



CITY OF ORILLIA
Council Committee Meeting
Monday, April 11, 2022
3:00 p.m. - Closed Session
4:00 p.m. - Open Session

AGENDA

Notice: This meeting will be held electronically. Residents are encouraged to watch the meeting on Rogers TV or [online](#) beginning at 4:00 p.m. The meeting will also be livestreamed on the City's YouTube channel. Please visit orillia.ca to access the link.

Page

Open Session

Chair - Mayor S. Clarke

Call to Order

Approval of Agenda

Disclosure of Interest

Minutes

- March 28, 2022 Council Committee

Closed Session

Motion to move into Closed Session

"THAT, pursuant to Section 239(4) of the *Municipal Act*, 2001, S.O. 2001, c.25, notice is hereby given that Council Committee intends to hold a closed session meeting to deal with a matter pursuant to Section 239(2) (c) of the said Act (Land Matter)."

Closed Session Items

1. Corporate Services Department - re Hydro One Land Opportunity - Update. File: L00-HYDR (*Land*)

Motion to Rise to Open Session

Open Session - 4:00 p.m.

Motions Arising from Closed Session Discussions

Consent Agenda

- 7 - 33 1. Deputy Clerk - re Municipal Accommodation Tax. File: L04-O-442XC01-2022-
- a) Report - Business Development, Culture and Tourism Department.
- THAT this Committee recommends to Council that Report BDCT-22-04 dated April 4, 2022 from the Business Development, Culture and Tourism Department regarding a bi-annual update on the City of Orillia Municipal Accommodation Tax be received;
- AND THAT the Use of Funds Agreement and Collection Agreement with Orillia and Lake Country Tourism be extended for one year;
- AND THAT the Mayor and Clerk be authorized to execute all agreements regarding the Municipal Accommodation Tax.
- 35 - 38 2. Corporate Services Department - re New Horizons for Seniors Grant. File: F11-GEN
- THAT this Committee recommends to Council that as recommended in Report CS-22-14 dated March 28, 2022 from the Corporate Services Department, the New Horizons for Seniors Grant in the amount of \$24,105 be accepted;
- AND THAT the grant funds be incorporated into the Recreation and Youth Services Division 2022 Operating Budget to off-set increased expenditures in the amount of \$24,105.
- 39 - 45 3. Deputy Clerk - re Feasibility of establishing a four-way stop - Matchedash Street South. File: T08-GEN
- a) Report - Development Services and Engineering Department.
- THAT this Committee recommends to Council that Report DSE-22-02 dated April 5, 2022 from the Development Services and Engineering Department regarding the feasibility of establishing a four-way stop at Matchedash Street South and Elgin Street once the Matchedash Lofts development achieves 75% occupancy be received as information.
- 47 - 50 4. Environment and Infrastructure Services Department - re Sir Sam Steele Brick and Limestone Restoration Contract Award. File: F17-GEN
- THAT this Committee recommends to Council that as recommended in Report EIS-22-04 dated March 30, 2022 from the Environment and Infrastructure Services Department, TMR Restoration and Construction Inc.

be awarded Contract Number EIS-PES-22-01 to complete the Sir Sam Steele Building Brick and Limestone Restoration works at 30 Peter Street South, for the tendered sum of \$228,275 plus HST;

AND THAT the Sir Sam Steele Building Brick and Limestone Restoration works be authorized to exceed the approved \$200,000 Capital Budget by \$99,000 net HST, and be funded from the Capital Contingency Reserve;

AND THAT the Mayor and Clerk be authorized to execute the agreement.

51 - 54

5. Environment and Infrastructure Services Department - re Pavement Markings. File: T06-GEN

THAT this Committee recommends to Council that as recommended in Report EIS-22-05 dated March 29, 2022 from the Environment and Infrastructure Services Department, Stoneline Ltd. be awarded Contract Number EIS-SPO-22-01 to complete the annual pavement marking contract for the tendered sum of \$219,560 plus HST;

AND THAT the overall Operating Budget for pavement markings be increased from \$89,600 to \$223,425 net HST;

AND THAT the additional \$133,825 be funded from the Tax Rate Stabilization Reserve;

AND THAT the Mayor and Clerk be authorized to execute the agreement.

THAT the recommendations set out on the April 11, 2022 Consent Agenda be adopted by Council Committee and forwarded to Council for ratification.

Board Reports

Council Referrals

55 - 264

1. Deputy Clerk - re Federation of Canadian Municipalities' Partners for Climate Protection Program and Climate Change Action Plan. File: D03-CCAP (*Yuill Herbert, Principal, and Naomi Devine, Senior Consultant, Sustainability Solutions Group, will be in attendance*)

a) Report - Environment and Infrastructure Services Department.

THAT this Committee recommends to Council that as recommended in Report EIS-22-03 dated April 2, 2022 from the Environment and Infrastructure Services Department, the Climate Change Action Plan as set out in Schedule "B" of the report be received and adopted in principle;

AND THAT the following Corporate Greenhouse Gas (GHG) emissions reduction targets be approved:

- 50% GHG reduction by 2030, below 2018 levels, and
- 100% GHG reduction by 2040, below 2018 levels;

AND THAT the following community GHG emissions reduction targets be endorsed;

- 33% GHG reduction by 2030, below 2018 levels, and
- 100% GHG reduction by 2050, below 2018 levels;

AND THAT additional funding to incorporate aspects of the Climate Change Action Plan to current facility design projects be assigned as follows:

- \$120,000 allocated to the Transit Terminal Design project, to be funded as \$80,000 from the Transit Equipment Reserve and \$40,000 from the Parking Reserve, and
- \$35,000 allocated to the Brian Orser Arena re-design, to be funded by the Major Facilities Capital Maintenance Reserve;

AND THAT staff report back to Council with annual progress updates towards reduction targets and integrating carbon budgeting and climate change action within City processes;

AND THAT funding associated with priority actions and projects outlined within the Climate Change Action Plan be referred to the 2023 Budget deliberations, future year budget processes and included as part of the 10-year Capital Plan;

AND THAT the Mayor be requested to provide a copy of this resolution and the Climate Change Action Plan in correspondence to implore higher levels of government for funding and support necessary for municipalities to achieve local climate change action through implementation of Climate Change Action Plans to the following:

- The Right Honourable Justin Trudeau, Prime Minister of Canada
- The Honourable Steven Guilbeault, Minister of Environment and Climate Change
- Honourable Doug Ford, Premier of Ontario
- Honourable David Piccini, Minister of the Environment, Conservation and Parks
- Federation of Canadian Municipalities
- Partners for Climate Protection Program
- Global Covenant of Mayors for Climate and Energy
- Association of Municipalities of Ontario

265 - 294 2. Deputy Clerk - re Outreach Worker. File: A18-LIBXS04-GEN (*Brian Adams, Chair, Community Outreach Working Group, will be in attendance*)

a) Report - Community Outreach Working Group.

THAT this Committee recommends to Council that as recommended in Report HR-22-06 dated April 1, 2022 from the Community Outreach Working Group, a Community Outreach Worker be hired to provide outreach services to those in need at the Orillia Public Library, Orillia City Centre, and at various other locations in the downtown area;

AND THAT this position be housed at the Library and report to the Library's Chief Executive Officer, or designate;

AND THAT an agreement be negotiated with an existing social service or mental health agency, or qualified individual, to offer supplemental clinical supervision, professional development and mentoring to the successful candidate.

- 295 - 334 3. Assistant Clerk - re Technical Land Evaluation. File: D17-SAB

a) Report - Development Services and Engineering Department.

THAT this Committee recommends to Council that Report DSE-22-08 dated April 4, 2022 from the Development Services and Engineering Department regarding an update on the City's Municipal Comprehensive Review process and the current Technical Land Evaluation project be received;

AND THAT staff be directed to include within the Request for Proposal for the City's Comprehensive Review and Update to the Official Plan a specific Council and public consultation process for establishing a 'Made in Orillia' set of planning principles to manage growth from an environmental, cultural, economic and social perspective.

- 335 - 347 4. Deputy Clerk - re Feasibility of amending Chapter 700 of the City of Orillia Municipal Code - Business Licensing - Local Produce. File: C01-2022-

a) Report - Development Services and Engineering Department.

THAT this Committee recommends to Council that as recommended in Report DSE-22-01 dated April 4, 2022 from the Development Services and Engineering Department, Chapter 700 of the City of Orillia Municipal Code - Business Licensing be amended by removing the requirement that a licensed fruit/vegetable stand must only sell products grown on lands in the Townships of Severn, Ramara and Oro-Medonte.

Departmental Reports

- 349 - 356 1. Chief Administrative Office and Human Resources Department - re Bill 27 - Employees Disconnecting from Work Policy. File: A09-GEN

THAT this Committee recommends to Council that as recommended in Report HR-22-05 dated April 5, 2022 from the Chief Administrative Office

and Human Resources Department, Policy 5.7.1.5. - Employees Disconnecting from Work be adopted as set out in Schedule "A" of the report.

Enquiries

1. Councillor Fallis will introduce the following enquiry:

THAT this Committee recommends to Council that staff be directed to prepare a report with respect to the following:

The feasibility and costs of installing remote solar light fixtures at the Clayt French Dog Park;

AND THAT the report further explore the feasibility and costs of installing remote solar light fixtures or outdoor string solar lights suspended from trees along the trail from West Ridge Boulevard to Atlantis Drive.

Announcements

Open Public Forum

Members of the public wishing to speak during Open Public Forum must pre-register by Monday, April 11, 2022 at 12:00 p.m. To pre-register, please contact the Corporate Services Department, Clerk's Division, at 705-325-1311 or at clerks@orillia.ca.

Please note that the Open Public Forum period is limited to a maximum of 30 minutes, with each speaker allotted a maximum of 5 minutes. The first six registrants will be guaranteed the opportunity to speak.

Adjournment



Clerk's Department

T: 705-325-1311
F: 705-325-5178
clerks@orillia.ca
orillia.ca
50 Andrew St. S., Suite 300,
Orillia, ON L3V 7T5

To: Michael Ladouceur, Manager of Tourism
Copy to: Gayle Jackson, Chief Administrative Officer/Clerk
Jim Lang, City Treasurer
Jennifer Ruff, Manager of Communications
Ashley Stafford, Executive Assistant to Mayor and Council (Municipal Code)
Rhonda Elliott, Records Coordinator (Agreement)
From: Megan Williams, Deputy Clerk
Date: July 19, 2019
Subject: **Municipal Accommodation Tax**

The following resolution was adopted by Council at its meeting held on July 18, 2019:

“THAT as recommended in Report CCTD-19-04 dated June 11, 2019 from the Chief Administrative Office, a four per cent Municipal Accommodation Tax on all Orillia transient accommodations be approved with an implementation date of April 6, 2020, with the exclusions set out in the report;

AND THAT Ontario's Lake Country, as the City's 'tourism entity' defined in Regulation 435/17, receive 50 per cent of the net Municipal Accommodation Tax as outlined in the conditions of the legislation, with staff authorized to negotiate an agreement regarding the parameters of use of the Municipal Accommodation Tax funds;

AND THAT staff be authorized to negotiate an agreement with Ontario's Lake Country for the collection of the Municipal Accommodation Tax on behalf of the City as set out in the report, with the agreement to include a termination clause of 3 to 6 months;

AND THAT staff report back to Council Committee bi-annually, including prior to the expiration of the agreement, to review the success of the Municipal Accommodation Tax with Ontario's Lake Country and future application and collection of the Municipal Accommodation Tax;

AND THAT staff be directed to prepare a policy which defines and guides how the municipally-retained Municipal Accommodation Tax funds will be spent by the City and report back to Council as part of the 2020 Budget;

AND THAT the Mayor and Clerk be authorized to execute all agreements regarding the Municipal Accommodation Tax.”

Michael Ladouceur
July 19, 2019
Page 2

Please provide a signed copy of the agreement to Rhonda Elliott, Records Coordinator for Clerk's Department files.

MW:cw

CITY OF ORILLIA

TO: Council Committee – April 11, 2022
FROM: Business Development, Culture and Tourism Department
DATE: April 4, 2022
REPORT NO: BDCT-22-04
SUBJECT: Orillia Municipal Accommodation Tax – Bi-Annual Update

Recommended Motion

THAT report BDCT-22-04 be received;

AND THAT the Use of Funds Agreement and Collection Agreement with Orillia and Lake Country Tourism be extended for one year;

AND THAT Mayor and Clerk be authorized to execute all agreements regarding the Municipal Accommodation Tax.

Purpose

The purpose of this report is to provide a bi-annual update regarding the City of Orillia Municipal Accommodation Tax (MAT), while seeking authorization to extend the current agreements in place with Orillia and Lake Country Tourism (OLC) for one year. The report will provide a financial overview of the MAT in 2021 and will update Council regarding initial plans for 2022.

Background & Key Facts

- On June 17, 2019, report [CCTD-19-04](#) was presented regarding a proposed MAT for Orillia and on August 15, 2019, Council approved the following:
 - *“THAT Council approve a four per cent Municipal Accommodation Tax on all Orillia transient accommodations with an implementation date of April 6, 2020, with the exclusions set out in this report;*

AND THAT Ontario’s Lake Country as the City’s ‘tourism entity’ defined in Regulation 435/17 receive 50 per cent of the net Municipal Accommodation Tax as outlined in the conditions of the legislation, with staff authorized to negotiate an agreement regarding the parameters of use of the Municipal Accommodation Tax funds;

AND THAT staff, be authorized to negotiate an agreement with Ontario’s Lake Country for the collection of the Municipal Accommodation Tax on behalf of the City as set out in this report;

AND THAT staff report back to Council Committee bi-annually, including prior to the expiration of the agreement, to review the success of the Municipal Accommodation Tax with Ontario's Lake Country and future application and collection of the Municipal Accommodation Tax;

AND THAT staff be directed to prepare a policy which defines and guides how the municipally retained Municipal Accommodation Tax funds will be spent by the City of Orillia and report back to Council as part of the 2020 budget.

AND THAT Mayor and Clerk be authorized to execute all agreements regarding the Municipal Accommodation Tax.”

- On March 20, 2020, Council deferred the implementation of the MAT from April 6, 2020 to September 1, 2020 as part of the COVID-19 community assistance program.
- The Mayor and Clerk executed two agreements with OLC effective September 1, 2020. The first was a Use of Funds Agreement, which outlines the manners and methods in which OLC can utilize their portion of funds as Orillia's eligible tourism entity. The second agreement was to establish OLC as the collection agent for the City of Orillia to administer the MAT at a rate of 2.5 per cent of the gross MAT.
- The two agreements with OLC are scheduled to expire on December 31, 2022.
- On November 1, 2022, report BDCT-21-12 was presented to Council providing the second bi-annual update of 2021 regarding the MAT.
- The City of Orillia supports tourism through the use of the MAT, along with the tourism development operating budget within the Business Development, Culture and Tourism Department.
- According to [Destination Canada's Resident Sentiment Survey Report](#), updated March 15, 2022 (November 2022 figures in brackets):
 - 84% (86%) of Ontarians feel safe when thinking about travelling to nearby communities.
 - 81% (80%) of Ontarians feel safe when thinking of travelling within Ontario.
 - 71% (56%) of Ontarians feel safe when thinking of traveling to other parts of Canada.
 - 42% (28%) of Ontarians' perceived safety is much lower when thinking about travelling to the US and 37% (26%) to other international destinations.
 - 16% of Canadians are interested in a small-town travel destination.

Options & Analysis

Option 1 – Recommended

THAT report BDCT-22-04 be received;

AND THAT the Use of Funds Agreement and Collection Agreement with Orillia and Lake Country Tourism be extended for one year;

AND THAT Mayor and Clerk be authorized to execute all agreements regarding the Municipal Accommodation Tax.

The Province of Ontario was in a lockdown for the larger part of the first two quarters of 2021. As a result, initial tourism marketing plans were cancelled and scaled back, along with tourism marketing support. This was done for two main reasons:

- 1- Uncertainty of MAT revenue related to a decrease in occupancy rates;
- 2- Stigma of promoting Orillia as a tourist destination during a pandemic when the priority messaging was to stay home, shop local and explore your own backyard.

As the Province began to re-open and loosen restrictions, Orillia tourism support and marketing initiatives increased. The third and fourth quarter saw several campaigns launched, yielding great success. As restrictions loosened and the Province began to re-open, Orillia saw a direct benefit within their hotel occupancy rates.

Orillia Hotel Occupancy Rates

One of the key benefits to implementing a MAT is the data collection that comes with the remittance process. Prior to implementing the MAT, research showed that the average daily occupancy rate for all Orillia hotels combined was 44%. This figure represents the entire year as a whole and doesn't account for the ebb and flow of the tourism seasons. For example, during peak summer months, hotels operate at a much higher rate than they would in the winter.

In total, Orillia has 14 hotels/motels offering 700 rooms. Table 2 provides a monthly breakdown of the MAT performance in 2021 along with the hotel occupancy rates associated with each month. Orillia saw an increased number of visitors throughout the summer, which was highlighted with 67% and 76% occupancy rates in July and August respectively.

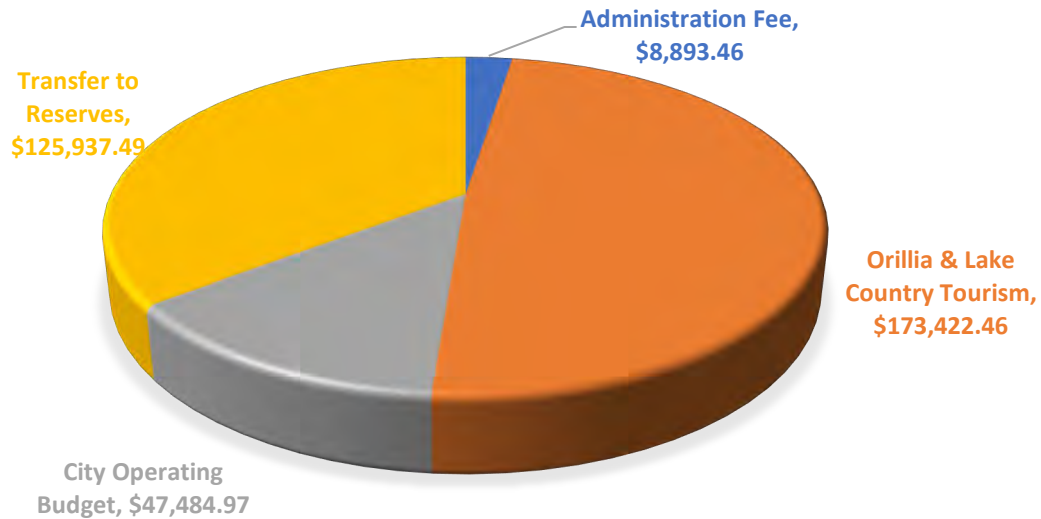
Table 2: Daily Occupancy Rates

Timeline	Revenue Earned	Occupancy Rate
2019	N/A	44%
Q4 2020	\$70,648	43%
Jan 2021	\$12,625	37%
Feb 2021	\$13,001	33%
Mar 2021	\$15,434	31%
Apr 2021	\$13,329	30%
May 2021	\$18,308	49%
June 2021	\$24,038	48%
July 2021	\$47,834	67%
Aug 2021	\$58,617	76%
Sept 2021	\$48,582	66%
Oct 2021	\$46,029	58%
Nov 2021	\$36,960	50%
Dec 2021	\$22,121	39%

Table 2 outlines the original budget which was presented to Council during the 2021 budget process, and then revised during the bi-annual update presented to Council in May 2021. As the table demonstrates, COVID-19 impacted the overall actual MAT revenue which directly impacts spending. As stated, staff scaled back its spending in the first two quarters of 2021 to maximize its ability to support the tourism industry as part of Ontario's Framework to Reopen plan while being able to further contribute to the reserve for future investment to promote Orillia as a tourist destination. Figure 1 demonstrates how the MAT breaks down within its various approved allocations.

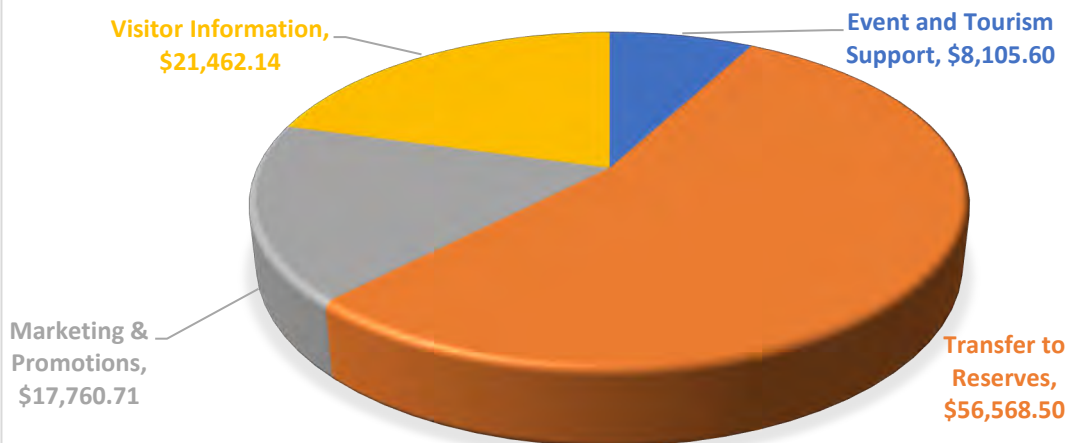
Table 2: Overall Summary for the 2021 Municipal Accommodation Tax

	2021 Budget	2021 Revised Budget	2021 Actuals
MAT Gross Revenue	(\$509,731)	(\$332,000)	(\$355,738)
Less: Collection Fee Expense	\$12,743	\$8,300	\$8,893
Net MAT Revenue	(\$496,988)	(\$323,700)	(\$346,844)
<u>Expenses (50 per cent split between OLC and City)</u>			
Orillia & Lake Country Tourism	\$248,494	\$161,850	\$173,344
City Operating Expense Spent	\$149,096	\$97,110	\$47,485
City Operating Expenses Unspent and Transferred to Reserve			\$56,568
City Transfer to Reserve	\$99,398	\$64,740	<u>\$69,369</u>

FIGURE 1: 2021 MAT SUMMARY

2021 Operating Expenditures

As set out in [Policy 4.1.10.1.](#), 60 per cent of the City's portion of the MAT shall be allocated to the annual operating budget to enhance and support tourism growth and strategy. Figure 2 showcases how staff utilized the operating portion of the MAT budget.

FIGURE 2: CITY MAT OPERATING BUDGET

With the uncertainty of COVID-19 in the first two quarters of 2021, staff scaled back spending until a clearer picture of the tourism landscape in the context of the COVID-19 pandemic could be assessed. Several initiatives were implemented with great success and have set the

foundation for what is hopefully going to be a return of a prosperous 2022 tourism season. Below is a summary of some initiatives that occurred, utilizing MAT operating funding in 2021:

- Various Tourism Marketing Campaigns
 - Social Media
 - YouTube
 - Canadian Travel & Lifestyle Magazine
 - Google Ads
 - Bell Media – Great Places to See Campaign (CTV, Pure Country)
 - Google Tag Manager (Analytics Software)
 - Downtown Banners
- Event and Product Support
 - Studio Images Tour
 - Film Productions
- Tripvia - Free mobile self-guided tours
- Crowdriff – User Generated Curation Software
- Visitor Information Services (VIS)

Tourism Readiness & Renewal Program Report

Throughout 2020 and 2021, the City of Orillia and OLC worked with Bullpen PR to conduct a fam tour during the green tourism season to gain a comprehensive review of the tourism offering from an outside perspective in order to provide recommendations on how to develop strategies and partnerships moving forward. Schedule “A” are the move forward recommendations provided to the City and OLC. These recommendations will help inform staff’s marketing strategy and tourism development efforts moving forward.

Orillia Tourism Ambassador Training Program

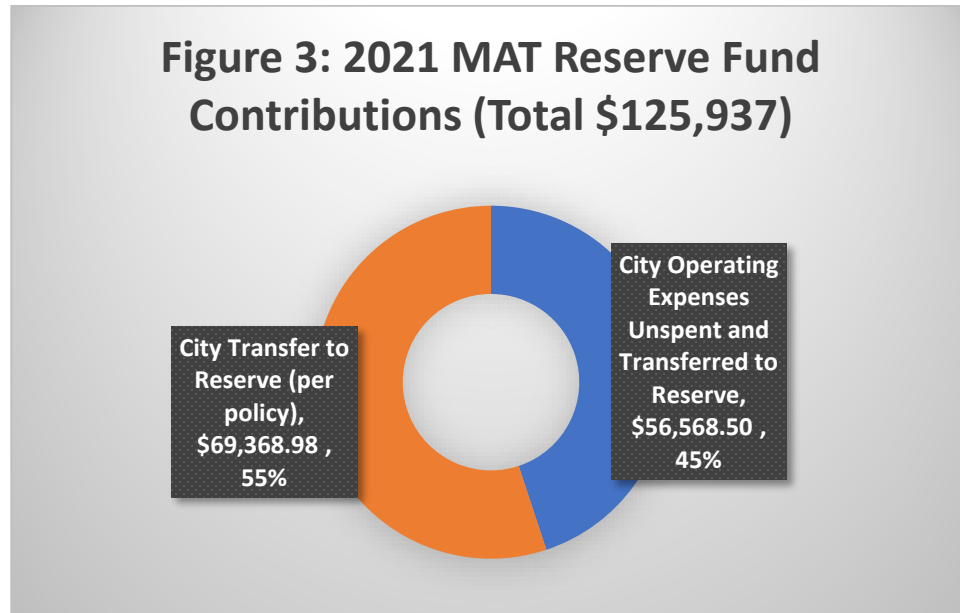
As reported to Council in December 2021, Orillia has hired Agilec to develop an online tourism ambassador training program. The online certification program, scheduled to launch in Spring 2022, will focus on 5 key modules, and would require the student approximately 1-2 hours to complete. It will be a free certificate, marketed to all Orillia businesses and its employees, prospective employees, and local students. The objective of the program is to have all tourism businesses offer a consistent approach to the visitor experience, help direct clientele to similar businesses and operators and provide the utmost visitor customer service as possible. The six modules of the certification program are:

- 1- Orillia Tourism Overview
- 2- Orillia Heritage and History
- 3- Orillia “Today”
- 4- Enriching the Visitor Experience
- 5- Attractions and Tourism

Reserve Fund Contributions

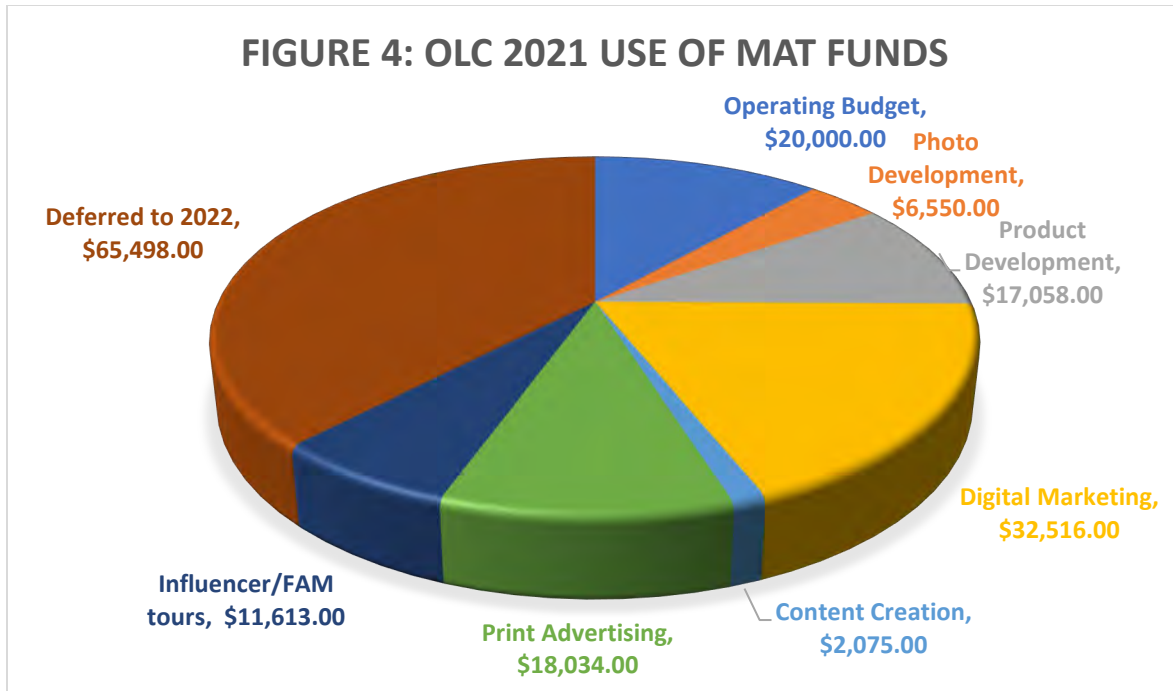
As set out in [Policy 4.1.10.1](#), 40 per cent of the City’s portion of the MAT shall be allocated to the Tourism Reserve Fund. Also, in accordance with the policy, all unspent MAT operating dollars are to be allocated to the reserve fund at the end of the fiscal year. The reserve fund

allows the City to save in order to assist long-term investment in tourism. This approach was maximized in 2021 due to the volatility and uncertainty of the tourism industry with the impact of COVID-19 pandemic messaging in the first two quarters. Figure 3 highlights how much funds were transferred to the reserve per City policy and how much was transferred due to unspent operating budget.



OLC Use of Funds

OLC and the City of Orillia have an agreement in place that outlines how OLC can utilize its funds driven by the MAT. Prior to the MAT, the City provided OLC \$20,000 annually to offset operational costs. This amount is consistent with the other four neighboring municipal partners of OLC; the Townships of Ramara, Severn and Oro-Medonte and the Chippewas of Rama First Nation. As part of the agreement, OLC can allocate \$20,000 of MAT funds to its core operating budget, with the remainder being used to enhance tourism in the Orillia and Lake Country area. Schedule "B" outlines how OLC utilized their funds, along with the strategy for 2022. Figure 4 breaks down how OLC used their funds in 2021. OLC sought approval to defer approximately \$65,000 in MAT revenue to 2022 for a few reasons. The early uncertainty with COVID-19 had them delay their 2021 strategies. Additionally, MAT revenue earned in November and December of 2021, only would have been received in December 2021/January 2022 for use, however it is recorded in 2021 as revenue earned.



2022 MAT Strategies

Staff will be focusing their attention in 2022 on four key priorities to apply MAT expenditures, as informed by the [City of Orillia Tourism Strategic Action Plan](#). Execution of these priorities is dependent on the status of COVID-19 throughout the year.

1- Festival and Events assistance

- a. Support existing events to return in COVID-19 context.
- b. Promote Orillia as a destination for established touring events, such as Contact ONtour, 2024 Ontario 55+ Winter Games (Bid Stage), OSUM Conference (2023) and other potential events, including sport tourism, as they arise and become available.
- c. Marketing of the existing festival and events calendar.

2- Tourism Marketing and Communications

- a. Orillia will be partnering with Bell Media for a “Great Places to See” campaign through CTV and its two sister radio stations Pure Country and The Dock. The campaign will focus on safe things to do in Orillia.
- b. Digital advertising campaign to promote Orillia as a premier destination. Various campaigns will be created targeting specific demographics. Facebook will be used to target the 50+ age group, while Instagram will be used to target the 25+ age group.
- c. Marketing campaign to encourage staycations within the region. Marketing within the BruceGreySimcoe region to further promote the safe travel experience.
- d. Marketing campaign to encourage visitation from outside the region. Geographic target markets will include the Greater Toronto Area, Northern Ontario and the Kawartha Region.

- e. Promote visitorillia.ca with monthly changes to ensure up-to-date information is provided.
- 3- Product Development
- a. Further leverage Tripvia Tours app and various self-guided tours, while expanding on current product offerings.
 - b. Creation of a series of 12 [digital informational guides](#) on what to see and how to see Orillia. Examples will be:
 - i. How to experience Orillia in “one hour,” “four hours,” “one day,” and “one weekend.”
 - c. Work with tourism partners to establish packages encouraging overnight stays while leveraging the [Ontario’s Staycation Tax Credit](#)
- 4- Infrastructure and Support
- a. Mobilize the visitor information booth around Orillia, attending various events, functions or gatherings where visitors and tourist might be present
 - b. Launch the online Orillia Tourism Ambassador Training Program.
 - c. Work with City departments to help fund capital projects that could be used to enhance tourism through the MAT.

Agreements with Orillia & Lake Country Tourism

The City of Orillia and OLC executed two agreements in regard to the MAT. The first agreement is regarding how OLC can utilize their funds they receive for being Orillia’s “Eligible Tourism Entity.” The second agreement is a service contract whereby Orillia has hired OLC to serve as the collection agent on behalf of the City at a rate of 2.5% of gross MAT revenue.

Both agreements are set to expire on December 31, 2022. With 2022 being an election year, and marketing plans for 2023 planned in 2022, staff are seeking Council authorization to extend the current agreements in place by one year. This would allow the new term of Council an opportunity to review the MAT in detail in 2023 before further extending or negotiating new long term agreements or MAT strategy.

Option 2 – Not Recommended

THAT report BDCT-22-04 be received as information;

This option is not recommended as it does not provide city staff or OLC advanced notice to begin planning and projecting the 2022 – 2023 tourism season and budgets. Should Council choose option 2, staff would be required to report back to this term of Council to determine who the City of Orillia would select as its eligible tourism entity per *Regulation 435/17* with a full review and renewal of the necessary and required agreements.

Not only does OLC receive 50% of net MAT revenue but they also handle the full administration and collection of the program. Providing OLC advanced notice would be desirable from a stakeholder relationship perspective as it would show a level of commitment, especially after a tumultuous past two years since the launch of the MAT program due to COVID-19. The collection and administration of the MAT is not currently something the City has the resources to do internally. Should Council choose option 2, staff would begin the

process of assessing additional options for who should be the eligible tourism entity, and the process on how the City will administer and collect the MAT in 2023.

Financial Impact

There is no financial impact associated with this report. Should Council choose option 1, staff would execute an extension to the current agreements with OLC. All financial impacts associated with the MAT will continue to be presented to Council through the budget process.

2022 MAT Budget

Account	2021 Budget
Gross Revenues	(\$295,000)
Event Support	\$27,324
Marketing & Promotion	\$35,823
Visitor Information	\$23,010
Collection Expense	\$7,505
Transfer to Reserves	\$57,525
Grant to Organization - (OLC)	\$143,813

The MAT reserve fund balance as of December 31, 2021 is \$140,894 which also includes the 2020 contributions. During the 2022 budget process, Council authorized the use of \$40,000 from the MAT reserve to fund the design plan for the renovations at Swanmore Hall.

Consultation

Orillia and Lake Country Tourism

OLC has worked tirelessly to support the tourism industry in Orillia. OLC was an active member of the Economic Recovery Task Force and has worked closely with City staff to implement, collect, administer, and execute the MAT.

Schedule “B” – OLC 2022 Spring MAT Report, outlines their 2022 marketing strategy to promote Orillia as a tourist destination, along with a summary of 20201 MAT spending and collection.

OLC, at its board meeting held April 4, 2022, passed the following motion:

“THAT the two agreements between Orillia and Lake Country Tourism and the City of Orillia regarding the Municipal Accommodation Tax that are set to expire on December 31, 2022 be extended one year to December 31, 2023.”

Economic Development Impact

The tourism industry has been hit especially hard by the COVID-19 pandemic and in turn this has an economic impact on local retailers and service providers. The proposed key priority areas identified for MAT expenditures in 2022 support a comprehensive approach to visitor attraction which will be critical to ongoing economic recovery efforts. The proposed 2022

priorities align with Business Development and economic recovery initiatives to support existing businesses, encourage residents to support local businesses and will support the increasing return of visitors to our community.

Communications Plan

Communication requirements have not been identified at this time.

Relation to Formal Plans, City of Orillia Policy Manual and/or Guiding Legislation

The recommendation included in this report is related to the following formal plans, City policies and/or guiding legislation:

- [Tourism Strategic Action Plan](#)
- [City of Orillia Strategic Plan](#):
 - Sustainable Growth – 4.2. Develop the City to be a year-round destination for tourism, cultural activities, sports, active living, accommodation and trails.
- [City of Orillia Policy Manual Section 4.1.10.1](#) – Municipal Accommodation Tax – City Use Policy

Conclusion

The MAT has provided the City an opportunity to enhance tourism with a new stream of revenue. The revenue generated in 2021 has allowed the City to begin leveraging its existing tourism infrastructure and further carry out its marketing and development initiatives.

Staff will continue to monitor and assess the tourism landscape throughout 2022 while working closely with its key tourism stakeholders such as OLC. Staff is recommending extending its current agreements with OLC by one year to allow for the new term of Council to have an opportunity to fully evaluate the program before assessing extending or negotiating new long-term agreements with OLC.

Schedules

- Schedule “A” – Tourism Readiness and Renewal Program
- Schedule “B” – OLC Spring MAT Report

Prepared by & Key Contact: Michael Ladouceur, Interim Director, Business Development, Culture and Tourism

Approved by: Gayle Jackson, Chief Administrative Officer



TOURISM
READINESS &
RENEWAL
PROGRAM
REPORT



August, 2021 Tour

Move Forward
Recommendations for
City of Orillia & Lake Country



Move Forward Recommendations

1. Recognize and Promote the Strengths You Already Have... Some of Which You May Take for Granted

A) For the City of Orillia

- Your downtown core, specifically the first 3-4 blocks of Mississauga Street offers a strong mix of restaurants and shops 'those in the know' will gravitate to visit after visit.
- The city's waterfront and waterfront parkland are an equally strong draw.
- As exemplified by the artwork on display on Mississauga Street and in other parts of the city, it is clear to see that Orillia is a community that does an exemplary job of celebrating and supporting the local arts community.
- The city has taken its support one step further by becoming a 'palette' for these artists, while showcasing everything from sculptures and metal art to wall murals.

B) For Lake Country

- Not unlike other 'cottage country' locales, there is no shortage of beautiful geography, from Lake Simcoe to your parkland to your rural attractions.
- You offer visitors a variety of ways to navigate this beauty: car, boat (both on the local lakes and via the Trent Severn Canal system) and undoubtedly more and more in the future by bike thanks to a growing interest in bike tours and local efforts underway to better promote cycling routes.
- Your proximity to Orillia addresses the 'what do I do' if the weather is inclement or after people are done hiking or biking or if they're camping and want to trek into town to check out the shops and restaurants during their stay.



2. Do More Cross Promotions and Identify More Experience Synergies to Help 'Raise the Tide' for All.

- The more tourism and lifestyle operators promote complementary experiences in the area, the more visitors on the receiving end will wake up to the fact there's a lot to see and do. This strategy can be manifested in a variety of ways, ranging from major initiatives/

coordinated events (such as closing the downtown core for pedestrians) whereby these events are promoted on participating vendors' websites or on posters in storefront windows... to something as simple as restaurants showcasing local works of art on their walls or selling food and beverage items sourced locally. Instead of adorning your patio with umbrellas emblazoned with the logos of Toronto breweries, use umbrellas that promote local businesses and/or artists.

- A good example of one vendor going down this path and driving the process is the Quayle's Brewery beer garden whereby local businesses are chipping in to support local causes by paying for and decorating Xmas trees to highlight the beer garden. The net effect is to promote the brewery and participating businesses, while raising money for charity... and for all involved, creating a positive vibe.

3. Use this Synergistic Approach to Build Experience Bridges Between the City of Orillia and Lake Country.

- Bike Tours. Orillia and Lake Country is already well along this path (literally and figuratively) with its cycling routes. These routes will hopefully encourage more visitors to tour and safely explore downtown Orillia but also to venture out into Lake Country. So ideally these initiatives will catalyze: i) bike travel within Orillia ii) bike travel in Lake Country and iii) bike travel between Orillia and Lake Country.

- Driving Tours. We recognize Orillia and Lake Country has a [web page](#) dedicated to driving tours. However the content seems to currently be limited to a [downloadable PDF](#), that showcases a four-hour drive with suggested stops along the way. But also why not break the tours down into more 'bite-size' drives (or rides), so for instance: explore for... 1 hour or 2 hours. Why not also create full day tours?

- Both for Biking and Driving Tours: take things to the next level by among other things: developing both guided and self-guided tours; creating thematic tours e.g. Bike and Hike; Art Studio Tour; Farm Tours (providing there are enough farmers in the area that sell meat, cheese, eggs, crafts etc. from their homes... something that's really big in parts of the U.S. and here in communities like [St. Jacobs](#)).

- For the above-mentioned tours, consider creating downloadable apps.



4. Aggressively Promote Your Destination Experiences

- For locals in Orillia & Lake Country, it is no doubt a well-known fact that Quayle's is a destination brewery or 'destination attraction' in general terms. The reason for that is that Quayle's goes well beyond simply providing a spot where you can go and sample beer by virtue of among other things its: scenic, rural location; food selection; various seating arrangements; live entertainment; and organized events.
- Obviously, the Stephen Leacock Museum is yet another destination experience that will draw people from outlying areas.
- From what we saw, you have other lesser-known destination experiences as well, by virtue of the fact they have found a way to transcend and add layers to their core experiences. These include local businesses



such as: Mark IV Brothers (it's not just the coffee and food... it's the store, the outdoor patio, the cool interior with the motorbike on display, the takeaway food and drink including Kimchi of all things); the Refillery District (which as their website appropriately observes is: changing the way we shop... promoting among other things, reusable/refillable containers, organic foods and green household cleaners); and Alleycats Music and Art (whether you're into cool posters, are caught up in the vinyl record revival or are a comic book collector, some or all of the above, you'll be willing to drive the extra distance to see what they have).

- Each of these destination experiences can serve as proverbial magnets that on their own, will compel people living outside of the area to want to visit. So there's merit in promoting some of these experiences more aggressively and then as per #2 above, encourage them to stay and explore other attractions during their visit and perhaps stay overnight.
- Even if there are no obvious synergies between say a record store and a store that promotes household products in reusable containers... the connection could come down to something as simple as the fact that one partner may be attracted to one/one attracted to another and combined, it gives them a reason to both want to visit. So yes, promote experiences where there are obvious synergies. But also promote experiences by virtue of their collective 'gravity'.

5. Embrace Actions that Will Make Your Community Even More People Friendly

- One of the jokes on 'The Morning Show' is: Question: how do you get 100 Canadians out of a swimming pool? Answer: You ask them to. Canadians have a reputation for being friendly and having spent plenty of time touring less than friendly cities (including here in Canada) we can vouch for the fact that people living in Orillia are exceptionally friendly.
- However another interpretation of 'People Friendly' that ties in directly with your tourism experience pertains to how easy it is for people within your community to move about versus falling into the trap most communities in the country are guilty of and that's: putting cars first.
- From our experience, Orillia is surprisingly busy due no doubt in part to the number of major highways running through. And with its volume of traffic, it can be treacherous for instance to cross Centennial Drive



to access the waterfront. There are long stretches between streetlights along Mississauga Street and because of this, people habitually cross the street to get to shops or to go to and from downtown parking lots (most notably Lots 5/11).

- The busy roads assessment also applies to the major streets running out of town, which from what we could see are far too busy for cyclists to navigate.
- Top of mind solutions to these challenges: consider adding more crosswalks; get rid of traffic 'beg buttons' that force pedestrians to wait longer if they don't press the button in time; create bike lanes as part of a more comprehensive Bike Strategy, which protects cyclists in town and on roads heading out of town.
- Consider upgrading Orillia's buses (many of which can now accommodate two bikes on their carriers) so that more people will be encouraged to use a combination of buses and bikes to get around.
 - Build on the momentum created by making the downtown and outlying areas more active transit friendly by promoting more walking/biking tours.
 - Create bike parking stations so there are more places to park your bike and encourage more retailers to provide bike racks outside of their establishments.
 - Consider establishing a tourism shuttle service in tandem with encouraging visitors to park on the perimeter of town... so that in an ideal world, they pay a more manageable daily parking fee (than the current \$50) in a location that doesn't have an impact on downtown parking and so that once in town, they get around on foot.
 - Consider setting up a bike share program so that visitors can get around on bikes versus bringing their own into town.
- Address two critical shortcomings far too many Canadian communities face within their downtown experiences: the lack of public washrooms and the lack of public drinking water... both essential needs for residents and visitors alike navigating the downtown. In Orillia's case, the waterfront washroom facility is first class. It's attractive and well maintained from our experience. But it's also not within easy reach of anyone shopping in the downtown area. So ideally, establish a washroom facility right downtown, even if such an installation is temporary for the busier green season. Or tied to permanent solutions, some of which are self-cleaning as in the case of [Paris](#) and closer to home [St. Catharines](#). And to make it easier to 'know where to go' create a [Washroom Map](#) as they've done in Kitchener. Or better still, tie it in with tour maps and/or apps.
- With respect to public drinking water: yes, COVID-19 has curtailed the use of public fountains. However as cities like [Zurich](#) have demonstrated in spades, it is possible to create public installations, many of which are also works of art, that double as water bottle filling stations. Or in lieu of public art that doubles as a filling station, conventional [outdoor fountains](#) with a bottle filling feature would work as well.

- In the wake of doing some or all of the above: actively promote Orillia and Lake Country as an active transport community – both for residents and visitors.

6. Find Synergies Between Your Strengths and Challenges

- Arguably a current weakness is pedestrian safety and the challenge of navigating vehicular traffic (you're not alone... it's a challenge that applies to most communities in this country).
- An obvious strength is the area's artistic community.
- So one example of leveraging a strength to address a perceived challenge would be to create crosswalks in high traffic areas, that local artists create, as has been [successfully done in communities from around the world](#).
 - The net effect of such an initiative would be to not only make crossing safer... but also, it would complement and add to the community's obvious commitment to public art.
 - Art could be used to address challenges in Lake Country as well. For instance, both Black River Wilderness Park and Tent Kitchen and Bar are quite easy to drive by even when you're looking for them... so why not install roadside artwork or if permissible, paint a portion of the road in front of these destinations to grab the attention of people driving by? And specific to Tent Kitchen and Bar... the outside light poles from the former gas station send the wrong message to prospective visitors. So short of removing them, why not turn them into works of art.
 - Also applicable to Lake Country is the fact that for incoming visitors, one scenic park might not be deemed all that different from another. So why not take one specific park and take things to the next level by creating an art park or sculpture park like [Griffis Sculpture Park](#) just north of Ellicottville? Other noteworthy examples here in Ontario include [The Haliburton Sculpture Forest](#) and the [Singhampton Sculpture Forest](#). The latter interestingly has been set up by the artist on her country property.



7. Continue to Build on Your Connection with Water

- Orillia's waterfront park system, complete with its walking/biking trail is clearly a strong asset for the community that benefits residents and visitors alike.
- The challenge, as experienced in previous years, is to attract residents and visitors without overwhelming the existing parking or having the parkland overrun.
- A starting point would be to address the challenge head on through measures such as setting up a perimeter parking/shuttle service, encouraging more visitors to bike to the park (either with their own bikes or rental bikes) and to give them more reasons to want to visit and explore.

- Further to the latter point, a waterfront tour map for pedestrians and cyclists would help people to not just stop in one spot but to explore the waterfront.
- Another consideration would be to establish an Art in the Park event not unlike what [Stratford](#) does every Sunday during the green season.
- Orillia’s historic [bandstand](#) is another feature that ideally the city would promote more aggressively in tandem with weekend concerts. In doing so: don’t just promote performances that appeal mostly to the 55+ crowd... stage performances that will appeal to families and teens/20 somethings as well.
- It goes without saying Orillia’s ambitious [waterfront revitalization](#) has the potential to go a long way towards intensifying and beautifying the waterfront.
- Taking concrete measures to build on the appeal of visiting the waterfront will help to attract more boating traffic including ‘Loopers’ navigating the Trent Severn Canal system.

8. Continue to Tap into Your People Power

- Today’s tourists fall into two distinct categories: those who like to be self-guided and those who want you to hold their hand and show them around.
- You can use residents to accomplish both while at the same time enhancing your overall tourism experience. For example: local artists could provide walking tours of downtown art installations. Or they could help to create a self-guided tour, adding their personal comments and observations to the app.



- The same analogy can be applied to Lake Country. For instance there are no doubt locals who know the area’s parks and hiking trails (perhaps naturalists to boot) that would be more than capable of guiding visitors through some of your most scenic destinations.
- To the city’s credit, Orillia already has a [self-guided tour of downtown buildings](#)... but again, in light of the city’s history... are there local historians who might want to lead such tours?
- Do more to profile local business leaders and visionaries to put more of a ‘human face’ on the area. This could be done with short profiles or videos of these individuals that could touch on: what brought them to the area, what they love about living there and why people would want to visit the area in general or their business. So perhaps individuals like [Mike Rothwell](#) of Alleycats Music or [Tyler Knight and Allie Fry](#) of Refillery District.



9. Create Compelling New Destination Experiences (or Enhance Existing Ones) that Will Help to Define the Community

- Two prospective new experiences suggested earlier in these recommendations are prime examples of leveraging your existing resources and talent to create new experiences: the idea of Art in the Park for Orillia's waterfront and the creation of an Art Park for one of Lake Country's existing parks. Or as in the case of the above-mentioned Singhampton Sculpture Park, is there a local artist or group of artists willing to set up their own sculpture park?
- In lieu of (or complementing) permanent installations as per the last point, another possible experience could be an Arts and Crafts Festival event that showcases the community's artists and their work but also promotes the area's present and future breweries, cideries and wineries... something that could be staged on a single day or over the course of a weekend.
- Building on the See You on the Patio program, which Orillia deserves credit for staging in the first place, from our experience in attending similar community initiatives such as the one in [Kincardine](#), opt to close the streets down during the day on weekends. The current program seems primarily focused on promoting restaurant dining, whereas when the streets are open during the day, it encourages considerably more foot traffic that the participating shops will benefit from as well. In Kincardine's case they've used the event to even promote businesses that aren't located on the roads closed to traffic by allowing them to set up booths or bring in food trucks.
- Yet another option to consider would be to launch an Orillia [Ciclovia](#) event (as introduced to the world in Colombian cities) whereby an even larger stretch of road or road network is closed to traffic to encourage people to bike throughout the community without worrying about cars. This would be an aggressive, yet relatively inexpensive way of promoting the city as a bike friendly destination that could attract visitors from much further afield.

10. Focus on What Needs to Be Done to Attract Quality Visitors/Potential Future Residents

- The flipside of considering any of the recommendations is to also take into account, which measures will serve to attract more quality visitors, some of whom could ultimately become future residents.
- It's a well-known fact that millennials are [buying fewer cars](#) for a number of reasons, ranging from the high price of ownership to the fact they're increasingly concerned about the environment and their desire to live in the equivalent of a 15-20 minute community where they can access most of their needs on foot or by bike.
- Additionally, one of the few benefits of COVID-19 is that working remotely is now widely accepted. And a growing body of white-collar workers are doing just that.
- So Orillia and Lake Country has a golden opportunity to link enhancements to its tourism experience, playing up the area's strong connection with nature, culture and art as a starting point. The next step (literally) would be to create a more walkable, more active transport friendly community which inevitably will make the thought of relocating to the area that much more attractive.

Schedule B – OLC Spring Report



March 28, 2022

Submitted by: Kris Puhvel, Executive Director, Orillia and Lake Country Tourism

2021 Completed Projects

Total Spend: \$115 000

Purchase of Crowdriff Software

This platform has allowed for enhanced marketing through social media by providing access to user generated photos and other important features. These photos are shared on social media and the platform allows for the creation of photo galleries that are featured on our website. The software rights were purchased in partnership with the City of Orillia.



Paddling Signage

To further promote OLC Paddle Lake Country program, an informative paddling sign was added at Tudhope Park.



Hosting Influencers/Writers

OLC sponsored a media visit from Dobbernation Loves to write comprehensive articles about Orillia's Culinary Scene <https://dobbernationloves.com/food-drink/best-restaurants-in-orillia/> and Attractions and Things to Do <https://dobbernationloves.com/travel-resorts/attractions-things-to-do-in-orillia/>. Both articles are now ranked very highly using Google. OLC also sponsored [GabyNoCanada](#) to feature a number of patios through her social media channels.

Cycling Infrastructure

To enhance the municipality as a cycle-friendly destination bike racks were provided to Orillia's Cycle Simcoe certified hotels (5 in total) as well as a bike repair station stationed at the Leacock Museum.

Print Media

To target the Toronto market OLC purchased advertorials for three issues of Adamo Nest, a Toronto lifestyle magazine, to promote various tourism features of the City and surrounding region. Each issue has a circulation of 100k and images are featured as well on elevator screens.

To promote Orillia as a boating destination we also purchased, in collaboration with Chamber of Commerce, a full-page inside back cover ad in "Ports-The Cruising Guide", which is a boating guide to the Trent-Severn and Lake Simcoe.

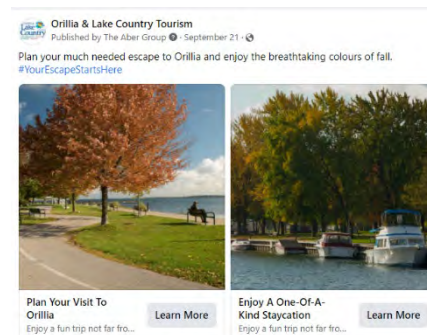


Tourism Readiness and Renewal Program

With collaborative funding from OLC, the City of Orillia and Tourism Simcoe County this project began in 2021 and is led by Bullpen Consulting. Findings from the summer season visit to Orillia and Lake Country provided recommendations to strengthen the tourism readiness of Orillia and Lake Country to improve the experience for visitors, locals and the media alike.

Digital Marketing Campaigns

OLC undertook a wide variety of digital marketing campaigns in 2022. This includes a Fall YouTube and Spotify campaign with Post Media and numerous social media campaigns promoting Orillia, as well as regional attractions. In addition, in order to attain greater traffic to our website, all blog posts were boosted on Facebook and Instagram.



OLC Programs

Supported marketing efforts for Tap into Maple and Flavours of Lake Country. These programs support visitation to local businesses and in Spring of 2021 due to circumstances no participation fees were charged to our businesses.

Photo and Video Production

Completed a Winter Orillia photoshoot and produced a 60 second "Orillia-We do Winter Well" video that will be used to promote winter visitation. All photos were shared with accommodators, the municipality and community partners.



Orillia and Lake Country Annual Contribution

Continued support of Orillia and Lake Country Tourism for core funding of operations with a contribution of \$20 000.

Digital Billboards

Placed ads on Gardner Expressway and Dundas Square digital billboards promoting winter visitation.



Website banner ads

Other initiatives

Blog creation for website



It's time to start the music, it's time to light the lights! After a tumultuous year for theatre and live events on pause, the performing arts are making a comeback. Orillia has a long history of being a premiere location for quality community and professional theatre and this part of our local arts scene has [...]



Following is a summary of our 2022 initiatives

Anticipated Spend: 150k

Crowdriff Visual Marketing Software

The software rights are purchased in partnership with the City of Orillia. This platform allows for enhanced social media and website marketing by providing access to user generated photos and other important features.

Support for Streets Alive

Financial support for the maintenance and repainting of several Streets Alive outdoor sculptures. This initiative will help keep public art front and centre in our Downtown core and to build on the appeal and excitement that our unique and creative streetscape brings to locals, cottagers and visitors to Orillia and area.

Content Creation

Develop timely content for www.orillialakecountry.ca such as blogs and other website content that focuses on City of Orillia and regional tourism assets and events.

Signage

To further promote the OLC Paddle Lake Country program, an informative paddling sign will be added at Couchiching Beach Park.

Enhanced signage at the Port of Orillia that will provide visitors more information about other attractions in the City such as the historic downtown core.

Print Advertising

Advertorials in Adamo Nest Magazine which targets the GTA Condo Market as well as ads in Canada Travel and Lifestyle Magazine.



Hosting writers/influencers

OLC plans to host at least three writers and influencers with significant followers to experience and promote some of Orillia's tourism assets. This will include bringing back writer Andrew Dobson to add additional restaurants to his popular guide <https://dobbernationloves.com/food-drink/best-restaurants-in-orillia/>

Program Support

Support for on-going OLC programs such as Tap into Maple and Flavours of Lake Country.

Digital Marketing

OLC ran social media and YouTube campaigns promoting the "Orillia-We do Winter Well" theme. Additional seasonal digital campaigns will be executed throughout the year.



Tourism Readiness and Renewal Program

With collaborative funding from OLC, the City of Orillia and Tourism Simcoe County this project led by Bullpen PR included a summer visit in 2021 and a winter visit in March 2022 to Orillia. The recommendations resulting from this audit will provide a roadmap to strengthen the tourism readiness of Orillia and Lake Country to improve the experience for visitors, locals and the media alike.

OLC Visitor Guide Ads

The 2022 OLC Visitor Guide (circ. 35k) features a number of ads for Orillia cultural attractions as well as one for all of its hotels and motels.



Cycling Infrastructure

We will continue our efforts to enhance the municipality as a cycle-friendly destination by providing up to 10 bike racks for municipal attractions such as the Opera House, as well as Cycle Simcoe certified businesses.

Fish TV

In collaboration with the City of Orillia, we will be hosting Fish TV to shoot, edit and air 2- 30 minute dedicated shows. Filming will begin in 2022. Each show will showcase the great fishing, accommodations, scenery, and all the other great activities and attractions that the City of Orillia has to offer.

Orillia and Lake Country Annual Contribution

Continued support of Orillia and Lake Country Tourism for core funding of operations.

Additional Opportunities

We will continue to look at additional marketing and product development opportunities as they arise.

CITY OF ORILLIA

TO: Council Committee – April 11, 2022
FROM: Corporate Services Department
DATE: March 28, 2022
REPORT NO: CS-22-14
SUBJECT: **New Horizons for Seniors Grant**

Recommended Motion

THAT the New Horizons for Seniors Grant in the amount of \$24,105 be accepted;

AND THAT the grant funds be incorporated into the Recreation and Youth Services Division 2022 Operating Budget to off-set increased expenditures in the amount of \$24,105.

Purpose

The purpose of this report is to inform Council that the City of Orillia was the successful recipient of the New Horizons for Seniors Grant. The City was eligible for a maximum of \$25,000 in funding for a project that increases participation and engagement of seniors living in Orillia and the surrounding area. Staff submitted an application for purchase of various programming materials and supplies for the development of a Seniors Essentials Program.

Background & Key Facts

- According to Statistics Canada, the City of Orillia has a population and catchment area of 119,000 (31,000 in Orillia and 88,000 in the catchment area). Of which, 21.1% are over the age of 65 and 35% are over the age of 55.
- Recreation and Youth Services (RYS) programming serves over 400 seniors per year.
- Insufficient time, financial constraints, and lack of access to recreation resources are the main social and environmental factors that contribute to physical inactivity in seniors.
- Staying active and social will help prevent isolation and injuries.
- By 2031, seniors are expected to make up 26% of the population in Simcoe County.
- In December 2021, the Recreation and Youth Services Division submitted an application to the Government of Canada for the New Horizons for Seniors Program in order to establish a Seniors Essentials Program.
- The main objective of the grant application was to gain capital assistance to establish the Seniors Essentials Program.
- The secondary objective of the grant was to promote social participation and increase senior safety and confidence related to independent living for older adults living in Orillia and surrounding areas.

- The City will receive \$24,150 to establish the Seniors Essentials Program. This program will host a series of monthly workshops and programming aimed at educating seniors in the community. Topics include mental health, nutrition, chronic illness, physical literacy, balance and stability and independent living.
- The establishment of the Seniors Essentials Program will help facilitate senior specific programming, while encouraging seniors to build and maintain new relationships, acquire new skills, improve their health, increase motivation, and retain integrity.
- In addition, this funding will aid with the purchase of programming materials and other costs associated with the program such as fitness equipment, a laptop and projector, and honorariums for guest speakers.
- Based on the key deliverables set out in the grant application, the project end date is March 2023.

Options & Analysis

Option 1 – Recommended

THAT the New Horizons for Seniors Grant in the amount of \$24,105 be accepted;

AND THAT the grant funds be incorporated into the Recreation and Youth Services Division 2022 Operating Budget to off-set increased expenditures in the amount of \$24,105.

Over the past three years, the City has been expanding on senior-focused recreational programming available to the community. The Seniors at Play program has grown increasingly popular since its inception in 2019, despite challenges faced by the COVID-19 pandemic and other factors. Membership totals have slowly grown reaching over 100 active members at times.

The City of Orillia has been awarded funding from the New Horizons for Seniors Program four times since 2017 to enhance older adult recreational programming within the community of Orillia. The New Horizons for Seniors Program has contributed to expanding seniors recreation with more access to pickleball programming, originally funding the Seniors at Play initiative, expanding seniors programs at the Orillia Recreation Centre, and now supporting proposed essential workshops for older adults in the community.

Accessible and affordable recreational programming for seniors is a service that is imperative in an aging population and should be prioritized to ensure all aging populations are able to engage socially, maintain physical fitness, and ensure healthy aging. With the addition of the Seniors Essentials programs, community members will gain knowledge about the essentials related to healthy aging and independent living, while also getting connected with local experts and resources to best support them in maintaining independence. Workshops and programs will be offered for various topics such as mental health, physical fitness, chronic illness, nutrition, online safety, increased awareness and understanding of diversity in the community, and more.

This program aims to aid older adults by educating them and allowing them to connect with others in a safe and inclusive space that fosters learning and connection within the

community. Seniors at Play programming will be enhanced by this new initiative by combining educational sessions and hands on learning to engage all participants and develop further understanding of various topics covered. This project will offer unique learning opportunities and provide the Recreation and Youth Services Division the opportunity to connect older adults with the experts in the community and information needed for healthy aging.

This project will support Orillia's Age Friendly Community Action Plan by targeting actions 12 and 26 that address offering more diverse recreational program to meet the needs of older adults in the community of Orillia.

Option 2

THAT Report No. CC-22-14 be received as information.

This option is not recommended as the New Horizons for Seniors Grant will allow for the establishment of the Seniors Essentials Program. If Council receives this report as information, staff would have to return the funding the grant has provided as they would be unable to proceed with the Seniors Essentials Program.

Financial Impact

There is no financial impact to the City of Orillia as this project will be supported through grant funds and current operating dollars. As a result, associated expense lines will exceed budget but will be fully offset by the related grant revenues.

Consultation

The following were consulted and their comments have been included in this report:

- Age-Friendly Committee
- North Simcoe Muskoka Specialized Geriatric Services
- Couchiching Family Health Team

Economic Development Impact

There is no direct economic development impact associated with the recommended motion. However, by offering more targeted programming for seniors, the City of Orillia may attract a larger population of seniors to our community.

Communication Plan

Working with the Corporate Communications Division, the Recreation and Youth Services Division will develop and implement a communications plan to promote the Seniors Essentials Program, including but not limited to advertising in the 2022 Fall Made Fun Guide, information on the City's website and posts on the City's social media channels.

Relation to formal plans, City of Orillia Policy Manual and/or guiding legislation

The recommendation included in this report supports recreation, however it is not a goal or project specifically identified in the Corporate Plan.

- and -

The recommendation included in this report is related to the following formal plans:

- [The Parks, Recreation and Culture Master Plan](#)
- [The Age Friendly Orillia Community Action Plan](#)

Conclusion

The creation of the Seniors Essentials program is an excellent opportunity for the City of Orillia to meet the needs of a growing segment of the population; to provide meaningful activities that encourage social participation and promote health and wellbeing.

Prepared by and Key Contact: Erica Veldman, Recreation Coordinator- Sport and Seniors
Approved by: Amanpreet Singh Sidhu, General Manager Corporate Services & City Solicitor



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To: Ian Sugden, General Manager, Development Services and Engineering
Copy to: Clerk's Division (Council Referrals)
From: Megan Williams, Deputy Clerk
Date: June 8, 2021
Subject: **Enquiry - Feasibility of establishing a four-way stop - Matchedash Street South**

This is to advise you that the following recommendation was adopted by Council at its meeting held on June 7, 2021:

“THAT staff be directed to prepare a report with respect to the following:

The feasibility of establishing a four-way stop at the corner of Matchedash Street South and Elgin Street once the Matchedash Lofts development achieves 75% occupancy.”

Please prepare a report to Council Committee.

If you require further information regarding this enquiry, please contact Councillor Hehn.

[signed original on file]

MW:hl

CITY OF ORILLIA

TO: Council Committee – April 11, 2022
FROM: Development Services and Engineering Department
DATE: April 5, 2022
REPORT NO: DSE-22-02
SUBJECT: All-way Stop at Matchedash St South and Elgin St

Recommended Motion

THAT Report No. DSE-22-02 be received as information.

Purpose

Council at its meeting held on June 7, 2021, adopted the following resolution:

“THAT staff be directed to prepare a report with respect to the following:

The feasibility of establishing a four-way stop at Matchedash Street South and Elgin Street once the Matchedash Lofts development achieves 75% occupancy.”

The purpose of this report is to provide Council with the results of the analysis regarding this request.

Background & Key Facts

- A resident brought forward a request to consider implementing an all-way stop at Matchedash Street South and Elgin Street. The resident's concern was that traffic had increased in the area.
- Matchedash Street South and Elgin Street are two-lane Local roads, have speed limits of 50 km/h and have sidewalks on both sides of the road.
- There are no crossing guards or schools in the immediate area.
- Matchedash Lofts (“Lofts”) were developed on the northwest corner of Matchedash Street South and Colborne Street.
- See Schedule “A” for existing conditions.

Options & Analysis

Staff present the following Facts options for consideration:

Option 1 – Recommended

THAT Report No. DSE-22-02 be received as information.

This option is recommended for the following reasons:

- A turning movement count (“TMC”) was conducted at the intersection of Matchedash Street South and Elgin Street on August 24, 2021.
- The Lofts was at 82% occupancy at the time of the TMC.
- Ontario Traffic Manual (“OTM”) Book 5, Regulatory Signs states that an all-way stop control may be considered when both of the following conditions are met:
 - Total vehicle volume on all intersection approaches exceeds 350 vehicles per hour for the highest hour recorded, and
 - The volume split does not exceed 65/35.
 - For example, if the intersection at Matchedash Street South and Elgin Street peaked at 100 cars in one hour, less than 65 of the vehicles are travelling in the north/south direction and more than 35 vehicles are travelling in the east/west direction, this condition would be met (as it exceeds the 65/35 requirement and would be a 55/45 split).
- The TMC concluded the following results:
 - The highest hour recorded, 4:00 P.M. to 5:00 P.M. counted 186 vehicles – 53% of the required minimum.
 - The split based on the highest hour volume was 73/27 and does not exceed the 65/35 requirement.
- Neither of the warrants were met, therefore, an all-way stop is not warranted at this time.
- The OTM also provides a Collision Warrant for all-way stops; four collisions per year over a three-year period.
 - There has been one collision since 2018 or 0.33 per year over a three-year period.
- Using the collision warrant, an all-way stop is not warranted.
- OTM Book 5 states that all-way stops should not be used under the following conditions:
 - Where the protection of pedestrians is a prime concern as this concern can usually be addressed by other means, or
 - As a speed control device.
- OTM Book 5 also notes that stop compliance is poor at unwarranted stop signs.
- The cost of installing the all-way stop is low, but the cost of enforcement for non-compliance is high. The Ontario Provincial Police provides the Highway Traffic Act enforcement within the City.
- Inappropriate/unwarranted use of stop signs creates disrespect for the stop signs, as well as other traffic control devices.

Option 2

THAT Council implement an all-way stop at the intersection of Matchedash Street South and Elgin Street.

This option is not recommended for the reasons outlined above.

Financial Impact

Option 1: There would be no financial impact if Council chooses Option 1.

Option 2: if Council chooses to pursue Option 2, the cost to supply and install a new all-way stop at the subject intersection, and the required temporary signage for new traffic controls, is estimated to be \$2,400. This would be taken from the Environmental and Infrastructure Services 2022 Operating Budget.

Consultation

Consultation requirements have not been identified at this time.

Economic Development Impact

There is no direct economic development impact associated with the recommended motion.

Communications Plan

Should Option 2 be adopted, it is mandatory to install WBI (stop ahead) and WB3 (new-sunburst) temporary signs for 30-60 days. This has been taken into consideration in the Financial Impact section of this report.

Relation to Formal Plans, City of Orillia Policy Manual and/or Guiding Legislation

The recommendation included in this report is related to the following formal plans, City policies and/or guiding legislation:

- Ontario Traffic Manual Book 5, Regulatory Signs

This report does not directly relate to any of the areas of focus outlined in The City of Orillia Strategic Plan.

Conclusion

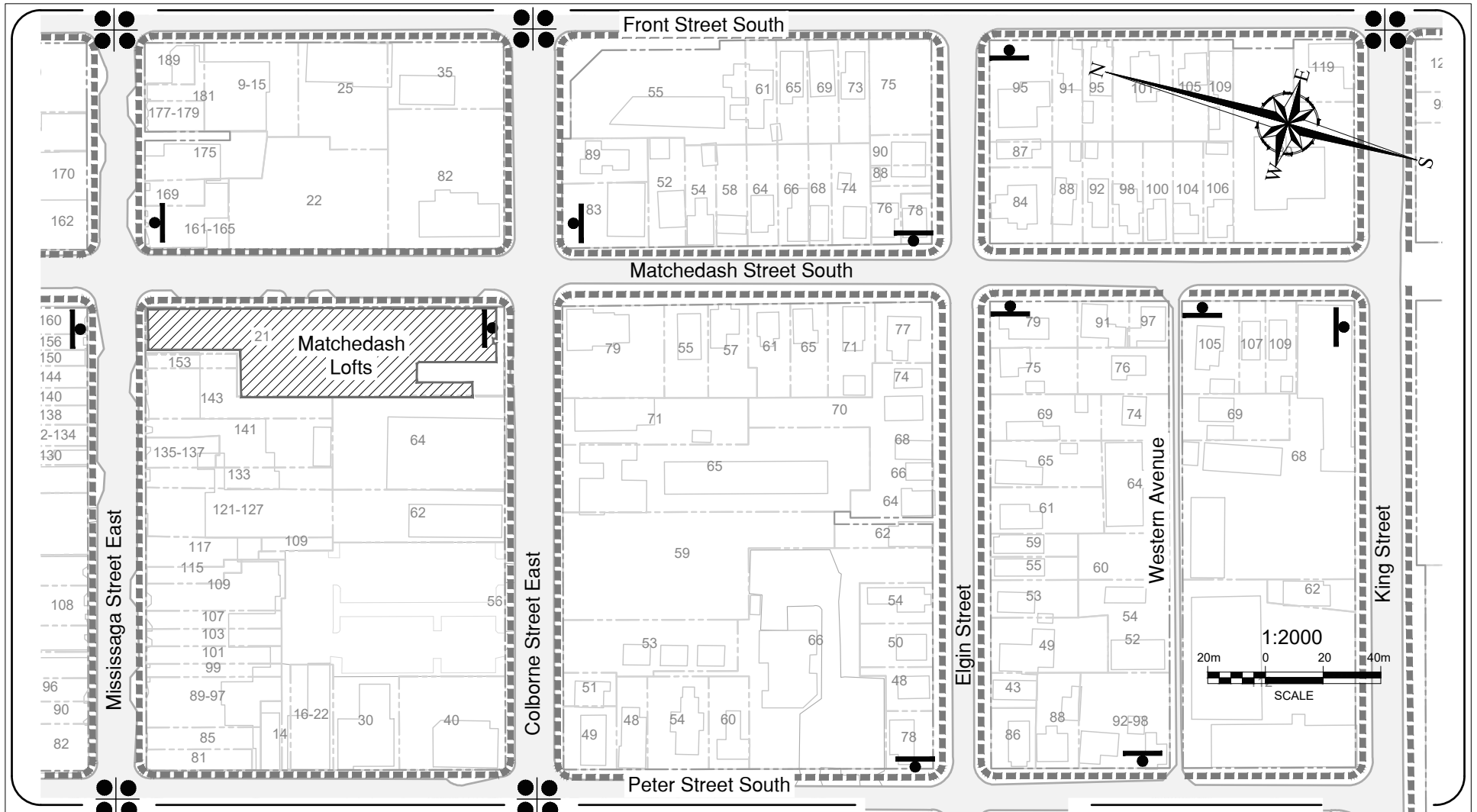
Staff recommends that report DSE-22-02 be received as information as the warrants provided in OTM Book 5 for all-way stops on minor roads are not met.

Schedules



- Schedule “A” – Existing Conditions

Prepared by: Lisa V. Dobson, P.Eng.
Transportation Technologist

Approved by: Ian Sugden, MCIP, RPP
General Manager of Development Services and Engineering



Legend

-  Existing Stop Sign
-  Existing Traffic Light
-  Existing Sidewalk
- 325 Municipal Address

DESIGN BY:
 DRAWN BY: WH
 CHECKED BY: LD
 APPROVED BY:
 DATE: DEC. 16, 2021
 PLOTTED: DEC. 16, 2021



Development Services and
 Engineering Department

Schedule A

TITLE

FILE:

SHEET:

PLAN No:

ACAD FILE:

SKLDPK57.DWG

CITY OF ORILLIA

TO: Council Committee – April 11, 2022
FROM: Environment and Infrastructure Services Department
DATE: March 30, 2022
REPORT NO: EIS-22-04
SUBJECT: **Sir Sam Steele Brick and Limestone Restoration Contract Award**

Recommended Motion

THAT TMR Restoration and Construction Inc. be awarded Contract No. EIS-PES-22-01 to complete the Sir Sam Steele Building Brick and Limestone Restoration works at 30 Peter Street South, for the tendered sum of \$228,275 plus HST;

AND THAT the Sir Sam Steele Building Brick and Limestone Restoration works be authorized to exceed the approved \$200,000 capital budget by \$99,000 (net HST), and be funded from the Capital Contingency Reserve;

AND THAT the Mayor and Clerk be authorized to execute the agreement.

Purpose

The purpose of this report is to provide an update regarding the Sir Sam Steele Brick and Limestone Restoration project, and to request additional budget for the purpose of completing the restoration of the clock tower façade and necessary supporting works.

Background & Key Facts

The following are key points for consideration with respect to this report:

- In October 2007, the City retained Roderick Young Architect Inc. to complete a Condition Assessment of the building exterior at 30 Peter Street South.
- Deficiency items were addressed over time at the facility since the 2007 Condition Assessment.
- The last remaining deficiency to address is repointing of brick and limestone on the clock tower at the northwest corner of the building.
- As part of the 2020 budget process, Council approved an initial project budget of \$200,000 for the restoration of brick and limestone on the Sir Sam Steele building clock tower.
- Since the time of the initial project funding approved in late 2019, inflation has caused a significant increase in labour and material costs.
- On February 8, 2022, staff presented the project to the Municipal Heritage Committee to be received as information.

- On February 18, 2022, the Environment and Infrastructure Services Department issued Request for Tender (RFT) EIS-PES-22-01.
- On March 10, 2022 staff observed a large crack in one of the limestone features near the top of the clock tower. Upon further investigation a large section of limestone was removed for public safety and preserved for potential re-installation.
- A small section of sidewalk has been closed as a precaution and signage has been placed to encourage the public to use the sidewalk on the west side of Peter Street South.
- The RFT closed on March 16, 2022. Six compliant tenders were received, and all six tenders exceeded the initial established project budget of \$200,000.
- Staff and the City's consultant, Jessica MacDonald Architect Inc. (JMA), fully evaluated the tender submissions against the published RFT evaluation criteria.
- TMR Restoration and Construction Inc. had the overall lowest, compliant tender submission.

Options & Analysis

Staff present the following option for consideration:

Option 1 - Recommended

THAT TMR Restoration and Construction Inc. be awarded Contract No. EIS-PES-22-01 to complete the Sir Sam Steele Building Brick and Limestone Restoration works at 30 Peter Street South, for the tendered sum of \$228,275 plus HST;

AND THAT the Sir Sam Steele Building Brick and Limestone Restoration works be authorized to exceed the approved \$200,000 capital budget by \$99,000 (net HST), and be funded from the Capital Contingency Reserve;

AND THAT the Mayor and Clerk be authorized to execute the agreement.

The restoration of brick and limestone features on the Sir Sam Steele building clock tower will assist in the preservation of this important heritage building at 30 Peter Street South in Orillia's downtown core. As the owners and landlord of this facility, the City is obligated to preserve the façade as a key element of the building's heritage designation. Additionally, the outcome of this project will mitigate potential liability concerns of loose stonework above pedestrian walkways.

This option is recommended as it would award the tender to the lowest, compliant bidder. Since the time of the original budget approval, and especially considering the current COVID-19 situation, tender submissions and pricing have increased dramatically within the construction industry.

Financial Impact

The original project budget of \$200,000 for the brick and limestone restoration was requested as part of the 2020 budget process. Since that time, construction pricing has increased dramatically (especially with current COVID-19 disruptions).

The lowest compliant tender pricing received by TMR Restoration and Construction Inc. totaled \$228,275 (excluding HST). Staff have incorporated professional service fees, as well as a contingency balance across all aspects of the project, to recommend \$299,000 towards overall project completion.

The City's consultant supports the updated project budget for the following reasons:

- Given the elevation of the clock tower, the exact extent of the remediation work required remains unknown until the successful contractor has their scaffolding erected and can investigate the surface conditions up close.
- Bidders have been provided with a conservative estimate of the quantitative areas for brick and limestone repointing and replacement. "Unit Prices" for repointing and replacement were also requested from the bidders, should the actual work areas be less than, or more than, current estimates. As such, there is a high probability that the bid price will fluctuate once the successful contractor accurately assesses the amount of work required.
- "Unit Prices" provided by the bidders for this type of specialized historical remediation work per square meter cost is significant. Additional repairs beyond those carried in the base bid will have the potential to increase the cost associated with the work.
- The structural nature of the work could lead to the discovery of further remedial efforts once the awarded contractor evaluates the brick and limestone conditions. The City would have no choice but to proceed with the repair as it would present a public safety issue to leave in its present condition.

With the updated project costs outlined above, an additional \$99,000 is required to complete the Sir Sam Steele Brick and Limestone Restoration works project. This would establish an overall project budget of \$299,000 with the additional \$99,000 to be funded from the Capital Contingency Reserve. The current balance of the Capital Contingency Reserve is \$775,901.

Consultation

Staff presented the project to the Municipal Heritage Committee on February 8, 2022. A memo dated February 1, 2022, from the Supervisor of Sustainable Operations was received as information and adopted by the Committee.

Staff engaged the Orillia Museum of Art and History (OMAH) in early 2022 regarding the upcoming restoration project. As the tenant of the building, OMAH is supportive of this

important work occurring to continue to preserve and enhance the heritage features and character of the building.

Economic Development Impact

There are no direct economic development impacts resulting from this report; however, this type of project is in keeping with the types of projects encouraged through the City's Downtown Tomorrow CIP Grant Program which cumulatively have the impact of revitalizing the City's core. The recommended motion will facilitate the restoration of the brick and limestone façade on the OMAH clock tower, and subsequently the long-term preservation of this iconic heritage building in the City's core.

Communications Plan

A public notice will be posted on the City's website, in the Weekly Bulletin and on the City's social media channels advising of the restoration and any associated impacts to the public. Communications with the building tenant and adjacent businesses will be ongoing in advance and throughout the duration of the project.

Relation to Formal Plans, City of Orillia Policy Manual and/or Guiding Legislation

The recommendation included in this report is related to the following formal plans, City policies and/or guiding legislation:

- [Heritage Designated Buildings](#)
 - [By-law 1996-24](#) - Register of Designated Properties – Ontario Heritage Act R. S. O. 1990, c.O.18, s.27:
- [Cultural Plan for the City of Orillia](#)

Conclusion

Staff are seeking Council approval of additional funds to increase the budget for the Sir Sam Steele Brick and Limestone Restoration project and award the tender to TMR Restoration and Construction Inc.

Prepared by & Key Contact: Renee Recoskie, P.Geo., Manager, Property and Environmental Sustainability

Approved by: Andrew Schell, C.E.T., General Manager of Environment and Infrastructure Services

CITY OF ORILLIA

TO: Council Committee – April 11, 2022
FROM: Environment and Infrastructure Services Department
DATE: March 29, 2022
REPORT NO: EIS-22-05
SUBJECT: **Pavement Markings**

Recommended Motion

THAT Stoneline Ltd. be awarded contract EIS-SPO-22-01 to complete the annual pavement marking contract for the tendered sum of \$219,560 plus HST;

AND THAT the overall budget for pavement markings be increased from \$89,600 to \$223,425 (net HST);

AND THAT the additional \$133,825 be funded from the Tax Rate Stabilization Reserve;

AND THAT the Mayor and Clerk be authorized to execute the agreement.

Purpose

The purpose of this report is to notify Council that the results for the Request for Tender (RFT) EIS-SPO-22-01 – Pavement Markings exceeded the approved 2022 operating budget and to provide Council with options for proceeding with the 2022 pavement marking program.

Background & Key Facts

- Pavement Markings are lines, symbols, and marks, typically made up of paint and glass beads, that aid motorists in operations of motor vehicles on paved roads.
- Pavement markings are designed and supplied by an engineer as part of the submission when a road is reconstructed.
- There can be legal implications when roads are not properly marked in accordance with the requirements of Ontario Traffic Manual Book 11 – Pavement, Hazard and Delineation Markings.
 - 2010 - The City of Oshawa and Township of Scugog were found 67% liable for a traffic accident where lines and signs were missing;
 - 2018 – The City of Hamilton held 25% liable in accident due to missing stop bar at an intersection; and
 - 2017 - The City of Orillia was found 25% liable for not painting the centre line in a 2013 accident.

- The City relies on contracted services to annually complete pavement markings on its road network.
- Funding to support pavement marking is approved through the annual operating budget submissions.
- There are two different types of applications that are used by the contracted forces to apply paint within the City annually.
 - Paint Truck Works – provides an application of the center, skip and edge lines.
 - Hand Machine Works – provides the application of stop bars, tails, symbols, parking stalls, hatching and parking lots.
- Traditionally the City has applied two applications of Paint Truck Works annually to provide longevity until the reapplication can occur the following year. Hand Machine works are applied once annually and take longer to complete within the cycle.
- On February 11, 2022 staff released an RFT, EIS-SPO-22-01 for the application of pavement markings within the City of Orillia.
- On March 15, 2022, three submissions were received and reviewed, and all submissions significantly exceeded the \$89,600 funding approved as part of the 2022 operating budgets.
- In discussion with the pavement marking contractors they have stated the increases are due to:
 - a 40% increase in material cost in 2021;
 - expected further increases between tendering and purchasing of materials;
 - cost of fuel for dual applications;
 - increases in labour costs.
- Staff have also purchased thermoplastic pavement markings over the last 5 year for many of the symbols throughout the City.
- Thermoplastic markings are intended to have a longer life expectancy than paint, but are more costlier than the painted markings.

Options & Analysis

Option 1 – Staff Recommended Option

THAT Stoneline Ltd. be awarded contract EIS-SPO-22-01 to complete the annual pavement marking contract for the tendered sum of \$219,560 plus HST;

AND THAT the overall operating budget for pavement markings be increased from \$89,600 to \$223,425 (net HST);

AND THAT the additional \$133,825 be funded from the Tax Rate Stabilization Reserve;

AND THAT the Mayor and Clerk be authorized to execute the agreement.

This option would allow staff to award the RFT and complete the pavement marking that has traditionally occurred annually. An additional budget of \$133,825 would be required to provide the applications. Option 1 would provide longevity for markings to be visible through to the

next application in 2023 and conform with the Ontario Traffic Manual specifications. Staff also evaluated a reduction of paint truck works from two applications to one, and it was felt that this option would create a greater liability to the City due to a decrease in the marking availability. It would also increase costs for the 2023 application due to the need for pre-maintenance, prior to painting.

Option 2 – Deferral of Thermoplastic Markings for 2022

THAT Stoneline Ltd. be awarded contract EIS-SPO-22-01 to complete the annual pavement marking contract for the tendered sum of \$219,560 plus HST;

AND THAT the overall budget for pavement markings be increased from \$89,600 to \$223,425 (net HST);

AND THAT staff defer the purchase of 2022 thermoplastic markings, resulting in a savings of \$50,000;

AND THAT the additional \$83,825 be funded from the Tax Rate Stabilization Reserve;

AND THAT the Mayor and Clerk be authorized to execute the agreement.

Similar to Option 1, Option 2 would see two applications of the paint truck works as well as the one application of the hand machine works, but would defer the purchase of thermoplastic markings in 2022, reducing the additional funding request from the Tax Rate Stabilization Reserve by \$50,000. The thermoplastics program will continue throughout 2022 using the remaining stock of markings and will continue with the purchasing of necessary products in 2023, depending on budget availability.

Financial Impact

Option 1 would require additional funding in the amount of \$133,825 to the existing operating budget for 2022. Staff recommend the additional cost be funded from the Tax Rate Stabilization Reserve.

Option 2 would require an additional funding of \$83,825 to the existing operating budget for 2022. Staff recommend the additional cost be funded from Tax Rate Stabilization Reserve.

The current balance of the reserve fund is approximately \$5,000,000.

Consultation

Consultation requirements have not been identified at this time.

Economic Development Impact

There is no direct economic development impact associated with the recommended motion.

Communications Plan

Communication requirements have not been identified at this time.

Relation to Formal Plans, City of Orillia Policy Manual and/or Guiding Legislation

The recommendation included in this report is related to the following City policies and/or guiding legislation:

- Ontario Traffic Manual Book 11 – Pavement, Hazard and Delineation Markings
- Policy 2.6.1.1. – Guidelines and Procedures for Traffic Calming

Conclusion

The report outlines the need for additional budget to support the annual pavement marking contract as costs have significantly increased due to materials, labour and fuel pricing. The report proposes two options with staff recommendation being to continue with the City's traditional marking applications. Both options would require additional budget allocation.

Prepared by & Key Contact: Kyle Mitchell, Manager of Source Protection and Operations

Approved by: Andrew Schell, General Manager, Environment and Infrastructure Services

To: Renee Recoskie, Manager of Environmental Compliance

Copy to: Andrew Schell, Director of Environmental Services and Operations
Rhonda Elliott, Records Coordinator (By-laws)
Clerk's Department (Referrals)

From: Megan Williams, Deputy Clerk

Date: May 7, 2019

Subject: **Federation of Canadian Municipalities' Partners for Climate Protection Program and Climate Change Action Plan**

The following recommendation was adopted by Council at its meeting held on May 6, 2019:

"THAT as recommended in Report ESO-19-03 dated April 18, 2019 from the Environmental Services and Operations Department, the City of Orillia join the Federation of Canadian Municipalities - Local Governments for Sustainability Partners for Climate Protection Program;

AND THAT the By-law attached as Schedule "A" to the report be presented to Council to appoint the Mayor and Manager of Environmental Compliance to oversee the implementation of the Partners for Climate Protection Program milestones;

AND THAT staff be authorized to develop a Climate Change Action Plan, with support from the Partners for Climate Protection Program, and report back to Council."

At that same meeting, the following by-law was adopted:

2019-54 A By-law to appoint the Mayor and the Manager of Environmental Compliance to oversee the implementation of the Partners for Climate Protection Program milestones.

This by-law appoints the Mayor and Manager of Environmental Compliance to oversee the implementation of the Partners for Climate Protection Program milestones as recommended by Council Committee.

Please prepare a report to Council Committee.

MW:cw

CITY OF ORILLIA

TO: Council Committee – April 11, 2022
FROM: Environment and Infrastructure Services Department
DATE: April 2, 2022
REPORT NO: EIS-22-03
SUBJECT: **Climate Change Action Plan**

Recommended Motion

THAT the Climate Change Action Plan dated April 2022 be received and adopted in principle;

AND THAT the following corporate greenhouse gas (GHG) emissions reduction targets be approved:

- 50% GHG reduction by 2030, below 2018 levels, and
- 100% GHG reduction by 2040, below 2018 levels;

AND THAT the following community GHG emissions reduction targets be endorsed:

- 33% GHG reduction by 2030, below 2018 levels, and
- 100% GHG reduction by 2050, below 2018 levels;

AND THAT additional funding to incorporate aspects of the Climate Change Action Plan to current facility design projects be assigned as follows:

- \$120,000 allocated to the Transit Terminal Design project, to be funded as \$80,000 from the Transit Equipment Reserve and \$40,000 from the Parking Reserve; and
- \$35,000 allocated to the Brian Orser Arena re-design, to be funded from the Major Facilities Capital Maintenance Reserve;

AND THAT staff report back to Council with annual progress updates towards reduction targets and integrating carbon budgeting and climate change action within City processes;

AND THAT funding associated with priority actions and projects outlined within the Climate Change Action Plan be referred to the 2023 Budget Process, future year budget processes and included as part of the 10-year Capital Plan;

AND THAT the Mayor be requested to provide a copy of this resolution and the Climate Change Action Plan in correspondence to implore higher levels of government for funding

and support necessary for municipalities to achieve local climate change action through implementation of Climate Change Action Plans to the following:

- The Right Honourable Justin Trudeau, Prime Minister of Canada
- The Honourable Steven Guilbeault, Minister of Environment and Climate Change
- Honourable Doug Ford, Premier of Ontario
- Honourable David Piccini, Minister of the Environment, Conservation and Parks
- Federation of Canadian Municipalities
- Partners for Climate Protection Program
- Global Covenant of Mayors for Climate & Energy
- Association of Municipalities of Ontario.

Purpose

The purpose of this report is to present the Climate Change Action Plan (“Plan”), *Orillia’s Climate Future*, dated April 2022 to Council Committee for review and adoption in principle. Adoption of the Plan, in addition to establishing and setting GHG emission reduction targets, is required to guide and endorse the planning and implementation of climate change action moving forward. The modelling and actions contemplated in the Plan are set based on a corporate GHG emission reduction target of 50% by 2030 and Net Zero by 2040, and a community reduction target of 33% (one-third) by 2030 and Net Zero by 2050.

Orillia’s Climate Future, along with an approved corporate target and endorsed community target, will demonstrate the City’s commitment and readiness to tackle the ambitious challenges of climate change at the local level. In addition, by adopting the Plan with established reduction targets, the City will officially complete FCM’s Partners for Climate Protection Program Milestones 1 through 3 for both the corporate and community climate action streams.

Background & Key Facts

The following are key terms for understanding when reviewing this report:

- “Baseline Year” – The year set to establish a greenhouse gas (GHG) baseline inventory and Business As Usual (BAU) scenario. For the City of Orillia, 2018 was established as the baseline year based on availability of data to allow for a comprehensive inventory. GHG reduction targets also refer to the “baseline year” to establish the percentage of reductions (i.e., GHG reduction refers to the amount of reduction compared to levels inventoried as part of the 2018 baseline year).
- “Business as Usual (BAU)” – A reference scenario of the future emissions and climate impacts of activities (City or community) based on assumptions of current energy usage and municipal, provincial, and federal policies extending to the year 2050. This scenario provides a baseline of outcomes should no climate actions be taken.

- “Carbon Budget” – The maximum amount of greenhouse gases that can be emitted worldwide without increasing the global average temperature more than 1.5° Celsius. In the context of the City’s reduction targets, the City would utilize a carbon budget model to assign the maximum GHG emissions that can be emitted each year (or other cycle/timeframe) to reach the approved reduction target.
- “Community Climate Action Plan (CCAP)” – An action plan to reduce the greenhouse gas emissions of the community of Orillia developed through consultation with the public and modeling emissions scenarios. Both corporate and community aspects come together as part of *Orillia’s Climate Future*.
- “Community Based Steering Committee (CBSC)” – A group formed with members from a cross-section of residents, organizations, academic institutions, and businesses in Orillia. The participation, guidance, and feedback of members was central to the creation of *Orillia’s Climate Future*.
- “Corporate Climate Action Plan (CAP)” – An action plan to reduce the greenhouse gas emissions of the Corporation of the City of Orillia released directly through municipal operations and activities. This is referred to at the start of the Plan and appears in its entirety as part of Appendix D of *Orillia’s Climate Future* and is no longer a standalone report.
- “GHG” – Greenhouse gases (GHG) trap heat close to Earth’s surface through the greenhouse effect. Small changes in the atmospheric concentrations of these gases lead to significant changes in Earth’s temperature and climate. The major greenhouse gases are carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). New GHGs are predominantly released through the human activity of burning fossil fuels for heating and transportation.
- “IPCC” - The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body and foremost expert for assessing the science of human-induced climate change. The panel is comprised of thousands of scientists who review and compile scientific findings into “Assessment Reports” for policymakers and the general public.
- “Marginal Abatement Cost” (MAC) – The cost of reducing one additional unit of pollution (measured in GHG emissions). GHG reduction costs can vary widely by actions and related emissions. Common practice is to identify and pursue actions with lower MACs (e.g. low hanging fruit) to maximize savings and returns early in climate planning. Marginal abatement costs are frequently shown on a Marginal Abatement Cost Curve to indicate the investment pathway to reach Net Zero Emissions.
- “Marginal Abatement Cost Curve” (MACC) – A Marginal Abatement Cost Curve is a graph that presents carbon emissions abatement options relative to a baseline (BAU) scenario. The graph permits a visualization of various mitigation options/actions organized by a single, understandable metric: the economic cost of emissions abatement. MACC curves are broken into discrete ‘blocks’. Each block represents an individual or set of similar carbon abatement measures.
- “Net Zero” - Net Zero Emissions refers to releasing either no greenhouse gas emissions and/or offsetting emissions (via GHG-storing initiatives) such that the resulting impact is no further GHGs are released into the atmosphere. Net Zero

emissions is a key concept in preventing extreme impacts and damages from climate change.

- “*Orillia’s Climate Future*” – Title of the final Climate Change Action Plan report prepared to address both the City of Orillia’s corporate emissions (previously referred to as CAP) and the community’s emissions (previously referred to as CCAP). Integrating both aspects into one comprehensive Plan will allow for greater clarity and simplicity when referencing the work. The City’s corporate-focused plan appears as Appendix D within the *Orillia’s Climate Future* document.
- “CO₂” – Carbon dioxide (CO₂) is the most common GHG emitted by human activity. It makes up the largest quantity of GHGs and has the single largest impact on global warming. The terms “CO₂” or “carbon” are commonly used as shorthand expressions for all GHGs. However, the more accurate term is CO_{2e}.
- “CO_{2e}” – “Carbon dioxide equivalent” or “CO_{2e}” is the accurate term for quantifying different greenhouse gases (GHGs) into a common unit. As GHGs such as carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) vary by quantity and warming impact in the atmosphere, the term ‘CO_{2e}’ distills the total warming impact of all GHGs into a single quantifiable unit. The quantity of CO_{2e} is commonly expressed in metric weight: grams (g), kilograms (kg), and/or tonnes (t).
- “Science-Based Target” – A GHG reduction target that aligns with the global agreement known as the [United Nations Framework Convention on Climate Change’s \(UNFCCC\) Paris Agreement](#) to limit average global warming to 1.5 degrees Celsius above pre-industrial times. Limiting this warming will be achieved only through drastically reducing GHG emissions to carbon neutral by 2050, as globally we are already at approximately 1.2 degrees warmer than the pre-industrial period. The importance of science-based targets to reduce climate change is proven through the work of thousands of scientists worldwide.
- “Social Cost of Carbon” (SOC) – is an estimate of the damage caused to society by climate change including such impacts as health and lost jobs.
- “Evidence-Based Target” – is a GHG reduction target that is designed to decarbonize as quickly as possible while taking into consideration the realities of the resources, operations, and technology available. It may not be as ambitious as a science-based target; however, it considers the most realistic implementation from the bottom up.
- “EUI” – Energy Use Intensity is a measure of a building’s total energy use as a function of its size, typically over the span of a year. The energy use includes electricity, natural gas, heating oil and other fuels. The common units of EUI are GJ/ft² or kWh/m², and generally a low EUI signifies good energy performance and a high EUI indicates room for improvement in energy efficiency.
- “RNG” – Renewable Natural Gas (RNG) is a low-carbon replacement for fossil fuel derived natural gas (whose main component is methane). RNG can be derived from various biogas sources such as municipal solid waste, digesters at wastewater treatment facilities, food production facilities, livestock excrement etc. and it can be used as a substitute for natural gas in many applications such as heating, electricity generation, or vehicle fuel.
- “REC” – A Renewable Energy Certificate is a legal instrument that certifies that the owner of the REC has the right to claim the associated environmental attributes of

renewable energy that has been generated and delivered to the utility grid. One REC represents one megawatt-hour of renewable electricity and it can be sold on the open market as an energy commodity. RECs are commonly sold from renewable electricity generators to entities that release significant GHG emissions as a carbon credit to offset their emissions. RECs may also be sold to entities that are close to Net Zero and require RECs as a low carbon action to reach Net Zero.

The following are key points for consideration with respect to this report:

- In April 2019, Council adopted the recommendation for the City to join the Federation of Canadian Municipalities (FCM) - Local Governments for Sustainability Partners for Climate Protection Program (PCP Program).
- Joining the PCP Program allowed the City to access resources and tested program guides to assist with developing Climate Change Action Plans. Leveraging the collective experiences and expertise of other partner municipalities helped accelerate the City's progress towards climate action. Establishing endorsed emission reduction targets is a requirement for municipalities to remain in the PCP Program.
- Currently, over 400 Canadian municipalities are participating in the PCP Program, over 460 community and corporate emission reduction targets have been set under the program and over 160 local climate change action plans have been implemented. Area municipalities in the Program include the City of Barrie, Township of Severn, County of Simcoe, and District Municipality of Muskoka.
- The City of Orillia's Strategic Plan was adopted by Council on December 12, 2019. Through the Strategic Plan, "Quality of Life", "Healthy Environment", and "Sustainable Growth" were created as key pillars for strategic direction moving forward. Under Healthy Environment, 2.1, the desire to position Orillia as a leading municipality in addressing climate change was established.
- Through initial work on climate change action planning and baseline emission inventories, staff developed a strategy to progress through the PCP Program milestones and structure both a Corporate Climate Action Plan (CAP) and Community Climate Action Plan (CCAP) to map out the pathway to a low carbon future for both the City and greater community. The necessary funding to proceed with this strategy was approved by Council as part of the 2021 budget process, funded in the amount of \$120,000.
- City staff were successful through the Province of Ontario's Municipal Energy Plan Program grant for funding up to \$60,000 towards the cost of developing the CCAP.
- The City retained Sustainability Solutions Group (SSG) in May 2021 to assist in developing both the CAP and CCAP. The project began in May 2021 and engaged the community through a Community Based Steering Committee (CBSC) and involved key staff through the City Staff Working Group.
- Broader public engagement – focused primarily on the Community Plan – was launched in September 2021 and provided opportunities for the public to participate in a comprehensive survey as well as a Virtual Open House.
- The Corporate Plan together with the Community Plan form the comprehensive strategy for responding to climate change, titled "*Orillia's Climate Future*". Plans

will both be contained in one document for ease of reference and will be referred to as “Orillia’s Climate Future” or the “Climate Change Action Plan”.

- The project timeline and progression to date is shown in Figure 1, below:

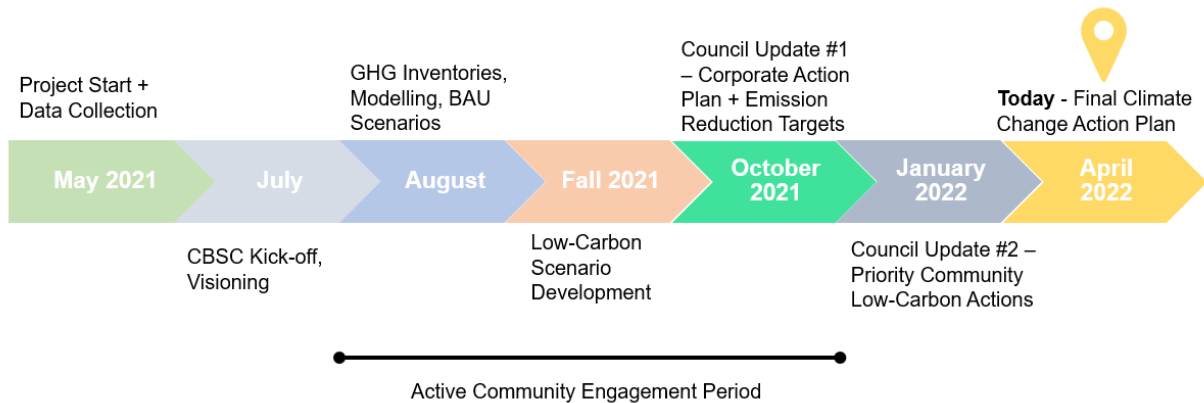


Figure 1: Climate Change Action Plan Project – Timeline.

- Prior to development of the plan, the City moved forward with key projects to act locally on climate change. As part of the engagement and education components of the project, past initiatives undertaken by the City were promoted. These initiatives included:
 - The upgrade of over 3,300 streetlights to LED fixtures in 2020, resulting in a financial savings of 40% and a 76% reduction in GHG emissions.
 - Upgrade of lighting at City facilities to LED throughout 2020 – 2022.
 - Environmentally sustainable building materials utilized as part of the Orillia Waterfront Centre construction and the Orillia Public Library’s designation as a LEED Silver certified building with efficient energy and water features and other environmentally sustainable features.
 - A total of 600 kilowatts of rooftop solar panel installations on two recreation facilities.
- As a complement to the City’s Climate Change Action Plan project and mitigation efforts, the City is also completing a “Climate Change Adaptation Strategy” to inform the City and community how to utilize resiliency measures to respond to and address extreme weather events and local climatic changes. Increasing flooding, ice storms, and other extreme weather events will put increasing pressures and risks on the City’s infrastructure, assets and community livelihood. Adaptation strategies will build capacity within the City to be prepared for project impacts by increasing resiliency.
- The “Adaptation Strategy” opportunity was available to the City as a result of federal and provincial funding provided to ICLEI (an international non-governmental organization that promotes sustainable development) to offer a comprehensive training program to municipalities to develop these strategies in-house, with their guidance and assistance.
- The following Orillia specific climatic projections, shown in Figure 2, are available through the work completed under this program to date. Additional information is available to access on the City’s [website](#).

City of Orillia

FUTURE CLIMATIC PROJECTIONS

September 2021

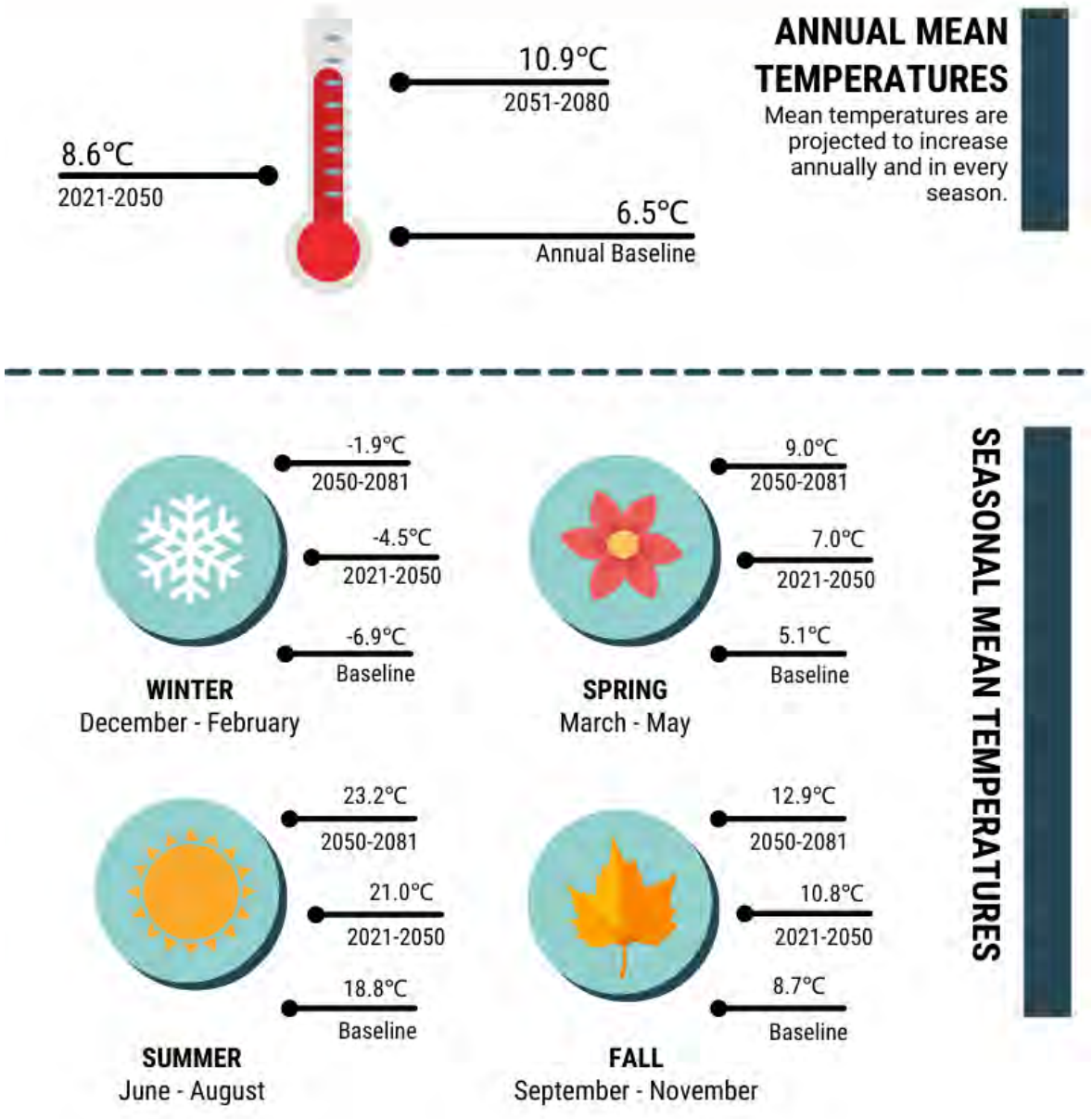


Figure 2: City of Orillia – Future Climatic Projections.

- More recently, as part of the 2022 budget process (in advance of the finalized Plan), Council approved capital projects targeted at advancing the City's progress towards Net Zero. These initiatives were informed by preliminary findings through the project and include:
 - GHG facility auditing program across several City facilities to establish a roadmap for deep building retrofits.
 - Fleet EV charging stations at City facilities.
 - Community Energy-Efficiency Financing Program – this feasibility study would evaluate the opportunities and levers available to encourage energy efficiency efforts in Orillia buildings (homes, businesses, community spaces). This project is contingent on grant funding and the application is in progress.
 - Solar photovoltaic (PV) installation at the Orillia Recreation Centre. This project is contingent on grant funding. The application has been submitted and is under review.
- The aforementioned initiatives will be captured as emission reduction efforts pursued via *Orillia's Climate Future*, in addition to any efforts occurring after the baseline year of 2018 for the City and community through the modelling component of the project.

Local Climate Action and Emission Reduction Targets

- To date, 2,082 jurisdictions in 38 countries have declared a climate emergency. In January 2021, a United Nations survey with 1.2 million respondents in 50 countries, the largest survey of public opinion on climate change ever conducted, found that 64% of people said that climate change was an emergency.
- Within Canada, at the time of this report, 521 municipalities have declared a climate emergency, including area municipalities the City of Barrie, Town of Gravenhurst, Town of Huntsville, District Municipality of Muskoka and just recently the Town of Innisfil.
- The Intergovernmental Panel for Climate Change (IPCC) released its 6th Assessment Report on August 7, 2021. The report provides an update on the current state of physical science-based climate change and addresses changes in climate and the role of human influence. Findings indicate that a rapid reduction of emissions is required by 2030 with a target of Net Zero prior to 2050 to prevent long-term ecological and climate breakdown. The plan indicates that global emissions must be reduced 49% by 2030 from baseline 2017 levels.
- A “science-based” reduction target is currently recognized as best practice in climate change action planning. This target is designed to effectively align with the global agreement known as the United Nations Framework Convention on Climate Change's (UNFCCC) Paris Agreement to limit warming to 1.5° Celsius. Currently, on a global level the earth is above 1.2° Celsius warmer than the pre-industrial period, making climate action urgent.
- Canada is a signatory to the Paris Agreement, an international climate change treaty signed in 2015.

- The difference between a “science-based target” and the term “evidence-based target” is tied to the framework produced by the [Science Based Targets Network in November 2020 to guide Cities towards science-based climate targets](#). This approach attributes an equitable distribution or “fair share” approach for target setting whereby high-emitting, high-GDP communities are to take more significant action in reductions compared to low-emitting, low-GDP communities. Although globally a 49% reduction in global emissions is required by 2030, high-emitting, high GDP communities are to take a greater part in contributing to this reduction as they contribute more emissions per capita.
- In early 2021 (prior to the release of the latest IPCC report) the Canadian government committed to reduce GHG emissions by 40 – 45% below 2005 levels by 2030 (previously 30% reduction by 2030). In addition, the price on carbon pollution will be set to increase by \$15 per tonne each year starting in 2023 through to 2030.
- In October 2021 FCM’s Big City Mayors’ Caucus declared support for the Cities Race to Zero Campaign. This campaign is aimed at encouraging businesses, municipalities, and all sectors to rally leadership and support to champion a resilient, zero carbon recovery.
- The United Nations Climate Change Conference (COP26) occurred October 31 – November 12, 2021. Takeaways from the conference included:
 - A joint declaration by China and the U.S. to work together on climate change.
 - Development of the Glasgow Climate Pact which establishes a commitment to “phase down” coal for coal reliant countries like India and China.
 - Of the world’s population, 85% are now blanketed by Net Zero targets.
- Table 1, below, has been prepared to illustrate an overview of Ontario-based municipal comparator emission reduction targets and has been updated to reflect the City of Toronto’s new target as of December 2021.
- It should be noted that while a municipal corporate target is commonly established, there are other approaches when it comes to community low-carbon scenarios. Working towards a modelled low-carbon scenario through establishing priority actions rather than a “specific target” was also revealed through the benchmarking.

Table 1 – Municipal Climate Change Action - Benchmarking				
Municipality	Commitment 2030	Commitment 2050	Benchmark Year	Target Adoption
Halton Hills	Net Zero	-	N/A	2019
Burlington	-	Net Zero (2040)	2016	2020
Whitby	-	-80%	2019	2021
Toronto	-65%	Net Zero (2040)	1990	2021
District of Muskoka	-50%	Net Zero	2018	2020
Hamilton	-	Net Zero	N/A	2019
Caledon	-36%	Net Zero	2016	2020
Guelph	-	Net Zero	N/A	2019
Aurora	-16% (2023)	-80%	2018	2021
Tiny Township	-6% (2028)	-	2015	2018

Municipality	Commitment 2030	Commitment 2050	Benchmark Year	Target Adoption
Vaughan	-22% (2031)	Not specified	2013	2019
Barrie ²	No target	-	-	-
Innisfil	No target	-	-	-
Town of Georgina	No target	-	-	-

Notes:

1. -XX% - refers to the percentage reduction compared to established benchmark year.
 2. Barrie is in the process of developing corporate and community climate change action plans. In 2019 Barrie Council directed staff to create mitigation plans that would identify ways of reducing the City's carbon emissions with a goal of Net Zero emissions by 2050.
- On March 29, 2022, the Federal government unveiled the [2030 Emissions Reduction Plan: Canada's Next Steps to Clean Air and a Strong Economy](#). The plan sets out an ambitious approach to cutting emissions to keep Canada on track towards the goal of achieving Net Zero emissions by 2050. This plan includes \$9.1 billion in new investments to assist businesses, homeowners, and municipalities to meet their emissions reduction targets while collectively working to achieve the targets in the Federal Plan.

Options & Analysis

Option 1 – Recommended

THAT the Climate Change Action Plan dated April 2022 be received and adopted in principle;

AND THAT the following corporate greenhouse gas (GHG) emissions reduction targets be approved:

- **50% GHG reduction by 2030, below 2018 levels, and**
- **100% GHG reduction by 2040, below 2018 levels;**

AND THAT the following community GHG emissions reduction targets be endorsed:

- **33% GHG reduction by 2030, below 2018 levels, and**
- **100% GHG reduction by 2050, below 2018 levels;**

AND THAT additional funding to incorporate aspects of the Climate Change Action Plan to current facility design projects be assigned as follows:

- **\$120,000 allocated to the Transit Terminal Design project, to be funded as \$80,000 from the Transit Equipment Reserve and \$40,000 from the Parking Reserve; and**

- **\$35,000 allocated to the Brian Orser Arena re-design, to be funded from the Major Facilities Capital Maintenance Reserve;**

AND THAT staff report back to Council with annual progress updates towards reduction targets and integrating carbon budgeting and climate change action within City processes;

AND THAT funding associated with priority actions and projects outlined within the Climate Change Action Plan be referred to the 2023 Budget Process, future year budget processes and included as part of the 10-year Capital Plan;

AND THAT the Mayor be requested to provide a copy of this resolution and the Climate Change Action Plan in correspondence to implore higher levels of government for funding and support necessary for municipalities to achieve local climate change action through implementation of Climate Change Action Plans to the following:

- **The Right Honourable Justin Trudeau, Prime Minister of Canada**
- **The Honourable Steven Guilbeault, Minister of Environment and Climate Change**
- **Honourable Doug Ford, Premier of Ontario**
- **Honourable David Piccini, Minister of the Environment, Conservation and Parks**
- **Federation of Canadian Municipalities**
- **Partners for Climate Protection Program**
- **Global Covenant of Mayors for Climate & Energy**
- **Association of Municipalities of Ontario.**

This option is recommended for the following reasons:

- Allows the City to move forward with a corporate evidence-based emission reduction target, in line with the recent IPCC report. It also positions Council to realize the strategic priority of moving towards leadership in local climate change action and to “lead by example” through the establishment of an evidence-based target.
- Endorses the community target developed through a period of technical analysis and engagement stream with staff and the Community Based Steering Committee (CBSC). Members of Council were also provided the opportunity for input and feedback as part of the Community-focused plan elements through a Special Council Meeting that occurred on January 28, 2022.
- Balances the local realities, technology availability and resources against the need for strategic and focused climate change action through the reduction targets identified for the City corporately and in the community. The ability to achieve a greater than 50% reduction in emissions by 2030 (both corporately and in the community) was evaluated as part of this project and an achievable pathway was unable to be identified at this time.

- Provides an action plan and framework which could be considered and incorporated through future strategies such as Corporate Strategic Plans, Economic Development Strategies, Official Plan updates, growth documents, etc.
- Meets compliance requirements to complete Milestones 1 through 3 for both the corporate and community climate action streams under the FCM PCP Program. The remaining milestones will consist of Milestone 4 – Implementing Local Climate Action Plan and Milestone 5 – Monitoring and Reporting Results.
- Provides additional design funding towards two facility related projects (New Transit Terminal and Brian Orser Arena Renovation). These projects were previously approved by Council and require significant building design work. To ensure that aspects of the Climate Change Action Plan are incorporated, additional design budget must be allocated as outlined in Option 1. Based on industry best practice, an allocation of an additional 15% - 20% in design fees has been recommended. This range is recommended based on low-carbon design aspects being considered specialized professional services in the current market. The final design process will also inform construction budgets prior to those budgets coming forward to Council as part of future year budget submissions.
- Provides staff direction to include identified actions and projects as part of the 10-year Capital Plan. Staff will bring forward additional budget, staffing resources and projects as part of the 2023 and future year budget processes.
- Provides staff direction to focus on implementation of the Plan. This will involve incorporating aspects of climate change action within the City's processes to work towards actions identified in the plan (i.e., carbon budgeting, climate lens for Council reporting, Staff Working Group, etc.).
- Aligns and forms synergies between the City's climate change efforts and related programs and policies, most notably the City's asset management efforts. The planning and funding for municipal asset resiliency and replacement has many correlative benefits with climate change mitigation and adaptation efforts. Asset management and climate change action efforts and costs can be combined to optimize opportunities and benefits. Enables staff to pursue funding contingent on a Council approved Climate Change Action Plan (i.e., FCM Community Efficiency Financing opportunity, part of Green Municipal Fund). This funding opportunity was identified as part of the Community Efficiency Financing – Feasibility Study, approved by Council as a 2022 capital project.

Should *Orillia's Climate Future* and the targets identified in Option 1 be adopted, key factors for implementation are identified below:

- The role of the City differs between the corporate and community GHG reduction targets. Council is requested to approve the corporate target because the pathway to achieve those reductions is within the City and Council's direct control. There are still uncertainties, technology limitations, etc. that can alter the ability of achieving the target; however, the mechanisms for acting, funding, seeking out grants, etc. all lie directly within the City's sphere of control. Comparatively, Council is requested to endorse the community target. For the pathway to achieve these GHG reductions the City will be acting as part of a greater community team.

All members of the Orillia community (i.e., residents, businesses, organizations, etc.) will play a part in the implementation of the Plan.

- Partnerships and mobilization within the community will be required to implement the actions identified within *Orillia's Climate Future*. The City acting alone will be unable to achieve the community reductions required. Innovative approaches towards engagement and partnerships, building implementation momentum and understanding within key stakeholder groups and the community will be ambitious challenges for both staff and members of the CBSC.
- Devising a strategic implementation plan will be paramount to the success of both the corporate and community actions. It is recommended that both the Staff Working Group and CBSC remain in effect and be re-tooled to migrate from planning to implementation.
- Every action that has been included in the Plan must be implemented to reach the Net Zero emission target (100% reduction). Even small actions can play a critical role in bringing the whole plan together. The strategic implementation plan will focus on timing, resources and factors required to enact those actions, but will include all actions identified.

Financial Impact

As part of both the October 2021 and January 2022 Special Council Reports, high level costs estimates were provided to achieve a Net Zero climate future for the Corporation of the City of Orillia as well as the Orillia community. It is important to note – alongside the cost estimates – that the low-carbon pathway is also an opportunity to save emissions and save energy, both of which have financial and non-market value. By 2030, every tonne of emissions saved represents an avoided \$170 per the carbon tax and every GJ of energy saved is valued at between \$15 to \$60 (depending on price of electricity, natural gas and gasoline). *Orillia's Climate Future* will help steer the community's policies and investments in a way that minimizes the economic risk and stimulates the transition to a green economy.

Significant capital costs will be required to pursue climate change actions while developing a robust asset management program. City staff identify and understand that external funding sources, as well as related efforts to garner and promote climate change action funding, support, policies and programs, will be of paramount importance to the success of *Orillia's Climate Future*.

Corporate Climate Action

There are items and upgrades for which costing has not been included at this point, based on the high degree of uncertainty and variability. These items include electric vehicle charging infrastructure and electricity storage equipment, etc. Most of the cost associated with moving towards Net Zero is attributed to:

- Deep-building retrofits to reduce energy consumption, and transition towards electrification.

- Fleet electrification.
- Clean electricity strategies (i.e., local renewable power generation) to potentially offset carbon emissions still associated with electricity.

In addition, implementation of these projects is currently not part of staffing resource plans or Division responsibilities. Currently, there is limited specific funding allocated in the current 10-year capital plan. Staffing resources will be required and will be assessed throughout the course of 2022 and brought forward for Council approval as part of the 2023 budget process. Through the Staff Working Group, resourcing needs across the various Departments will be evaluated.

The table below provides a high-level illustration of the combined estimated investment costs, factoring in avoided carbon costs and fuel savings as a result of moving forward with the recommended emission reduction target. The investment cost across the target time horizon of \$52,800,000 declines to \$31,900,000 when these savings are included in the analysis.

Table 2: Estimated Total Corporate Investment Cost (2023-2040).

	2023–2025	2026–2030	2031–2035	2036–2040	TOTAL
Investments (in millions, \$2018)					
Buildings	4.6	7.9	15.2	0.2	27.9
Fleet	3.7	3.4	2.7	2.5	12.3
Renewable Energy	4.5	6.1	1	1	12.6
Total Investment	12.8	17.4	18.9	3.7	52.8
Energy Cost Savings (in millions, \$2018)					
Buildings	0.07	0.4	1.4	1.9	3.8
Fleet	0.25	1.2	1.8	2.1	3.6
Renewable Energy	0.6	3.1	4.6	5.1	13.5
Total Fuel Cost Savings	0.92	4.7	7.8	9.1	20.9

Source: Orillia's Climate Future, April 2022

Another important factor to consider with respect to the financial impact of the CAP is the unknown availability of provincial, federal and other funding to assist with offsetting capital costs outlined above. There has been increased funding available to support climate mitigation planning and projects of late. Staff would continue to seek all opportunities available to offset the funding required to support implementation of the CAP.

It is important to note that the financial implications of the Community plan do not rest solely with the City. The City will act as the champion for the community plan but will not be the only party having influence on implementation (including financial investment) for the plan. It should also be noted, wherever possible City capital projects should consider including GHG reduction aspects within the design and construction phases to result in marginal cost increases to projects being completed. Corporate investment will be required across Buildings and Fleet categories identified in Table 2, regardless of climate action pursuits. It is the intent to assess asset replacement timeframes, optimization of fleet and asset use, etc. as part of climate action when at all possible through implementation recommendations. Opportunities to manage cost through adjusting service levels and functions will also be explored. Financial costs to implement climate action, along with other corporate priorities, are contingent on funding availability. Advocating to higher levels of government will be critical to supporting the implementation of climate change actions in Orillia.

Community Climate Action

The complete financial analysis undertaken for the community portion of the Plan is contained within “Part 3: The Opportunity” of *Orillia’s Climate Future*, included as Schedule “B” of this report. A brief summary of the overall financial results is provided below in Table 3.

Table 3 – Summary of Financial Results for Community Climate Action.

NET IMPACTS OVER THE PERIOD, UNDISCOUNTED, \$ MILLIONS	
Total incremental capital investment, 2022-2050	\$1,069
Average annual investment	\$38
Total savings, 2022-2050	-\$3,109
Net cost, 2022-2050	-\$2,040
FINANCIAL INDICATORS, \$	
Capital cost (undiscounted) to reduce each tonne of GHG	\$86
Abatement cost per tonne of GHG (undiscounted)	-\$165
Average annual household savings on home energy (undiscounted), 2050 over 2018	-\$3,958
Investment \$/person-year of employment	\$146,900

Source: *Orillia’s Climate Future*, April 2022

The investments in the Low-Carbon Pathway (achieving community reduction target) generate financial returns on a net basis beginning in 2031. The 'net annual cost' line in Figure 3 represents the net of the investments and savings. For illustrative purposes, in an early year in a Net Zero scenario, investments might total \$40 million, while savings total \$7 million, resulting in a net cost of \$33 million. Later in the study period, investments might total \$29 million, while savings total \$129 million, resulting in net savings of \$100 million. In the post-investment period after 2050, the benefits to the community continue for as long as the measures deliver savings.

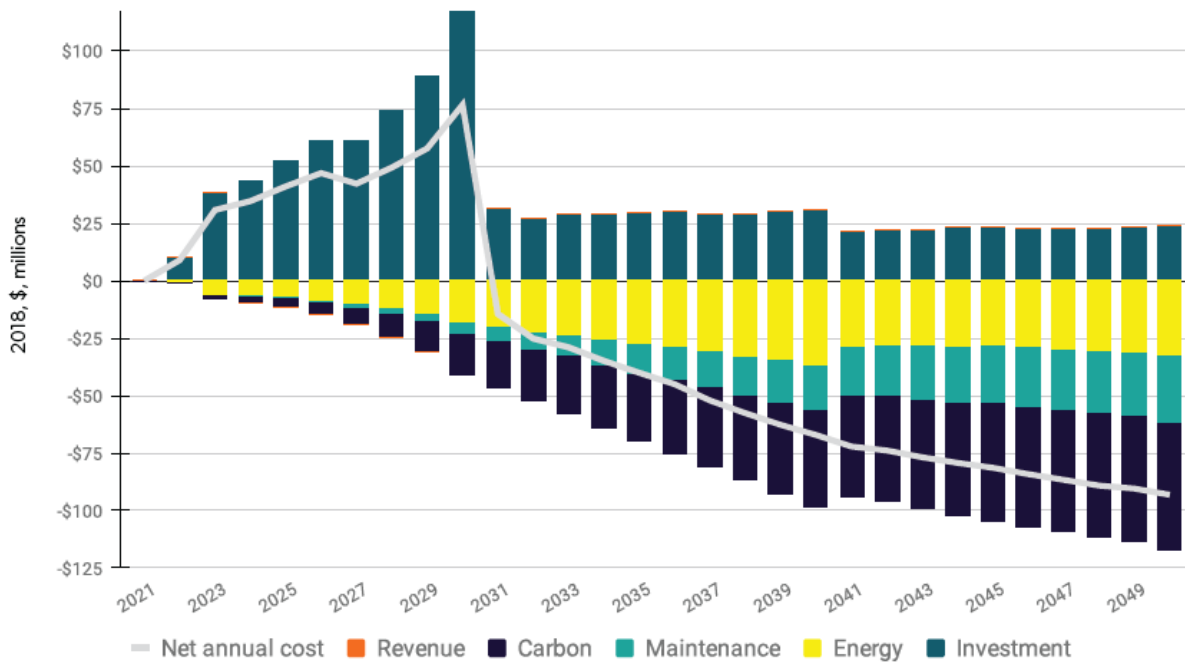


Figure 3: Year-over-year Investments and Returns in the Low-Carbon Pathway over the BAU Scenario, 2022 – 2050.

It has been communicated to Council that with the current state of reserves and expected asset management investments, a larger investment will be required to initiate the low-carbon actions necessary to achieve the corporate and community targets. There will be opportunities to leverage asset management requirements with upgrades and retrofits required to achieve emission reduction targets (for Corporate assets). However, overall a significant investment will be required from the City and will provide pressures associated with timing, prioritizing projects, asset renewal and underfunded projects. It will be a priority of implementation to focus on securing funding through other levels of government and grant opportunities to be able to fully advance the actions contained within *Orillia’s Climate Future*.

Consultation

A complete summary of the consultation efforts completed as part of Orillia's Climate Future were summarized for Council as part of the [January 2022 Special Council Meeting report](#). In addition, all public engagement activities undertaken as part of the Climate Change Action Plan project are included in Appendix B of *Orillia's Climate Future* report.

Members of the public were able to voice their opinions on *Orillia's Climate Future* through several engagement events. Each event, from the virtual open house (with keynote speaker, and CBC Radio host, Bob McDonald), to CBSC meetings, a city-wide survey, and focus groups with youth and equity-deserving groups, was designed to ask for their aspirations and concerns at each step of the climate change action planning process. Residents were also asked for their feedback on the assumptions that went into the modelling process to produce the targets and actions found in *Orillia's Climate Future*.

There was widespread support for a science-based approach to target setting to align with the UNFCCC Paris Agreement; 86% of respondents selected either strongly agree or agree, in the city-wide survey.

Economic Development Impact

Transitioning to a low- or zero-carbon economy is expected to have four categories of impacts on labour markets: additional jobs will be created in emerging sectors, some employment will be shifted (e.g., from fossil fuels to renewables), certain jobs will be reduced or eliminated (e.g., combustion engine vehicle mechanics), and many existing jobs will be transformed and redefined. The Low-Carbon Scenario adds person-years of employment over the BAU between 2022 and 2050 (Figure 4). As seen in Figure 4, this amounts to approximately 260 jobs annually, with the majority in residential and commercial building retrofits and infrastructure investments.

Through stakeholder interviews for recent initiatives such as the Cyber-Security Project and the Innovation Hub Feasibility Study, it has become evident that many businesses and investors exploring new opportunities are seeking to locate within municipalities that align with their values and whose actions "lead by example". Council's support of this Climate Change Action Plan would demonstrate Council's commitment to *Orillia's Climate Future* and has the potential to play an important role in the attraction and retention of like-minded industry.

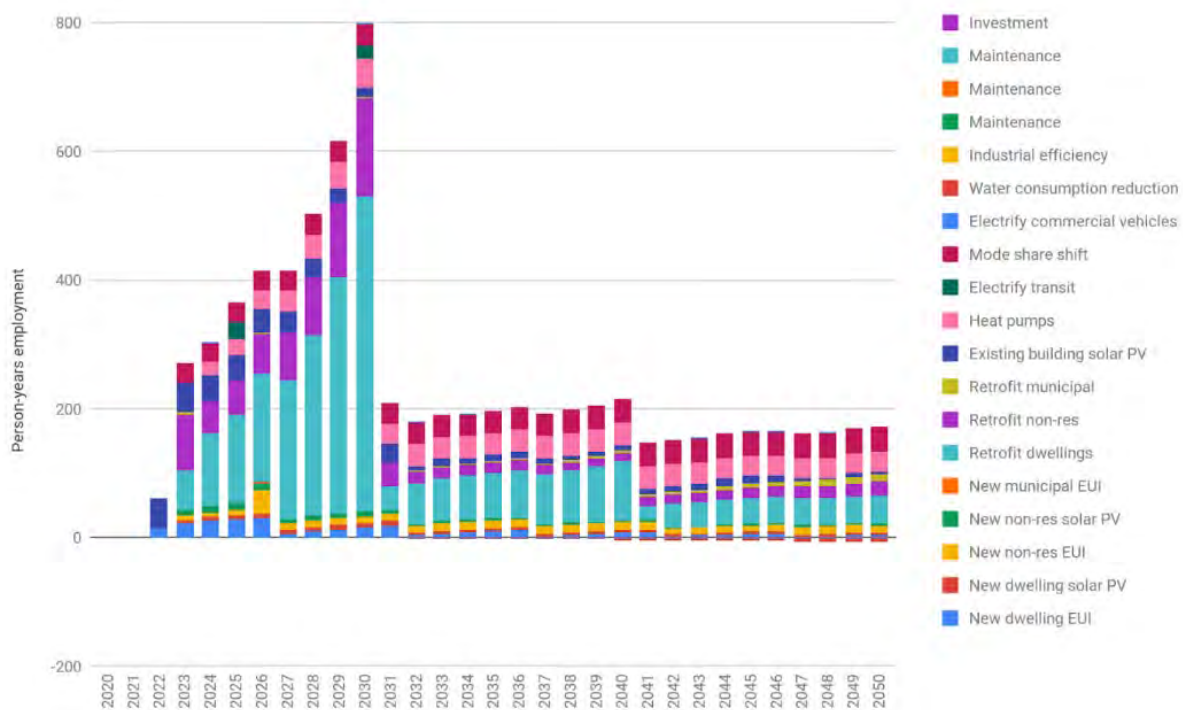


Figure 4: Annual Person-years of Employment Generated in the Low-Carbon Scenario.

Communications Plan

The City of Orillia communications team has worked closely with EIS and SSG on providing a diverse “Our Climate Future” communications and engagement plan to help educate the public about the CAP and CCAP and gain their input to help inform the plans. Ongoing communications and engagement efforts will be required as the City and the Orillia community work together to meet the objectives and targets as approved and endorsed by Council. The communications team will work with EIS to develop and implement ongoing strategies to keep Orillia stakeholders (including residents, businesses, community groups, and organizations) updated and engaged through various communications channels and engagement opportunities.

Relation to Formal Plans, City of Orillia Policy Manual and/or Guiding Legislation

The recommendation included in this report supports the following goals identified in the 2019 City of Orillia Strategic Plan:

- Quality of Life
 - 1.2 – Improve health and well-being of citizens. Initiatives related to this goal have the potential to improve the resident’s quality of life and reduce the strain on Orillia’s health care and social services.

- Healthy Environment
 - 2.1 – Continue the City’s commitment to environmental stewardship by increasing waste diversion, reducing our environmental footprint, enhancing urban greenery, ensuring clean water and promoting safe water management practices. This will help address concerns regarding climate challenges, as well as the desire to position Orillia as a leading municipality in addressing climate change. This goal has implications to both services the City undertakes and the infrastructure investments it makes.
- Sustainable Growth
 - 4.3 – Effectively manage growth via focused infrastructure investments that encourage environmentally attractive, affordable, diverse, financially sustainable and technology-enabled communities. This goal expands on item 4.1. And focuses on specific concerns around affordability, diversity and the environment. By ensuring future investments are aligned with these items will ensure that growth will be aligned with community priorities.
 - 4.4 – Promote economic development to create employment investment opportunities. This will help attract investment and create increased economic opportunity. Economic development was a significant concern raised in staff and public consultation and relates to concerns regarding low household income levels.

The recommendation included in this report is also related to the following formal plans, City policies and/or guiding legislation:

- *A Healthy Environment and a Healthy Economy, 2020*
- 2030 Emissions Reduction Plan: Canada’s Next Steps to Clean Air and a Strong Economy, 2022
- Provincial Policy Statement, 2020
- 2019 A Place to Grow: Growth Plan for the Greater Golden Horseshoe, as amended.
- City of Orillia Strategic Plan, 2019
- City of Orillia Official Plan, 2010
- City of Orillia Multi-Modal Transportation Master Plan, 2019

Conclusion

Staff and the City’s consultant, Sustainability Solutions Group, have worked closely with the community to develop a Climate Change Action Plan that serves to tackle the ambitious challenges of climate change at the local level. Staff recommends that Council receive and adopt *Orillia’s Climate Future* in principle, along with approving corporate

GHG emission reduction targets and endorsing community GHG emission reduction targets.

Schedules

- Schedule “A” – *Orillia’s Climate Future* – Presentation Slides
- Schedule “B” – *Orillia’s Climate Future*, Final Report – April 2022

Prepared by & Key Contact: Renee Recoskie, Manager, Property and Environmental Sustainability

Approved by: Andrew Schell, General Manager of Environment and Infrastructure Services Department



Report No. EIS-22-03 – *Orillia's Climate Future*
Council Committee, April 11, 2022



2015

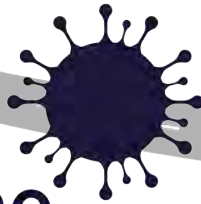


Paris Agreement signed to limit global warming to well below 2C and preferably 1.5C compared to pre-industrial levels.

2018



UN scientific body IPCC publishes a report on what is required to limit warming to 1.5C, indicating the world has 12 years left at current rates.



2020

January - Canada's first COVID-19 case.
March - Ontario declares a state of emergency in response to the pandemic.

2021



Orillia City Council approves the creation of a climate action plan for the municipality and the community.

2030

Orillia reduces community emissions by 1/3 over 2018 levels on its journey to net-zero emissions.

2040

Orillia achieves net-zero emissions for city operations!

2050

Orillia achieves net-zero emissions!



**Orillia's
Climate
Future**

FUTURE CLIMATIC PROJECTIONS

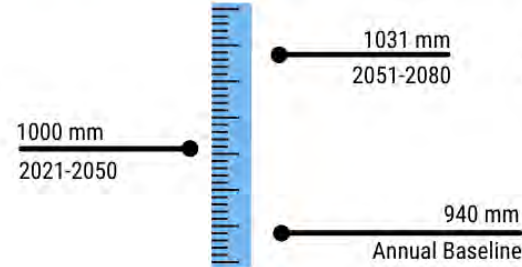
September 2021



ANNUAL MEAN TEMPERATURES

Mean temperatures are projected to increase annually and in every season.

For more information on Orillia Future Climatic Projections, please visit the City's Climate Science report, accessible [here](#).



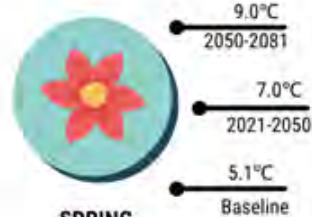
ANNUAL MEAN PRECIPITATION

Annual precipitation is expected to increase. Winter and Spring are projected to get significantly wetter, with a slight decline in the Summer.

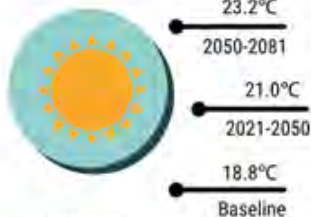
SEASONAL MEAN TEMPERATURES



WINTER
December - February



SPRING
March - May



SUMMER
June - August



FALL
September - November

* Baseline period: 1950s (1976-2005), Projection periods: 2030s (2021-2050), 2060s (2051-2080)
* Water Temperature section - Baseline period: 1990s (1961-2010), Projections periods: 2020s (2011-2040), 2050s (2041-2070), 2080s (2071-2100).

Source:

Canadian Climate Data and Scenarios Network, Climate Atlas of Canada Tool



FREEZING RAIN EVENTS

Freezing rain events are expected to increase slightly during January, slightly change in December, and decrease in November, March, and April

Severe freezing rain events (>6 h per day) are projected to increase up to 30% by 2100

Existing Initiatives

Two City recreation centres have solar panels that generate a total of 600 kW of electricity.

This generates enough electricity to power 68 homes each year!



In 2020 the City changed 3,380 streetlights to LED.

This change is expected to save the City 40% on energy bills and reduce the GHG emissions of streetlights by 76%!



Project Start +
Data Collection

GHG Inventories,
Modelling, BAU
Scenarios

Council Update #1
– Corporate Action
Plan + Emission
Reduction Targets


Today - Final Climate
Change Action Plan

May 2021

July

August

Fall 2021

October
2021

January
2022

April
2022

CBSC Kick-off,
Visioning

Low-Carbon
Scenario
Development

Council Update #2 –
Priority Community
Low-Carbon Actions

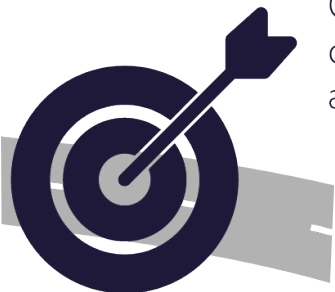
Active Community Engagement Period

Orillia's
Climate Future
Our Community Climate Action Plan



2021

Orillia City Council approves the creation of a climate action plan for the municipality and the community.



Selected targets from *Orillia's Climate Future*:

- By 2030, the City will reduce heating consumption by 50%.
- By 2030, the City will reduce energy consumption in arenas and swimming pools by 20 – 50%.
- By 2030, the Community will retrofit 65% of Pre-1980 buildings (residential – single and multi-unit).

By 2030, the Community will achieve 27% of total personal vehicles being electric.



2030

Orillia reduces community emissions by 1/3 over 2018 levels on its journey to net-zero emissions.

Orillia reduces emissions by 50% over 2018 levels from City operations!

Selected targets from *Orillia's Climate Future*:

- By 2040, the City will develop the capacity to generate 6 – 8 MW of renewable energy or engage in another strategy to purchase renewable energy and/or its benefits.
- By 2040, the City will meet all heating demands in corporate buildings using 100% clean electricity.
- By 2040, the City will reduce non-heating energy use by 20 – 50% through retrofit and renovations.

By 2040, the City will only procure zero-emission vehicles (electric or hydrogen).



2040

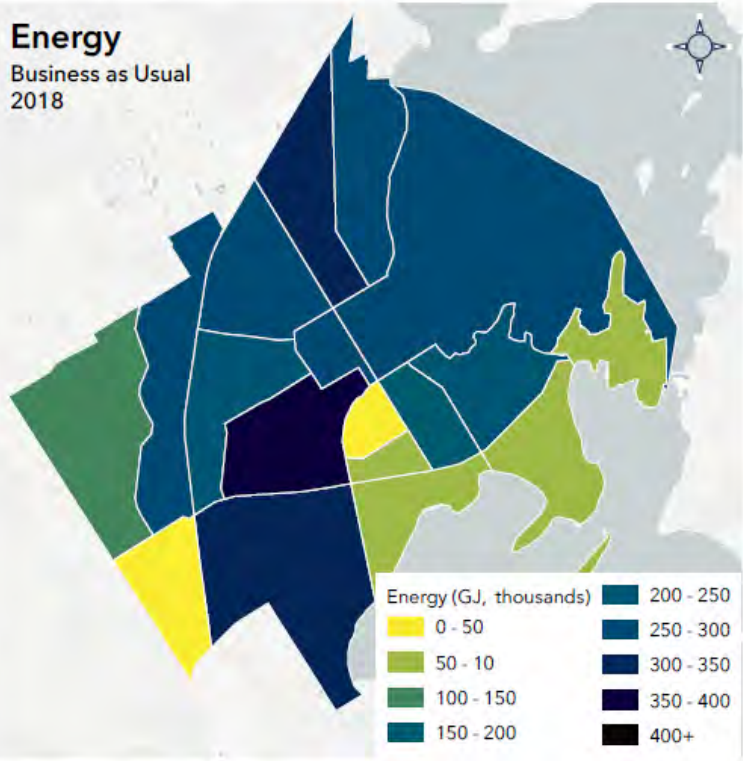
Orillia achieves net-zero emissions for city operations!

Selected targets from *Orillia's Climate Future*:

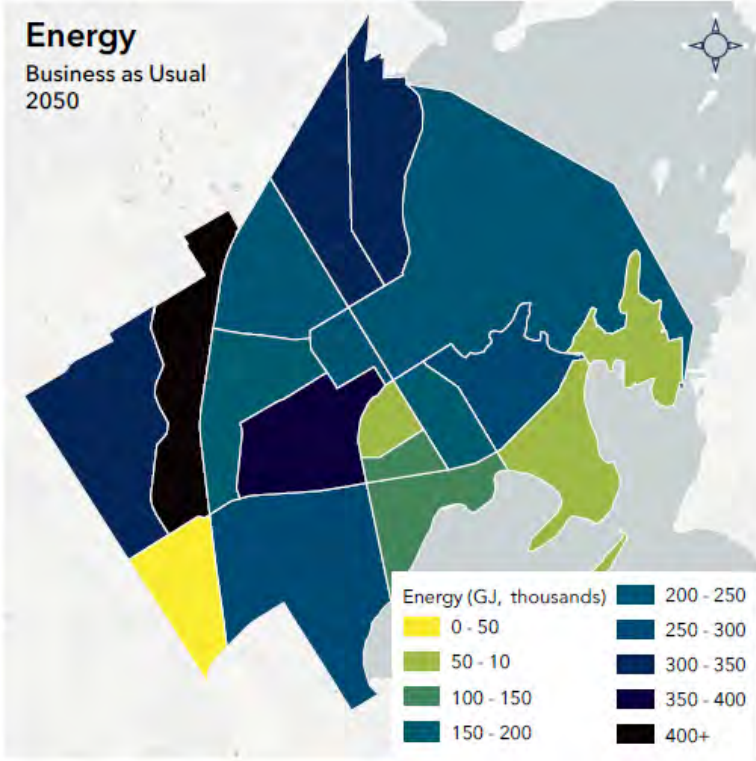
- By 2050, the Community will achieve 100% of total personal vehicles being electric.
- By 2050, the Community will retrofit 95% of Pre-1980 buildings (residential – single and multi-unit).
- By 2050, the City and Community achieve installation of over 62 MW of Solar PV.
- By 2050, the City and Community achieve a 90% waste diversion rate.



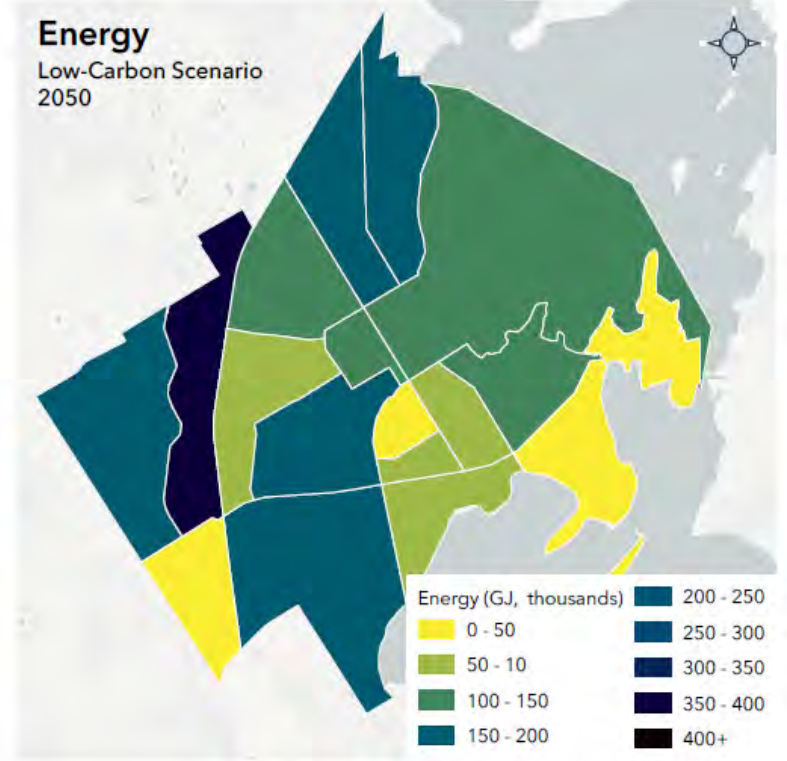
Energy
Business as Usual
2018

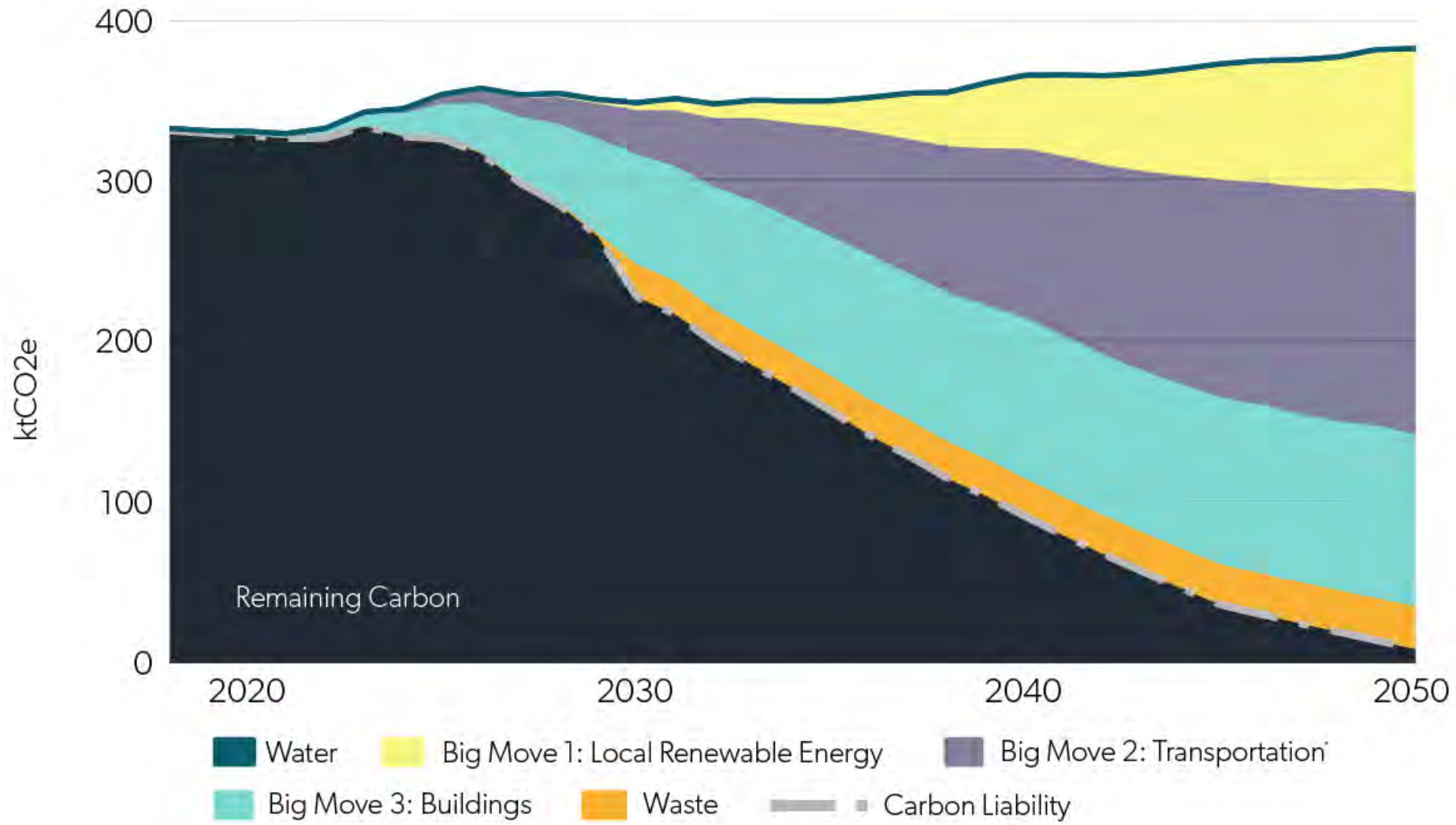


Energy
Business as Usual
2050



Energy
Low-Carbon Scenario
2050





Financial Impact – City (Corporate)

	2023–2025	2026–2030	2031–2035	2036–2040	TOTAL
Investments (in millions, \$2018)					
Buildings	4.6	7.9	15.2	0.2	27.9
Fleet	3.7	3.4	2.7	2.5	12.3
Renewable Energy	4.5	6.1	1	1	12.6
Total Investment	12.8	17.4	18.9	3.7	52.8
Energy Cost Savings (in millions, \$2018)					
Buildings	0.07	0.4	1.4	1.9	3.8
Fleet	0.25	1.2	1.8	2.1	3.6
Renewable Energy	0.6	3.1	4.6	5.1	13.5
Total Fuel Cost Savings	0.92	4.7	7.8	9.1	20.9

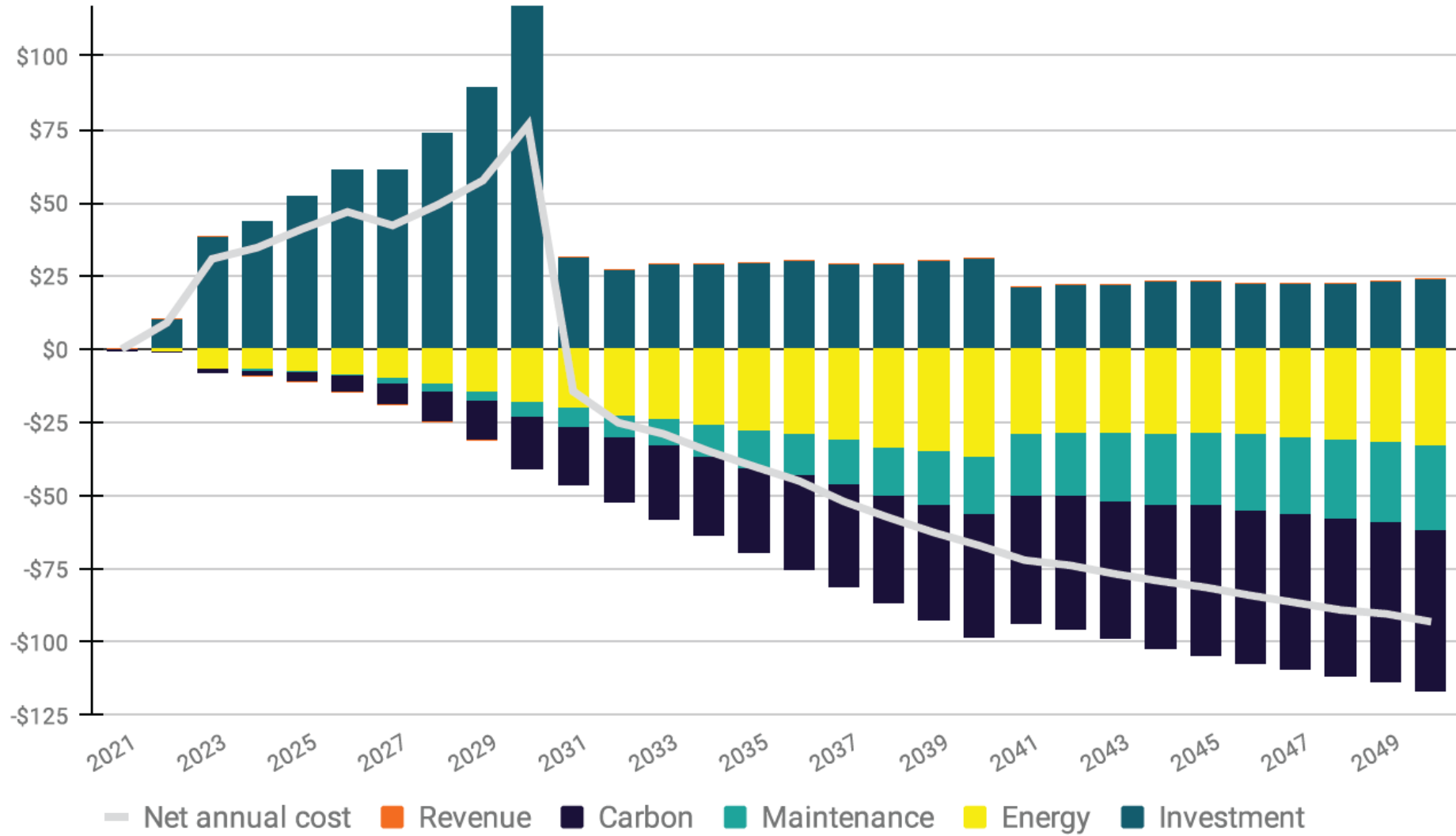
Financial Impact - Community

NET IMPACTS OVER THE PERIOD, UNDISCOUNTED, \$ MILLIONS

Total incremental capital investment, 2022-2050	\$1,069
Average annual investment	\$38
Total savings, 2022-2050	-\$3,109
Net cost, 2022-2050	-\$2,040

FINANCIAL INDICATORS, \$

Capital cost (undiscounted) to reduce each tonne of GHG	\$86
Abatement cost per tonne of GHG (undiscounted)	-\$165
Average annual household savings on home energy (undiscounted), 2050 over 2018	-\$3,958
Investment \$/person-year of employment	\$146,900



Thank You!

ORGANIZATION	MEMBER NAME
Active Transportation Committee	Raj Gill
Agriculture, Bass Lake Farms	Jacob Kearey-Moreland Madeleine Fournier
Community Development Corporation	Carol Benedetti
Couchiching Conservancy	Mark Bisset
Duncor Enterprises Inc.	Rick Newlove
Enbridge Gas	Mary Sye, Municipal Energy Advisor
Environmental Advisory Committee	Tim Adamson Lee Hanson Rick Ruegg
Hydro One	Gillian Lind

Georgian College	Dr. Mary Louise Noce, Dean of Orillia Campus Bill Angelakos, Dean, Technology and Visual Arts
Lakehead University	Ellen Field, Assistant Professor Ledah McKellar, Sustainability Coordinator
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Simcoe Muskoka District Health Unit	Sarah Warren
Sustainable Orillia	Stan Matthewson, President Danny Epstein Jessica Kearney David VanAlstyne Susanne Laperle Kirk McLean
Sustainable Orillia - Youth Council	Blythe Wieclawek

Thank You!

Project Team Acknowledgement

SSG'S PROJECT TEAM	CITY OF ORILLIA PROJECT TEAM	INTERNAL TECHNICAL COMMITTEE
Naomi Devine	Renee Recoskie	Laura Thompson
Yuill Herbert	Andrew Schell	Jeremy Dutka
John Kong	Mark Buma	Greg Preston
Marcus Williams	Jasmine Lyn	Kyle Mitchell
Penny Beames	Tyler Hunt	Wesley Cyr
Brittany MacLean		Melissa Gowanlock
		Susan Votour
		Lynn Telford
		Amanpreet Singh Sidhu
		Kelly Smith
		Ian Sugden
		Jeff Duggan



Orillia's Climate Future

Orillia's Climate Future

Our Community Climate Action Plan



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Glossary of Terms

BAU: Business-as-Usual Scenario

BEV: Battery Electric Vehicle

CAFE: Corporate Average Fuel Economy

CBSC: Community Based Steering Committee

CEEP: Community Energy and Emissions Plan

DE: District Energy

EPA: Environmental Protection Agency

ESG: Environmental, Social, and Governance

EV: Electric Vehicle

FCM: Federation of Canadian Municipalities

GHG: Greenhouse Gas

GJ: Gigajoule

HV: Heavy-Duty Vehicle

ICI: Institutional, Commercial, and Industrial

IESO: Independent Electricity System Operator

IPCC: Intergovernmental Panel on Climate Change

J: Joule

kWh: Kilowatt hour

ktCO₂e: Kilotonnes Carbon Dioxide Equivalent

LIC: Local Improvement Charges

MTSA: Major Transit Station Area

MW: Megawatt

NEB: National Energy Board

NZ: Net-Zero Emissions

O&M: Operations and Maintenance

OPG: Orillia Power Generation

OPO: Ontario Planning Outlook

PACE: Property Assessed Clean Energy

PJ: Petajoule

PV: Photovoltaics

RNG: Renewable Natural Gas

SCC: Social Cost of Carbon

tCO₂e: Tonnes Carbon Dioxide Equivalent

TGS: Toronto Green Standard

TJ: Terajoule

UNFCCC: UN Framework Convention on Climate Change

WWTP: Wastewater Treatment Plant

ZEV: Zero Emission Vehicle

Acknowledgements

Land Acknowledgement

The City of Orillia would like to respectfully acknowledge that we are situated on the traditional territory of the Anishinaabe peoples, specifically the Chippewas of Rama First Nation, a member of the Chippewa Tri-Council, which includes the Chippewas of Beausoleil First Nation and the Chippewas of Georgina Island First Nation. These lands are covered by the Williams Treaties and the Upper Canada Treaties and were signed by our governments on behalf of the Anishinabek and Canadian peoples. We are thankful for the opportunity to honour and recognize the long and enduring presence of Indigenous Peoples - First Nations, Metis and Inuit - on this land. Their teachings and stewardship, culture and way of life have shaped our City's unique identity.

As we strive to foster a welcoming, caring, inclusive, and accessible community for all citizens, the City of Orillia is committed to helping our community understand, honour, and take action toward real Truth and Reconciliation through education and acknowledgement and moving forward with respect, harmony, and dignity for our Indigenous peoples of the past, present, and future.

Community Engagement Acknowledgement

The Community Based Steering Committee (CBSC) was formed with membership from a cross-section of residents, organizations, academic institutions and businesses in Orillia. Their participation, guidance, and feedback is gratefully acknowledged and is central to the creation of *Orillia's Climate Future*.

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		Susan Votour
		Lynn Telford
		Amanpreet Singh Sidhu
		Kelly Smith
		Ian Sugden
		Jeff Duggan

Disclaimer

Reasonable skill, care, and diligence has been exercised to assess the information acquired during the preparation of this analysis, but no guarantees or warranties are made regarding the accuracy or completeness of this information. This document, the information it contains, the information and basis on which it relies, and the associated factors are subject to changes that are beyond the control of the author. The information provided by others is believed to be accurate but has not been verified.

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Executive Summary



Executive Summary

“Orillia’s Climate Future signals our community’s commitment to deep and effective climate action. While the journey ahead is long, we have the drive and persistence to make it our reality.”

Andrew Schell, General Manager of Environment and Infrastructure Services, City of Orillia

Climate change is the greatest long-term global challenge that human society faces. Greenhouse gas emissions (GHGs) from human activity are warming the planet, and the resulting changes in temperature and weather patterns are negatively impacting human health, infrastructure, livelihoods, and ecosystems.

The Paris Agreement, adopted by 197 countries in December 2019, aims to limit global warming to safe levels—that is, well below a 2°C increase, and preferably to a 1.5°C increase—above pre-industrial levels.¹ However, the world is not on track to meet this agreement. Despite a temporary decline in global emissions in 2020 due to the COVID-19 pandemic, the world is heading toward 3°C or more of warming.²

The City of Orillia is joining cities around the world in setting a target of net-zero emissions. Net-zero emissions is achieved when decarbonization of the economy reduces GHG emissions to as close to zero as possible, and remaining human-driven emissions are balanced by carbon sequestration using natural or technological means.

Two plans, the Corporate and Community Climate Change Action Plans, form *Orillia's Climate Future*. These plans identify a path to reduce community emissions by one-third (over 2018 levels) by 2030 and approach net-zero emissions by 2050.

For the City of Orillia, net-zero will be achieved by rapidly decarbonizing, thereby reducing GHG emissions from how people move around, how residents operate buildings, how goods are produced and manufactured, and how people consume and dispose of waste.

A Business-as-Usual (BAU) Scenario was developed for Orillia to project energy use and GHG emissions in the community between now and 2050, should the community continue on its current course of action. Orillia’s BAU tells the story of a missed opportunity—for the climate, for economic development and innovation, and for community benefit. Because of the efficiency measures that are already planned, energy use and emissions only go up slightly despite the city’s projected growth. While this future could obviously be worse, following the BAU trajectory

¹ United Nations Framework Convention on Climate Change. (2015) The Paris Agreement. Retrieved from: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

² United Nations Climate Change (2021). New UNEP Synthesis Provides Blueprint to Urgently Solve Planetary Emergencies and Secure Humanity’s Future. <https://unfccc.int/news/new-unep-synthesis-provides-blueprint-to-urgently-solve-planetary-emergencies-and-secure-humanity-s>

does not address Orillia's contribution to climate change, and forgoes all of the benefits associated with a decarbonized city.

The Low-Carbon Pathway (LCP), which outlines actions that upgrade Orillia's energy systems, transportation, and buildings, is an opportunity to save emissions and energy, both of which have financial and non-market value. By 2030, every tonne of emissions saved avoids \$170 in carbon taxes and every GJ of energy saved is valued between \$15 and \$60 (depending on the price of electricity, natural gas, and gasoline). Each tonne of GHG emissions avoided is one tonne less in the atmosphere that can cause extreme weather events and untold damage. Every GJ saved is energy that does not need to be produced or generated, saving land for biodiversity, agriculture, or parks.

Orillia's decarbonization actions are grouped into three Big Moves:

Big Move 1: Renewable Energy

Renewable energy replaces fossil fuel and non-renewable energy sources from the grid. Increased solar energy generating capacity gives the city more control over how it meets its energy needs.

Big Move 2: Transportation

Increased uptake of electric vehicles reduce emissions from driving, while investments in public transit and active transportation get more people in buses and on bikes.

Big Move 3: Buildings

Retrofitted existing buildings and high-efficiency new builds make for more comfortable homes that are cheaper to run and better for the climate.

The shift to a low-carbon future will take effort and dedication. But the rewards of the Low-Carbon Pathway go beyond decarbonization and lessening Orillia's contribution to climate change. More efficient homes and transportation decrease household energy costs, which are felt most keenly by low-income households. The City saves money that would otherwise be earmarked for carbon taxes. And new, good paying jobs are created as skilled people are needed to retrofit buildings, operate the improved transit system, and install and maintain the city's energy infrastructure.

Taking climate action will lead to a better life for the community of today and of tomorrow.

CITY OF
ORILLIA

50
ANDREW STREET SOUTH

Part 1:

The Climate Context for Orillia

Part 1: The Climate Context for Orillia

This action plan shows that there is no one magic silver technology bullet to manage our GHG emissions; the solution, as shown, relies on a lot of smaller individual actions; some which we can take as individuals and some as a community. Climate change is a 21st century problem, and we have been trying to solve it with 19th century organizational setup; this CCAP shows that actions and crosscutting communications will be key to getting the results in a timely manner at the lowest cost. These plans are not going to be free, but as has been widely shown elsewhere, the cost of not doing anything will be far higher. These actions will help Orillia evolve into the sustainable community of the 21st century for the benefit of all of us. We can also translate these actions into our own areas of living.

Tim Adamson, member of the CBSC

1.1 A Global Threat; A Local Opportunity

Climate change is the greatest long-term global challenge that human society faces. Greenhouse gas emissions (GHGs) from human activity are warming the planet, and the resulting changes in temperature and weather patterns are negatively impacting human health, infrastructure, livelihoods, and ecosystems. As the planet warms, these impacts become more intense and more destructive in every region of the world, with disproportionate impacts on vulnerable people.³

Countries have agreed to a global, collective response. In December 2015, the Paris Agreement was adopted by 197 countries. The Paris Agreement aims to limit global warming to safe levels—that is, well below a 2°C increase, and preferably to a 1.5°C increase—above pre-industrial levels.⁴ The Paris Agreement is a framework to help each country do its part.

However, the world is not on track to meet this agreement. Despite a temporary decline in global emissions in 2020 due to the COVID-19 pandemic, the world is heading toward 3°C or more of warming.⁵ This degree of warming threatens human health, economic well-being, and the survival of the natural systems that humans and eight million other plant and animal species depend upon.⁶

We are increasingly at risk. Every year of delay adds to the cumulative amount of GHGs that will exist in the atmosphere. Every tonne of GHGs emitted comes with associated social and

³ Pörtner, H. O., Roberts, D. C., Adams, H., Adler, C., Aldunce, P., Ali, E., ... & Ibrahim, Z. Z. (2022). Climate change 2022: impacts, adaptation and vulnerability.

⁴ United Nations Framework Convention on Climate Change. (2015) The Paris Agreement. Retrieved from: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

⁵ United Nations Climate Change (2021). New UNEP Synthesis Provides Blueprint to Urgently Solve Planetary Emergencies and Secure Humanity's Future. <https://unfccc.int/news/new-unesp-synthesis-provides-blueprint-to-urgently-solve-planetary-emergencies-and-secure-humanity-s>

⁶ Ibid.

economic costs. Hesitation only increases the challenge of decarbonising and decreases the likelihood of a smooth transition (Figure 1).

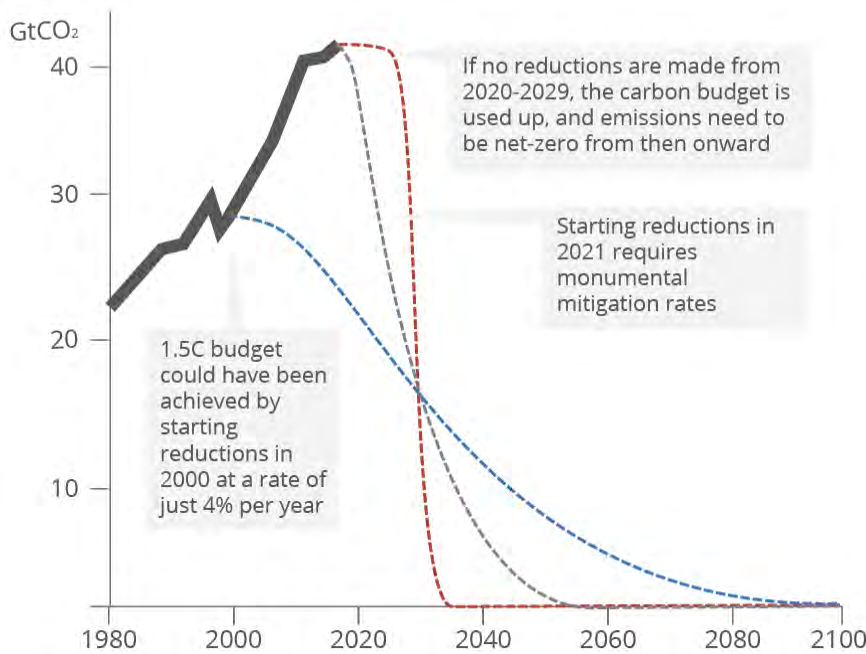


Figure 1. The risk of delay and the imperative to act .⁷

The Tragedy of the Horizon

“Climate change is the Tragedy of the Horizon,” according to Mark Carney, former Head of the Bank of Canada and former Governor of the Bank of England. “The catastrophic impacts of climate change will be felt beyond the traditional horizons — beyond the business cycle, the political cycle, and the horizon of financial institutions like central banks. Climate risks are a direct function of cumulative emissions, so earlier action will significantly decrease the cost of future adjustments. As such, it is in society’s best interest to restrict climate change to avoid global warming above 1.5°C.”⁸

But there is a path forward. In May 2021, the International Energy Agency (IEA) released a milestone report titled Net Zero by 2050.⁹ Globally, the IEA found that the path to net-zero is narrow. It requires massive deployment of all available clean energy technologies, including renewables, electric vehicles (EVs), and energy efficiency building retrofits between now and 2030. IEA’s key findings echo those of the analysis in this report. The net-zero pathway will bring

⁷ IPCC. (2018). Summary for Policymakers. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. <https://www.ipcc.ch/sr15/chapter/spm/>

⁸ Carney, M. (2015). Breaking the Tragedy of the Horizon – climate change and financial stability. [bankofengland.co.uk/-/media/boe/files/speech/2015/breaking-the-tragedy-of-the-horizon-climate-change-and-financial-stability.pdf?la=en&hash=7C67E785651862457D99511147C7424FF5EA0C1A](https://www.bankofengland.co.uk/-/media/boe/files/speech/2015/breaking-the-tragedy-of-the-horizon-climate-change-and-financial-stability.pdf?la=en&hash=7C67E785651862457D99511147C7424FF5EA0C1A)

⁹ IEA (2021). Net-zero by 2050. Retrieved from: <https://www.iea.org/reports/net-zero-by-2050>

jobs and growth, and they will stem from the necessary leaps in clean energy innovation and the rapid shift away from fossil fuels. Electricity will become the core of the energy system, and new low-emissions industries will flourish. Similar to the IEA, Orillia’s Climate Action Plan describes a pathway to transform the energy system.

A low-carbon Orillia is a better city. Homes that are properly insulated and use heat pumps for heating and cooling are more comfortable and more affordable to run. Swapping gas- and diesel-powered vehicles for electric vehicles reduces air pollution, which results in less asthma in children and less COPD and other chronic diseases in the elderly. Additionally, increased walking, biking, and transit improves fitness, increases social interactions, and results in a more vibrant community.

The shift to a low-carbon future will take effort and dedication. But the rewards go beyond lessening Orillia’s contribution to the climate crisis. Taking climate action will lead to a better life for the community of today and of tomorrow.

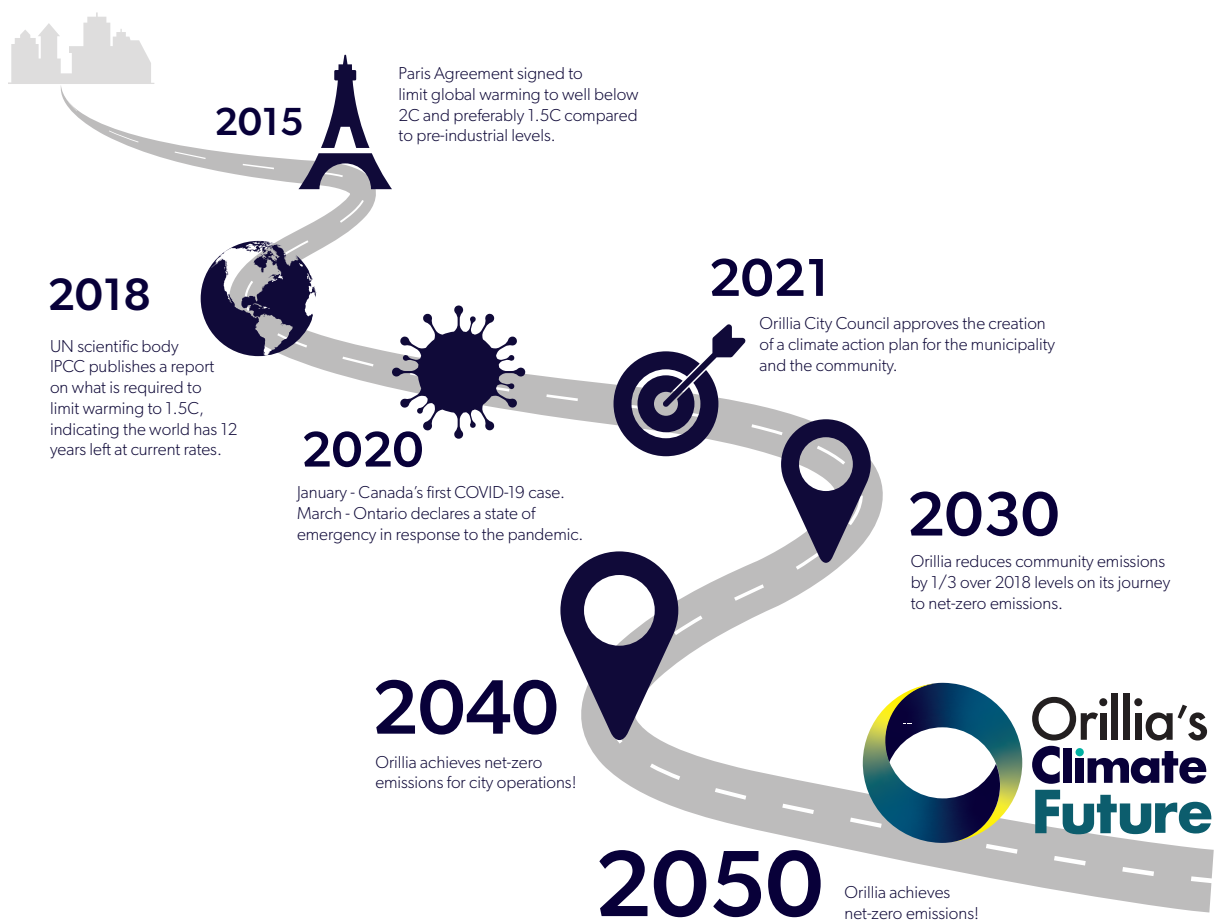


Figure 2. Timeline of climate action in Orillia.

1.2 How This Plan Came Together

“With this plan, the City is putting the building blocks in place to confirm Orillia as a net-zero community by 2050. ‘Orillia’s Climate Future’ is a comprehensive sustainability initiative and its successful implementation will do much to ensure the quality of life in our community for all residents, present and future.”

Susanne Laperle, member of the CBSC, Sustainable Orillia

Orillia's Climate Future identifies a path to reduce community emissions by one-third (over 2018 levels) by 2030 and approach net-zero emissions by 2050. The actions identified provide a foundation on which the City can build to achieve even greater emissions reductions in the future. This snowball effect helps maintain momentum as the City builds on its own successes.

This plan was developed through two complementary streams. Technical analysis calculated Orillia’s energy and emissions makeup and projected how the City could shape the future. The engagement stream, led by the Orillia’s Climate Future project team (composed of SSG and City of Orillia staff), sought out voices from the community to learn what residents would need from a climate plan. Four workshops were held with the Community-Based Steering Committee (CBSC) to introduce the technical aspects of the plan and gather their intelligence.

Additionally, the process integrated the expertise of representatives from the Environment and Infrastructure Services Department. Staff representatives were able to seek out and capture additional intelligence across all City Departments. Meetings were held with an internal technical committee of staff with representation from all major departments in the City of Orillia, and a presentation was made to the Mayor and Members of Council.

Table 1. Summary of engagement phases with outcomes.

ENGAGEMENT	DETAILS	OUTCOMES
1: The Process	Introduce the Internal Technical Committee (ITC) to the process that will form the CAP and the CCAP.	ITC provided data and feedback on data gaps.
	Introduce the Community-Based Steering Committee (CBSC) to the process that will form the CAP and the CCAP.	CBSC drafted vision statements and co-designed the Town Hall.

ENGAGEMENT	DETAILS	OUTCOMES
2: Community and Corporate Targets	The science-based target is introduced to both committees.	<p>The ITC and Staff Project Team provided input to shape the corporate climate target.</p> <p>The CBSC recommended a carbon budget for the corporate plan, which was included.</p> <p>The CBSC agreed with moving toward a science-based community target.</p>
3: Roadmap to Net-Zero	<p>Review work completed by staff and SSG to create a pathway to net-zero by 2050.</p> <p>Gain feedback on the pathway and what challenges or opportunities may be available.</p>	<p>The CBSC, the technical staff committee, and Members of Council were able to review and provide feedback on the low-carbon assumptions.</p> <p>Overall direction for the targets and how to shape the actions was also informed by the results of the city-wide survey and focus groups.</p>

What is a Climate Emergency?

In January 2020, 11,000 scientists signed a report titled *World Scientists Warning of a Climate Emergency*.¹⁰ The scientists indicated that climate change is more severe than anticipated, and that it threatens natural ecosystems and the fate of humanity. As of March 2021, 1,904 jurisdictions in 34 countries, including 15 national governments and the EU Parliament, had declared climate emergencies.¹¹ An emergency requires immediate action; it is a moment when one phones 911 to request urgent help. By declaring a climate emergency, governments at all levels are signalling that the situation is dire and urgent.

¹⁰ Ripple, W., Wolf, C., Newsome, T., Barnard, P., Moomaw, W., & Grandcolas, P. (2019). World scientists' warning of a climate emergency. *BioScience*.

¹¹ Climate Emergency Declaration. Climate emergency declarations in 1,904 jurisdictions and local governments cover 826 million citizens. March 14, 2021. Retrieved from: <https://climateemergencydeclaration.org/climate-emergency-declarations-cover-15-million-citizens/>

1.3 Leading By Example: Modernizing the City's Buildings and Fleet

In 2021, the City of Orillia began a new climate action planning process to provide concrete climate policy and action recommendations as well as a target for GHG emissions reductions.

This planning process has resulted in comprehensive Corporate and Community Climate Change Action Plans, now known as Orillia's Climate Future. Together, these plans will enable the City to achieve the Partners for Climate Protection (PCP) Program¹² milestones 1 through 3 to reduce corporate and community-wide emissions.

The Corporate Plan establishes the City as a leader in climate action. By actively addressing the energy and emissions associated with its own buildings and vehicles, the City demonstrates its willingness to invest in tackling its share of the community GHGs.

The Corporate Climate Action Plan identifies a pathway to net-zero GHG emissions for City operations by 2040 that also meets the following targets:

1. Buildings

1.1 Existing buildings:

- By 2030, the City will reduce heating consumption by 50%, and by 2040, the City will reduce non-heating energy use by 20–50% through retrofit and renovation.

1.2 Recreational buildings:

- By 2030, the City will reduce energy consumption in arenas and swimming pools by 20–50%, and by 2040, the City will reduce GHG emissions in arenas and swimming pools by 100%.

1.3 Building heat consumption:

- By 2040, the City will meet all heating demands in corporate buildings using 100% clean electricity.

1.4 New buildings:

- After 2023, all new buildings will meet Passive House or equivalent according to the building type, and meet net-zero GHG standards.

2. Vehicle Fleet

2.1 Light-duty vehicles:

- After 2023, the City will purchase electric light-duty vehicles where available/possible, with the goal of solely purchasing electric vehicles by 2030.

2.2 Medium- and heavy-duty vehicles:

- The City will delay procurement of medium-duty pick-up trucks, where possible, until a new fleet of electric pick-ups are available in 2025.
- By 2025, the City will convert 100% of utility and maintenance ATVs to electric.
- By 2030, the City will convert 50% of heavy-duty vehicles (e.g. snow removal, dump truck) to electric or hydrogen-powered.

¹² To learn more about the Partners for Climate Protection Program, please see: <https://www.pcp-ppc.ca/>

- By 2040, the City will only procure zero-emissions vehicles (electric or hydrogen).

3. Clean Electricity

- By 2040, the City will develop the capacity to generate 6–8 MW of renewable energy or engage in another strategy to purchase renewable energy and/or its benefits.

Key Implication: Orillia's Corporate Carbon Budget

The Corporate CAP embeds the consideration of GHG emissions, capital and operating budgets, infrastructure planning, and fleet management.

In order to align financial and GHG management, Orillia will apply a carbon budget. Like a financial budget, the carbon budget aims to limit the emissions the City “spends.” The carbon budget is designed to be applied in four-year intervals to line up with the City’s financial budgeting process. The carbon budget assigns a cap of GHGs the City can emit in each four-year period. The suggested carbon budget, which is to begin in 2023, is provided below:

Table 2. Orillia's corporate carbon budget.

4-YEAR PERIOD	BUDGET (TCO ₂ E)
2023-2026	7,084
2027-2030	5,465
2031-2034	3,643
2035-2038	1,700
2039-2042	121

Key Implication: City Budget

The transition to net-zero corporate emissions will require investments over and above what is currently allocated to the maintenance of current buildings and fleet. However, if retrofits are planned to coincide with building maintenance and upgrades already scheduled, then those costs can be reduced. For example, if a building façade needs to be updated in 2032 for structural or integrity reasons, then installing insulation at the same time would be less expensive than installing insulation at a separate time. Combining these efforts also limits the disruption to municipal staff and to the public. The CAP also identifies investments in renewable energy to ensure the availability of clean electricity by 2040.

The following table provides estimates of the investments needed to make Orillia’s corporate operations net-zero by 2040. The bulk of the retrofits take place between 2031 and 2035, in order to allow the City to develop a program for the retrofits and maximise use of existing equipment. Expediting these retrofits would accelerate the reduction of GHG emissions and save on energy costs.

Table 3. Estimated total investment cost (2023–2040).

	2023–2025	2026–2030	2031–2035	2036–2040	TOTAL
Investments (in millions, \$2018)					
Buildings	4.6	7.9	15.2	0.2	27.9
Fleet	3.7	3.4	2.7	2.5	12.3
Renewable Energy	4.5	6.1	1	1	12.6
Total Investment	12.8	17.4	18.9	3.7	52.8
Energy Cost Savings (in millions, \$2018)					
Buildings	0.07	0.4	1.4	1.9	3.8
Fleet	0.25	1.2	1.8	2.1	3.6
Renewable Energy	0.6	3.1	4.6	5.1	13.5
Total Fuel Cost Savings	0.92	4.7	7.8	9.1	20.9

The estimates of energy consumption, GHG emissions, and selected financial flows (i.e. fuel costs, vehicle operations and maintenance (O&M) costs, carbon costs, capital investments) will inform and guide the City’s efforts to reduce its corporate emissions and can support subsequent decision-making processes for specific buildings and vehicles.

The full Corporate Climate Action Plan can be found in Appendix D of the accompanying document.

1.4 The Risk of Inaction: A Missed Opportunity

A Business-as-Usual (BAU) Scenario was developed for Orillia to project energy use and GHG emissions in the community between now and 2050, should the community continue on its current course of action. The BAU assumes no additional GHG-reducing or low-carbon policies, actions, or strategies are implemented by 2050 beyond those that are currently approved and funded or underway.

Orillia’s BAU tells the story of a missed opportunity—for the climate, for economic development and innovation, and for community benefit. It illustrates a relatively stable trajectory of GHG emissions in the community, increasing from approximately 320 ktCO₂e in 2018 to almost 400 ktCO₂e by 2050. Throughout the scenario, the transportation sector accounts for nearly half of community emissions, while emissions related to the operation of buildings make up most of the other half. Waste, agriculture, and fugitive emissions from the transportation and distribution of natural gas contribute marginally to overall community emissions.

Similarly, energy use increases slightly from under 6,100,000 GJ in 2016 to nearly 6,700,000 GJ in 2050. Throughout the scenario, the transportation sector is responsible for over 40% of community energy use while the buildings sector (residential, commercial, and industrial) makes up nearly 60%.

The Low-Carbon Pathway is an opportunity to save emissions and energy, both of which have financial and non-market value. By 2030, every tonne of emissions saved avoids \$170 in carbon

taxes. Moreover, experts estimate that each metric tonne of carbon emitted leads to \$51 in social and economic costs globally.¹³ Every GJ of energy saved is valued between \$15 and \$60 (depending on the price of electricity, natural gas, and gasoline).

Each tonne of GHG emissions avoided is one tonne less in the atmosphere that can cause extreme weather events and untold damage. Every GJ saved is energy that does not need to be produced or generated, saving land for biodiversity, agriculture, or parks.

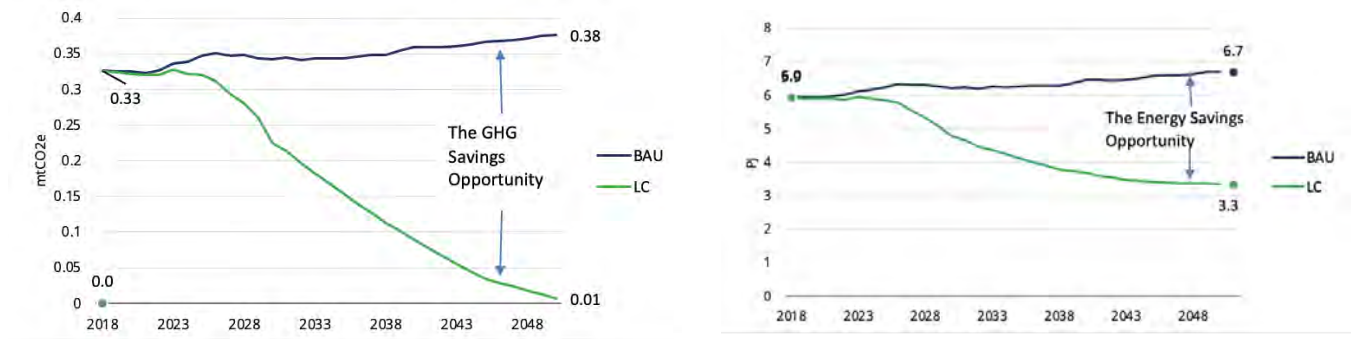


Figure 3. The opportunity of the Low-Carbon Pathway.

Orillia’s Climate Future will help steer the community’s policies and investments in a way that minimizes the economic risk and stimulates the transition to a green economy. Many of the investments that are identified will result in innovation, industry development, and job creation.

Lock-in and Latency

Many municipal planning decisions made today will still have environmental impacts 100 years from now. In the case of infrastructure investments and land-use plans, the environmental consequences continue for centuries. This leads to “lock-in” and a situation where past decisions limit the options and increase the costs for future decisions. In the context of community energy and emissions planning, this makes the longest-term decisions among the most urgent. It is also difficult to shift direction and build momentum, a concept known as latency. It takes time to scale up actions. For example, if the City develops a retrofit program, it needs to design the program, hire staff, negotiate financing, prepare legal agreements, secure contractors, develop a marketing and engagement approach, etc. It takes time for people to learn about the program, apply, be accepted, and arrange for implementation. Both latency and lock-in are reflected in the technical analysis; retrofit programs are scaled up incrementally, for example.

¹³ Chemnick, J. (2021) Cost of Carbon Pollution Pegged at \$51 a Ton. Scientific American. Retrieved from: <https://www.scientificamerican.com/article/cost-of-carbon-pollution-pegged-at-51-a-ton/>

1.5 Aiming for Zero

The City of Orillia is joining many other cities in setting a target of net-zero emissions. Net-zero emissions is achieved when decarbonization of the economy reduces GHG emissions as close to zero as possible, and any remaining human-driven emissions are balanced out by an equivalent amount of carbon removals. Carbon removals or sequestration can be achieved by restoring natural lands and soils or through direct air capture and storage technology.

For the City of Orillia, net-zero will be achieved by rapidly decarbonizing, thereby reducing GHG emissions from how people move around, how residents operate buildings, how goods are produced and manufactured,¹⁴ and how people consume and dispose of waste.

Avoiding Delay: The Risk of the “Net” in the Net-Zero Target

In an influential article, three climate scientists described how net-zero targets were developed because climate models could no longer identify safe pathways with GHG reductions alone; the only viable pathways also require removal of emissions from the atmosphere.¹⁵ They argue that these pathways are more theoretical than real as large scale carbon dioxide removal (CDR) technologies do not yet exist. As a result, a net-zero pathway can mislead by conveying opportunities for reductions where they may not exist. For this reason, the scenarios analysed for the City of Orillia focus solely on efficiency gains and emissions reductions, highlighting any remaining emissions as a gap that may need to be addressed using CDR or other strategies as they emerge.

Table 4 presents a checklist that provides an overview of the scope of Orillia’s net-zero strategy evaluated in this analysis.¹⁶

Table 4. What does a net-zero target mean for Orillia?

QUESTIONS	RESPONSE BASED ON THIS ANALYSIS
Scope	
What global temperature goal does this plan contribute to (to stabilize global temperature or see it peak and decline)?	1.5°C
What is the target date for net-zero?	2050
Which GHGs are considered?	CO ₂ , CH ₄ , NO ₂

¹⁴ While consumption-based emissions are not addressed in this analysis, the City of Orillia is seeking to influence these emissions through additional projects.

¹⁵ Dyke, J., Watson, R., and Knorr, W. (2021). Climate scientists: Concept of net-zero is a dangerous trap. Retrieved from: <https://theconversation.com/climate-scientists-concept-of-net-zero-is-a-dangerous-trap-157368>

¹⁶ Rogelj, J., Geden, O., Cowie, A., & Reisinger, A. (2021). Net-zero emissions targets are vague: Three ways to fix.

QUESTIONS	RESPONSE BASED ON THIS ANALYSIS
How are GHGs calculated (GWP100 or another metric)?	GWP100, GWP20
What is the extent of the emissions (over which territories, time frames, or activities)?	City of Orillia's geographic boundary, with some exceptions
What are the relative contributions of reductions, removals, and offsets?	To be determined
How will risks be managed around removals and offsets?	To be determined
Fairness/Equity	
What principles are being applied?	The City of Orillia aims to align with Science-Based Climate Targets: A Guide for Cities.
Would the global climate goal be achieved if everyone did this?	Yes
What are the consequences for others if these principles are applied universally?	Globally, cities with the highest levels of poverty would be allowed to increase their emissions to raise their populations out of poverty, while cities with lower levels of poverty would reduce their emissions.
How will your target affect others' capacity to achieve net-zero and their pursuit of other Sustainable Development Goals?	By minimizing the demand for scarce low-carbon resources such as renewable natural gas (RNG) and hydrogen, the pathway creates opportunities for less flexible sectors and jurisdictions to use these resources. The pathway will also help reduce costs for low-carbon strategies, which will have regional and international implications.
Roadmap	
What milestones and policies will support achievement?	This report details milestones against which to measure progress, but it does not identify specific policies.
What monitoring and review system will be used to assess progress and revise the target?	An annual climate lens and carbon budget is proposed.

QUESTIONS	RESPONSE BASED ON THIS ANALYSIS
<p>Will net-zero be maintained or is it a step towards net-negative?</p>	<p>This analysis provides a pathway to net-zero that creates the possibility for going net-negative. However, net-negative strategies have not been evaluated as part of this plan.</p>
<p>Limitations/Opportunities for Additional Investigation</p>	
<p>Impacts on peak electricity demand</p>	<p>The impacts on peak demand and the electricity capacity required to support the demand was outside the scope of this analysis. Marginal emissions factors for electricity that result from using natural gas for peaks were also not assessed in the analysis.</p>
<p>Consideration of embodied carbon</p>	<p>The impact of equipment and materials production for the City of Orillia was not evaluated. The choice of materials can have a significant impact on the GHG profile of building retrofits. Additionally, the benefit of a walking trip is much greater when the embodied carbon in infrastructure and vehicles is considered.</p>



Part 2: Orillia's Low-Carbon Climate Future

Part 2: Orillia's Low-Carbon Climate Future

2.1 The Future Orillia Residents Want

At Orillia Soldiers' Memorial Hospital, we are driven by our shared purpose that we are a community that is committed to improving health and wellness. Orillia's Climate Future action plan is a significant step in support of this purpose. With focus on sustainable transportation and complete communities, the action plan aims to prioritize planning concepts that promote the health and well-being of our community.

Tom Roberts, VP Corporate Services & CFO, Orillia Soldiers' Memorial Hospital

Orillia residents voiced their opinions on Orillia's Climate Future through several engagement events. Each event—from the town hall (with keynote speaker and CBC Radio One host Bob McDonald) to community steering committee meetings, a city-wide survey, and focus groups with youth and equity-seeking groups—was designed to obtain their aspirations and concerns at each step of the climate action planning process. Residents were also asked for feedback on the assumptions used in the modelling process to produce the targets and actions found in Orillia's Climate Future.

There was widespread support for a science-based approach to align with the Paris Agreement—86% of respondents selected either strongly agree or agree in the city-wide survey.¹⁷

Residents were also asked to create vision statements to help guide the plan's implementation. Members of the CBSC drafted statements in the following six categories: community (overall visions for the community's future), economy, energy, green and blue spaces (natural areas), transportation, and waste. The vision statements were then included in the survey for broader feedback. These statements serve as a "North star" for the community as it embarks on a path to create a successful, vibrant, and equitable low-carbon future.

COMMUNITY VISION STATEMENTS¹⁸

1. We acknowledge climate justice as central to decision-making, and we strive to do our fair share to eliminate GHG emissions. Orillia's climate action will enact principles of equity, accessibility, diversity, and inclusion.
2. We will be a community that fosters community resilience to the impacts of climate change through mitigation and adaptation strategies.
3. We will be a community that meets the needs of current residents without compromising

¹⁷ 245 residents took part in the survey. Of the respondents, 7.7% either disagreed or strongly disagreed, while 4.5% were neutral, and 1.6% needed additional information.

¹⁸ 80.5% of respondents either strongly support or support the proposed community vision statements.

the ability of future residents to meet their needs.

ECONOMY¹⁹

1. The City of Orillia and the community will strive to achieve a sustainable circular economy that will protect the environment, drive future economic growth, and encourage green investment immediately.

ENERGY²⁰

1. The City of Orillia and the community will reduce their energy use and strive to achieve 100% renewable energy and energy conservation before 2050.
2. The City will strive to fuel switch 100% of its heating sources ahead of 2050, choosing electric sources or non-emitting sources including green hydrogen.

NATURAL AREAS (GREEN AND BLUE SPACES)²¹

1. The City will increase its tree cover by 5% per year over the next 20 years. The natural landscapes will become a place of learning for all of Orillia's citizens.
2. The City will preserve, protect, and enhance a variety of connected green and blue spaces that are equitably distributed and accessible to all people.

TRANSPORTATION²²

1. By 2050, the community will have a transportation system consisting of primarily zero-emission vehicles.
2. By 2050 Orillia and the community will have a transportation system featuring 50% or higher non-vehicle modes, which will contribute to zero emissions, a healthier population, and lower healthcare costs.
3. Orillia will focus the majority of development on building complete communities, prioritizing infill, and growing up rather than out after 2025.

WASTE²³

1. The City of Orillia will achieve zero waste by 2050 through community-driven leadership, the development of a circular economy, regenerative agriculture practices, and education actions. The City will assist community members, businesses, and organizations who may struggle to reach these goals.

The list of engagement activities undertaken for this plan can be found in Appendix B of the accompanying document.

¹⁹ 84.4% of survey respondents either strongly support or support the proposed economic vision statement.

²⁰ 75.9% of respondents either strongly support or support the proposed energy vision statements.

²¹ 86.7% of respondents either strongly support or support the proposed natural areas vision statements.

²² 71.8% of respondents either strongly support or support the proposed transportation vision statements.

²³ 77.2% of respondents either strongly support or support the proposed vision statement.

As the President of Sustainable Orillia and a resident, I recognize the role of the Climate Change Action Plan as a key determinant of sustainability for our Community. Also, both organizationally and personally, I have found participation on the Community Based Steering Committee informative and positive in terms of ensuring as broad a cross section of our community as possible, given the COVID restrictions we have faced, will have their views represented. I also think this process was a great way to inform and educate the community representatives.

Stan Mathewson , member of the CBSC, Sustainable Orillia

2.2 How Do We Decarbonize a City?

At a high level, the pathway and actions to decarbonize a city are well established and have been evaluated in cities across Canada. However, the specific mix of actions and rate of technology adoption varies from city to city, according to factors such as the existing building stock, the rate of growth, the character of the city's built environment, energy costs, the mix of local industry, etc.

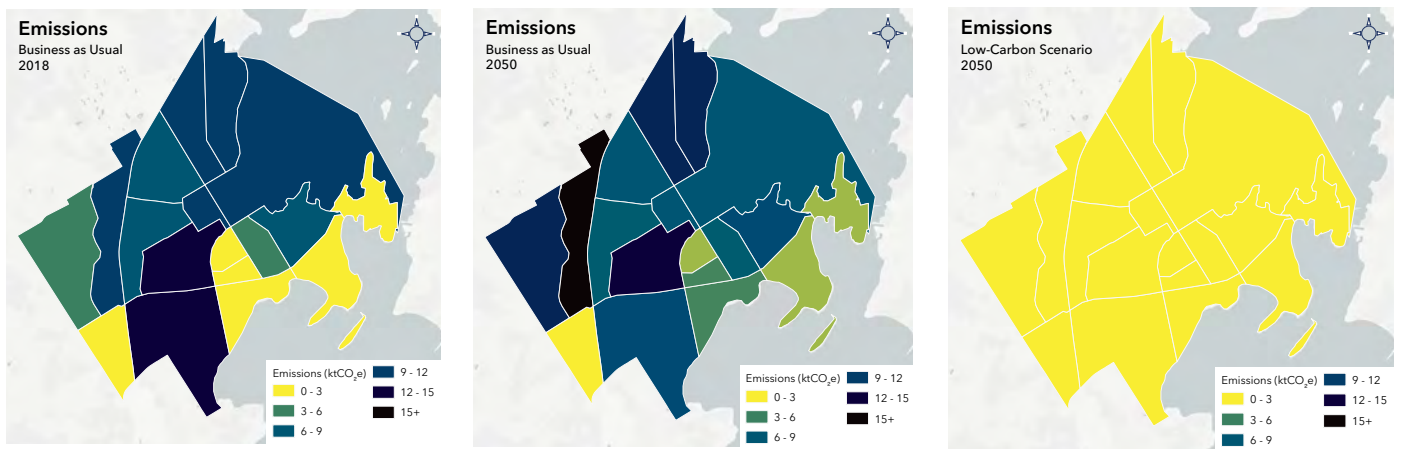


Figure 4. Emissions in Orillia, from 2018 (left), 2050 in the Business-as-Planned scenario (middle) and the Low-Carbon scenario (right).

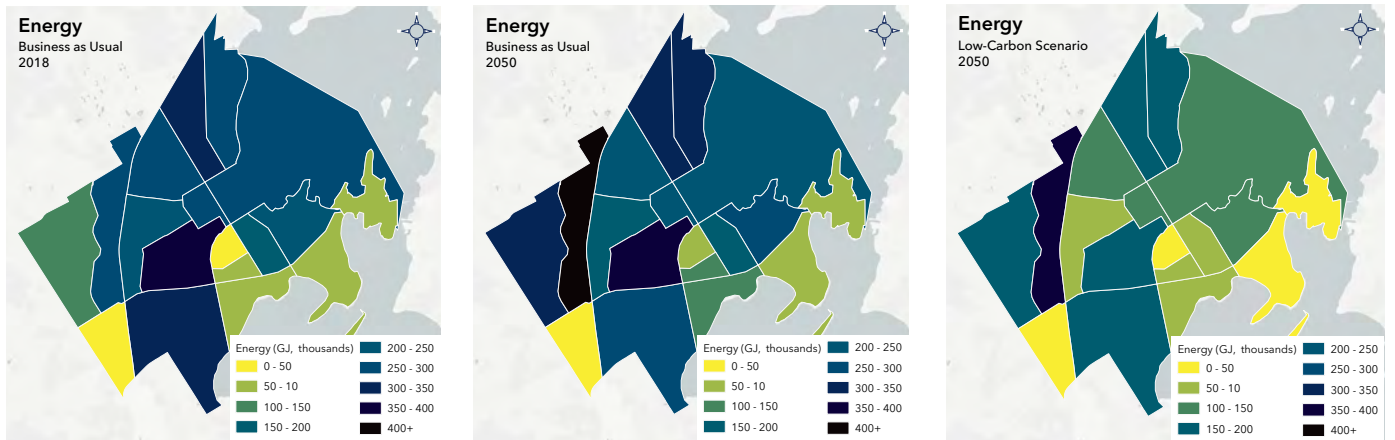


Figure 5. Energy in Orillia, from 2018 (left), 2050 in the Business-as-Planned scenario (middle) and the Low-Carbon scenario (right).

The Low-Carbon Pathway for Orillia is based on the hierarchy of the Reduce-Improve-Switch framework, a similar approach to Reduce-Reuse-Recycle (from the waste sector) and Avoid-Shift-Improve²⁴ (from the transportation sector). It focuses on the concept of reducing energy consumption and improving the efficiency of the energy system (supply and demand) and then fuel switching to low-carbon or zero-carbon renewable sources.

The energy system is complex, and so the application of the Reduce-Improve-Switch approach acts as a guide rather than a prescription. Many actions have cross-cutting impacts. For example, building retrofits can reduce the amount of energy required for space heating (through envelope improvements) while simultaneously improving the efficiency of the energy used in the building (through equipment upgrades). Additionally, solar photovoltaics (PV) could be installed on the roof, facilitating a switch to a zero-carbon renewable source. In general, whether it be buildings, transport, or waste, the objective is to first reduce the amount of energy needed by as much as possible (through reduced consumption and efficiencies) and then fuel switch away from fossil fuels to low- or zero-carbon fuel sources to supply the remainder of the demand.

Figure 6 illustrates the transformation of the energy system in Orillia across the relevant sectors, as well as showing a point-in-time comparison by sector and fuel. Fossil fuels are nearly phased out by 2050 (light and dark blue) and total energy consumption is more than cut in half due to efficiency gains in transportation and buildings. The energy system is electrified, using mostly locally generated electricity, and the remainder is provided by the provincial grid. The charts illustrating end-use highlight the importance of retrofits and the efficiency of the electric engine in limiting growth in electricity consumption as electrification occurs.

²⁴ GIZ. (2011). Sustainable urban transport: Avoid-shift-improve. Retrieved from http://www.sutp.org/files/contents/documents/resources/E_Fact-Sheets-and-Policy-Briefs/SUTP_GIZ_FS_Avoid-Shift-Improve_EN.pdf

EMISSIONS ENERGY

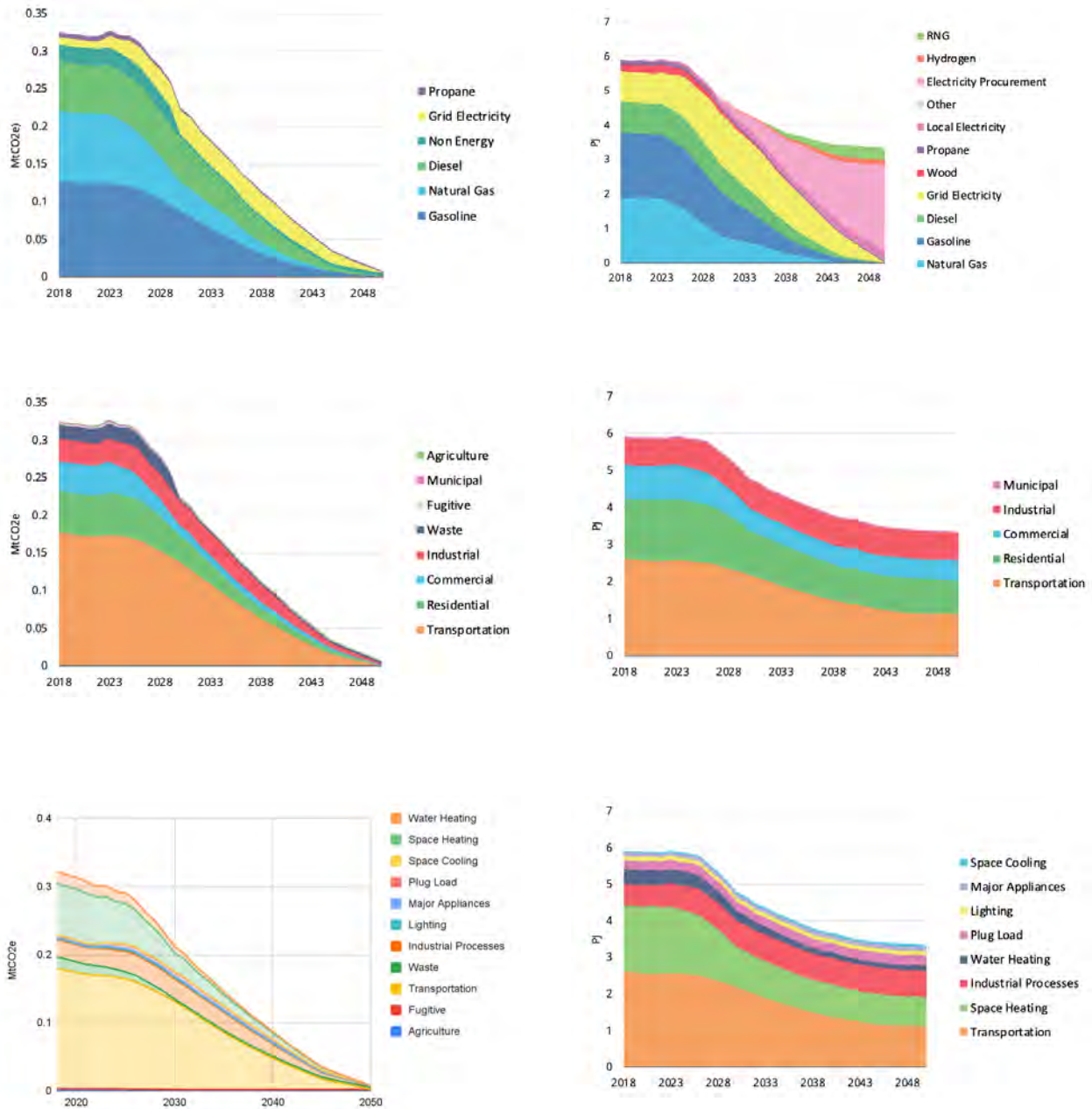


Figure 6. GHG emissions and energy by energy type, sector, and end-use (2018–2050)—Low-Carbon Pathway.

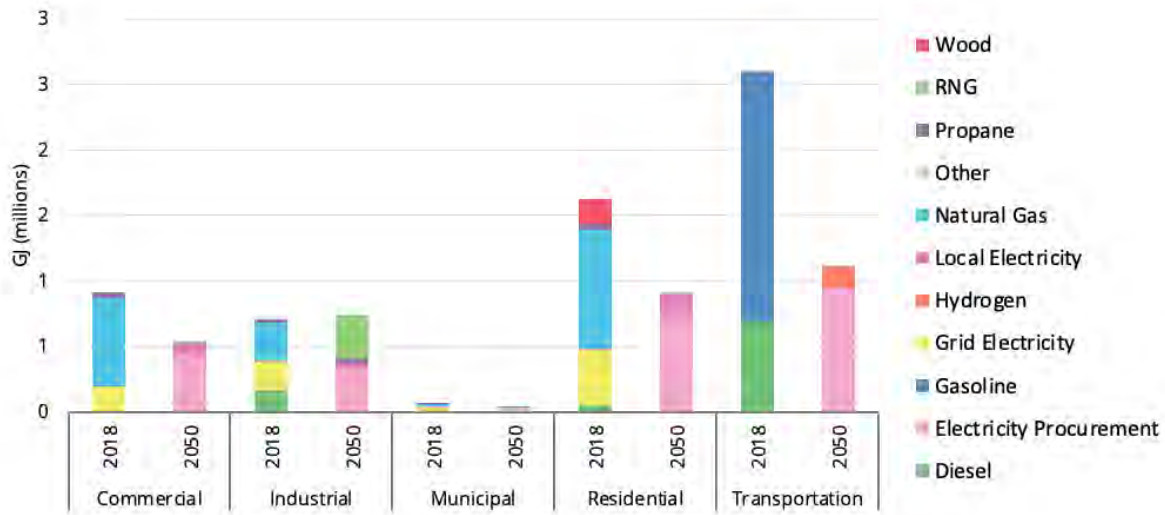


Figure 7. Total energy for NZ40, 2018 and 2050.

Managing population growth is one of the City’s major issues. I see the City’s Climate Change Action Plan helping to guide future development to preserve and enhance our green spaces, contribute to an active transportation network, and enhance our surrounding waterways. The City has an opportunity to be a leader in our fight against climate change by demonstrating, through their actions, a commitment to the plan. Policies need to be in place to ensure all development follows best practices, which will contribute to a reduction in greenhouse gas emissions. I want to live in a community where I can be proud of the steps we are taking to address climate change.

Lee Hanson, member of the CBSC

2.3 Efficiency First: The Negawatt

It is important to distinguish between the vital roles that reducing energy consumption (using less energy overall) and increasing energy efficiency (using the least amount of energy) play in a climate-friendly, low-carbon future.

Reducing electricity consumption is the top priority in the Reduce-Improve-Switch framework. Electricity that is saved or avoided is called a negawatt. Negawatts can be generated from behaviour changes or land-use and mobility patterns that result in walking or cycling rather than driving. Reducing electricity consumption also reduces peak load demands on utilities and makes the transition to renewable energy easier and more affordable.

The next important action is to “improve”, which is another way to generate negawatts. This refers to maximizing energy efficiency improvements and can include building retrofits such as replacing windows and doors, adding insulation, and replacing heating systems with more efficient systems, such as heat pumps. It also includes moving from gas and diesel engine vehicles to electric vehicles, which have motors that are up to three times more efficient.

Electric or gas hot water systems can be replaced with heat pumps, and gas cooktops can be replaced with electric or induction stoves.

The final step in the Reduce-Improve-Switch paradigm is to switch to zero carbon electricity sources, such as rooftop solar PV, solar and wind farms, or off-site renewable energy obtained through power purchase agreements. The more megawatts that are “generated”, the less zero-carbon electricity is required, which reduces both capital and operating costs for the electricity system, resulting in a triple-win situation.

Retrofits and Negawatts²⁵

A key challenge of decarbonization is managing the impact of electrifying heating and transportation on peak electrical demand. While the analysis for Orillia did not evaluate the impact on peak demand on an hourly basis, an analysis of the aggregate impact of deep retrofits and fuel switching on a major portfolio of buildings in Ontario provides insight on the critical role of retrofits. When this portfolio is heated with natural gas, the electricity demand peaks at 70 MW on a mid-summer afternoon. After full electrification and retrofitting, these same buildings peak at 74 MW on a winter morning when the buildings are ramping up for the workday. Improving the thermal envelope—the insulation and window upgrades—keeps the peak from being much higher as a result of the electrification of heating. Retrofits generate energy savings for homeowners and businesses, but the uncounted dividends are the negawatts that can be used to power heat pumps without requiring major investments in the electrical grid.

2.4 Orillia’s Big Climate Moves

As a proud member of the Orillia community that recently renewed our own commitment to environmental accountability in our strategic plan, Georgian College is pleased to see the City of Orillia’s new Climate Change Action Plan. Energy, water, and waste reduction targets are critical in combating climate change and together, we can develop impactful plans that lead to meaningful change for all.

Dr. Mary Louise Noce, Dean, Orillia Campus, Georgian College, member of the CBSC

The Big Moves are the focal points for major emissions reductions in the community and the major drivers in Orillia’s Climate Future. This plan identifies the following three Big Moves:

Big Move 1: Local renewable energy: Solar panels are installed on new and existing buildings during construction and retrofits, respectively. Additional renewable energy is procured at the community scale through local power purchase agreements and renewable energy credits.

Big Move 2: Transportation: In line with federal targets, all new light- and medium-duty vehicle purchases will be electric by 2035. Transit ridership will increase 10-fold by 2050 and will double for short trips.

²⁵ Ibid.

Big Move 3: Buildings: The vast majority of buildings in Orillia will undergo deep retrofits to improve efficiency and reduce energy demand. New buildings will be built to increasingly efficient standards, with all new buildings meeting net-zero standards by 2030. All buildings will install efficient electric heating and cooling systems.

In addition to these Big Moves, this plan identifies the following additional moves to make the transition to net-zero emissions a success for the municipality and community: waste and governance. The details of these moves are discussed in the sections that follow.

Implementing the Actions: A Complete Package

Every action modelled for this plan must be implemented to reach the net-zero target. Even small actions can play a critical role in bringing the whole plan together. For example, maximizing building solar PV is a high-cost investment that will not greatly reduce GHG emissions in itself. However, if Orillia invests in its own solar energy capacity, then the city can transition transportation and heating from fossil fuels to electric systems without relying so heavily on Ontario's dirty electricity grid (see Figure 11 for more details on the Ontario grid). So, this action with a seemingly small impact on GHG emissions unlocks a suite of opportunities to move away from high-emissions fuel sources and reduce GHG emissions in other sectors. It also gives Orillia control over its own electrification strategies rather than waiting for major upgrades to the grid.

Safe Bets Versus Wild Cards²⁶

The Canadian Institute for Climate Choices defines safe bets as emission-reducing technologies and solutions that are already commercially available and face no major constraints to widespread implementation. Wild cards are solutions that may come to play a significant and important role on the path to net-zero, but whose ultimate prospects remain uncertain. The actions explored in Orillia's Climate Future are primarily safe bets. Given the Canadian and European governments' emphasis on green hydrogen,²⁷ a limited deployment was modelled to explore the implications of hydrogen relative to electrification and to position Orillia to take advantage of green hydrogen if this becomes a viable option.

²⁶ Ibid.

²⁷ Government of Canada. (2020). The Hydrogen Strategy. <https://www.nrcan.gc.ca/climate-change/the-hydrogen-strategy/23080>

2.4.1 THE LOW-CARBON PATHWAY: BY WEDGE (ACTIONS) AND WATERFALL (CUMULATIVE REDUCTIONS)

The following two figures (figure 8 on the following page) illustrate the story of Orillia's Low-Carbon Pathway.

The first, called a wedge diagram, groups the emissions reductions effects of all actions in each Big Move and the additional moves over time. Each colourful wedge shows how much impact each Move will have on reducing emissions from the business-as-usual scenario. The grey area at the bottom of the graph shows the remaining carbon emissions. By the time the graph reaches 2050, the grey area has shrunk to almost nothing, and this is a reflection of the small amount of emissions left at the end of the low-carbon pathway.

The second figure is a waterfall graph. Generally, this type of bar chart shows the story of how something changes from a set period in time, in much the same way as a "before and after" photo. The bar on the left is the starting point, or the "before" setting. The bars in the middle show change over time. The bar on the far right shows the final "after" setting. In Figure 8, the bar on the left shows Orillia's total cumulative emissions of 10,400 ktCO₂e for 2022-2050 if the city were to follow the business-as-usual scenario. That's Orillia's "before" setting. Each of the middle bars shows the emissions that are removed from that total in each time period if the community follows the low-carbon pathway. So, for the period of 2022-2025, the emissions only go down by a small amount. But in each of the following time periods, the bars show a more significant change.

The final bar shows Orillia's cumulative emissions from 2022-2050 if the city follows the low-carbon pathway and carries out all of the actions. That's the final "after" picture.

There are two main take-aways in this figure. One, by implementing all of the actions, Orillia cuts its contribution to climate change by more than half. That's a significant change. Two, the actions with the biggest impacts take a long time to get going. Taking action now means the steepest reductions will not be visible until 2040. Change will feel slow at first and that may be discouraging. But with patience and dedication, the city will build momentum and reach its goals.

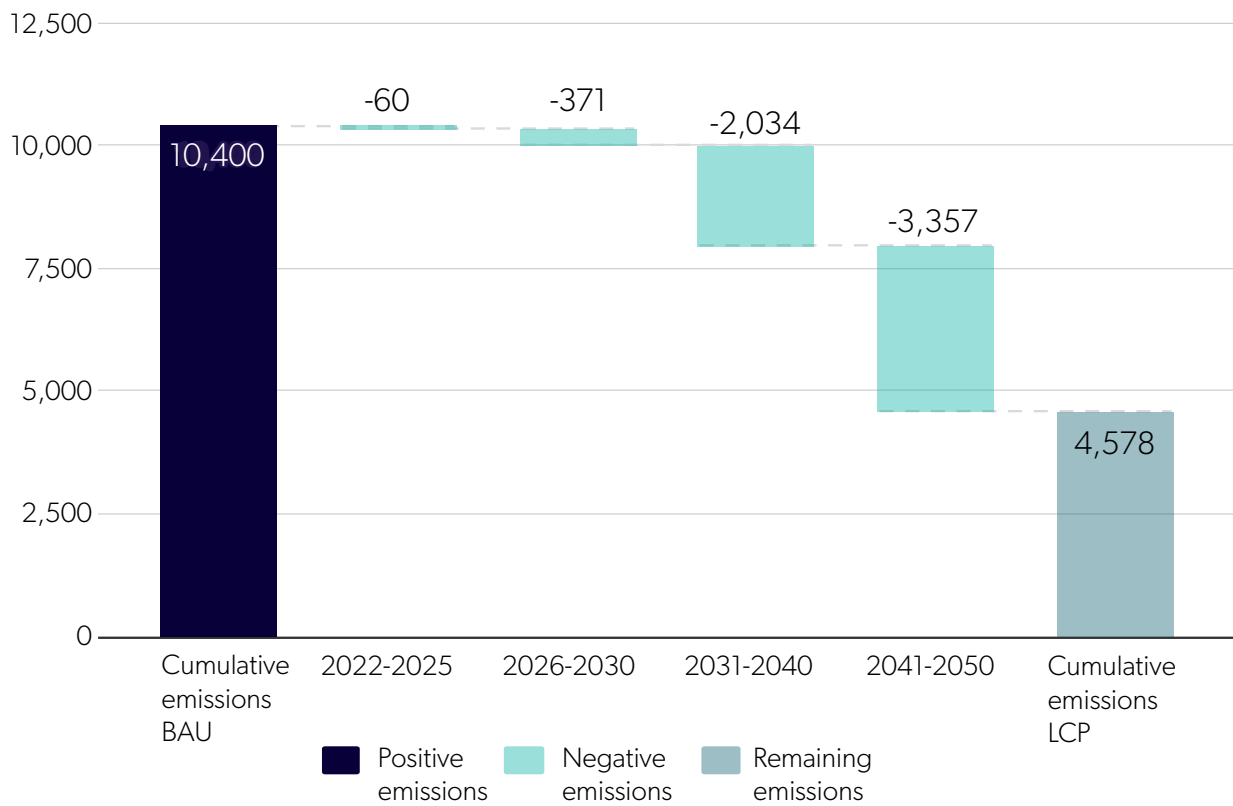
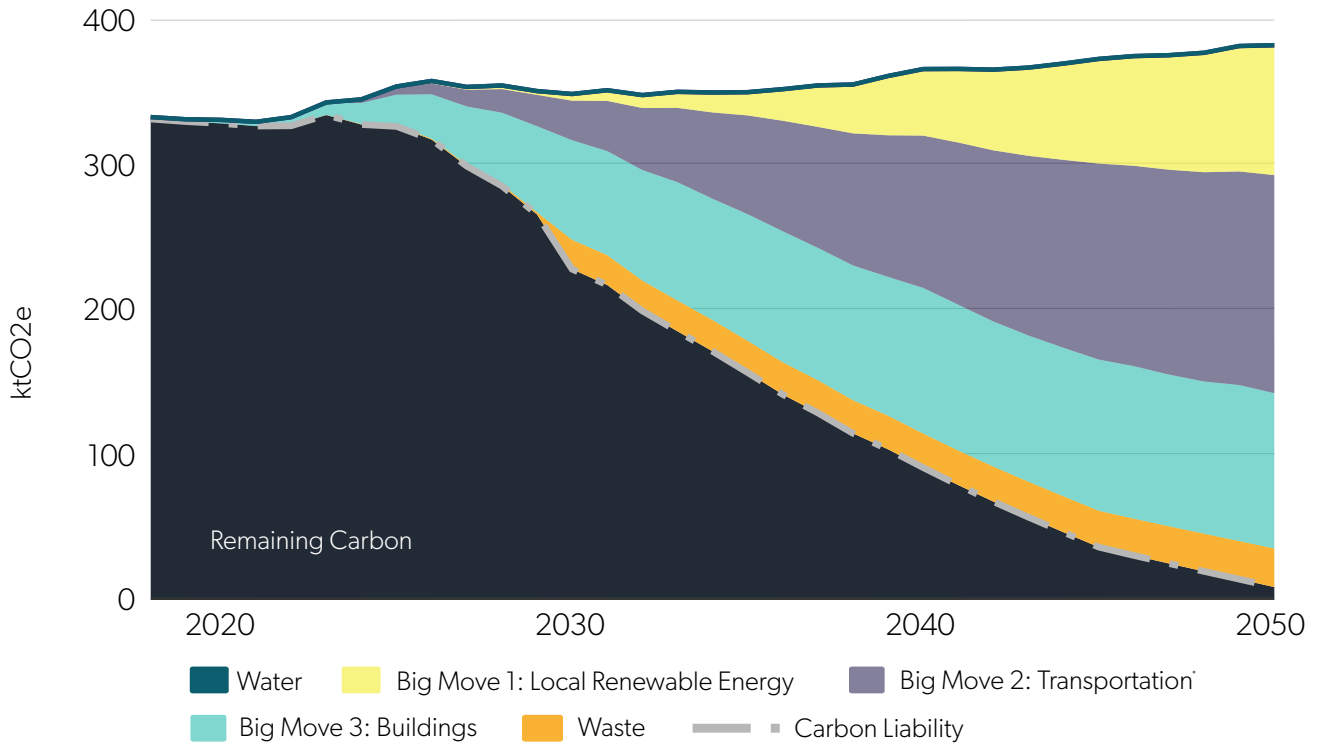


Figure 8. Two views on the low-carbon pathway—by Big Move (wedge) and by cumulative emissions (waterfall).

Table 5. The impact of the Big Moves.

GHG REDUCTION BY BIG MOVE (KTCO2E)				
	2022-2025	2026-2030	2031-2040	2041-2050
Remaining Emissions	1,313.2	1,392.4	1,500.2	372.6
Big Move 1: Local Renewable Energy	2.4	13.4	228.3	720.3
Big Move 2: Transportation	6.4	84.4	711.2	1,343.1
Big Move 3: Buildings	49.9	248.7	873.2	1,039.9
Waste	1.0	24.4	220.9	252.7
Water	0.0	0.1	0.3	0.6
Total reductions	60	371	2,034	3,357

Table 6. Explanation of Action table categories.

ACTION	LOW-CARBON PATHWAY OBJECTIVE	RECOMMENDED NEXT STEPS	POTENTIAL PARTNERS	MUNICIPAL ROLE
Number and name of the program or action recommended.	Identifies the sector or asset being addressed to achieve the low-carbon scenario (as modelled).	<p>Identifies which of the following for consideration in implementation:</p> <p>Program/Process: An ongoing activity undertaken by the municipality that demonstrates leadership and/or feasibility to the community with staff and financing to support the effort.</p> <p>Policy: A policy developed by the municipality, and approved by Council.</p> <p>Initiative: A study or project, undertaken by the municipality, private sector, not-for-profit sector, or other sectors, individually or collaboratively, with a specific focus, that is implemented for a set time period.</p> <p>Infrastructure: Investment in physical infrastructure by the municipality.</p>	Identifies potential partners for implementation of the action.	Describes the municipality's role in action implementation.

Table 7. Explanation of the Outcomes tables.

LOW-CARBON PATHWAY OUTCOMES	GHG IMPACT (CUMULATIVE REDUCTION) KT	GHG EMISSIONS REDUCTIONS RATING	COST RATING	INCREMENTAL SOCIETAL CAPITAL COST (\$, 2018, UNDISCOUNTED)	REPORTING METRICS	TIMING
Describes the end-state of the action associated with the low-carbon pathway.	Cumulative number of GHG emissions reductions in kilotonnes.	Describes the cumulative GHG emissions reduction impact for each action, compared to the business-as-planned scenario	<p>\$: <\$1,000,000</p> <p>\$\$: \$1,000,000-\$25,000,000</p> <p>\$\$\$: \$25,000,001-\$50,000,000</p> <p>\$\$\$\$: \$50,000,001-\$100,000,00</p> <p>\$\$\$\$\$: >\$100,000,000</p> <p>Costs and Savings are Relative to the Business-as-Usual Scenario: The financial analysis tracks projected costs and savings associated with low-carbon measures that are above and beyond the assumed business-as-usual costs and investments.</p>	Lists the capital cost, in \$2018, and the financial return.	The method and measurement unit for measuring the impact of the action taken. All metrics should be analyzed on an annual basis for those that are being actively implemented.	Recommended start and completion date for the Action. *Start date denotes when planning for the action Begins.
		Low: <100 kt -				
		Medium: 100-500 kt				
		High: 500+ kt				

The City of Orillia’s Climate Action Plan is an excellent example of how communities play a vital role in the transition to a clean energy future. Each has a unique opportunity to approach net-zero from a different perspective, and we see this in how Orillia is leveraging its own innovation, strengths, infrastructure, industries, and services to reduce its carbon footprint. As an energy leader, Enbridge Gas is pleased to partner with the city on conservation initiatives and can provide communities with guidance and expertise. Additionally, we invest in low- and no-carbon clean energy solutions including hydrogen, hybrid heating systems, renewable natural gas, and geothermal with great success. We believe that in working together, doing what we can, when we can, at every level and from every angle, we will achieve our collective goal. Congratulations to the Orillia community for taking this important step for climate action.

Enbridge Gas, member of the CBSC

2.5 BIG MOVE 1: Generating Renewable Energy: Solar for the Sunshine City

2.5.1 Overview

This section outlines the actions associated with Big Move 1: Generating Renewable Energy, and the impacts these actions will have on reducing emissions in Orillia's low-carbon future.

Each colourful wedge in the figure below shows the GHGs Orillia will not emit because of that wedge's actions. In this particular diagram, the actions associated with Big Move 1 are broken out and displayed individually. For context, the combined impacts of Big Moves 2&3 are also included.

The grey slope at the bottom are the GHGs still being emitted in each year. By 2050, the combined actions will have addressed nearly all of Orillia's emissions.

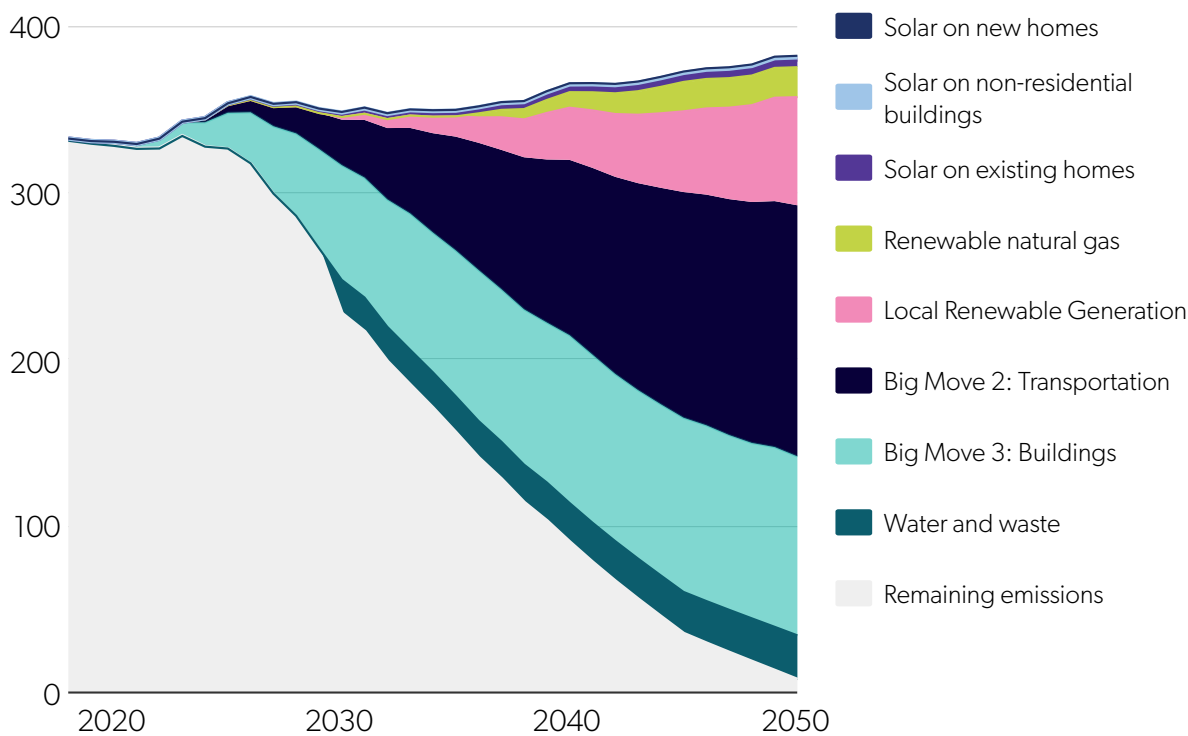


Figure 9. Big Move 1 renewable energy wedge.

Renewable energy replaces fossil fuel and non-renewable energy sources from the grid. The renewable energy actions recommended for the community Climate Action Plan mirror those recommended in Orillia's corporate plan and include the following:

- 1. Local Generation:** Local renewable energy generation on individual homes and properties would provide the greatest financial and economic benefits for the community. Local generation involves building and maintaining solar PV on roofs and other sites. Solar power does require an initial capital investment and its use is governed by provincial policy.

Why Solar?

Solar is a key technology for decarbonising the energy system. Solar costs have dropped rapidly and as a result are reliable and affordable. Solar is accessible to homeowners or businesses. Each installation has the impact of lowering consumption from the grid as the electricity is used locally, which helps create space for electrifying heating and transportation. Solar can be installed in a variety of configurations and locations—complimenting other uses, such as on roofs and over parking lots. Because solar is decentralised, it also increases the resilience of the community to extreme weather events. Installing solar requires a capital investment and a location to install it. A solar garden is a strategy to enable broader participation for those without land and with limited capital. A solar garden is a large solar installation installed by an energy cooperative, which can include investment in small financial increments. From an electricity system perspective, solar is considered intermittent power and needs to be balanced with other sources of generation and/or energy storage. Orillia Power Generation’s hydro power capacity complements solar generation.

2. Advocacy for a Decarbonized Ontario Electricity Grid: Presently, Ontario has no concrete plan to decarbonize its electricity grid before 2030.²⁸ Many cities in Ontario have developed similar plans to decarbonize their corporate and community operations and are advocating for a zero-emissions provincial electricity grid.

The price of electricity from new power plants

Electricity prices are expressed in 'levelized costs of energy' (LCOE). LCOEs captures the cost of building the power plant itself as well as the ongoing costs for fuel and operating the power plant over its lifetime.

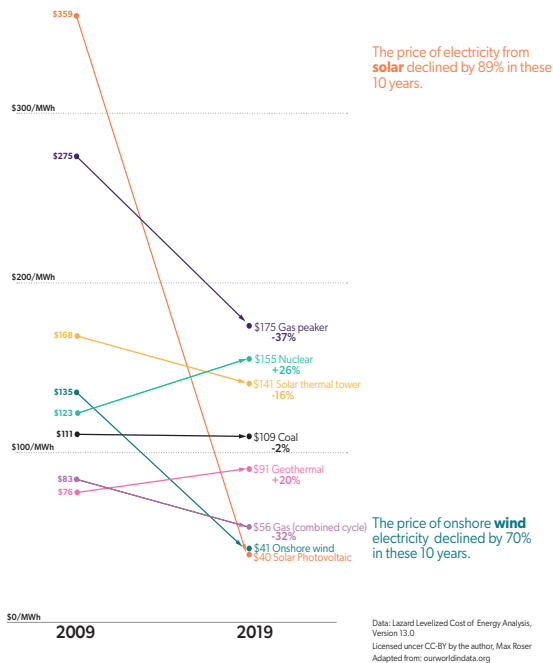


Figure 10. The cost of solar PV is decreasing.

²⁸ The IESO currently has a study underway to explore potential pathways for decarbonising the provincial electricity system. For more information, see: <https://ieso.ca/Sector-Participants/IESO-News/2022/03/Pathways-to-Decarbonization-Study-Underway>

A GHG Intensive Provincial Electricity Grid?

Ontario's electricity system is relatively clean compared to the electricity systems in other provinces, but it is projected to become more GHG intensive per unit of electricity generated (Figure 11) due to nuclear retirements and the addition of gas generation. This trend has wide-ranging implications for Orillia's ability to rapidly reduce GHG emissions, as electrification of transportation and heating is the primary pathway.

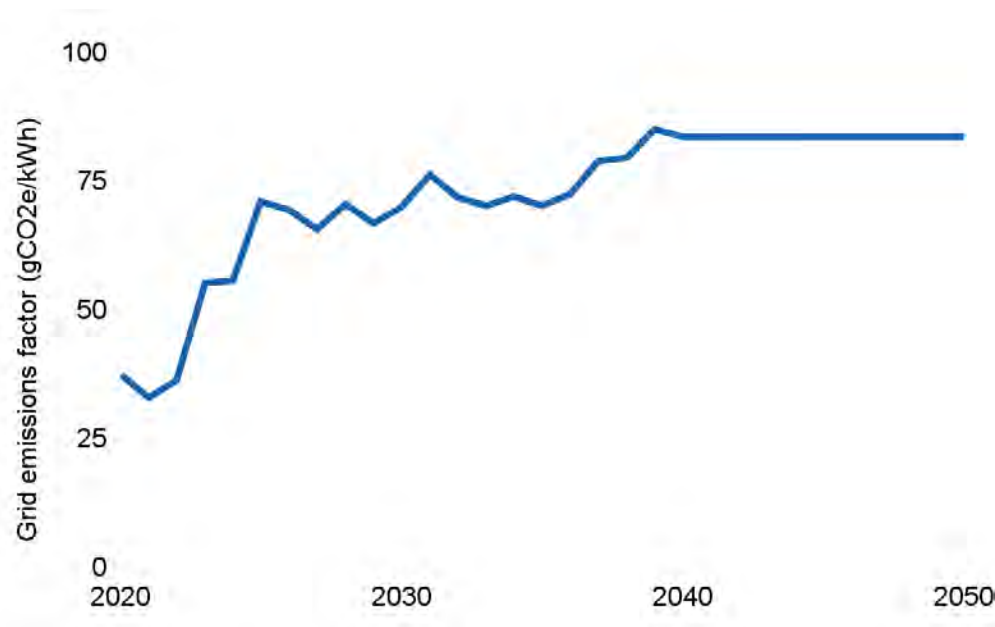


Figure 11. Projection of the Ontario grid's GHG emissions intensity.

3. **Renewable Energy Certificates (RECs):** Renewable energy certificates are used to procure the clean attributes of renewable electricity generated off-site. If the City finds that generating its own solar power is infeasible for logistical, financial, and/or policy reasons, then RECs could be used to offset the City's remaining corporate emissions. Ontario has announced that it is creating a Clean Energy Credit registry to facilitate this process.²⁹
4. **Power Purchasing Agreements (PPAs):** A power purchase agreement is used to directly purchase electricity from an off-site provider. In this case, the desired energy would be renewable electricity. The City would have to investigate and/or create the policy conditions needed to develop a PPA and investigate if Orillia Power Generation could enter into a PPA with a provider. Some cities have also established renewable energy cooperatives as a way of increasing renewable supply while retaining local control.

²⁹ Barretto, C. (2022). Ontario to create voluntary clean energy credit market. Retrieved from: https://cassels.com/insights/ontario-to-create-voluntary-clean-energy-credit-market/?utm_source=Mondaq&utm_medium=syndication&utm_campaign=LinkedIn-integration

2.5.2 Targets: Big Move 1

Table 8. Solar PV targets

	2023–2025	2026–2030	2031–2040	2041–2050
Solar PV installed (MW)	12.05	17.06	17.6	15.44

2.5.3 Implementation: Big Move 1

Table 9. Implementation Actions

ACTION	LOW-CARBON PATHWAY OBJECTIVE	RECOMMENDED NEXT STEPS	POTENTIAL PARTNERS	MUNICIPAL ROLE
1.1 Residential solar program	Maximize new residential building solar PV Maximize existing building solar PV	Develop an expedited permitting process. Develop a financing program (i.e. Solar Colchester, Halifax’s Solar City). Incorporate a requirement for solar into a green development standard (see also: action 3.3).	FCM, local solar installers	Program development and delivery.
1.2 Community solar program	Maximize new non-residential solar PV	Work with OPG or a cooperative to develop a solar garden to advance equity outcomes.	OPG, renewable energy cooperative	Provide access to municipal land or roof space.
1.3 Business solar program	Maximize new non-residential solar PV	Identify feasible locations or roof spaces. Coordinate with OPG and businesses.	OPG, renewable energy cooperative	Provide incentives to businesses such as reduced development cost charges.
1.4 Renewable natural gas generation	Fuel switch to RNG	Work with OPG to develop a RNG project from organic waste streams.	OPG, FCM, Enbridge	Undertake a feasibility study.
1.5 Advocate for a zero emission grid	Purchase RECs	Actively engage with other levels of government and IESO.	Other municipalities, Clean Air Partnership, businesses	Coordinate with other municipalities.
1.6 Purchase Clean Energy Credits (RECs)	Fuel switch to RNG Purchase RECs	Purchase green electricity and RNG on behalf of the community	OPG	Develop an opt out rider on municipal taxes to purchase green electricity.

2.5.4 Outcomes: Big Move 1

Table 10. Low-Carbon Pathway Outcomes

LOW-CARBON PATHWAY OUTCOMES	GHG IMPACT (CUMULATIVE REDUCTION) KTCO2E	GHG EMISSIONS REDUCTIONS RATING	COST RATING	INCREMENTAL SOCIETAL CAPITAL COST (\$, 2018, UNDISCOUNTED)	REPORTING METRICS	TIMING
Maximize new non-residential solar PV	21	Low	\$\$	16 M Return: Yes	kW of solar PV installed Number of solar installations	Begin: Immediately End: 2050
Maximize existing building solar PV	84	Low	\$\$\$\$	68.7 M Return: Yes	kW of solar PV installed Number of solar installations	Begin: Immediately End: 2050
Maximize new residential building solar PV	15	Low	\$\$	14.5 M Return: Yes	kW of solar PV installed Number of solar installations	Begin: Immediately End: 2050
Fuel switch to RNG	190	Medium	\$\$\$	27.6 M Return: No	% of fuel that is renewable in the community	Begin: 2035 End: 2045
Purchase RECs	655	High	\$\$\$\$	69.3 M Return: No	Number of MWs of RECs purchased to offset emissions	Begin: 2030 End: 2050

2.5.5 INSPIRATION: BIG MOVE 1

Community-owned renewable power

Community renewable energy will play a critical role in the path to net-zero for municipalities across Canada. From an equity perspective, this approach can provide local, affordable energy to those who traditionally cannot invest in renewables such as renters, businesses, and low-income households.³⁰ There are many ways that communities can approach renewable power generation. Many ownership models exist, such as co-operatives, investment funds, and solar gardens. Co-operative business models are enabled by legislation in all provinces and territories.³¹ Municipalities can help establish community projects by providing land, expediting permitting and approval processes, and enabling citizen participation or even having an ownership stake in the system.³² The ownership design can be made as specific as each community requires; community-owned local renewable power is positioned for growth as communities increasingly become electrified while energy prices rise and local populations continue to grow.

Community District Energy in Revelstoke, British Columbia³³

The City of Revelstoke's biomass-fired community energy system uses wood waste from a local timber mill to provide heat to downtown core buildings through a district energy loop. In 2001, community members began volunteering to create a biomass energy project with the timber mill's waste wood, which was originally incinerated. The community group created a wholly owned subsidiary of the municipality — the Revelstoke Community Energy Corporation — which owns and operates the energy system. The initial investment was \$5.6 million, with an estimated payback period of five years. Operating since 2005, the community energy system offsets over 3,700 tonnes of greenhouse gas emissions (GHGs) every year, improves local air quality, increases job security and lowers energy costs.^{34,35}

³⁰ Solar Energy Industries Association. 2016. Community Solar.

³¹ Government of Canada. An Information Guide on Co-operatives. 2015. Strategic Policy Sector, Innovation, Science, and Economic Development Canada.

³² ICLEI Canada, 2018. On the money: Financing tools for local climate action. Partners for Climate Protection.

³³ Ibid.

³⁴ B.C. Ministry of Community & Rural Development. N.d. Green Communities: Integrated Resource Recovery Case Study: Revelstoke Community Energy System.

³⁵ Biomass Energy Resource Center. 2009. Community District Energy: City of Revelstoke.

2.6 BIG MOVE 2: Transportation: How We Will Get Around

2.6.1 Overview

This section outlines the actions associated with Big Move 2: Transportation, and the impacts these actions will have on reducing emissions in Orillia's low-carbon future.

Each colourful wedge in the figure below shows the GHGs Orillia will not emit because of that wedge's actions. In this particular diagram, the actions associated with Big Move 2 are broken out and displayed individually. For context, the combined impacts of Big Moves 1&3 are also included.

The grey slope at the bottom are the GHGs still being emitted in each year. By 2050, the combined actions will have addressed nearly all of Orillia's emissions.

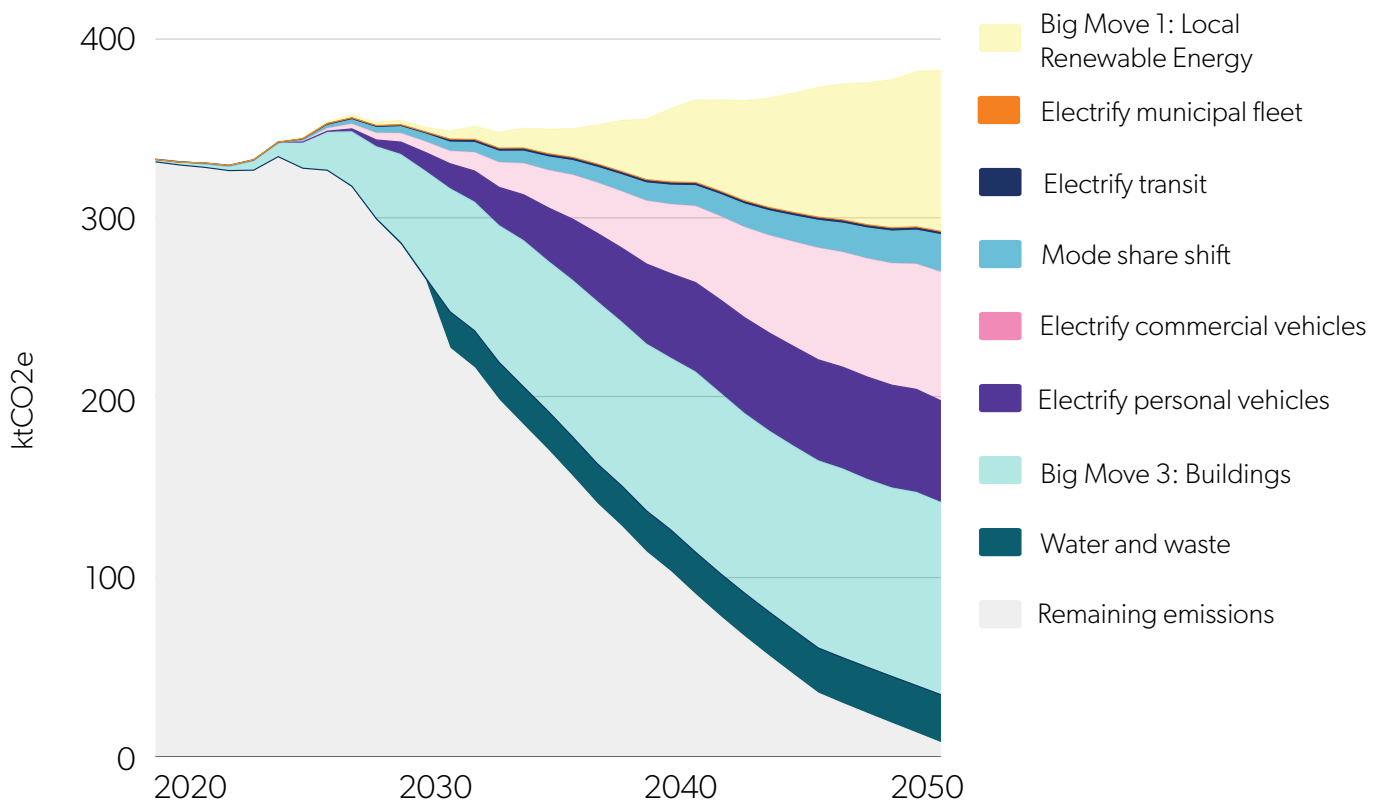


Figure 12. Big Move 2 transportation wedges.

Transportation accounted for 56% of emissions in Orillia in 2018. By 2050, this proportion is expected to decrease to 49% due to an uptake in low-emissions vehicles; however, this decrease does not contribute greatly to Orillia’s low-emissions target. To meet Orillia’s emissions reductions targets, reducing transportation-related emissions needs to be a priority. This can be achieved by prioritizing the following three modes of transportation:

- 1. Transitioning to low-emissions vehicles:** Low-emissions vehicles are key to reducing emissions from personal use vehicles, commercial vehicles, and transit.
- 2. Improved and accessible transit:** Transit has a lower emissions-per-passenger footprint than personal-use vehicles. Even when all vehicles are low-emissions, transit can provide a safe, affordable option for residents.
- 3. Investing in the active transportation system:** Like transit, a well-designed active transportation system can provide a safe and affordable option for residents to move around Orillia. Active transportation promotes physical well-being and equity while reducing traffic congestion and personal stress.

2.6.2 Targets: Big Move 2

Table 11. EV and mode share targets

		2016	2025	2030	2040	2050	
Share of total personal vehicles that is electric	BAU	0%	3%	6%	13%	14%	
	LC	0%	4%	27%	85%	100%	
Share of total energy used for transit that is electric	BAU	0%	1%	2%	4%	5%	
	LC	0%	2%	14%	58%	82%	
Mode share	BAU	Bike	2%	2%	2%	2%	2%
		Personal Vehicle	88%	89%	89%	90%	90%
		Transit	4%	4%	4%	4%	4%
		Walk	7%	6%	6%	5%	5%
Mode share	LC	Bike	2%	2%	4%	7%	10%
		Personal Vehicle	88%	87%	83%	73%	63%
		Transit	4%	4%	7%	12%	17%
		Walk	7%	6%	7%	9%	11%

2.6.3 Implementation: Big Move 2

Table 13. Implementation Actions

ACTION	LOW-CARBON PATHWAY OUTCOME	RECOMMENDED NEXT STEPS	POTENTIAL PARTNERS	MUNICIPAL ROLE
2.1 Private charging stations	Electrify personal use vehicles	Integrate EV charging into an Orillia Green Standard.	Households, building owners, local business owners.	Provide incentives.
	Electrify commercial vehicles	Provide an incentive for EV charging in multi-unit retrofits.		
2.2 Public charging stations	Electrify personal use vehicles	Ensure equitable access to charging stations across the City.	OPG, Infrastructure Canada, EV charging station providers.	Install infrastructure; partner with a third party provider.
	Electrify commercial vehicles	Partner with OPG on EV charging stations in public locations and on-street parking.		
2.3 On-demand transit	Mode-share shift*: Transit	Evaluate on-demand transit options using electric vehicles.	Orillia Transit	Provide or contract on-demand transit.
2.4 Fleet electrification	Electrify commercial vehicles	Coordinate fleet owners and operators to accelerate EV uptake.	Organisations with fleets (university, college, hospital, private businesses).	Coordinate a fleet electrification initiative.
2.5 E-bike Rebate Program	Mode-share shift*: Active Transportation	Provide an incentive for all residents, with greater incentives for low-income households, to purchase e-bikes.	FCM, bike shops.	Provide the incentive, identify approved bike businesses to participate, administer the incentive application process.
2.6 Transit investments	Mode-share shift*: Transit	Implement the "Aggressive Scenario" in the MMTP ³⁶	Municipality.	Increase investment in transit.
		Provide free or low-cost transit to select demographics such as youth, seniors, and individuals living below a determined income threshold.		
		Provide a workplace transit pass program.		
2.7 EV Policy	Electrify municipal fleet Electrify transit	Implement a policy to only purchase EVs for the municipal and transit fleet unless an exception can be justified.	Municipality.	Adopt a policy.

³⁶ In the MMTP, the middle scenario was chosen through the plan development process and was costed. However, public engagement and a review of the local context in Orillia for this energy and emissions plan highlights the imperative for enhanced investment in transit.

ACTION	LOW-CARBON PATHWAY OUTCOME	RECOMMENDED NEXT STEPS	POTENTIAL PARTNERS	MUNICIPAL ROLE
2.8 A Cycling City	Mode-share shift*: Active Transportation	Provide physically-separated bike lanes for commuting. Partner with schools on bike training and promotion. Provide bicycle fix-it stations and end-of-trip facilities where possible and ensure all active transportation corridors are well lit. Ensure expedited winter maintenance of cycling pathways	Municipality, Sustainable Orillia. Council's Active Transportation Committee	Develop and implement an enhanced cycling network plan.
2.9 A "15 Minute" Orillia	Various. The combination of actions taken in low-carbon city planning needs to ensure that everyone living in the city has access to essential urban services within a 15 minute walk or bike.	Meet with the planning department to incorporate targets for mixed use development where feasible. Define essential urban services.	Orillia's Planning Department	Designate number of homes within a 15 minute walking or cycling distance for essential urban services.

Transitioning to Low-Emissions Vehicles

The Government of Canada has set a mandatory target for all light- and medium-duty vehicle sales across the country to be electric by 2035. Due to the lifecycle length of the average vehicle, there will still be gas and diesel emissions from light- and medium-duty vehicles by 2050. To minimize these straggling emissions, Orillia can set the conditions for electric vehicle uptake prior to the 2035 target, with 80% of vehicle purchases being electric by 2030.

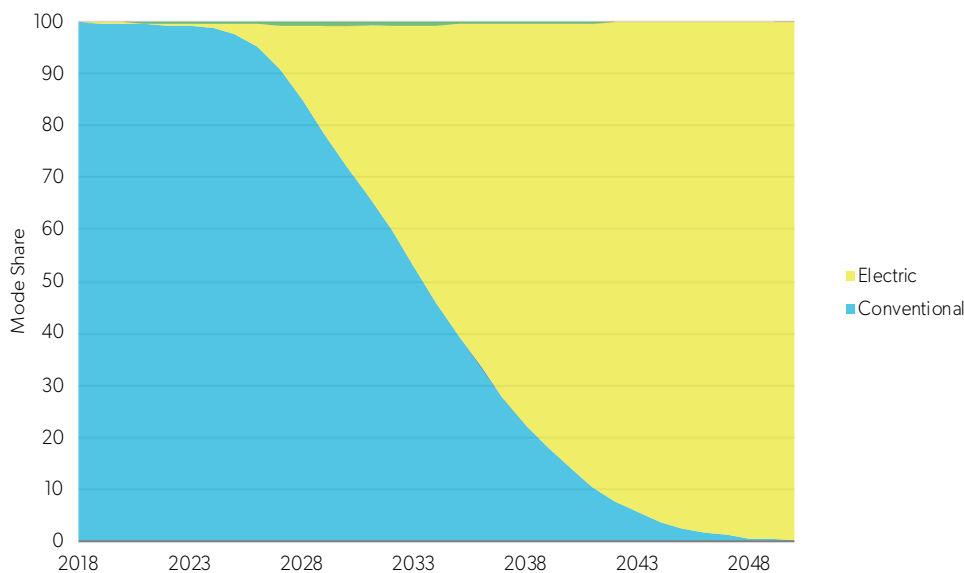


Figure 14. EVs as a share of the total private vehicle fleet in the low-carbon scenario.

2.6.4 Outcomes: Big Move 2

Table 14. Low-Carbon Pathway Outcomes.

OUTCOME	GHG IMPACT (CUMULATIVE REDUCTION) KT	GHG EMISSIONS REDUCTIONS RATING	COST RATING	INCREMENTAL SOCIETAL CAPITAL COST (\$, 2018, UNDISCOUNTED)	REPORTING METRICS	TIMING
Electrify personal use vehicles	936	High	\$\$	\$20.7 M Return: Yes	% of new vehicles registered that are electric	Begin: Immediately End: 2035 (all purchases electric)
Electrify commercial vehicles (electric and hydrogen for heavy-duty)	905	High	\$\$\$	\$27.8 M Return: Yes	% of new vehicles registered that are electric	Begin: Immediately End: 2035 all purchases electric for light- and medium- duty; 2045 all purchases electric and hydrogen for heavy-duty
Electrify transit	37	Low	\$\$	\$4.3 M Return: Yes	%/# of buses electric	Begin: Immediately End: 2040
Electrify municipal fleet	9	Low	\$\$	\$1.9 M Return: Yes	%/# of fleet vehicles electric	Begin: Immediately End: 2023 (all procurement electric)
Mode-share shift*: Transit		Medium	\$\$\$\$	\$65.5 M Return: Yes	Mode share	Begin: Immediately End: 2050
Mode share shift*: Active Transportation	258	Medium	\$\$\$\$	\$65.5 M Return: Yes	Mode share	Begin: Immediately End: 2050

2.6.5 Inspiration: Big Move 2

Zoning Bylaw Amendment in Port Moody, B.C.

The City of Port Moody, British Columbia, introduced an amendment to their Zoning Bylaw to require electric vehicle charging infrastructure for residential units (minimum one Level 2 charger for each unit) and commercial parking spaces (20% to include Level 2 chargers).³⁷

³⁷ City of Port Moody. No Date. Electrical Vehicle Charging Planning Requirements (webpage). Retrieved online, February 25, 2022. <https://www.portmoody.ca/en/business-and-development/electrical-vehicle-charging-planning-requirements.aspx>

Zero Fares on Intercity Transit

Starting on January 1, 2020, Olympia, Washington began a five-year free transit fare pilot for its bus and Dial-a-Ride services. The rationale behind the pilot was that it was the easiest and most effective and efficient way to eliminate the inefficiencies associated with fare collection, although Intercity also acknowledges the pilot's positive impact on accessibility, congestion reduction, and the environment.³⁸ After just one month of the program, Olympia saw a 20% increase in ridership compared to the previous year, which is equivalent to over 60,000 more riders.

Pilot Program Encourages Residents to Purchase E-Bikes in Saanich, B.C.

In October 2021, in an effort to reduce local GHGs and increase active transportation, the District of Saanich on southern Vancouver Island launched a pilot program offering rebates to residents interested in purchasing a new electrically assisted bicycle (e-bike).³⁹ The District estimates that this program will save between 1,000 and 2,000 tCO₂e by 2030.

The program was designed to be accessible to residents of all income levels. Applicants must reside in Saanich and the rebate is applied after the purchase for bikes bought at locally participating bike stores. One e-bike incentive per household is allowed, and the incentive ranges from \$350 to \$1,600. All residents are eligible for the \$350 rebate, but proof of income is required for a larger rebate. Residents can pre-register at saanich.ca/ebike. The District partnered with the Transportation ACES program for advice on equity considerations and the UBC REACT Lab to measure the impacts on travel behaviour and GHG emissions.

³⁸ Intercity Transit. No Date. FAQ (webpage). Retrieved on February 25th, 2022. <https://www.intercitytransit.com/zerofare-faqs>

³⁹ District of Saanich. 2021. Saanich launches new pilot program to help more residents switch to e-bikes. Retrieved online, February 25, 2022. <https://www.saanich.ca/EN/main/news-events/news-archives/2021/saanich-launches-new-pilot-program-to-help-more-residents-switch-to-e-bikes.html>

Active Transportation

From the
Museum of
Art & History
30 Peter St. S

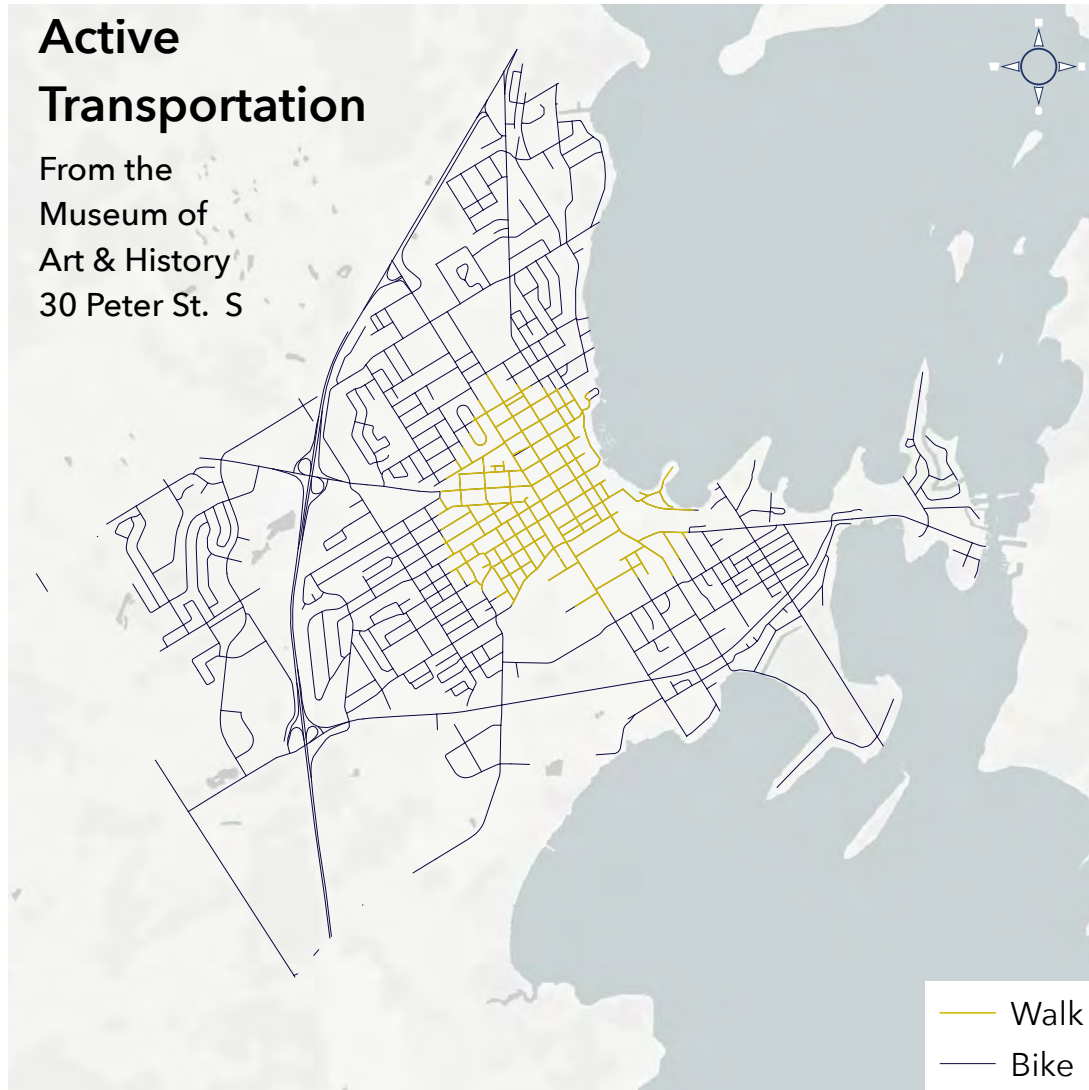


Figure 15. A map showing 15 minute walk times (yellow) and bike times (blue) from the Museum of Art and History at 30 Peter St. South in Orillia, Ontario.

Bike and Electric Scooter Sharing in Edmonton, AB

Edmonton is one of the first northern Canadian cities to offer bike, e-bike, and e-scooter sharing stations. The City developed a process to accept applications for the Active Transportation Vehicle Share Program and provided licences to three service providers in 2021. The City also developed parking and riding rules and continues to explore the appropriate number of service providers required to service the city while maintaining safety and enforcement.⁴⁰

⁴⁰ City of Edmonton. 2021. Bike and Electric Scooter Sharing (webpage). Retrieved online, February 25, 2022. https://www.edmonton.ca/transportation/cycling_walking/bike-electric-scooter-sharing

Cycling in Copenhagen, Denmark

In Copenhagen, intelligent transport systems optimize the city's traffic signals to benefit bicyclists and buses. The Danish have also significantly invested in cycling infrastructure, including separated cycle lanes along many streets. In 2019, 62% of all trips to and from Copenhagen for work or study were by bike. In total, 1.4 million kilometres are cycled in the city on an average weekday.⁴¹

What does transit have to do with equity?

A vehicle-based transit system constrains the mobility of those without a car, which can include people with a low income, youth, and the elderly. Further, the general bias towards investment in vehicular infrastructure causes damage to both youth and elderly because of safety issues and exposure to air pollution, to which they are particularly vulnerable. Air pollution from traffic has resulted in cases of neurological disorders including Parkinson's disease, Alzheimer's disease and other dementias, acute bronchitis in children, asthma, and respiratory illness, among other impacts. Transit and active infrastructure are important strategies to support an equitable approach to mobility.

Walking and cycling in all types of weather conditions in all types of weather

Canadian-led research conducted by the Clean Air Partnership indicates that weather is not the deterrent to active transportation uptake that it is often made out to be. The researchers noted that despite being the wettest Canadian city, Vancouver has the greatest active mode share of any other city in Canada. Vienna and Berlin, which were also analysed in the study, have very low amounts of annual sunshine, and yet they boast some of the highest active modes recorded.

A key factor that impacts active mode share is the availability of infrastructure, especially mode-specific infrastructure that allows for separation from other modes, such as vehicular traffic. The ability to switch modes (e.g. bringing a bike on transit) also has an impact, as does trip length. Trip length is impacted by population density and planning decisions about whether to create mixed-use neighbourhoods or separate residential and commercial areas.

⁴¹ Kirschbaum, E. August 8 2019. "Copenhagen has taken bicycle commuting to a whole new level," Los Angeles Times (online new article). Retrieved online, February 25, 2022. <https://www.latimes.com/world-nation/story/2019-08-07/copenhagen-has-taken-bicycle-commuting-to-a-new-level>



Figure 16. A map of the competing pressures of commercial and residential buildings as they relate to transportation needs, in Orillia.

In any city, the fossil fuels used to heat buildings and run vehicles exert pressure on the city's overall emissions profile. But where those pressures are felt most intensely differs by city, and differs by region within one city. In Orillia, commercial and residential buildings and transportation pressures exist in each region but are clustered in pockets. The above map (Figure 16) shows how the pressure exerted by these three elements compare within each transportation zone and how they are distributed across the city. Larger bubbles indicate that the pressure from that element is greater than in other regions, and show where types of decarbonization actions will be concentrated. For example, residential retrofits will be most intense in a ring around the centre of the city. Commercial retrofits will be more concentrated to the south of the centre and the city's outskirts. More low-carbon transit options will be required in the city centre, and in places with large clusters of commercial buildings.

2.7 BIG MOVE 3: BUILDINGS: WHERE AND HOW WE LIVE

2.7.1 Overview

This section outlines the actions associated with Big Move 3: Buildings, and the impacts these actions will have on reducing emissions in Orillia’s low-carbon future.

Each colourful wedge in the figure below shows the GHGs Orillia will not emit because of that wedge’s actions. In this particular diagram, the actions associated with Big Move 3 are broken out and displayed individually. For context, the combined impacts of Big Moves 1&2 are also included.

The grey slope at the bottom are the GHGs still being emitted in each year. By 2050, the combined actions will have addressed nearly all of Orillia’s emissions.

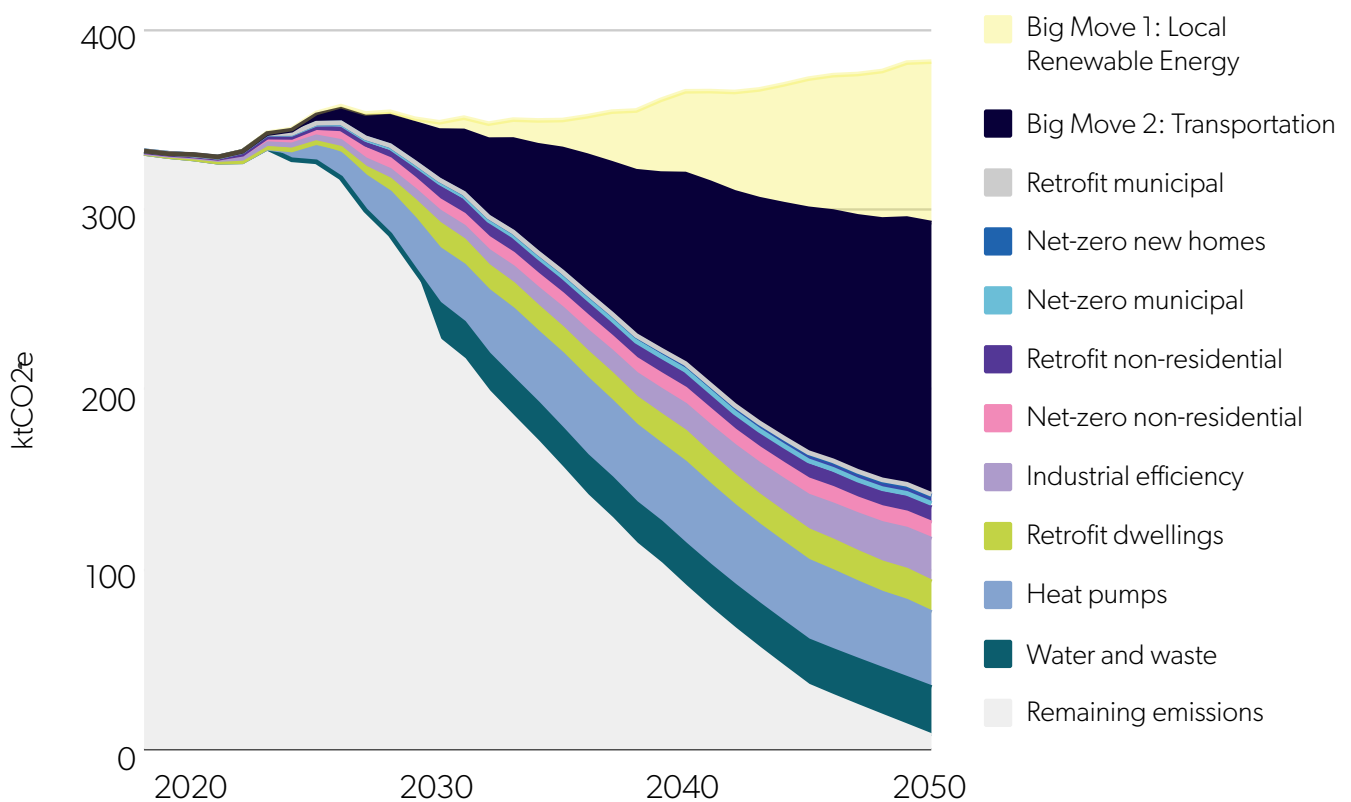


Figure 17. Big Move 3: Building wedges.

Buildings account for more than 40% of total community emissions in Orillia. This is expected to increase to 45% of the emissions share by 2050 based on current policies and plans. To achieve Orillia’s emissions reduction target, both existing and new buildings will need to be addressed in the following ways:

- 1. Deep retrofits for existing building stock:** To drastically decrease emissions associated with the operation of existing buildings in Orillia.
- 2. High standards for new builds:** To ensure new buildings are not future sources of emissions. As buildings are long-lasting assets, decisions made today about their building materials and heating systems create a lock-in to their future energy use and emissions.

2.7.2 Targets: Big Move 3

Table 15. Retrofits and new construction

BUILDING SECTOR/ TYPE	RETROFIT SCHEDULE	RETROFIT DETAILS
Residential—single and multi-unit	Pre-1980 buildings: 65% retrofit by 2030 (4,100 homes) 85% retrofit by 2040 (1,300 homes) 95% retrofit by 2050 (600 homes) Post-1980 buildings: 40% by 2030 (1,500 homes) 65% by 2040 (1,000 homes) 95% by 2050 (1,200 homes)	Target 50% thermal and 25% electrical savings for each building
Commercial and institutional	Pre-1980 buildings: 65% retrofit by 2030 85% retrofit by 2040 95% retrofit by 2050 Post-1980 buildings: 40% by 2030 65% by 2040 95% by 2050	Target 50% thermal and 30% electrical savings for each building
Industrial		Target 30% electrical savings for each building
Municipal	100% retrofit by 2040	Achieve 50% TEDI and 10% EUI reduction

What Constitutes a Deep Retrofit?

Toronto's Net-Zero Existing Buildings Strategy defines a GHG reduction retrofit as meeting two criteria:⁴²

1. A minimum upgrade package performance of 50% reduction in GHG emissions, reflecting established best practice in retrofit activities.
2. A near-net-zero pathway of at least an 80% reduction in GHG emissions, including a complete or near-complete fuel switch to electricity or other zero-carbon fuel source.

A deep retrofit typically includes improvements to the envelope and fuel switching from natural gas to electricity. The combination of the efficiency of heat pumps and the improved performance in the thermal envelope can reduce total electricity consumption. An additional benefit is that the improved performance of the building envelope can reduce the size of the HVAC equipment required thereby reducing capital costs, to "tunnel through the cost barrier."

Scaling Deep Retrofits

Deep retrofits target energy savings greater than 50%. Retrofit programs in Canada have typically focused on retrofitting one building at a time. This can make the process costly for building owners and timely at a community scale. To retrofit buildings at the scale required to slow climate change, one potential solution, the Energiesprong program, is emerging from the Netherlands. The process involves using prefabricated façades and building envelopes, efficient heating and cooling systems, and insulated roofs, sometimes fitted with solar PV. These retrofits can be applied to one or many buildings (in close proximity) at a time. Energiesprong retrofits can be completed in as few as 10 days.

⁴² Integral, WSP, Windfall Ecology Centre and Reep Green Solutions (2021). The City of Toronto's Net Zero Existing Buildings Strategy. Retrieved from: <https://www.toronto.ca/legdocs/mmis/2021/ie/bgrd/backgroundfile-168402.pdf>

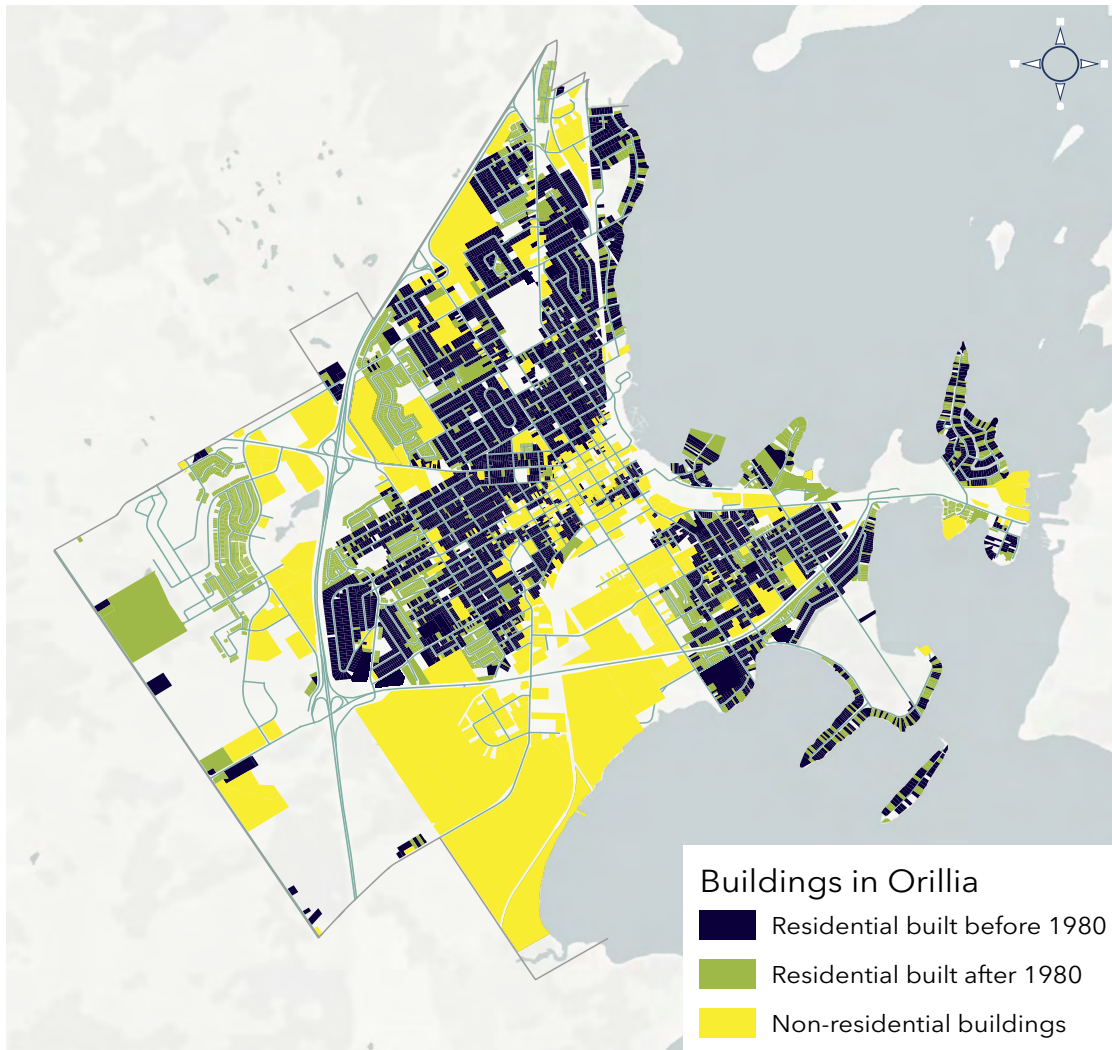


Figure 18: Map of buildings in Orillia, pre and post 1980.

2.7.3 Implementation: Big Move 3

Table 16. Implementation Actions

ACTION	OBJECTIVE	RECOMMENDED NEXT STEPS	POTENTIAL PARTNERS	MUNICIPAL ROLE
3.1 Orillia Retrofit Savings Program: Residential and Non-Residential	Retrofit residential buildings Retrofit non-residential buildings	Develop LIC retrofit program focussed on deep climate retrofits Develop an affordable, social housing stream for rental housing with incentives. Develop a commercial stream for multi-unit and non-residential buildings.	OPG, contractors, equipment suppliers, BILD, Efficiency Capital, FCM, Clean Air Partnership, Sustainable Orillia.	Develop and deliver the program.
3.2 Solar Neighbourhoods Pilot Program	Retrofit residential buildings	Develop a pilot neighbourhood retrofit program.	OPG, HydroOne, neighbourhood association, FCM, Sustainable Orillia.	Coordinate the pilot program and report on results.
3.3 Orillia Green Building Standard	New residential buildings energy-use intensity reduction New non-residential buildings energy-use intensity reduction	Develop a green standard policy for site planning, including a climate minimum performance standard.	Clean Air Partnership, BILD, CHBA.	Implement the new policy standard.

2.7.4 Outcomes: Big Move 3

Table 17. Low-Carbon Pathway Outcomes

ACTION	GHG IMPACT (CUMULATIVE)	GHG REDUCTIONS RATING	COST RATING	SOCIETAL INVESTMENT	REPORTING METRICS	TIMING
Retrofit residential buildings	362	Medium	\$\$\$\$\$	\$283.1 M Return: No	% buildings retrofit	Begin: Immediately End: 2050
Retrofit non-residential buildings	179	Medium	\$\$\$\$	\$100 M Return: No	% buildings retrofit	Begin: Immediately End: 2050
Retrofit municipal buildings	10	Low	\$\$	\$7.9 M Return: No	% buildings retrofit	Begin: Immediately End: 2040
Convert heating systems to heat pumps	965	High	\$\$\$\$\$	\$493.7 M Return: No	% heating systems converted	Begin: Immediately End: 2050

ACTION	GHG IMPACT (CUMULATIVE)	GHG REDUCTIONS RATING	COST RATING	SOCIETAL INVESTMENT	REPORTING METRICS	TIMING
New residential buildings energy-use intensity reduction	69	Low	\$\$	\$22.8 M Return: Yes	% buildings conforming to standards/voluntary measures	Begin: Immediately End: 2030
New non-residential buildings energy-use intensity reduction	212	Medium	\$\$\$	\$35.7 M Return: Yes	% buildings conforming to standards/voluntary measures	Begin: Immediately End: 2030
New municipal buildings energy-use intensity reduction	73	Low	\$	\$276 k Return: Yes	% buildings conforming to standards/voluntary measures	Begin: Immediately End: 2030

2.7.5 Inspiration: Big Move 3

Toronto Home Energy Loan Program⁴³

The Toronto Home Energy Loan Program (HELP), offered by the City of Toronto, lends money to homeowners to cover the upfront cost of energy efficiency improvements. The loan can be up to \$75,000 or 10 per cent of current assessment value of the home, which is paid back through the property tax bill. The interest rate is fixed at two per cent for a five-year term, 2.75 per cent for a 10-year term, or 3.54 per cent for a 15-year term. From January 2014 to December 2016, HELP funded 125 projects totalling \$2.1 million, saving homeowners an average of \$560 per year, and reducing 395 tonnes of GHGs annually. An easy application process, good customer support, and transferability to future owners were identified as key factors in the program’s success. However, the program faced several challenges during implementation. For instance, only half of mortgage lenders gave consent, which is required to ensure that enrollment in the program does not breach the homeowner’s mortgage terms. In addition, the marketing and promotion of the program was labour-intensive and difficult to sustain over time. Nonetheless, the program demonstrates the potential of LICs to reduce barriers and encourage energy-efficiency retrofits in Canada’s building stock.⁴⁴

⁴³ICLEI Canada, 2018. On the money: Financing tools for local climate action. Partners for Climate Protection.

⁴⁴City of Toronto, 2017. Home Energy Loan Program and High-rise Retrofit Improvement Support Program Evaluation. Report for Action PE18.4.

Sundance Cooperative Housing

Sundance Cooperative Housing in Edmonton is a mixed-income community that houses 150 people in 59 units.⁴⁵ The cooperative is undertaking a deep energy retrofit, based on a feasibility study that produced a comprehensive refinancing and revitalization plan focusing on building envelope refurbishment and repair and meeting current building code requirements.

Research, development, and design were completed in 2019, and construction is currently underway. To limit disruption to residents and to create cost efficiencies, new, energy efficient exterior wall panels were designed and constructed off-site and installed over existing exterior walls. Building system upgrades, such as heating systems, are also being completed.⁴⁶ The project has a \$10 million budget, including a \$2.5 million grant from the Federal Government. The retrofit project is expected to reduce energy use and GHG emissions by up to 80%.⁴⁷

TowerWise Retrofit Project, Toronto Community Housing

In 2014, Toronto Community Housing (TCH) and the Toronto Atmospheric Fund (TAF) signed an agreement to implement energy retrofits within 7 TCH multi-unit buildings that included 1,237 households. The buildings were built in the 1960s and 1970s and ranged from 4 to 19 stories high.⁴⁸ The primary aim of the project was to reduce GHG emissions by 30% and utility costs by 20%.

TAF provided \$4.2 million in funding, including \$1.2 million in grants and utility incentives, and \$3 million in financing. TCH and TAF entered an Energy Savings Performance Agreement to share the revenues from energy savings. Funding was also sourced from the Federation of Canadian Municipalities, the City of Toronto, Toronto Community Housing Corporation, Enbridge Gas Distribution, Union Gas Limited, and Ecobee.⁴⁹

Retrofits included double-glazed windows, gas-absorption heat pumps, low flow toilets and faucets, high-efficiency refrigerators, boilers, motors, lighting and other facility upgrades. When the project was complete, there was a higher than projected cost savings and emissions reductions, improved indoor environmental quality, and reduced overheating in the winter.

⁴⁵ CBC News. August 5, 2021. 'Wrapping these buildings in a nice, warm sweater': Edmonton retrofit first of its kind. Online news article retrieved on February 25, 2022. <https://www.cbc.ca/news/canada/edmonton/wrapping-these-buildings-in-a-nice-warm-sweater-edmonton-retrofit-first-of-its-kind-1.6128524>

⁴⁶ Sundance Cooperative. No date. Sundance Housing Cooperative: Creating a Sustainable Future. Retrieved online, February 25, 2022. <https://sundancecoop.org/sundance-retrofit-project/>

⁴⁷ Natural Resources Canada. 2019. Sundance Housing Rehabilitation Project. Retrieved online, February 25, 2022. <https://www.nrcan.gc.ca/science-and-data/funding-partnerships/funding-opportunities/current-investments/sundance-housing-rehabilitation-project/21926>

⁴⁸ Federation of Canadian Municipalities. No Date. Case study: Energy retrofit delivers multiple benefits, Improved air quality and resident comfort. Retrieved online, February 25, 2022. <https://fcm.ca/en/case-study/case-study-energy-retrofit-delivers-multiple-benefits>

⁴⁹ Toronto Housing. No Date. TowerWise Retrofit Project. Retrieved online, February 25, 2022. <https://www.torontohousing.ca/Pages/TowerWise-Retrofit-Project.aspx>

Toronto Green Standard

The Toronto Green Standard (TGS) stipulates Toronto's sustainable design requirements for new private and City-owned developments. The TGS consists of four increasingly stringent energy performance tiers with supporting guidelines that promote sustainable site and building design.

Tier One of the Toronto Green Standard is a mandatory requirement of the planning approval process. Financial incentives are offered through a Development Charge Refund Program for planning applications that meet higher-level voluntary standards in Tiers Two through Four.⁵⁰ The mandatory tier becomes increasingly stringent over time, achieving near-zero by 2030. Version 4 of the Toronto Green Standard was adopted by Council in July 2021 and reflects the most recent requirements and guidelines. It will come into effect in May 2022 and is aligned with the City's goal of reaching net-zero emissions by 2040.

Whitby Green Standard

Like the Toronto Green Standard, Whitby's Green Standard has four tiers of performance. The first tier is mandatory and the subsequent tiers are voluntary with financial and non-financial incentives. To support education and uptake, the Town has released a standards reference guide, site plan application checklist, and a plan of subdivision checklist. The Standard is a component of reaching Whitby's target of reducing emissions by 80% by 2050 in the community,⁵¹ a target that is currently being updated.

2.8 Additional Moves: Waste & Governance

2.8.1 MANAGING WASTE

Waste made up 2% of overall community emissions in Orillia in 2016. While small overall, this number will increase by 63% in a Business-as-Usual Scenario and should be addressed in Orillia's emissions reductions efforts to avoid future growth in the sector.

Orillia has a baseline solid waste diversion rate of 65%. With a robust system already in place to handle waste diversion, behaviour change and education through zero-waste programming can provide the push required to further increase the diversion rate. This aligns with the rapid uptake of zero-waste programs across the country. The federal single-use plastic ban is also expected to contribute to reduced waste generation overall.

⁵⁰ City of Toronto. No Date. Toronto Green Standards (webpage). Retrieved online on February 25, 2022. <https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/toronto-green-standard/>

⁵¹ Town of Whitby. No Date. Whitby Green Standard (webpage). Retrieved online on February 25, 2022. <https://www.whitby.ca/en/work/whitby-green-standard.aspx#Will-the-Whitby-Green-Standard-delay-the-current-development-process>

2.7.1.1 Implementation: Waste

Table 18. Waste Implementation Actions

ACTION	OBJECTIVE	RECOMMENDED NEXT STEPS	POTENTIAL PARTNERS	MUNICIPAL ROLE
4.1 Zero waste strategy	Waste diversion (90% diversion rate)	Develop a zero waste strategy.	Sustainable Orillia Council's Waste Management Advisory Committee	Lead, finance and implement a zero waste strategy
4.2 ICI waste	Waste diversion (90% diversion rate)	Investigate strategies to reduce ICI waste including reuse and recycling programs.	ICI waste service providers	Coordinate an ICI waste strategy
4.3 Orillia's free store	Waste diversion (90% diversion rate)	Develop a feasibility study. Identify an operating partner. Identify a location.	Sustainable Orillia Council's Waste Management Advisory Committee	Fund the development of a free store
4.4 Capture methane	Methane recovery (75% capture rate)	Commission a methane capture project	n/a	Finance and implement a methane capture project

2.7.1.2 Outcomes: Waste

Table 19. Low-Carbon Pathway Outcomes

ACTION	GHG IMPACT (CUMULATIVE)	GHG REDUCTIONS RATING	COST RATING	COSTS (CAPITAL)	REPORTING METRICS	TIMING
Waste diversion (90% diversion rate)	182	Medium	n/a	TBD	Waste diversion rate	Begin: Immediately End: 2050
Methane recovery (75% capture rate)	317	Medium	\$\$	\$2.9 M Return: No	% methane recovered	Begin: 2029 End: 2030 (system implemented)

2.7.1.3 Inspiration: Waste

Hornby Island and Chicago both offer innovative solutions to help their residents reduce waste.

Chicago, Illinois Rewards Recyclers

As part of Sustainable Chicago 2015 Goal 20, the City partnered with Recyclebank to trial a unique incentive program for recycling. Selected blue carts were retrofitted with an ID chip that reads the weight of the recycled materials collected by that household. Points are earned for every pound of recyclables diverted from the waste stream and can be redeemed for discounts at local and national businesses.⁵²

Hornby Island, B.C. Offers a Free Store for All

Hornby Island offers a Free Store for residents to share and recycle goods. It is volunteer-run and has been operating for nearly 40 years.⁵³

2.7.2 AN EMPOWERED CITY

Climate action requires major new initiatives and to support this effort, the City of Orillia will need to consider new management approaches and capacities.

Table 20. Capacity Actions

ACTION	OBJECTIVE	RECOMMENDED NEXT STEPS	MUNICIPAL ROLE
5.1 Permanent advisory committee to council or the Mayor	Create an independent body that will advise Council and Mayor on climate action.	Approve a bylaw Establish a terms of reference and appoint committee members.	Council motion, terms of reference, host committee meetings.
5.2 Carbon Budget - Community	Implement a carbon budget to manage the GHG targets.	Create a carbon budget policy. Create a carbon budget mechanism aligned with financial policies. Assign GHG targets to departments Incorporate responsibility for GHG management into job responsibilities.	Implement a carbon management system.
5.3 Orillia's Green Revolving Loan Fund	Develop a funding mechanism that is ring fenced for climate action and can receive a share of savings.	Develop terms of reference and capitalization for a revolving fund.	Create and coordinate the revolving loan fund.

⁵² City of Chicago. August 1, 2009. "CITY OF CHICAGO PARTNERS WITH RECYCLEBANK Recycling Rewards Program Will Help Promote Sustainability by Increasing Recycling Participation in Chicago." (Press Release). Retrieved online February 25, 2022. www.cityofchicago.org/%2Fdam%2Fcity%2Fdepts%2Fdoe%2Fgeneral%2FRecyclingAndWasteMgmt_PDFs%2FBlueCart%2FRecycleBankPressRelease.pdf

⁵³ Wilson, C. November 11 2014. "Hornby Island Free Store recycled for new outlet," Times Colonist. Retrieved online on February 25, 2022. <https://www.timescolonist.com/business/hornby-island-free-store-recycled-for-new-outlet-4615744>

ACTION	OBJECTIVE	RECOMMENDED NEXT STEPS	MUNICIPAL ROLE
5.4 Climate Lens for Staff Reports	Calculate and incorporate the climate impact of City decisions.	Research tools to assist in calculating climate impacts for staff to use in their reports.	Research and development.
5.5 Municipal investments	Ensure that short and long term investments are aligned with Orillia’s low-carbon pathway objectives.	Develop and apply an ESG (Environmental, social, and governance) policy for municipal investments and reserves.	Create and implement ESG policy.

What is a carbon budget?

The easiest way to think of a carbon budget (or carbon accounting) is to think of it just like the city’s financial budget. With a financial budget, each year, Council has a set amount of money in the city budget and a variety of areas to spend it, so it has to prioritize what is most important with its funds.

With a carbon budget, the city has a certain amount of carbon to “spend” if it wants to do its part to reduce the impacts of climate change. However, unlike a financial budget where there may be opportunities to bring in more money, the carbon budget remains static — it is the total net carbon the city can emit. Each year, or every few years (depending on the overall emissions reduction target), the amount of carbon the city can release decreases and continues on this downward trajectory until the budget is zero (or very close to it). A carbon budget operates like a bathtub filling up with water - the amount of space is fixed and can only hold so much before it overflows.

In Canada, the City of Edmonton is the first city to adopt a carbon budget (2021) as a part of its journey to a low-carbon future.

What is a Green Revolving Loan Fund?

Green revolving loan funds, also known as revolving loan funds, are funds from municipal, provincial or federal sources that finance a variety of emission reduction projects. The savings generated from the initial projects are then re-loaned for other projects, creating an “evergreen” source of capital that can be used again and again well into the future.

Sufficient capital is required to seed the fund, which may be a challenge for smaller communities. The fund administration requires staff time and expertise for it to be successful, however, only one-time funding is required; once initiated, the program will generate its own funds.

What is a Green Bond?

Bonds are a trusted financing tool used by all levels of government since the 1900s, with green bonds being a newer version. Green bonds are debt securities whose proceeds are earmarked for environmental or climate-related projects, such as public transit or low-carbon infrastructure investments. They offer the same financial terms as other bonds, which means that investors do not have to choose between financial returns and environmental benefits. There are a few types of green bonds, but most are treasury-style retail bonds with a fixed interest rate and redeemable in full on maturity, usually within 10 to 30 years.

The City of Pittsburgh’s Green Initiatives Trust Fund⁵⁴

The City of Pittsburgh’s Green Initiatives Trust Fund provides a continuous and secure source of funding from energy-saving measures, which is used to finance future energy-efficiency projects within the city, such as energy audits, aggregated energy purchases, renewable energy generation, efficiency upgrades at city-owned facilities, and other green initiatives in the Pittsburgh Climate Action Plan. Although there are no formal criteria for funding, the city focuses on projects with a payback period of less than half of the operational life expectancy of the equipment or measure. The Fund has helped energy projects to be evaluated and approved more quickly through the decision-making bodies of the municipality. Established in 2008, the Fund was initially seeded with \$100,000 US and topped up with savings from aggregated energy purchases and energy savings each year. From 2008 to 2012, the Fund financed solar thermal installations, a solar photovoltaic installation, installation of 4,000 LED street lights, and retrofits to various city facilities, including the City-County building, totalling \$2.45 million US.⁵⁵

⁵⁴ICLEI Canada, 2018. On the money: Financing tools for local climate action. Partners for Climate Protection.

⁵⁵Green Initiatives Trust Fund: City of Pittsburgh. Better Buildings Solution Centre: US Department of Energy.

City of Ottawa's 2017 Green Bond⁵⁶

The City of Ottawa is the first Canadian municipality to issue a green bond, enabled through its Green Debenture Framework. The framework identifies eight types of projects for which proceeds can be used:⁵⁷

1. Renewable energy
2. Energy efficiency
3. Pollution prevention and control
4. Clean transportation
5. Sustainable water management
6. Sustainable management of natural resources
7. Climate change adaptation and resilience
8. Green buildings

The first bond was issued in November 2017, with proceeds used to fund a light-rail transit system. The issuance was highly successful; it cost less than comparable non-green bonds and was oversubscribed, with twice as many bids as expected. The 30-year bond was issued at \$102 million, making Ottawa the fifth-largest bond issuer in Canada in 2017.⁵⁸

⁵⁶ ICLEI Canada, 2018. On the money: Financing tools for local climate action. Partners for Climate Protection.

⁵⁷ City of Ottawa. (n.d.) Investor Relations: Green Bonds.

⁵⁸ Bonds and Climate Change: Canada Report. 2017. Climate Bonds Initiative & Smart Prosperity Institute.

Part 3:

The Opportunity



Part 3: The Opportunity

The COVID-19 pandemic and related supply chain issues have brought greater light to the problem of sustainability. Thanks to the efforts of the Orillia Climate Future Committee, Orillia has begun discussing ways to reduce our carbon footprint. There has been an exciting exchange of ideas, including looking at garbage and recycling differently and considering the opportunity to turn waste into building products. This is an opportunity for us to extract resources from our own garbage dumps, reducing further burdens to the fragile environment around us.

Technology is rapidly changing, and Orillia has the opportunity to be at the forefront by adopting a local circular economy that will secure future prosperity for our residents and businesses. We live in an exciting time, where robotics and artificial intelligence can replace cheap offshore labour pools, reducing the disastrous ecological consequences that the shipping of materials has on our oceans.

Allan Lafontaine, Executive Director, Orillia District Chamber of Commerce

3.1 Financial Analysis

3.1.1 FINANCIAL CONCEPTS

The direct, community-wide financial impacts of Orillia's net-zero pathway were assessed; however, direct financial impacts should be seen as a secondary benefit of reducing GHG emissions. First and foremost, GHG reductions are a critical response to the global climate emergency. In addition, most measures included in the pathways provide economic and social goods to the community, such as net job creation and positive health outcomes, which are only reflected in this financial analysis as the cost of carbon emitted.⁵⁹

Key concepts that are used to analyse the financial impacts of the pathway are summarized below.⁶⁰

Costs Are Relative to the Do Nothing Scenario

This financial analysis tracks projected costs and savings associated with low-carbon measures that are above and beyond the costs in the BAU Scenario.

Discount Rate

The discount rate is the baseline growth value an investor places on their investment dollar. A project is considered financially beneficial by an investor if it generates a real rate of return equal to or greater than their discount rate.

An investor's discount rate varies with the type of project, duration of the investment, risk, and the scarcity of capital. The social discount rate is the discount rate applied for comparing the value to society of investments made for the common good, and as such, it is inherently uncertain and

⁵⁹ The Social Cost of Carbon is an estimate of the damage caused to society by climate change including impacts on health and lost jobs.

⁶⁰ Detailed financial assumptions are described in the Data, Methods and Assumptions Manual.

difficult to determine. Some argue that a very low or even zero discount rate should be applied in the evaluation of climate change mitigation investments. A 3% discount rate was applied for this analysis.⁶¹

Net Present Value

The net present value (NPV) of an investment is the difference between the present value of the capital investment and the present value of the future stream of savings and revenue generated by the investment.

Five aggregate categories are used to track the financial performance of the low-carbon actions in this analysis: capital expenditures, energy savings (or additional costs), carbon cost savings (assuming the carbon price reaches \$170/tonne CO₂e in 2030 and is held constant thereafter), operation and maintenance savings, and revenue generation (associated with renewable energy production facilities and some transit actions). Administrative costs associated with implementing programs, as well as any energy system infrastructure upgrades that may be required are excluded. Similarly, the broader social costs, such as health costs or damages from climate change, that are avoided from mitigating climate change are not included in this financial analysis.

Abatement Cost

The abatement cost of an action is the estimated cost for that action to reduce one tonne of GHG emissions, which is calculated by dividing the action's NPV by the total GHG emissions reductions (tCO₂e) resulting from the action. For example, if a project has a NPV of \$1,000 and generates 10 tCO₂e of savings, its abatement cost is \$100 per tCO₂e reduced.

Amortization

The costs of major capital investments are typically spread over a period of time (e.g. a mortgage on a house commonly has a 25-year mortgage period). Amortization refers to the process of paying off capital expenditures (debt) through regular principal and interest payments over time. In this analysis, we have applied a 25-year amortization rate to all investments.

Energy and Carbon Cost Projections

Energy cost projections were derived from⁶²:

- The Independent Electricity System Operator's (IESO) Long-Term Energy Plan (electricity);
- The US Energy Information Administration (propane); and
- The Canada Energy Regulator (all other fuels).

The financial analysis is sensitive to electricity and natural gas costs. Electricity costs are projected to increase more rapidly than natural gas. If natural gas costs increase more rapidly, then the financial benefit of many of the actions increases.

An escalating cost of carbon based on federal regulation was applied out to 2030, then held constant, which represents a conservative assumption. An alternative assumption is that carbon taxes continue to increase as climate change becomes more and more severe, which would increase the financial benefit of this scenario.

⁶¹ Environment and Climate Change Canada. (2016). Technical update to Environment and Climate Change Canada's social cost of greenhouse gas estimates. Retrieved from <http://ec.gc.ca/cc/BE705779-0495-4C53-BC29-6A055C7542B7/Technical%20Update%20to%20Environment%20and%20Climate%20Change%20Canadas%20Social%20Cost%20of%20Greenhouse%20Gas%20Estimates.pdf>

⁶² For more details on the financial assumptions see the TransformTO Data, Methods and Assumptions Manual.

3.1.2 THE BIG PICTURE

Table 21. Summary of financial results.

NET IMPACTS OVER THE PERIOD, UNDISCOUNTED, \$ MILLIONS	
Total incremental capital investment, 2022-2050	\$1,069
Average annual investment	\$38
Total savings, 2022-2050	-\$3,109
Net cost, 2022-2050	-\$2,040
FINANCIAL INDICATORS, \$	
Capital cost (undiscounted) to reduce each tonne of GHG	\$86
Abatement cost per tonne of GHG (undiscounted)	-\$165
Average annual household savings on home energy (undiscounted), 2050 over 2018	-\$3,958
Investment \$/person-year of employment	\$146,900

The financial impacts of the scenarios were explored in detail. For context, if Ontario's GDP is assigned to Orillia based on a per capita allocation, the investments in the Low-Carbon Pathway hover around 2–3% of annual GDP for a decade.⁶³ The investments in the Low-Carbon Pathway generate financial returns on a net basis beginning in 2031.

The line in Figure 22 represents the net of the investments and savings. For illustrative purposes, in an early year in a net-zero scenario, investments might total \$40 million, while savings total \$7 million, resulting in a net cost of \$33 million. Later in the study period, investments might total \$29 million, while savings total \$129 million, resulting in net savings of \$100 million. There are many underlying dynamics at play that result in these curves. In the post-investment period after 2050, the benefits continue for as long as the measures deliver savings.

⁶³ Ontario's GDP was calculated at \$58,000 per capita, and based on a population of 33,000, Orillia's GDP is estimated at \$1.9 billion.

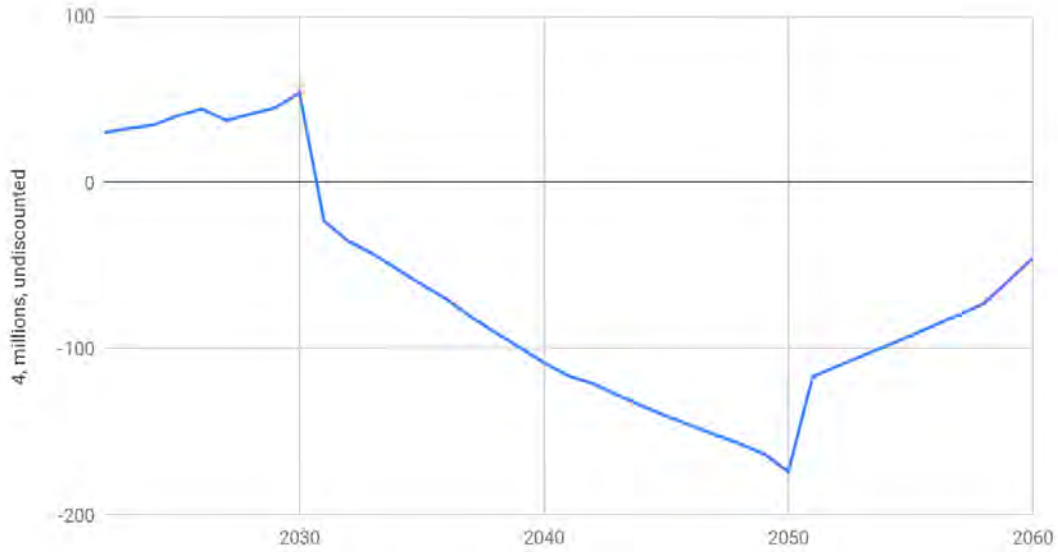


Figure 22. Net annual community-wide costs/savings for the Low-Carbon Pathway.

Figure 22 shows the present value of the major components of the three scenarios: investments; operations and maintenance savings; fuel and electricity savings; avoided costs of carbon; and revenue from transit and local energy generation. It is important to highlight that although capital investment for the plan ends in 2050, the NPV includes the energy, maintenance, and carbon costs savings as well as revenue projected over the full life of the measure, which, in some cases, extend as far as 2089.

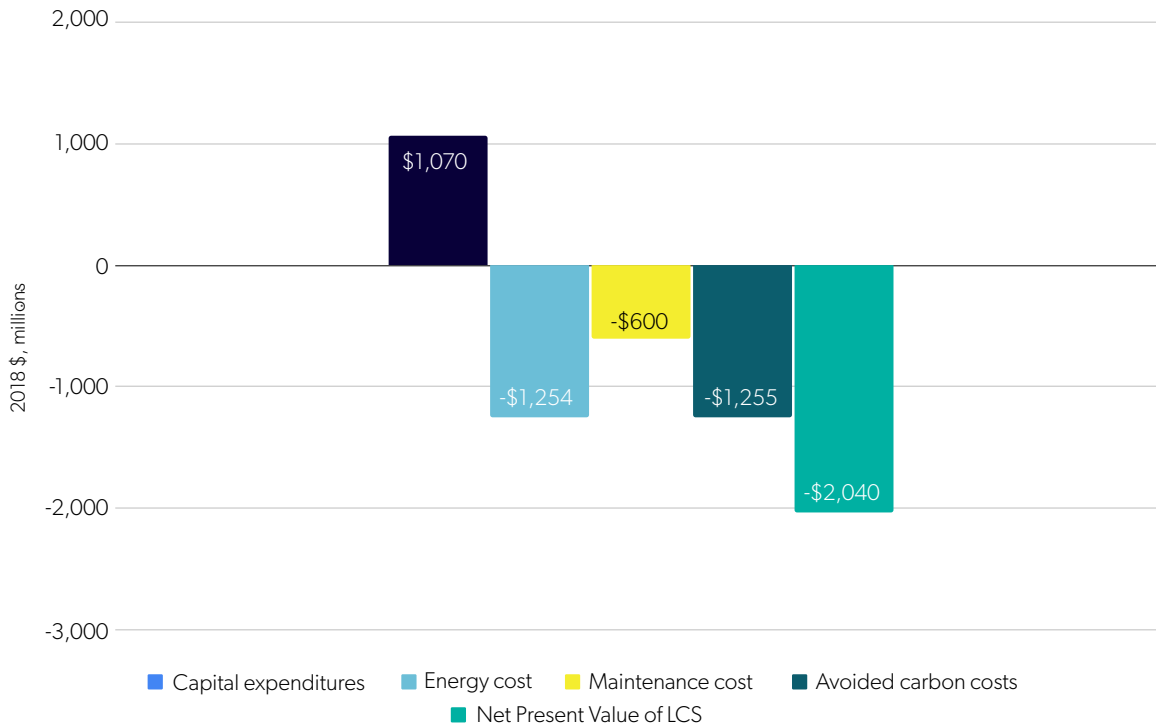


Figure 23. Present values of investments and returns for the BAU (2022-2050). Costs appear above the x-axis, while revenue and savings appear below it.

3.1.3 ABATEMENT COSTS

Abatement costs indicate whether a measure generates financial returns over its lifetime. A negative abatement cost indicates an action generates financial returns, while a positive abatement cost indicates the cost of an action exceeds financial returns. The width of each bar on the x-axis indicates the amount of GHG emissions that it saves.

The marginal abatement cost for the actions in the Low-Carbon Pathway are provided in Figure 24. Municipal retrofits have the highest marginal abatement cost at \$734 for every tonne of GHG reduced. Heat pumps follow with a marginal abatement cost of \$393. Both of these are interesting examples because, unlike other actions, GHG emission reductions are not always the primary motivator for these projects. In addition, these actions deliver significant benefits (improved health in the case of active transportation and ecology and shade in the case of trees) that are not factored into the calculation as financial benefits.

Solar PV on commercial buildings and households generates financial returns (savings) of \$732 and \$532 per tonne of GHG reduced, respectively. Electrification of vehicles consistently generates savings: personal vehicles (savings of \$418/tCO₂e), transit (savings of \$213/tCO₂e), and the City fleet (savings of \$297/tCO₂e). Reduced water consumption generates financial savings but very little GHG reductions, resulting in a large negative abatement cost.

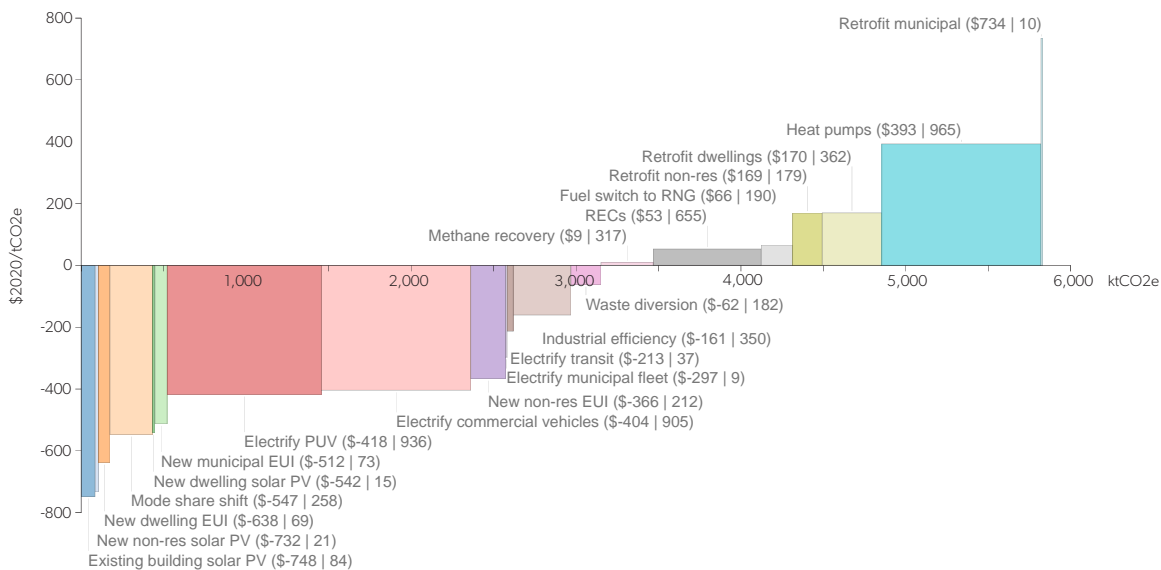


Figure 24. Marginal abatement cost curve (MACC) for the City's Low-Carbon Pathway.

Using Abatement Costs to Guide Policy

Figure 24 illustrates an abatement curve of actions. Actions on the left save money and are therefore financially interesting to investors. Actions in the middle have a net present value that is either slightly negative or slightly positive and may require credit enhancements to be compelling. Finally, on the right, those actions that are NPV negative will require subsidies. A capital-constrained public sector must concentrate on the expensive projects while relying on the private sector for the rest. A capital-rich public sector can invest in projects that are more expensive and those that may generate more interesting financial returns.

The Criticality of a Systems Approach

The abatement costs provide an important insight: the electrification of transportation generates financial savings, which, given the deployment of appropriate financial mechanisms, can be used to finance building retrofits, which are more costly. Building retrofits are critical to minimizing the burden on the grid to enable electrification of transportation.

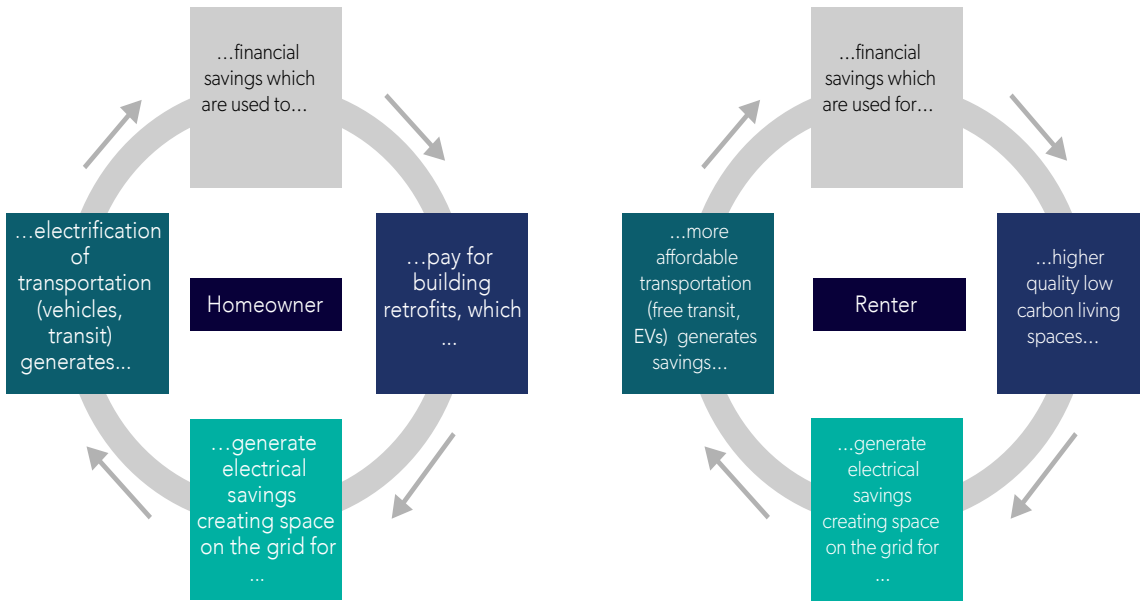


Figure 25. The electrification feedback cycle.

While a marginal abatement cost curve (MACC) illustrates the financial profile of the suite of actions, it is an imperfect indicator. The presentation of the MACC implies that the actions are a menu from which individual actions can be selected. In fact, many of the actions are dependent on each other, for example, the district energy cost increases without retrofits. Another important message is that in order to achieve the City’s target, all the actions need to be undertaken as soon as possible. While there can be a tendency to wait for technological improvements, this has the effect of reducing the value of the savings that can be achieved for households and businesses and the new employment opportunities that can be created.

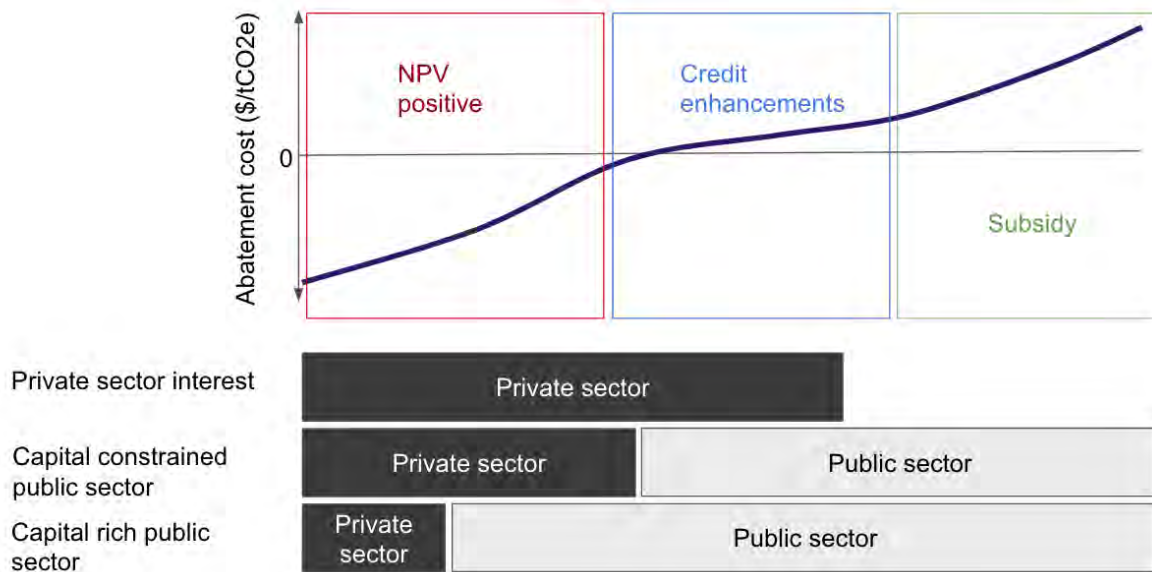


Figure 26. Aligning the abatement costs with investor interest.

The annual costs, savings, and revenue associated with fully implementing the actions in the Low-Carbon Pathway are shown in detail in Figure 27, with capital expenditures shown in full for the years in which they are incurred. As is characteristic of low-carbon transitions, the capital expenditures in the early years of the transition are significantly greater than the savings and revenues generated, and by 2031, savings are beginning to exceed investments in the Low-Carbon Pathway.

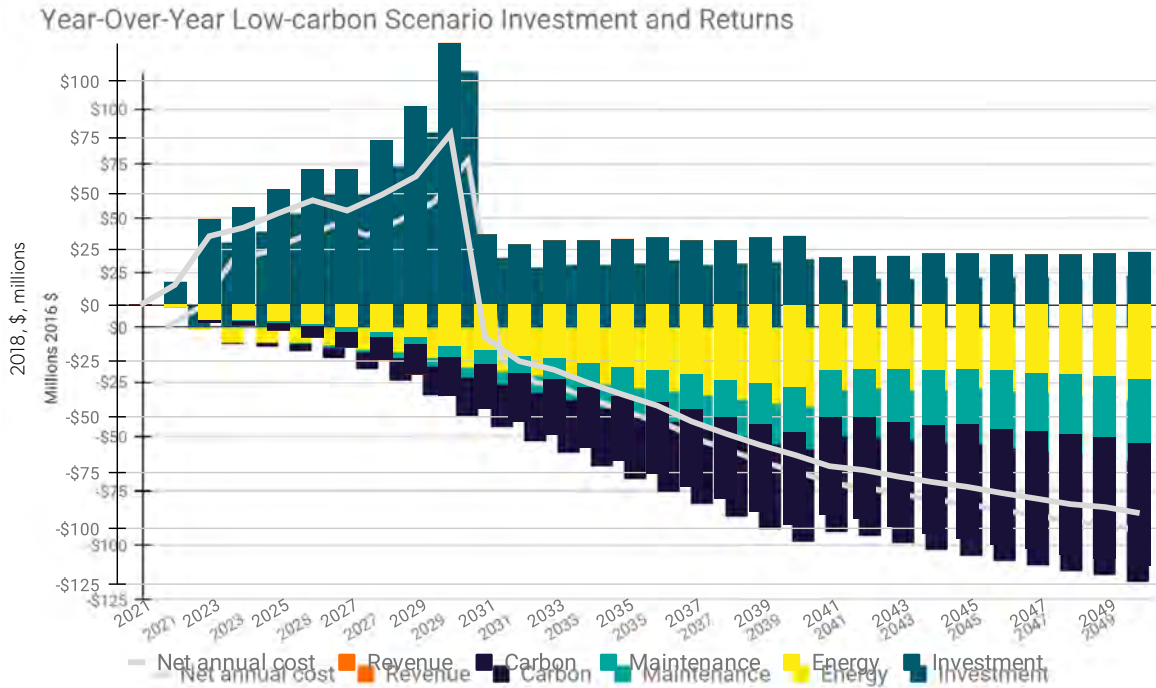


Figure 27. Year-over-year investments and returns in the Low-Carbon Pathway over the BAU Scenario, 2022 –2050.

The stacked area charts in Figure 27 represent the investments in the year they are made, which results in spikes and peaks depending on which actions are implemented in which year. For example, retrofits scale up until 2030, resulting in a peak in investments in that year. There is also an incremental capital expenditure relative to the BAU Scenario in 2030 when EVs are added, reflecting the early retirement of ICE vehicles—expenditures on vehicles are greater in the NZ40 scenario than the background replacement rate in the Do Nothing Scenario. Because of the early replacement, fewer vehicles are purchased in the NZ40 scenario than the Do Nothing Scenario between 2038 and 2044, resulting in a reduction in capital expenditures in this category. Similar blips can be observed in the NZ50 scenario but later on in the time period. The investment in transit and the building stock in the NZ scenarios is apparent relative to the BAP Scenario.

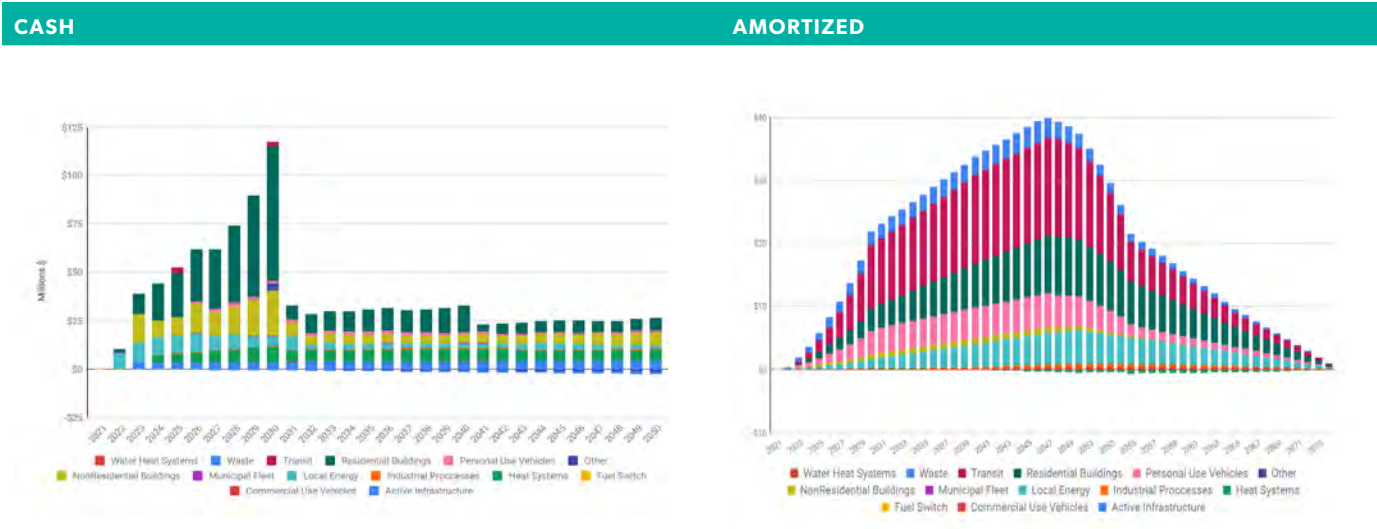


Figure 28. Incremental capital investments in the Low-Carbon Pathway over the BAU Scenario by action area, undiscounted.

Figure 28 presents costs and revenues, but with the capital expenditures amortized over 25 years with 3% interest. With this approach, which would presumably reflect actual approaches for financing the transition, the annualized capital payments are about equal to the savings and revenue generation right from the beginning of the program. By 2045, the annualized capital payments begin to decline as the earliest investments are paid off. On an annual basis, the Low-Carbon Pathway has an annual deficit, and annual savings only exceed annual costs by a small amount after 2070, as illustrated by the blue line. Amortization reduces the requirement for capital in the short term and evens out the trajectory, resulting in a longer tail of payments out until 2070 (Figure 29).

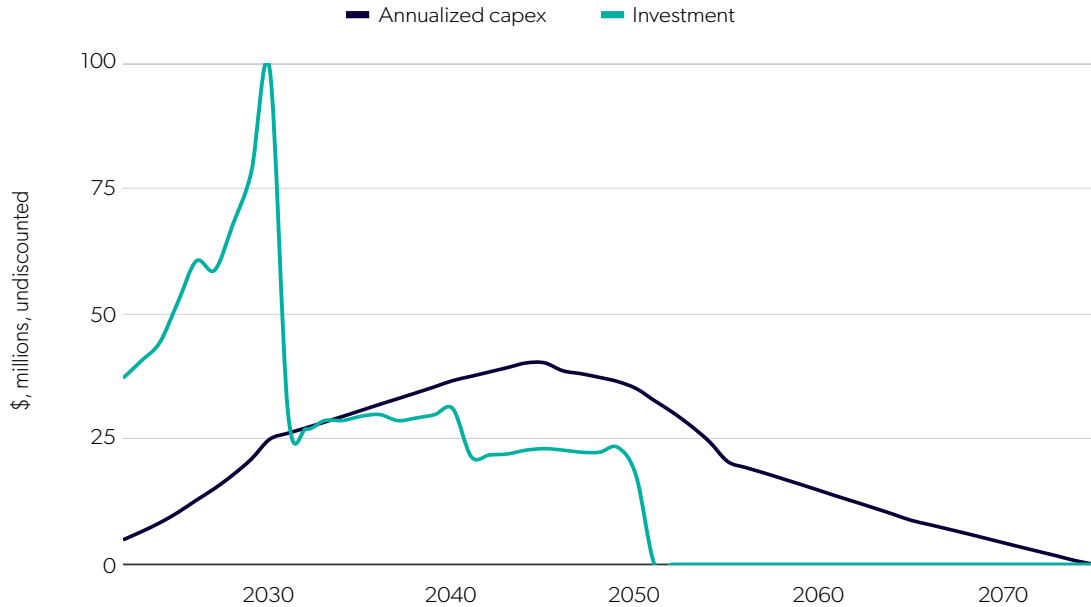


Figure 29. Impact of amortization on capital requirements for the Low-Carbon Pathway.

Household expenditures on energy—natural gas, electricity, gasoline, and diesel—are projected to decline slightly in the BAU and decline significantly in the Low-Carbon Pathway (Figure 30). In the BAU, household energy expenditures are relatively flat because vehicles become more efficient due to national fuel efficiency standards and because of decreased heating requirements as the climate becomes hotter due to climate change. The Low-Carbon Pathway involves shifting away from natural gas and gasoline to electricity, a more costly energy source. However, the increased cost is offset by the increased efficiency of homes as required by building codes, and in the case of electric vehicles, the cost is offset by the high efficiency of electric motors compared to internal combustion engines. The carbon price also adds to the cost of using fossil fuels for heating and transport. In the low-carbon scenarios, an average household in 2050 spends less on fuel and electricity (household energy and transportation expenditures) than they would have in the BAU Scenario. Depending on the business, policy, and financing strategies used in the implementation of the actions, these savings will be partly offset by the incremental capital expenditures required.

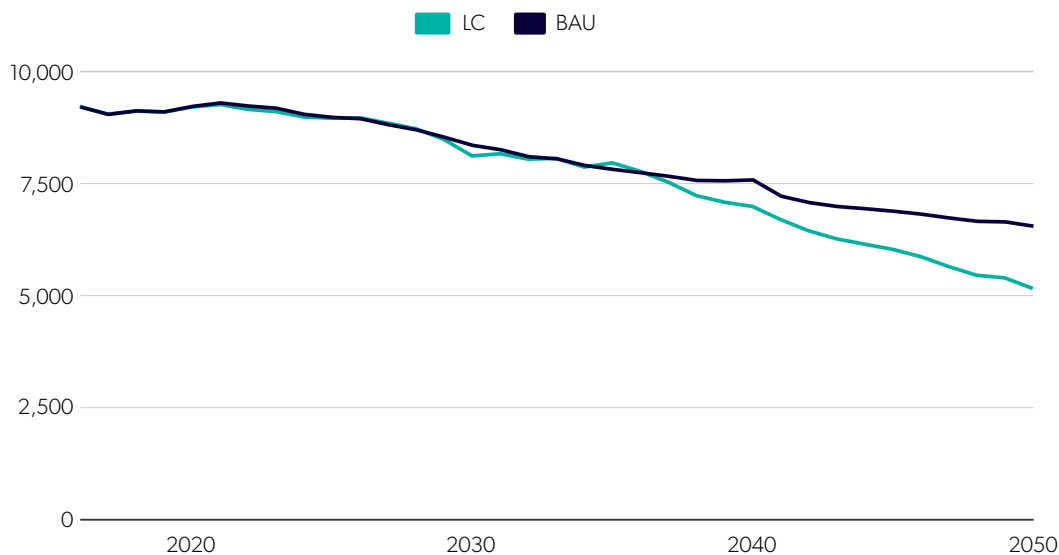


Figure 30. Average annual household expenditures on residential energy for the BAU and low-carbon scenario.

The Impact of the Carbon Tax

The carbon price is currently projected to climb to \$170/tCO₂e by 2030. This has the impact of increasing the cost of gasoline and natural gas relative to electricity. As a result, gasoline will be more expensive than electricity on a per-unit-of-energy basis by 2028 (note that the carbon price has not been factored into the electricity cost as it is negligible). This benefit is compounded by the fact that electric vehicles can go further per unit of energy than gasoline vehicles. Natural gas is still more affordable than electricity on a per unit basis over the period. Heat pumps, however, are three times more efficient than natural gas heating and home heating with an electric heat pump becomes more affordable than heating with natural gas in 2027 (Figure 31).

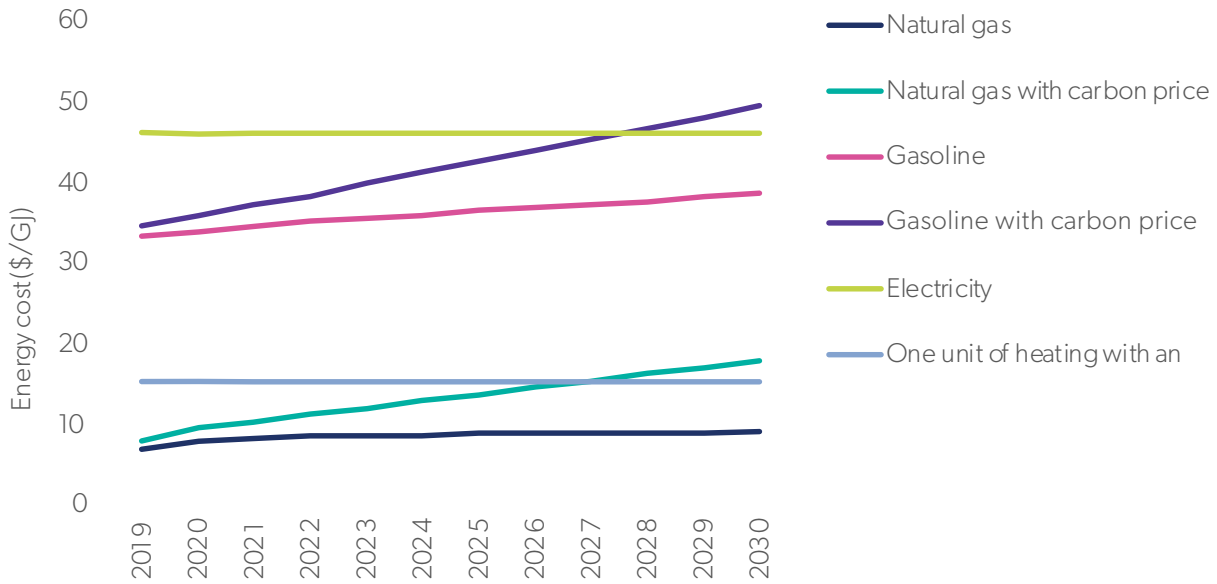


Figure 31. Projections of relative energy costs for gasoline, electricity, and natural gas.

Transitioning to a low- or zero-carbon economy is expected to have four categories of impacts on labour markets: additional jobs will be created in emerging sectors, some employment will be shifted (e.g. from fossil fuels to renewables), certain jobs will be reduced or eliminated (e.g. combustion engine vehicle mechanics), and many existing jobs will be transformed and redefined. The Low-Carbon Scenario adds person-years of employment over the BAU between 2022 and 2050 (Figure 32). As seen in the figure, this amounts to approximately 260 jobs annually, with the majority in residential and commercial building retrofits and infrastructure investments.

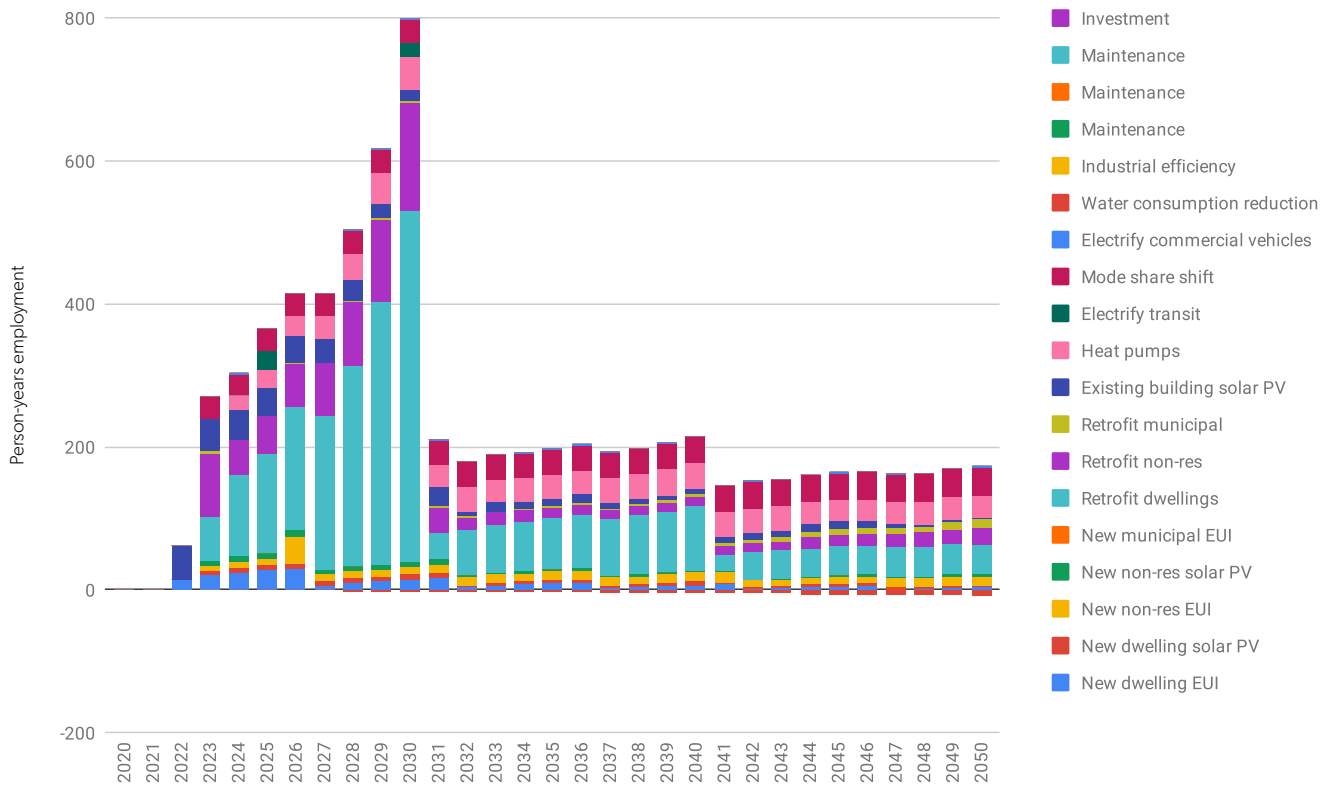


Figure 32. Annual person-years of employment generated in the Low-Carbon Scenario.

3.1.4 THE SOCIAL COST OF CARBON: A CITY FOR FUTURE GENERATIONS

Climate change represents a burden on future generations; the complexity of the climate system makes impacts difficult to anticipate. The burden to act increases the longer action is delayed, and as a result, people are turning to litigation as a potential solution to climate inaction. In 2015, twenty-one youth from across the United States filed a landmark constitutional climate change lawsuit against the federal government in the U.S. District Court for the District of Oregon. The youth successfully asserted that, in causing climate change, the federal government violated the youngest generation's constitutional rights to life, liberty, and property, and failed to protect essential public trust resources.⁶⁴ This exceptional case in the United States brought youth to the forefront of climate change action, and in Canada, the environmental non-profit, EcoJustice, has launched a judicial review against the British Columbia provincial government, "alleging it has failed in its legal duty to disclose emissions reduction plans to fight climate change."⁶⁵ The claims have not been tested in court at the time of this report's publication.

The social cost of carbon (SCC) is a new concept used in regulatory processes in Canada and the US to reflect the impacts of climate change on society. The SCC attempts to add up the quantifiable costs and benefits of a tonne of carbon dioxide. While the estimates of SCC are highly uncertain, it is one of the best ways to reflect future damages to ensure that decision-making which has implications for future emissions accounts for those implications.

The SCC includes assumptions about future conditions including population size, economic growth, rate of climate change and the impact of climate change on those conditions, drawing on the results of integrated assessment models. The discount rate for climate change is a concept representing societal need to act on climate change now despite it being less prevalent today than in the future. The discount rate, as a monetary value, is a significant assumption within the models. Discounting reflects the idea that people would rather have \$100 now than \$100 in ten years. From an ethical perspective, a higher discount rate indicates that future generations are worth less than current generations; for this reason the Stern Review⁶⁶ recommended a discount rate of 1.4%, well below traditional discount rates. As Stern pointed out in a subsequent article "A 2% pure-time discount rate means that the life of someone born 35 years from now (with given consumption patterns) is deemed half as valuable as that of someone born now (with the same patterns)".⁶⁷ The Government of Canada recommends 3% in circumstances where environmental and human health impacts are involved.⁶⁸

The Low-Carbon Pathway (LCP) analysis presents the SCC for remaining emissions and avoided GHG emissions. The Government of Canada reports on estimated damage associated with lower probability and high-cost damages using a 3% discount rate. This cost reflects less likely

⁶⁴ Our Children's Trust. (2016). Landmark US federal climate lawsuit. Retrieved November 14, 2016, from <https://www.ourchildrenstrust.org/us/federal-lawsuit>

⁶⁵ Labbé, S. (March 31, 2022) B.C. climate plan fails to detail how it will hit emission targets, allege court documents. Times Colonist. Retrieved from: <https://www.timescolonist.com/local-news/bc-climate-plan-fails-to-detail-how-it-will-hit-emission-targets-allege-court-documents-5218357>

⁶⁶ Stern, N. (2006). The Stern review on the economic effects of climate change. Cambridge University Press.

⁶⁷ Stern, N. (2015). Economic development, climate and values: making policy. Proc. R. Soc. B, 282(1812), 20150820. <https://doi.org/10.1098/rspb.2015.0820>

⁶⁸ Environment and Climate Change Canada. (2016). Technical update to Environment and Climate Change Canada's social cost of greenhouse gas estimates. Retrieved from <http://ec.gc.ca/cc/BE705779-0495-4C53-BC29-6A055C7542B7/Technical%20Update%20to%20Environment%20and%20Climate%20Change%20Canadas%20Social%20Cost%20of%20Greenhouse%20Gas%20Estimates.pdf>

impacts of increased temperatures that result in greater damage, as described within the 95th percentile of the SCC analysis.

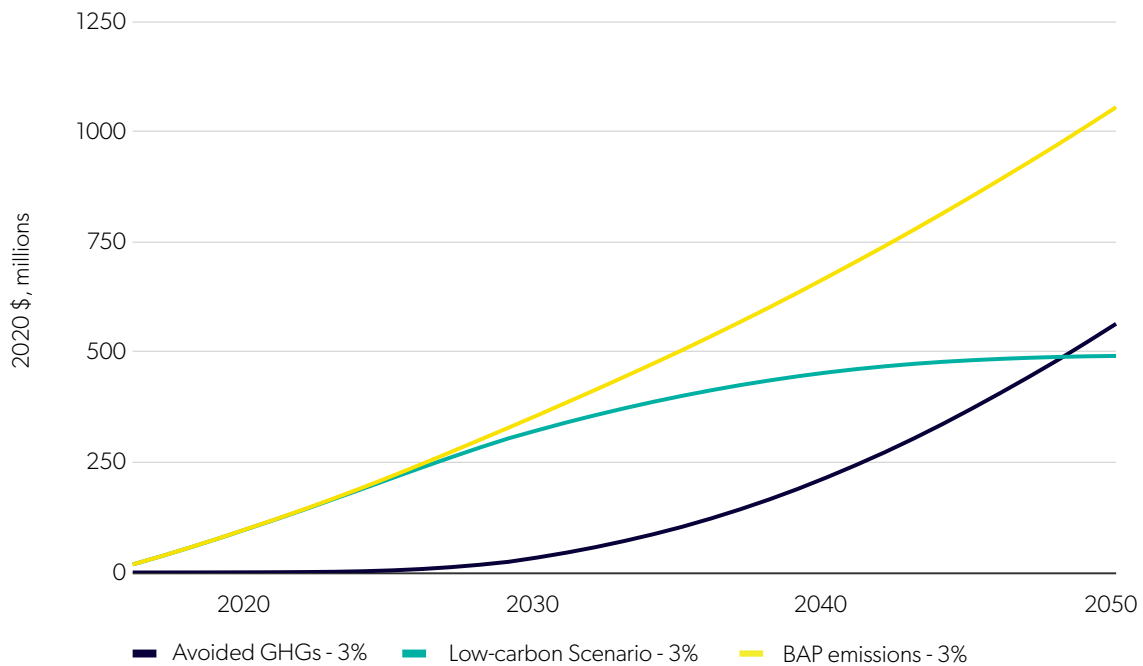


Figure 33. Social cost of carbon, in \$2020 cumulative at a 3% discounting rate, 95th percentile.

The results of the SCC both for remaining emissions and avoided emissions associated with the BAU and the LCP are illustrated in Figure 33. The value of the avoided emissions, as represented by the SCC, in 2050 is \$127 million in 2020 dollars. LCP actions taken and policies enacted result in avoided emissions equivalent to \$1.7 billion in savings.

Part 4:

Conclusion: What Happens Next?



Part 4: Conclusion: What Happens Next?

Decarbonizing Orillia and reaching the net-zero target in Orillia's Climate Future will require investment. But these new investments will not only achieve GHG emissions reductions, they also synergistically support other City objectives, such as economic development, improved health and equity outcomes, and climate resilience.

Taking responsibility for climate change by acting now will alleviate some of the pressure felt by future generations. Efforts and investments made today are important aspects of Orillia's equitable approach to climate action. The City is actively working to ensure programs and policies address the disproportionate impacts of our changing climate on equity-deserving groups and future generations.

The investments are organized around three focal points that streamline Orillia's climate action. These three Big Moves address the major drivers in Orillia's Climate Future and lead the city to net zero emissions by 2050.

Big Move 1: Renewable Energy actions enhance Orillia's local energy generation capacity. By maximizing solar PV on buildings within the city, Orillia takes control of its clean electricity production and creates an energy source that supports and enables so many other decarbonization actions. This move takes the "Sunshine City" moniker and turns it into climate action and economic opportunity.

Big Move 2: Transportation actions focus on decarbonizing a high-emissions activity that we engage in every day. Rather than managing traffic jams and fuel prices, Orillia will be a city of electric vehicles and frequent, reliable public transit. Investments that improve access to active transportation will create a healthier, more vibrant city. People of all ages will be able to get around the city more easily, and they will breathe cleaner air while doing so.

Big Move 3: Buildings actions will transform where we live into modern dwellings that are easier and more affordable to keep comfortable. Deep, coordinated retrofits will maximize the benefits of updated housing while mitigating the disruption and cost. Investments in commercial and industrial retrofits will improve conditions in key economic sectors in the city.

Additionally, Orillia will create and take advantage of robust waste diversion programs to further reduce waste and the emissions it produces. An investment in methane capture will reduce methane emissions and could create an alternative fuel source.

Finally, Orillia will institute the governance, management, and leadership structures needed to initiate and sustain long-term decarbonization actions. These structures include loans and other investment mechanisms to support the city in its efforts to reach net zero.

Creating the net-zero city that Orillia envisions will take dedication. But the benefits are vast, and will be felt by the city's residents, neighbouring communities, and the global community of cities that have committed themselves to the same future.

The Sunshine City will shine even brighter in 2050.

Orillia's Climate Future

Our Community Climate Action Plan Appendices



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Appendix A: Definitions

Base year: The starting year for energy or emissions projections.

Biogas (renewable natural gas): Methane captured from bacterial decomposition of sewage, manure, waste, plant crops, or other organic waste products. It can be used as a natural gas replacement.

Building retrofit: Changes to the structure or systems of an existing building to achieve energy and water consumption reductions.

Business-as-Usual (BAU): A scenario illustrating energy use and greenhouse gas emissions if no additional plans, policies, programs, and projects are implemented.

Capacity factor: The ratio of a power plant's actual output over a period of time to its potential output if it were possible to operate continuously over the same period of time.

Carbon dioxide equivalent (CO₂e): A measure for describing the global warming potential of a greenhouse gas using the equivalent amount or concentration of carbon dioxide (CO₂) as a reference. CO₂e is commonly expressed as million metric tonnes of carbon dioxide equivalent (MtCO₂e).

Cooling degree days (CDD): The number of degrees that a day's average temperature is above 18 °C, requiring cooling.

Deep energy retrofit: A whole-building analysis and construction process minimizing building energy use by 50% or more compared to the baseline energy use.

Distributed generation: Technologies that generate electricity on-site through solar photovoltaic (PV) systems, combined heat and power (CHP) systems, and/or other technologies.

District energy systems: Providing heating and/or cooling to multiple buildings from centralized energy systems.

Emissions: Greenhouse gas emissions measured in grams, kilograms, or metric tonnes (CO₂e), unless otherwise indicated.

Emissions intensity: The ratio of emissions released per unit of electricity generated, measured in gCO₂e/kWh.

Energy efficiency improvement: An improvement in the ratio of energy consumed to the output produced or service performed. This improvement results in the delivery of more services for the same energy inputs or the same level of services from less energy input.

Electric vehicles (EVs): An umbrella term describing a variety of vehicle types that use electricity as their primary fuel source for propulsion or as a means to improve the efficiency of a conventional internal combustion engine.

Energy storage: Technologies that store energy for consumption at a later time. Energy storage includes electric systems, such as batteries, and thermal systems, such as hot and cold water storage tanks.

Feed-in-Tariff: A policy mechanism designed to accelerate investment in renewable energy technologies by offering long-term contracts to renewable energy producers. The energy produced is sold to the grid rather than consumed directly (termed, "net-metering").

Geoexchange energy: Low-temperature thermal energy collected by heat pumps from soil and water near the Earth’s surface. Used in building heating.

Geothermal energy: High-temperature thermal energy collected from deep in the Earth for use in building heating and industrial applications.

Greenhouse gases (GHG): Gases that trap heat in the atmosphere by absorbing and emitting solar radiation, causing a greenhouse effect that unnaturally warms the atmosphere. The main GHGs are water vapour, carbon dioxide, methane, nitrous oxide, and ozone.

Heat pump: A device that transfers heat energy from a source of heat to a target area using mechanical energy.

Heating degree days (HDD): Number of degrees that a day’s average temperature is below 18oC, requiring heating.

HVAC: Heating, ventilation, and air conditioning systems, referred to in the context of a building.

Indicator: An observable or measurable result that shows evidence of whether an impact has occurred and the nature of that impact. It provides a metric one can use to quantify and define the scale of a resulting change.

Net-metering: This is an electricity billing mechanism that allows consumers who generate some or all of their own electricity to use that electricity anytime, instead of when it is generated.

Passive house buildings: Buildings designed and constructed to stringent standards resulting in up to 90% increased energy efficiency as compared to a typical building’s energy use.

Re-commissioning: A process of examining and optimizing a building’s HVAC systems after a building has been fully operational for a period of time.

Renewable energy: Energy that comes from resources that are naturally replenished on a human timescale, such as sunlight, wind, moving water, and geothermal heat.

Solar photovoltaic (PV): Also known as solar electric systems or solar panels, these are systems that convert sunlight into electricity. Any excess electricity produced can be sold to the utility through a process called net-metering.

Vehicle kilometres travelled (VKT): Distance travelled by vehicles within a defined region over a specified time period.

GHG emissions	Energy
1 ktCO ₂ e = 1,000 tCO ₂ e	1 MWh = 1,000 kWh
1 tCO ₂ e = 1,000 kgCO ₂ e	1 MWh = 3.6 GJ
1 kgCO ₂ e = 1,000 gCO ₂ e	1 GJ = 278 kWh
	1 GJ = 1,000,000 J
	1 MJ = 0.001 GJ
	1 TJ = 1,000 GJ
	1 PJ = 1,000,000 GJ

Appendix B: Public Engagement

Engagement Objectives

Principally, the Engagement Plan seeks to:

1. Build understanding about the process necessary to undertake meaningful climate action;
2. Facilitate inclusive conversations among interested or affected parties in order to document community concerns and aspirations;
3. Use community input to select the CCAP GHG emissions reduction target; and
4. Use community input as part of a collaborative problem-solving process with all interested or affected parties, in order to address the challenges of achieving the City's GHG emissions reductions targets.

This requires the City of Orillia to deliver certain outputs (tangible deliverables) and outcomes (changes in understanding, perspective, relationships, level of trust, etc.). Both the outputs and outcomes will support the City and interested or affected parties in reviewing and adjusting the CCAP.

Engaging with key interested or affected parties will provide opportunities to address concerns, discuss implications, and articulate the journey ahead. This will ensure that the CCAP created is feasible, ambitious, equitable, and effective.

The following are the recommended objectives for this Engagement Plan. These have been informed by SSG's experience and the pre-engagement interviews.

Objective 1: To inform, and more importantly, to engage interested or affected parties about the pressing need for ambitious climate action.

Output: A community-based interested or affected parties committee, with internal and external members, is established.

Outcome: Interested or affected parties understand the extent of planning and fiscal opportunities/needs necessary for the CCAP to succeed.

Outcome: Interested or affected parties understand the history resulting in the current need for a new strategy.

Outcome: Interested or affected parties know how to get engaged.

Outcome: Interested or affected parties are motivated and participate in engagement opportunities.

Output: Communications materials are created to educate and inform interested or affected parties about the strategy process and opportunities for input.

Objective 2: To involve interested or affected parties in the development of the engagement process.

Outcome: Interested or affected parties say they have been meaningfully involved in the development of the engagement plan for the CCAP.

Outcome: Interested or affected parties accept changes as necessary.

Output: Interviews with key interested or affected parties form the pre-engagement process.

Output: A pre-engagement interview summary.

Objective 3: To inform the community, including the Chippewas of the Rama First Nation, of the specific targets and actions required to create meaningful and feasible greenhouse gas emission reductions while engendering a sense of responsibility for continuing this work through to its long-term completion. Suggested outcomes include:

Outcome: The community understands both the changes, planning, and financial investment required for the climate action plan to succeed, as well as the increasing costs of inaction. Conversely, they are also aware that the change is achievable and that financial and “quality of life” benefits will be realized as the CCAP is achieved.

Outcome: Community participants know how to get engaged, are motivated to identify opportunities, and become partners in the realization of the CCAP.

Objective 4: To involve the community, including the Chippewas of the Rama First Nation, and City staff in gathering feedback to inform the modelling, to select appropriate low-carbon actions, and to determine how to implement the CCAP. This will ensure that the CCAP is customized to Orillia’s operational realities, strategic vision, expertise, and culture. It will also ensure all impacts to the Chippewas of the Rama First Nation impacts are considered.

Outcome: The Chippewas of the Rama First Nation understand and accept changes, challenges, or trade-offs that are required to create an ambitious CCAP.

Output: A series of criteria and/or options will be used to make decisions about low-carbon action selection.

Output: A series of assumptions to be used in the creation of low-carbon scenarios.

Output: Online survey or crowdsourcing activity distributed through optimal communications channels seeking feedback on scenario narratives and modelling results.

Output: The CCAP is based on an accurate description of Orillia’s “current state”. This foundation will ensure that the low-carbon actions proposed in the CCAP will correctly describe the type, extent, and speed of change required to achieve the emissions reduction goals.

Output: Regular updates (e.g. bimonthly) to mailing list subscribers and social media followers on project progress.

Output: Launch event and CCAP information session.

Output: BAU results workshop.

Output: Contact lists of the Chippewas of the Rama First Nations members who wish to continue the dialogue on CCAP implementation.

Outcome: The City of Orillia identifies and collaborates with its implementation partners to maximize the impact of the CCAP and to benefit all participants justly and equitably.

Objective 5: To involve the CBSC to lay the groundwork for a future implementation body that will be responsible for the long-term implementation of the strategy.

Outcome: The CBSC transitions into a long-term body that is responsible for the oversight of plan implementation.

Output: Terms of reference or planning document (like a memorandum of understanding) for the new implementation body.

Objective 6: To collaborate with the Chippewas of the Rama First Nation to identify how the CCAP can advance reconciliation and identify how the City and the First Nation can work together to implement low-carbon actions and advance the goal of the CCAP.

Outcome: Local Indigenous population will have an opportunity to provide input to shape the CCAP.

Output: A CCAP that is responsive to local First Nations concerns and based on a nation-to-nation engagement process.

Output: The City and the Chippewas of the Rama First Nation will have a foundation on which to potentially work as implementation partners.

Objective 7: To inform the Chippewas of the Rama First Nation and interested or affected parties about how their involvement will shape the City's climate action choices and to provide feedback to those interested or affected parties on the development of the CCAP and its implementation progress over the long term.

Outcome: Interested or affected parties will understand the impact of their participation in shaping the CCAP and in acting as champions for the implementation of the plan.

Outcome: Interested or affected parties can see they have impacted decision-making.

Output: The City of Orillia will provide regular and clear information on the progress of the CCAP on the City of Orillia's website, including updates on appropriate communications to interested or affected parties summarizing input and how it influenced plan decisions.

Output: Final presentation to the CBSC and City Council.

PHASE 1: PRE-ENGAGEMENT INTERVIEWS + ENGAGEMENT DESIGN

Project initiation: June–July 2021

ACTIVITY	SSG ROLE	CITY ROLE	OBJECTIVES	TIMEFRAME
Pre-engagement interviews and summary report	Conduct interviews of individuals identified by City (30-minute to 1-hour phone or video call). Analyze interviews.	Identify participants and invite them.	1	June–July
Engagement Plan design	Draft Engagement Plan.	Refine and approve.	All	July
CCAP engagement materials, including a dedicated project logo, promotional materials that can be shared online (e.g. social media, City’s website), and content for the CCAP webpage.	Prepare communications materials for the CCAP engagement process.	Provide support and guidance.	1, 3, 7	Ongoing

PHASE 2: ACTIVE ENGAGEMENT PERIOD

June 2021–January 2022

ACTIVITY	IAP2 SPECTRUM LEVEL
Public Communications Updates	<p>Inform</p> <p>Promise to the public: We will keep you informed on the plan’s progress and opportunities for you to become involved.</p>
<p>Internal Technical Committee (ITC) Workshop 1: The Process</p> <p>Task force members will become acquainted with each other and the project goals and process. The project approach and scenario modelling method will be introduced.</p> <p>Participatory workshop exercises will be hosted to build relationships, develop CAG project values, and explore themes to be addressed by the CCAP.</p>	<p>Involve</p> <p>Promise to the public: We will incorporate your preferences and feedback to the extent possible and seek advice in formulating alternatives.</p>
<p>CBSC Workshop 1: Introduction to the Process</p> <p>CAG members will become acquainted with each other and the project goals and process. The project approach and scenario modelling method will be introduced.</p> <p>Participatory workshop exercises will be hosted to build relationships, develop CAG project values, and explore themes to be addressed by the CCAP.</p>	<p>Involve</p> <p>Promise to the public: We will incorporate your preferences and feedback to the extent possible and seek advice in formulating alternatives.</p>

ACTIVITY	IAP2 SPECTRUM LEVEL
<p>CBSC & ITC Workshop 2. Where We're Headed: Opportunities and Targets</p> <p>Orillia's energy and emissions outlook will be presented to provide the scale of the emissions reductions challenge. The CAG will identify emissions areas to focus on and will present emissions reduction opportunities in each emissions sector for consideration in CCAP development. Varying emissions reduction targets will be debated, and preferred targets will be documented. The ITC will further explore corporate targets and what steps need to occur to get there, including corporate vehicles, waste, buildings, and energy generation. Feedback is incorporated to the CEEP.</p>	<p>Involve</p> <p>Promise to the public: We will incorporate your preferences and feedback to the extent possible and seek advice in formulating alternatives.</p>
<p>Online Community Survey: Online survey to give community members a chance to weigh in on vision statements and provide feedback. their low-carbon action and adaptation priorities. The results will be used as inputs into the action prioritization process.</p>	<p>Consult</p> <p>Promise to the public: We will seek your advice on the variety of options presented.</p>
<p>Launch Event: Town Hall 1—CCAP Inventory and BAU (Co-Hosted with Sustainable Orillia): The first public event, the Town Hall, will introduce the community to the CCAP process, share information about public input opportunities, and enable participants to share their vision for Orillia's future. Event hosting is shared with Sustainable Orillia.</p> <p>A possible guest speaker to kick-off the event with messaging on climate change.</p>	<p>Involve</p> <p>Promise to the public: We will incorporate your preferences and feedback to the extent possible and seek advice in formulating alternatives.</p>

ACTIVITY	IAP2 SPECTRUM LEVEL
<p>ITC 2: Base Year Energy and Emission Inventory and BAU Modelling Results A description of the project process and modelling approach will be presented. Base-year energy and emissions inventory data and Business-as-Usual Scenario modelling results will be reviewed. Emissions reduction challenges and opportunities will be discussed with regard to City powers. The second half of the project will be refining projects and policies to include in the October CAP. Proposed Attendees: Representatives from building approvals, community planning/ short-term planning, transportation, environmental services. Recommended to have directors or leadership committee to understand modelling approach.</p>	<p>Involve Promise to the public: We will incorporate your preferences and feedback to the extent possible and seek advice in formulating alternatives.</p>
<p>October Council Meeting: Corporate Climate Plan, draft Climate Emergency declaration. A presentation to Council on the recommended Corporate Plan and a recommended Climate Emergency.</p>	<p>Involve Promise: We will incorporate your preferences and feedback to the extent possible, and seek advice in formulating alternatives.</p>
<p>Focus Group 1: Youth (Lakehead University) 8–15 people. The group will have a short presentation on the community’s target and significant climate actions. A tailored list of low-carbon actions are presented and feedback is solicited to make them more inclusive.</p>	<p>Involve Promise: We will incorporate your preferences and feedback to the extent possible and seek advice in formulating alternatives.</p>
<p>Focus Group 2: Equity-Seeking Interest Groups 8–15 people. The group will have a short presentation on the community’s target and significant climate actions. Recommended Invitees: Renters advisory board, social housing operators, community-based non-profits.</p>	<p>Involve Promise: We will incorporate your preferences and feedback to the extent possible and seek advice in formulating alternatives.</p>

ACTIVITY	IAP2 SPECTRUM LEVEL
<p>ITC Workshop 3: Low-Carbon Scenario Actions & Assumptions Potential low-carbon actions and their assumptions for modelling will be identified and discussed by sector. Recommended Attendees: Directors or senior representatives from building approvals, community planning/short-term planning, transportation, environmental services. Representatives from building approvals, community planning/short-term planning, transportation, environmental services.</p>	<p>Involve Promise to the public: We will incorporate your preferences and feedback to the extent possible, and seek advice in formulating alternatives.</p>
<p>CBSC Workshop 3: Low Carbon Actions and Scenario development: This workshop will review climate actions associated with a climate target. SSG and the team will solicit CBSC input on considerations for scenario development.</p>	<p>Involve Promise to the public: We will incorporate your preferences and feedback to the extent possible and seek advice in formulating alternatives.</p>
<p>CBSC Workshop(s) 4a4b: Low-Carbon Scenarios This set of workshops will review the estimated impacts of climate actions for the City and community. Workshops with: CBSC, ITC, and Council.</p>	<p>Involve. Promise to the public: We will incorporate your preferences and feedback to the extent possible and seek advice in formulating alternatives.</p>

PHASE 3: FINAL REPORT + PRESENTATION

By Spring 2022

ACTIVITY	TIMEFRAME
Draft Presentation to Council. Update council on work done so far, draft elements of the low-carbon trajectory, and request to move to an open house.	Spring 2022
Community Open House: The plan is presented to the public along with technical reports. This event could potentially take place in person, if COVID guidelines allow. In the event that it is online, a digital, interactive Zoom-style event will be prepared.	Spring 2022 2-3 week open house period
Final Presentation to Council + Feedback Received Final details of the low-carbon plan and engagement results will be presented to Council. SSG, Sustainable Orillia, Youth Groups, and the Chippewas of the Rama First Nation invited.	Spring 2022
Celebratory Launch and Gala (Co-hosted with Sustainable Orillia)	TBD

Appendix C: Financial Analysis

PURPOSE OF THIS DOCUMENT

This document provides a summary of the projected costs, revenues, and savings associated with the implementation of the low carbon pathway modelled for Orillia's Community Climate Change Plan, on the whole and on an action-by-action basis. It also provides an overview of some of the energy transition's broader economic impacts, such as on jobs and household energy costs.

DISCLAIMER

Reasonable skill, care, and diligence have been exercised to assess the information acquired during the preparation of this analysis, but no guarantees or warranties are made regarding the accuracy or completeness of this information. This document, the information it contains, the information and basis on which it relies, and the associated factors are subject to changes that are beyond the control of the author. The information provided by others is believed to be accurate but has not been verified.

This analysis includes strategic-level estimates of capital investments and related revenues, energy savings, and avoided costs of carbon represented by the proposed Community Climate Change Plan. The intent of this analysis is to help inform project stakeholders about the potential costs and savings represented by Orillia's Community Climate Change Plan in relation to the modeled Business-as-Usual scenario. It should not be relied upon for other purposes without verification. The authors do not accept responsibility for the use of this analysis for any purpose other than that stated above and do not accept responsibility to any third party for the use, in whole or in part, of the contents of this document.

This analysis applies to the City of Orillia and cannot be applied to other jurisdictions without further analysis. Any use by the City of Orillia, its sub-consultants, or any third party, or any reliance on or decisions based on this document, are the responsibility of the user or third party.

Overview

This analysis describes the projected costs (capital investment), returns (operational and maintenance savings, energy savings, carbon cost savings, and revenues), and job creation opportunities associated with implementing the recommended low carbon pathway outlined in Orillia's Community Climate Change Plan (the "Plan"). The analysis also calculates marginal abatement costs, which identifies net cost per tonne of greenhouse gas (GHG) emissions reduced.

The following five categories of costs and returns are included in this financial analysis:

1. Capital costs;
2. Maintenance costs and savings;
3. Revenues;
4. Energy costs and savings; and
5. Carbon cost savings.

Administration, education, and marketing costs associated with actions are not included in the analysis. Nor are any of the costs or avoided costs associated with adding central energy infrastructure projected to be required with population growth and business-as-planned energy use. Similarly, any land purchases for renewable energy infrastructure are excluded.

In addition, where defensible cost and returns can not be identified for particular actions, they are excluded from the financial analysis. As a result, the following actions from the Plan's low carbon scenario are not included in this financial analysis:

Active transportation infrastructure required to increase the active transportation mode share;

The table below highlights the key findings from the financial analysis of the low carbon scenario recommended in the Framework. A glossary of terms is included in the summary.

Table 1. Summarized financial reporting

Financial Metric	Measurement Unit	Key Results
Total incremental capital investment, 2022-2050	2016 dollars, Cumulative	\$1.07 billion
Total savings and revenues*	2016 dollars	\$3.11 billion
Net return of the investments*	2016 dollars	\$2.04 billion
Capital cost (undiscounted) to reduce each tonne of GHG	2016 dollars	\$86
Abatement cost (NPV) per tonne of GHG	2016 dollars	-\$165
Top MACC actions	Marginal abatement cost/savings (\$/tonne CO ₂ e)	<ol style="list-style-type: none"> 1. Water consumption reduction 2. Adding solar PV to existing residential buildings 3. Adding solar to new non-residential buildings 4. Net-zero new construction 5. Modeshare shift
Employment	Person years of employment	7,282 person-years of employment, or an average of 260 full-time equivalent jobs annually
Annual savings on household energy expenditures	2016 dollars	\$3,958

*Over the lifecycle of the investment/asset

Key Financial Concepts

The following are key concepts that are used to analyze the economic and financial impacts of the Framework.

Costs are relative to the BAP

This financial analysis tracks projected costs and savings associated with low-carbon measures that are above and beyond the assumed 'business-as-usual' costs. The financial assumptions used to develop the analysis were shared with municipal government staff for input and revision.

Discount Rate

The discount rate is the baseline growth value an investor places on their investment dollar. A project is considered financially beneficial by an investor if it generates a real rate of return equal to or greater than their discount rate.

An investor's discount rate varies with the type of project, duration of the investment, risk, and the scarcity of capital.

Some argue that the evaluation of climate change mitigation investments should be based on the application of a very low or even zero discount rate to reflect the value to society. This approach is referred to as applying a social discount rate. A social discount rate is the discount rate applied for comparing the value to society of investments made for the common good and as such, it is inherently uncertain and difficult to determine.

In this project, we evaluate investments in a low-carbon future with a 3% discount rate.

Net Present Value

The net present value of an investment is the difference between the present value of the capital investment and the present value of the future stream of savings and revenue generated by the investment.

Five aggregate categories are used to track the financial performance of the low-carbon actions in this analysis: capital expenditures, energy savings (or additional costs), carbon cost savings, operation and maintenance savings, and revenue generation associated with renewable energy production facilities and some transit actions. Carbon cost savings assume that the carbon price will increase in line with current federal plans, reaching \$170/tonne CO₂e in 2030 and held constant thereafter.

Administrative costs associated with implementing programs, as well as any energy system infrastructure upgrades that may be required are not included, including associated land purchases. Similarly, the broader social costs that are avoided from mitigating climate change are not included in the financial analysis.

Marginal Abatement Cost

The marginal abatement cost of an action is the estimated cost for that action to reduce one tonne of GHG emissions and is calculated by dividing the action's net present value ('NPV') by the total GHG emissions it reduces (tCO₂e) over its lifetime. For example, if a project has a net present value of \$1,000 and generates 10 tCO₂e of savings, its abatement cost is \$100 per tCO₂e reduced. The abatement cost is marginal because it captures the incremental cost above the business-as-planned activity and cost.

Amortization

The costs of major capital investments are typically spread out over a period of time (e.g. a mortgage on a house commonly has a 25-year mortgage period). Amortization refers to the

process of paying off capital expenditures (debt) through regular principal and interest payments over time. In this analysis, we have applied a 25-year amortization rate to all investments where noted.

Industrial Emissions

Financial analysis of the industrial sector includes only the low carbon investments for secondary manufacturing. Primary industry (e.g. oil refinery) investments and net returns have not been estimated in this analysis.

A Note on Framework Motivation and Co-Benefits

The direct financial impacts of the Framework provide important context for local decision-makers. However, it is important to note that the direct financial impacts are a secondary motivation for undertaking actions that reduce GHG emissions. First and foremost, GHG emissions reductions are a critical response to the global climate crisis.

Note that most measures included in the Framework provide additional benefits to the community, such as cleaner air and positive health outcomes. These benefits are not fully captured in this analysis.

Financial Analysis Results

The investments required to implement the low-carbon pathway outlined in the Plan yield a positive financial return (net return) of \$2.04 billion over the lifecycle of the investments. Capital investments of \$1.07 billion across various sectors in the community are required between 2022 and 2050 to implement the Plan and generate the returns.

The overall returns translate to a weighted average return of \$165 per tonne of CO₂e reduced. Table two summarizes the net present value and marginal abatement cost by action and for the overall low-carbon pathway recommended in the Plan. All measures that have a positive abatement cost, or net financial loss, are highlighted in purple, and all measures with a negative abatement cost, or net financial return, are highlighted in green.

The most expensive action is retrofitting existing municipal-owned buildings, at \$734 per tonne of CO₂e avoided. This second most expensive action is adding heat pumps at \$393 per tonne of CO₂e avoided. The third most expensive action is retrofitting existing residential buildings at \$170 per tonne of CO₂e avoided.

Reducing water consumption has the lowest cost per tonne of GHG reduction, at an estimated savings of \$8,719 per tonne of CO₂e avoided. Beyond this, several actions relating to solar PV installations have high returns/savings. These include:

Adding solar PV to new residential buildings - \$748 per tonne of CO₂e avoided;

Adding solar to new non-residential buildings - \$732 per tonne of CO₂e avoided;

Adding solar PV to new residential buildings - \$542 per tonne of CO₂e avoided; and

Aside from rooftop solar installations, the most cost-effective actions per tonne of GHG emissions avoided are net-zero new residential buildings (\$638 per tonne of CO₂e avoided), mode share shift (\$547 per tonne of CO₂e avoided), and net-zero new municipal buildings (\$512 per tonne of CO₂e avoided).

Table 2. Net present value and marginal abatement costs by action.*

LOW-CARBON ACTION	CUMULATIVE EMISSIONS REDUCTION (KT CO ₂ EQ)	NET PRESENT VALUE	MARGINAL ABATEMENT COST (\$ / T CO ₂ EQ)
Water consumption reduction	1	-\$8,151,477	-\$8,719
Existing building solar PV	84	-\$62,454,381	-\$748
New non-res solar PV	21	-\$15,537,539	-\$732
New dwelling EUI	69	-\$44,236,037	-\$638
Mode share shift	258	-\$141,312,236	-\$547
New dwelling solar PV	15	-\$7,968,713	-\$542
New municipal EUI	73	-\$37,655,604	-\$512
Electrify PUV	936	-\$391,047,069	-\$418

¹This average is weighted in terms of actions that reduce more tonnes of GHGs influence the average more than actions that reduce less tonnes of GHGs. The net present value of the measures includes credit for the avoided costs of carbon (\$170/tonne CO₂e by 2050); if that credit were excluded, the net savings per tonne of GHG mitigated would be correspondingly lower.

LOW-CARBON ACTION	CUMULATIVE EMISSIONS REDUCTION (KT CO ₂ EQ)	NET PRESENT VALUE	MARGINAL ABATEMENT COST (\$ / T CO ₂ EQ)
Electrify commercial vehicles	905	-\$365,679,209	-\$404
New non-res EUI	212	-\$77,746,850	-\$366
Electrify municipal fleet	9	-\$2,654,004	-\$297
Electrify transit	37	-\$7,951,584	-\$213
Industrial efficiency	350	-\$56,176,173	-\$161
Waste diversion	182	-\$11,363,624	-\$62
Methane recovery	317	\$2,889,685	\$9
RECs	655	\$34,744,182	\$53
Fuel switch to RNG	190	\$12,533,922	\$66
Retrofit non-res	179	\$30,381,741	\$169
Retrofit dwellings	362	\$61,528,985	\$170
Heat pumps	965	\$379,560,900	\$393
Retrofit municipal buildings	10	\$7,491,741	\$734
TOTAL	5,831	-\$700,803,343	-\$120

*This table calculates the marginal abatement cost of actions out to 2050 and thus the total figures for NPV and marginal abatement cost differ from those outlined above which describe the results throughout the lifecycle of the investment.

Marginal Abatement Cost

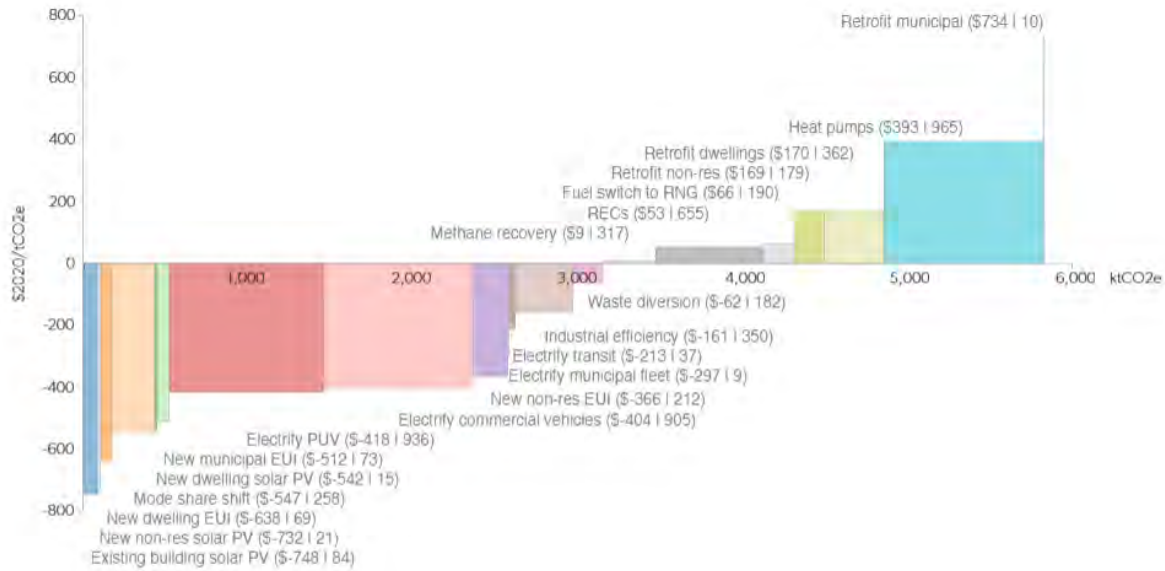
Marginal abatement costs are the estimated costs for each action to reduce one tonne of GHG emissions and are calculated by dividing each action's net present value by the total GHG emissions it reduces (tCO₂e) over its lifetime. For example, if a project has a net present value of \$1,000 and generates 10 tCO₂e of savings, its abatement cost is \$100 per tCO₂e reduced.

The marginal abatement cost curve (Figure 1) illustrates the individual marginal abatement cost of each of the actions included in the Plan. Note that although the presentation of the cost curve implies that each action has a unique marginal abatement cost, individual actions cannot be neglected without impacting the overall financial and GHG reduction outcomes of the broader set of actions. For example, if building retrofits are not completed, the amount of renewables required to meet the targets laid out in the Plan will increase drastically, which among other practical concerns, will change the financial cost of this action. Similarly, delaying actions will impact savings that households and businesses can achieve through the actions.

The marginal abatement cost curve provided useful insights when developing the Plan, particularly the recommendations for implementation. For example, it makes apparent which actions will be necessary but costly, and may not be financially appealing for the private sector to undertake on its own. This highlights where subsidies, incentives, or in some cases, regulations, from the municipal government or other funders or regulators may be powerful tools to spur action. The cost curve will remain useful as implementation gets underway, including programs, policies, and initiatives being planned and launched, and as they are reviewed and adjusted

over time based on changing conditions and lessons learned. Note, however, this analysis is a snapshot of current assumptions which are expected to change over time in the case of changes in carbon tax rates and pricing changes driven by market economics.

Figure 1. Marginal abatement cost curve for the actions included in the Plan.



Present and Net Present Values

The majority of the actions recommended in the Plan have positive net present values, as does the entire program of actions, or overall low-carbon pathway. Table 3 shows the present value of the major components of the Plan including capital investments, operations and maintenance savings, energy cost savings, avoided costs of carbon, and revenue. After discounting at 3%, the capital investments in the program have a present value of \$1.07 billion by 2050 when investments are complete, and the savings, avoided cost of carbon, and revenue have a net return of \$2.04 billion at the end of the lifecycle of the investments /assets.

Even though capital investment for the plan ends in 2050, the net present value includes the ongoing energy, maintenance, carbon costs savings, and projected revenue out to the end of the lifecycles of the assets as the investments made between 2022-2050 will continue to generate financial returns beyond the initial investment dates.

Table 3. Summary of financial results (Note: negative number = savings; positive number = cost)

FINANCIAL CONSIDERATION	NET PRESENT VALUE (DISCOUNT RATE 3%)
Capital investments	\$1.07 billion
Operations & maintenance savings	\$600 million

FINANCIAL CONSIDERATION	NET PRESENT VALUE (DISCOUNT RATE 3%)
Energy cost savings	\$1.25 billion
Carbon price savings	\$1.26 billion
Revenue from local generation and services	n/a
Net return of actions	\$2.04 billion

Cash Flow Analysis

The annual costs, savings, and revenue associated with fully implementing the low carbon scenario are shown in detail in Figure 2, with capital expenditures shown in full in the years in which they are incurred. As is characteristic of net-zero transitions, the capital expenditures in the early years of the transition are significantly greater than the savings and revenues generated, but, by 2031, the annual benefits exceed the annual investments and the cumulative benefits are greater than the cumulative costs.

Figure 2. Year-over-year low-carbon scenario investments and returns

Year-Over-Year Low-carbon Scenario Investment and Returns

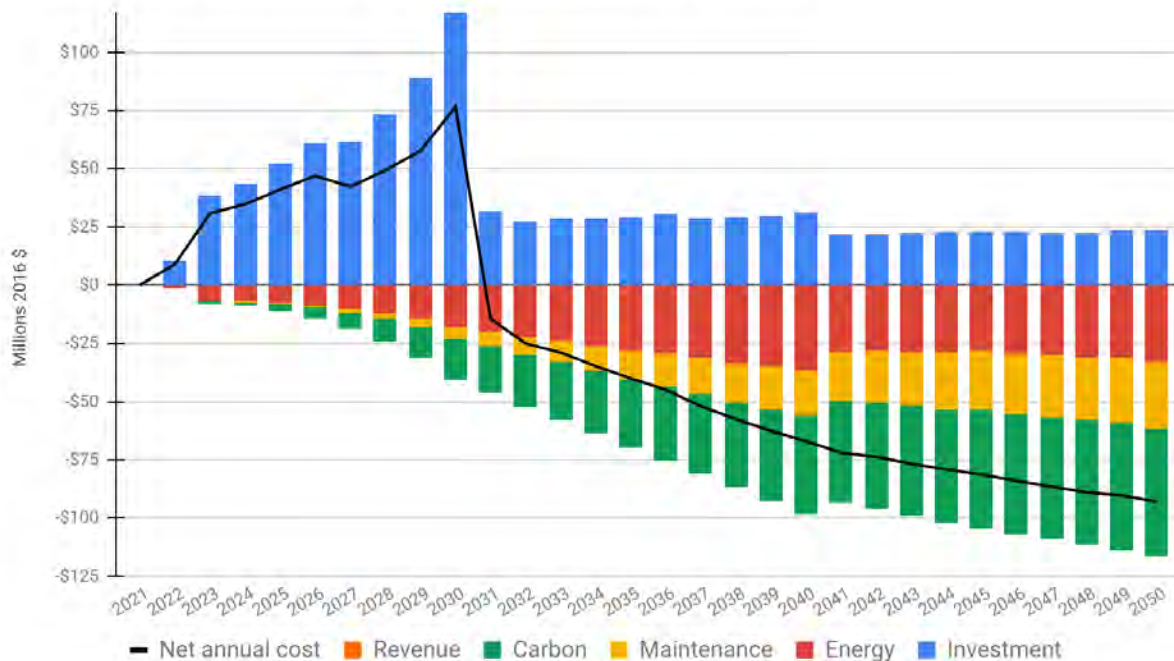
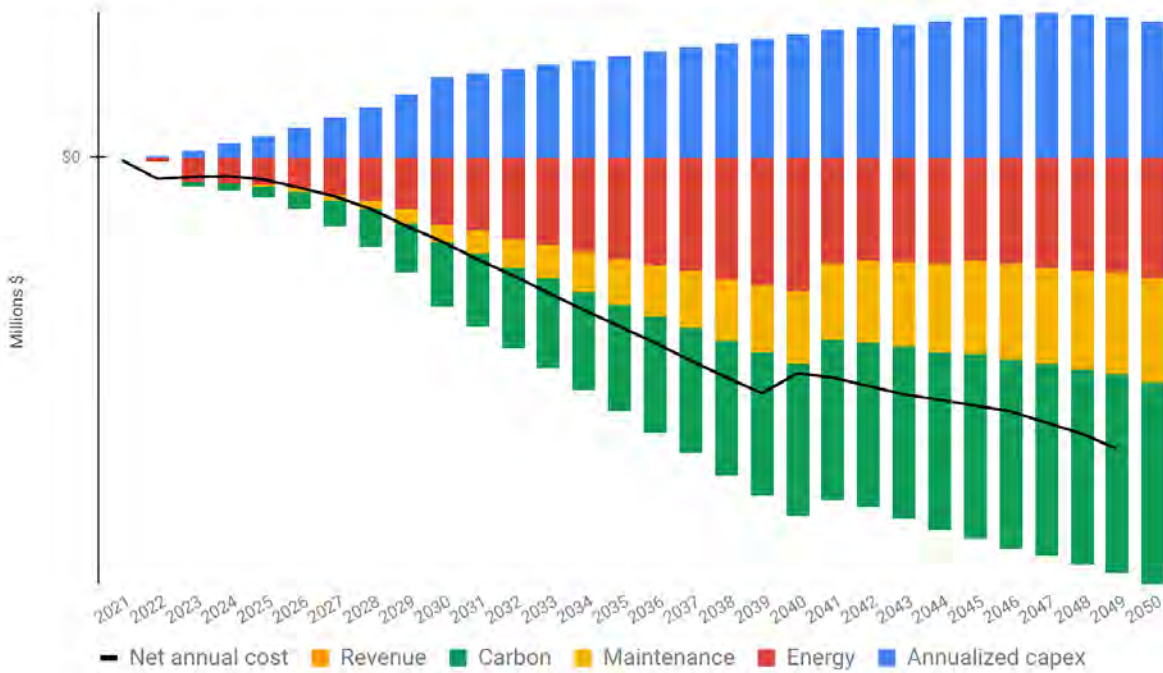


Figure 3 presents the same costs and benefits, but with the capital expenditures amortized over 25 years at a three per cent discount rate. With this approach, which presumably better reflects actual approaches for financing the transition, the savings and revenue generation throughout the scenario (2022-2050) are greater than the annualized capital payments. After 2050 (not shown in Figure 5), the benefits and revenues continue, resulting in continuing growth in the net annual benefit.

Figure 3. Year-over-year low-carbon scenario investments and returns, with capital investments, annualized

Year-Over-Year Low-carbon Scenario Investment and Returns, with capex annualized



Cost Savings for Households

Household expenditures on energy are projected to decline slightly in the business-as-usual scenario and decline more significantly in the low-carbon scenario. The baseline financial modelling and assumptions record an average household energy cost of over \$9,200 in 2016. In the business-as-usual scenario, household energy costs are expected to decline to around \$6,500 by 2050. Expenditure decreases can be attributed in part to vehicles becoming more efficient due to national fuel efficiency standards and the transition to electric vehicles that will happen in the business-as-usual scenario, and because of decreased heating requirements as the climate becomes milder due to climate change. These factors outweigh the increasing carbon tax being levied on fossil-fuel-derived sources of energy.

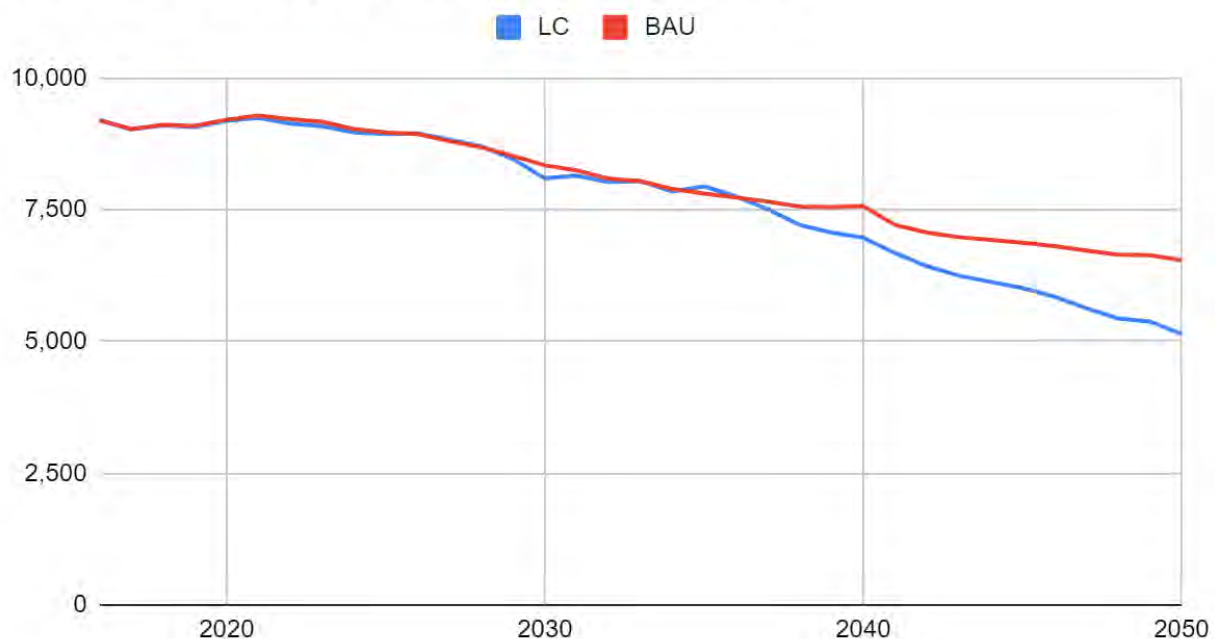
The low-carbon scenario involves shifting away from natural gas, diesel, and gasoline to electricity, which is currently more expensive than natural gas in Orillia. The increased cost of electricity, however, is offset by the increased efficiency of homes and electric vehicles, as well as the avoided carbon price.

In the low-carbon scenario, an average household in Orillia is expected to spend just over \$5,100, on household energy costs by 2050. This is 21% less per household than the 2050 cost in the business-as-usual scenario and 44% lower than 2016 energy costs.

Between 2022 and 2050, the low-carbon scenario will save the average Orillia household over \$11,000 in gross cumulative household energy expenditures, not including the cost to undertake efficiency improvements.

Figure 4. Projected household energy costs in Orillia in the business-as-usual and low-carbon scenarios, 2016-2050

Projected average household energy costs



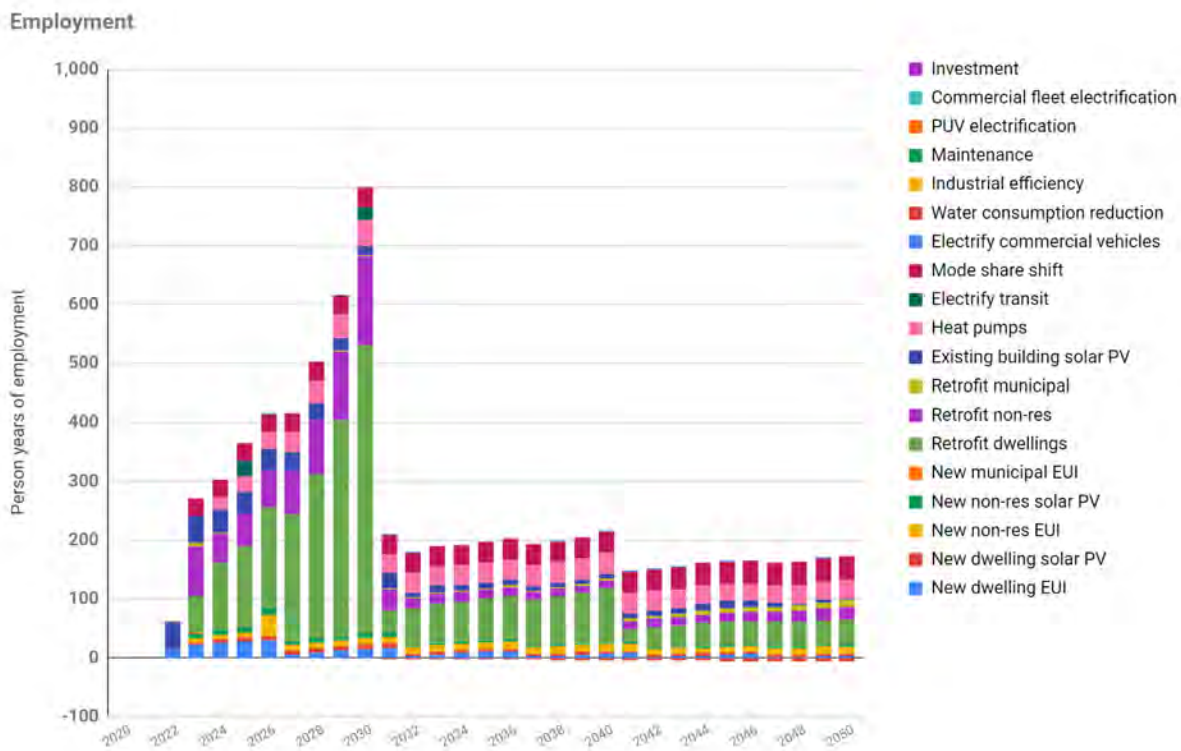
New Job Opportunities

Transitioning to a low- or zero-carbon economy is expected to have four categories of impacts on labour markets: additional jobs will be created in emerging sectors, some employment will be shifted (e.g., from fossil fuels to renewables), certain jobs will be reduced or eliminated (e.g., combustion engine vehicle mechanics), and many existing jobs will be transformed and redefined.

According to the direct job multipliers from Census Canada, implementation of the Plan will create more than 7,200 person-years of employment between 2022 and 2050. That is equal to an average of 260 full-time equivalent jobs per year above the jobs that would be created in the business-as-usual scenario. These jobs are primarily created by building retrofits.

There is a larger increase in jobs per year above the business-as-usual scenario between 2023 and 2030, than in the later years of the low-carbon scenario. This is due to the plan's recommendation for Orillia to complete the bulk of retrofits by 2030.

Figure 5. Projected increases in person years of employment in the low-carbon pathway compared to the business-as-planned scenario



Key Financial Assumptions

Land Use	Capital Investment Assumption
Land use intensification	Capital costs associated with land-use intensification encompass standard investment in the community, such as new housing developments. Generally speaking, with more infill development, new infrastructure spending decreases.
Decrease share of single-detached housing	
New Buildings	
New residential buildings with heat pumps	The cost for new construction of buildings on a \$/m ² is estimated to be: Single-detached: \$1,776 / m ² Double/row: \$1,426 / m ² Apt 1-6 storey: \$2,314 / m ² Apt 7-12 storey: \$2,422 / m ² Apt > 12 storey: \$2,395 / m ² Commercial: \$2,494 / m ² Industry: \$3,229 / m ² A residential air-source heat pump has a capital and installation costs of approximately \$8,485 (non-residential is ~\$10,075) and annual operating cost of approximately \$160 annually (~\$400 annually for non-residential).
New industrial building efficiency	
New commercial building efficiency with heat pumps	
Existing Buildings	
Retrofits of homes and heat pumps	The average cost of a 50% energy efficiency retrofit is assumed to be: Residential (per unit): \$45,000 Non-Res (\$/m ²): \$275 Industrial upgrades average the following in 2022 and 2050 per GJ/year Lighting system: \$134 \$59 Space heating: \$25 \$34 Water Heating: \$32 \$49 Motive: \$66 \$176 Process heat: \$27 \$43
Retrofits of commercial and industrial buildings	

Industrial improvements (process motors/efficiency)	
Renewable Energy	
Solar	Groundmount solar PV is assumed to cost about \$1,625 per kw/year in 2022, their maintenance costs are assumed to be \$20 per kw/year.
Transport	
Establish local electric bus service	<p>Today electric buses cost approximately \$630,000, and are expected to cost less than a diesel bus by 2031. A fast charger costs about \$140,000, and is assumed to be needed on a 1:20 ratio with electric buses. Electric bus maintenance costs are approximately 30% lower than for diesel buses.</p> <p>The cost of a personal electric vehicle is approximately \$33,500 in 2022 and is expected to decrease to \$32,000 by 2030, dropping below the cost of an average combustion engine vehicle by 2025. As of today, maintenance costs for an EV are assumed to be half of those for combustion engine vehicles.</p> <p>Heavy duty combustion engine vehicles are not expected to reach cost parity with their electric counterparts by 2050.</p>
Electrify municipal fleets	
Electrify personal vehicles	
Net-zero commercial transport activity	

Appendix D: Corporate Climate Action Plan

DISCLAIMER

Reasonable skill, care and diligence has been exercised to assess the information acquired during the preparation of this analysis, but no guarantees or warranties are made regarding the accuracy or completeness of this information. This document, the information it contains, the information and basis on which it relies, and factors associated are subject to changes that are beyond the control of the authors. The information provided by others are believed to be accurate but have not been verified.

This analysis includes strategic-level (i.e. high-level) estimates of costs and revenues that should not be relied upon for design or other purposes without verification. The authors do not accept responsibility for the use of this analysis for any purpose other than that stated above and does not accept responsibility to any third party for the use, in whole or in part, of the contents of this document. This analysis applies to Orillia and cannot be applied to other jurisdictions without analysis. Any use by theCity, its sub-consultants or any third party, or any reliance on or decisions based on this document, are the responsibility of the user or third party.

Glossary of Terms

BAU: Business-as-Usual Scenario

BEV: Battery Electric Vehicle

CAFE: Corporate Average Fuel Economy

CEEP: Community Energy and Emissions Plan

DE: District energy

EPA: Environmental Protection Agency

EV: Electric vehicle

FCM: Federation of Canadian Municipalities

GHG: Greenhouse gas

GJ: Gigajoule

HV: Heavy-duty vehicle

ICI: Institutional, commercial, and industrial

IESO: Independent Electricity System Operator

IPCC: Intergovernmental Panel on Climate Change

J: Joule

kWh: Kilowatt hour

ktCO₂e: Kilotonnes carbon dioxide equivalent

MTSA: Major Transit Station Area

MW: Megawatt

NEB: National Energy Board

O&M: Operations and maintenance

OPO: Ontario Planning Outlook

PACE: Property Assessed Clean Energy

PJ: Petajoule

PV: Photovoltaics

RNG: Renewable natural gas

SCC: Social cost of carbon

tCO₂e: Tonnes carbon dioxide equivalent

TGS: Toronto Green Standard

TJ: Terajoule

UNFCCC: UN Framework Convention on Climate Change

WWTP: Wastewater Treatment Plant

ZEV: Zero Emission Vehicle

Executive Summary

The Corporate Climate Action Plan (CAP) is the first part of a comprehensive climate action plan for the City, with part 2 focussing on community actions. Together, these two documents will form a comprehensive strategy, Orillia's Climate Future.

The CAP identifies a pathway to net-zero GHG emissions for City operations by 2040, including the following targets.

1. Buildings

1.1 Existing buildings:

By 2030, the City will reduce heating consumption by 50%, and by 2040, the City will reduce non-heating energy use by 20–50% through retrofit and renovation.

1.2 Recreational buildings:

By 2030, the City will reduce energy consumption in arenas and swimming pools by 20–50%, and by 2040, the City will reduce GHG emissions in arenas and swimming pools by 100%.

1.3 Building heat consumption:

By 2040, the City will meet all heating demand in corporate buildings using 100% clean electricity.

1.4 New buildings:

After 2023, all new buildings will meet Passive House or equivalent according to the building use case, and meet net-zero GHG standards.

2. Vehicle Fleet

2.1 Light-duty vehicles:

After 2023, the City will purchase electric light-duty vehicles where available/possible, with the goal of solely purchasing electric vehicles by 2030.

2.2 Medium and heavy-duty vehicles:

The City will delay procurement of medium-duty pick-up trucks until a new fleet of electric pick-ups are available in 2025.

By 2025, the City will convert 100% of utility and maintenance ATVs to electric.

By 2030, the City will convert 50% of heavy-duty vehicles (e.g. snow removal, dump truck) to electric or hydrogen-powered.

By 2040, the City will only procure zero-emission vehicles (electric or hydrogen).

3. Clean Electricity

By 2040, the City will develop the capacity to generate 6–8 MW of renewable energy, or engage in another strategy to purchase renewable energy and/or its benefits.

KEY IMPLICATION: A CARBON BUDGET

The Corporate CAP embeds the consideration of GHG emissions capital and operating budgets, infrastructure planning, and fleet management.

In order to align financial and GHG management, Orillia will apply a carbon budget. Like a financial budget, the carbon budget aims to limit the emissions the City “spends.” The carbon budget is designed to be applied in 4-year intervals to line up with the City’s financial budgeting process. The carbon budget assigns a cap of GHGs the City can emit in each four year period. The suggested carbon budget, which is to begin in 2021, is provided below:

Carbon Budget ²	
4-year period	Budget
2021-2024	9,982
2025-2028	9,055
2029-2032	6,886
2033-2036	4,075
2037-2040	3,567

KEY IMPLICATION: CITY BUDGET

The transition to net-zero corporate emissions will require investments over and above what is currently allocated to the maintenance of current buildings and fleet. However, if retrofits are planned to coincide with building maintenance and upgrades already scheduled, then those costs can be reduced. For example, if a building facade needs to be updated in 2032 for structural or integrity reasons, then installing insulation at the same time would be less expensive than installing insulation at a separate time. Combining these efforts also limits the disruption to municipal staff and to the public. The CAP also identifies investments in renewable energy to ensure the availability of clean electricity by 2040.

The following table provides estimates of the investments needed to make Orillia’s corporate operations net-zero by 2040. The bulk of the retrofits take place between 2031–2035. Expediting these retrofits would reduce GHG emissions more quickly and help save on energy costs.

Table 1. Estimated Total Investment Cost (2021-2040)

	2021-2025	2026-2030	2031-2035	2036-2040	Total
Twenty year investments (in millions, \$2018)					
Buildings	4.6	7.9	15.2	0.2	27.9
Fleet	3.7	3.4	2.7	2.5	12.3
Renewable energy	4.5	6.1	1.0	1.0	12.6
Total investment	53				

² Note that this carbon budget assumes the phasing out of emissions from electricity beginning in 2030 with zero emissions from electricity by 2040.

	2021-2025	2026-2030	2031-2035	2036-2040	Total
Fuel Cost Savings (in millions, \$2018)					
Buildings	0.07	0.4	1.4	1.9	3.8
Fleet	0.25	1.2	1.8	2.1	3.6
Renewable energy ³	0.6	3.1	4.6	5.1	13.5
Total Fuel Cost Savings	21				
Carbon Cost Avoided (in millions, \$2018)					
Fleet and Buildings	0.08	0.6	1.5	1.9	4.1
Renewable Energy	.03	.3	.52	.65	1.5
Total Carbon Cost Savings					5.6
20 Year-Transition Total	27				

The estimates of energy consumption, GHG emissions, and selected financial flows (i.e. fuel costs, vehicle O&M costs, carbon costs, capital investments), will inform and guide the City's efforts to reduce its corporate emissions, and can support subsequent decision-making processes for specific buildings and vehicles.

³ The total for fuel cost savings is high-level and does not account for the nuance of hourly electricity supply and demand. This analysis is outside the scope of this report.

Introduction

The Corporate Climate Action Plan (CAP) consists of targets and actions designed to reduce the greenhouse gas emissions of the Corporation of the City of Orillia. The Corporate CAP will work in tandem with the forthcoming Community Climate Action Plan (CCAP) to create a comprehensive framework for climate action in Orillia. Together, these two documents will form Orillia's Climate Future.

The Corporate CAP addresses municipal buildings and the City's vehicle fleet. These assets use energy to keep the lights on and the engines running. In turn, these energy sources release greenhouse gas emissions into the atmosphere. For example, the City burns natural gas to keep buildings warm in the winter, and diesel to run heavy-duty vehicles; both of these energy sources release carbon dioxide.

This plan describes a pathway to decarbonize these assets. Infrastructure such as street lights and the wastewater treatment plant will be addressed in the Community CAP.

In 2018, the City's buildings and vehicle fleet emitted 2,400 tCO₂e of carbon dioxide. If the City took no action on climate change and Orillia continued to grow at its projected rate, by 2040 the City's buildings and vehicle fleet would emit roughly 3,150 tCO₂e.

This pathway will shift the City from its current corporate energy use and emissions trajectory to net-zero emissions by 2040. Net-zero means that Orillia either releases no GHGs or offsets the emissions it does release.⁴ The actions outlined in the plan will decarbonize building and fleet assets as much as possible to reduce corporate emissions and then develop or purchase renewable energy to offset any remaining emissions.

The target aligns with changes required to keep global average temperature increases to less than 1.5 °C above pre-industrial levels. This goal of 1.5°C was agreed upon by the world's countries in 2015 as the way to collectively avoid the worst climate impacts.⁵ The target also supports Orillia's declaration of a climate emergency.

Though 2040 seems far from now, some aspects of this plan will need to be implemented in the very near term to meet the target. These aspects include actions like large building retrofits, which can be timed to coincide with renovations that are already scheduled. Others, like the development or purchase of renewable energy, may evolve over the next fifteen years as technologies advance and the province changes the electricity grid's energy mix.

Decarbonizing buildings and the vehicle fleet and investing in renewable energy is projected to cost about \$2.9 million per year in 2018 dollars from now until 2040. However, as assets move to cleaner energy sources, the City will save money on fuel costs and carbon costs. After accounting for these deferred costs, the projected net cost of the plan is roughly \$1.5 million per year.

⁴ Canada has joined more than 120 countries in a pledge to move to a net-zero economy. For more information, see Canada's Climate Plan

⁵ The decision to limit global warming to 1.5°C less than pre-industrial levels was reached at the Paris Climate Agreement in 2015. For more information see the Paris Agreement: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

Scope of the Corporate Climate Action Plan

The scope of the CAP considers the following corporate assets and activities:

1. Building retrofits and efficiency measures

This includes activities related to reducing energy consumption and GHG emissions associated with municipal buildings.

2. Fuel-switching

For buildings that require space heating and cooling and water heating, the goal is to switch to electric sources, and primarily electric air source heat pumps.

3. Electrifying the corporate fleet

The analysis includes the light, mid-size, and heavy vehicles in the city's operations as well as equipment.

4. Generating or purchasing clean electricity

To offset emissions associated with use of Ontario's electricity grid, the plan outlines four strategies to either generate or purchase renewable energy.

Water and wastewater, while corporate functions, are addressed in the Community Climate Action Plan.

Orillia's Current Reality: Corporate Energy and Emissions Inventory

Corporate Inventory

The City maintains 35 municipal buildings. These include buildings like fire halls, pools, arenas, and the Opera House. Smaller buildings, like the outdoor washroom facilities at Moose Beach and Couchiching Park, require very little energy.

The fleet is made up of more than 80 vehicles that include small cars for daily needs and heavy-duty machinery like snow plows and dump trucks. These heavier vehicles may not be deployed as often as the smaller cars, but they have much larger fuel tanks and burn through more gas and diesel on a per vehicle basis.

Though the graphs in this overview include energy consumption and emissions from street lights and wastewater processing, the Corporate CAP will focus on buildings and the vehicle fleet.

ENERGY CONSUMPTION

In 2018, Orillia consumed approximately 103,000 GJ of energy. Electricity accounted for 58% of this total, followed by natural gas at 33% and diesel and gas the remaining 9%.

At present, electricity is sourced from Ontario's grid. Electricity is used to light buildings, traffic lights, and street lamps and to power water filtration and wastewater treatment systems. Natural gas is primarily used to heat indoor spaces and the recreation centre swimming pool.

Diesel and gasoline were used exclusively in Orillia's corporate fleet to power light-, medium-, and heavy-duty vehicles.

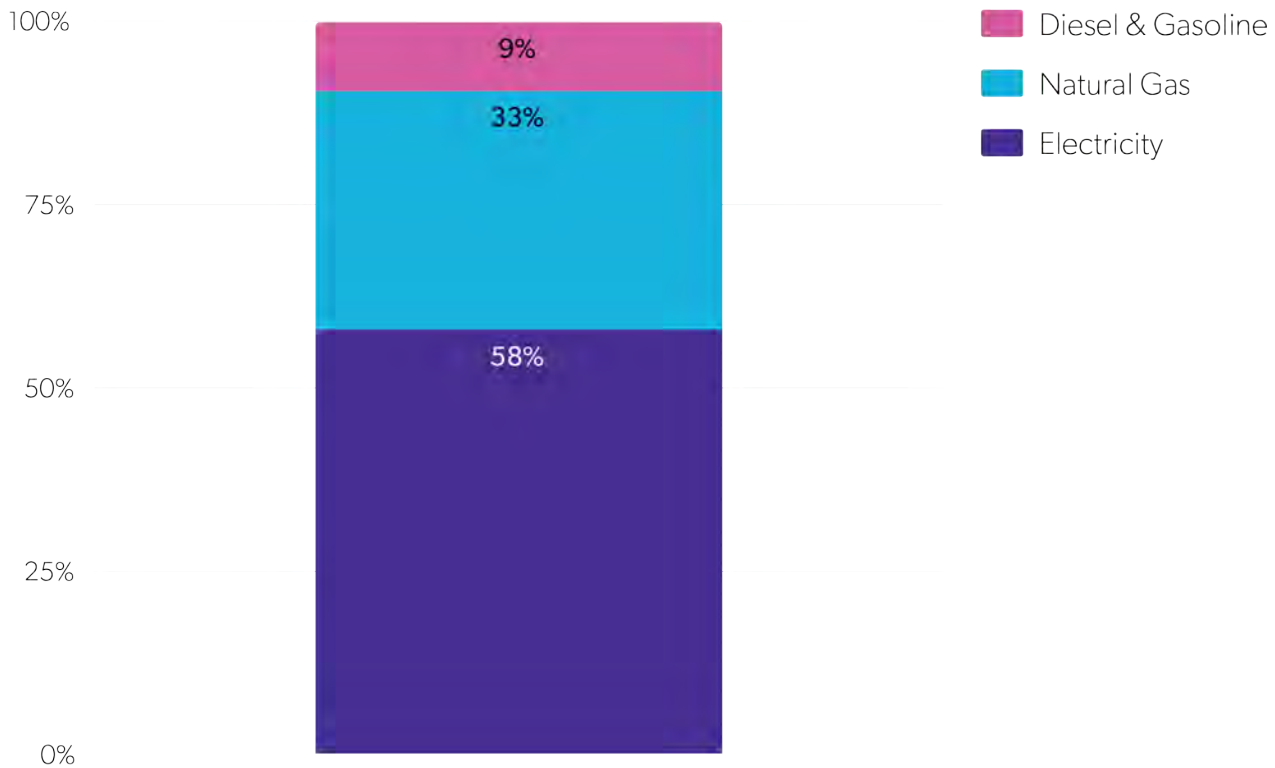


Figure 1. Orillia Corporate Energy Consumption, fuel-type, 2018.

GHG EMISSIONS

In 2018, Orillia's corporate emissions totalled approximately 2,800 tCO₂e. Natural gas in buildings comprised 60% of Orillia's GHG emissions, which made it the largest emitting fuel-type in the corporate inventory. The City uses natural gas to heat indoor spaces and the recreation centre swimming pool.

Lights in buildings, traffic lights, and street lights use electricity that results in emissions from Ontario's electricity grid. Finally, diesel and gasoline consumption in the vehicle fleet made up 25% of the total emissions.

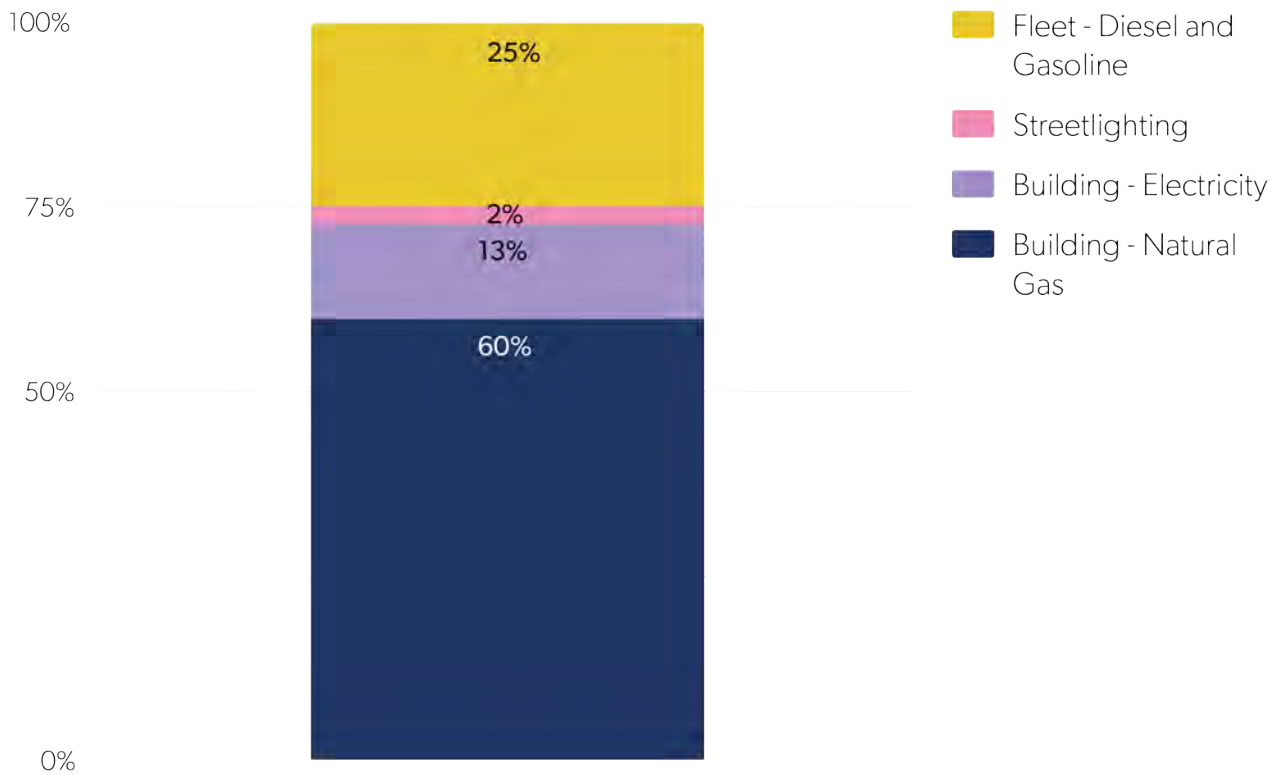


Figure 2. Orillia Corporate GHG Emissions by Sector 2018.

Business-As-Usual for the Next 20 years

The Business-as-Usual (BAU) scenario predicts a future where Orillia’s population increases as projected but the City takes no action on climate change. It serves as a reference point for the City’s potential energy consumption and GHG emissions in 2040. It is important to note that the BAU scenario does not include street lighting and wastewater processes as these are covered in a separate plan.⁶

⁶ As a result of these items not being included, GHG emissions start approximately 200 tCO₂e lower than the inventory year.

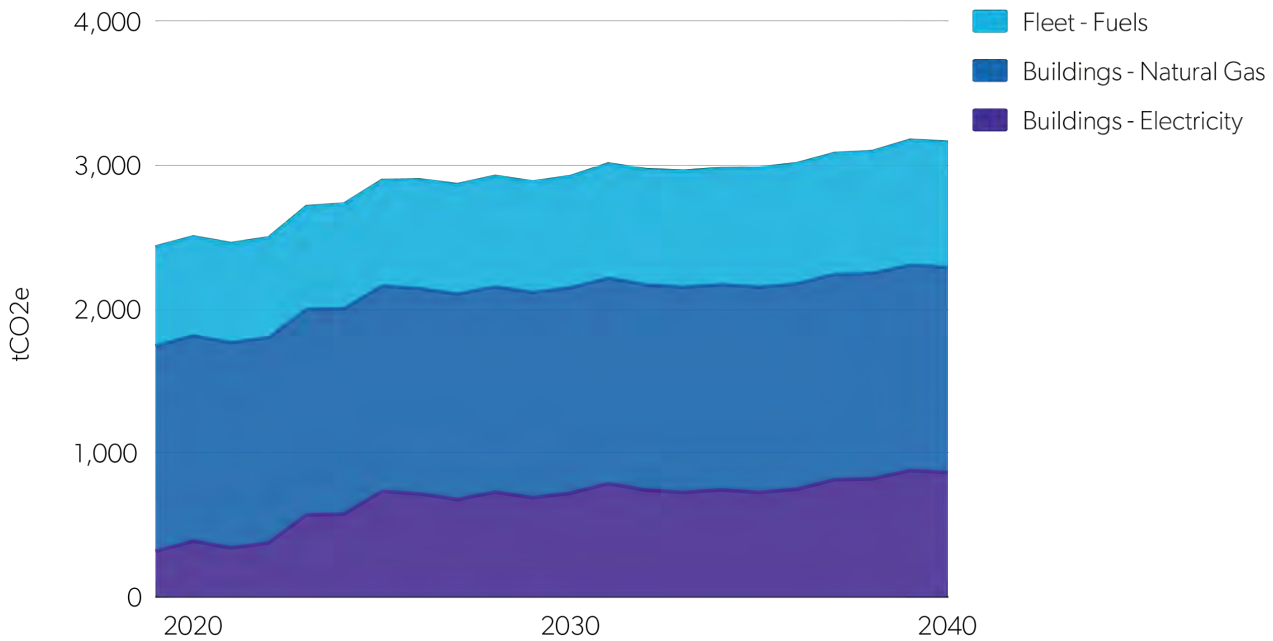


Figure 3. Business-as-usual GHG emissions for Orillia's Corporate Activities, 2018-2040. Note that street lighting and wastewater treatment are not included in this projection.

The BAU projects that GHG emissions will grow by 30% from roughly 2,400 tCO₂e in 2018 to 3,150 tCO₂e in 2040. This growth reflects additional vehicles needed for Orillia's fleet and increased emissions from the city's use of electricity from Ontario's grid.⁷ In the BAU, natural gas continues to be the dominant emitter.

In the BAU, the City continues to buy gas and diesel rather than electric vehicles, and as such emissions from the fleet are projected to grow by 26%.

A Climate-Friendly Future: The Net-Zero Transition

Net-Zero is a short way of saying that a place, business, or organization emits as little carbon dioxide as possible, and then offsets any emissions it does produce. Balancing emissions can be thought of like balancing a bank account—in this case the City reduces its carbon "expenses" as much as possible and then either generates or purchases enough renewable energy to cover the remainder.

The Corporate CAP embeds the consideration of GHG emissions capital and operating budgets, infrastructure planning, and fleet management.

In order to align financial and GHG management, Orillia will apply a carbon budget. Like a financial budget, the carbon budget aims to limit the emissions the City "spends." The carbon

⁷ The Atmospheric Fund of Ontario (and the IESO) projects that Ontario will increase its natural gas electricity generation over the next 15 years, which will lead to an increase in average GHG emissions. Grams of emissions per kilowatt hour increase from 50 to approximately 80 in 2040 and beyond. The forecasted emissions factor must be factored into the NZS to help to avoid underestimating the effects of interventions in the future.

budget is designed to be applied in 4-year intervals to line up with the City's financial budgeting process. The carbon budget assigns a cap of GHGs the City can emit in each four year period. The suggested carbon budget, which is to begin in 2021, is provided below:

Carbon Budget ⁸	
4-year period	Budget
2021-2024	9,982
2025-2028	9,055
2029-2032	6,886
2033-2036	4,075
2037-2040	3,567

Decarbonizing Building and Vehicle Fleet Assets

THE BUILDINGS ENERGY AND EMISSIONS NET-ZERO TRAJECTORY

To meet the net-zero target, the City will need to retrofit its existing buildings to reach at least 50% energy savings by 2040. A retrofit timeline has been identified to ensure that the upgrade activities disrupt the public and corporate operations as little as possible. For example, retrofits are not scheduled to occur in all recreational facilities or public amenities at once. Staff buildings should remain open to ensure that municipal work is not affected.

Buildings

1.1 Existing buildings:

By 2030, the City will reduce heating consumption by 50%, and by 2040, the City will reduce non-heating energy use by 20–50% through retrofit and renovation.

1.2 Recreational buildings:

By 2030, the City will reduce energy consumption in arenas and swimming pools by 20–50%, and by 2040, the City will reduce GHG emissions in arenas and swimming pools by 100%.

1.3 Building heat consumption:

By 2040, the City will meet all heating demand in corporate buildings using 100% clean electricity.

1.4 New buildings:

After 2023, all new buildings will meet Passive House or equivalent according to the building use case, and meet net-zero GHG standards.

The timeline has also been set up to ensure that larger buildings which consume more energy and are already scheduled to undergo normal renovations are targeted first. This process identified Brian Orser Arena and Barnfield Point for retrofits by 2025. Targeting larger buildings

first can help reduce energy costs, which frees up funding to renovate buildings that come up later in the timeline.

Figure 4 illustrates the timeline for building retrofits which was evaluated in this analysis. For a list of planned municipal building retrofits, see Appendix 2.

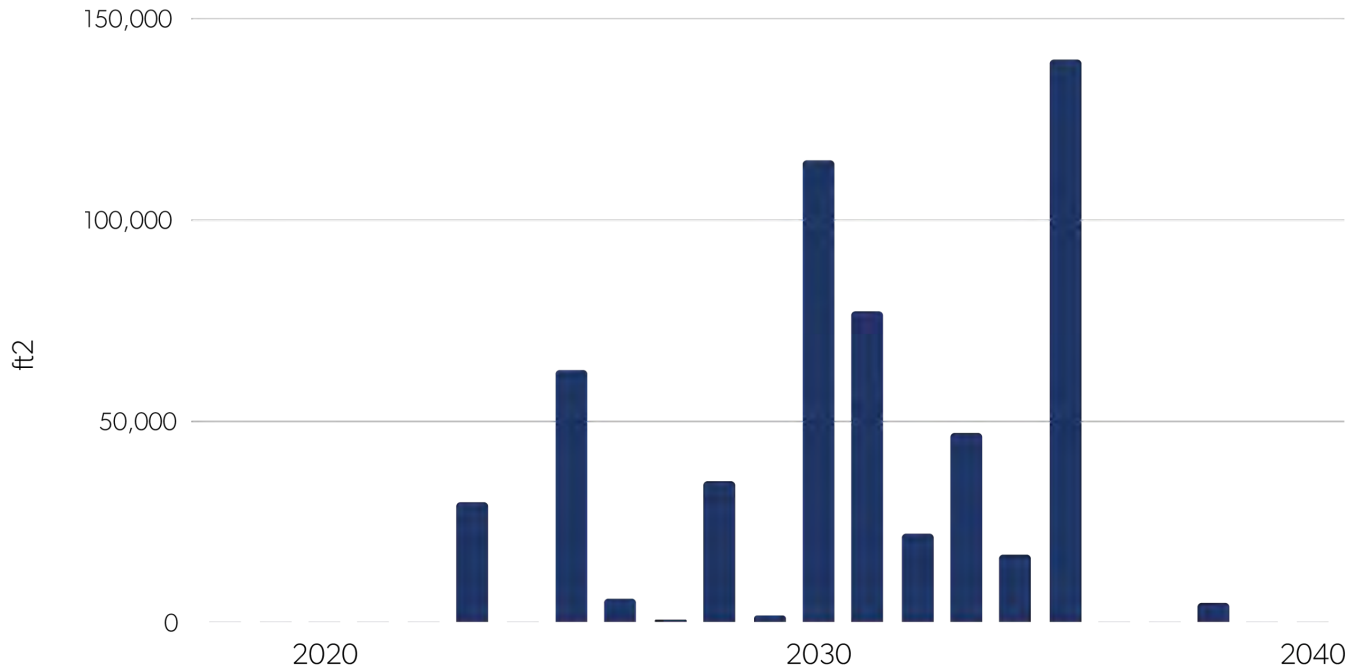


Figure 4. Building Retrofits and fuels-switching, by building type and target year, 2023-2040

Buildings energy consumption

The City’s retrofit and fuel-switching activities will reduce energy consumption by 50%. By 2040, all natural gas heating systems will be replaced by air source heat pumps and an electric system will heat the swimming pool.

It is important to note that similar to the BAU scenario, the wastewater treatment buildings are not included in this analysis as they will be covered in the Community Climate Action Plan.

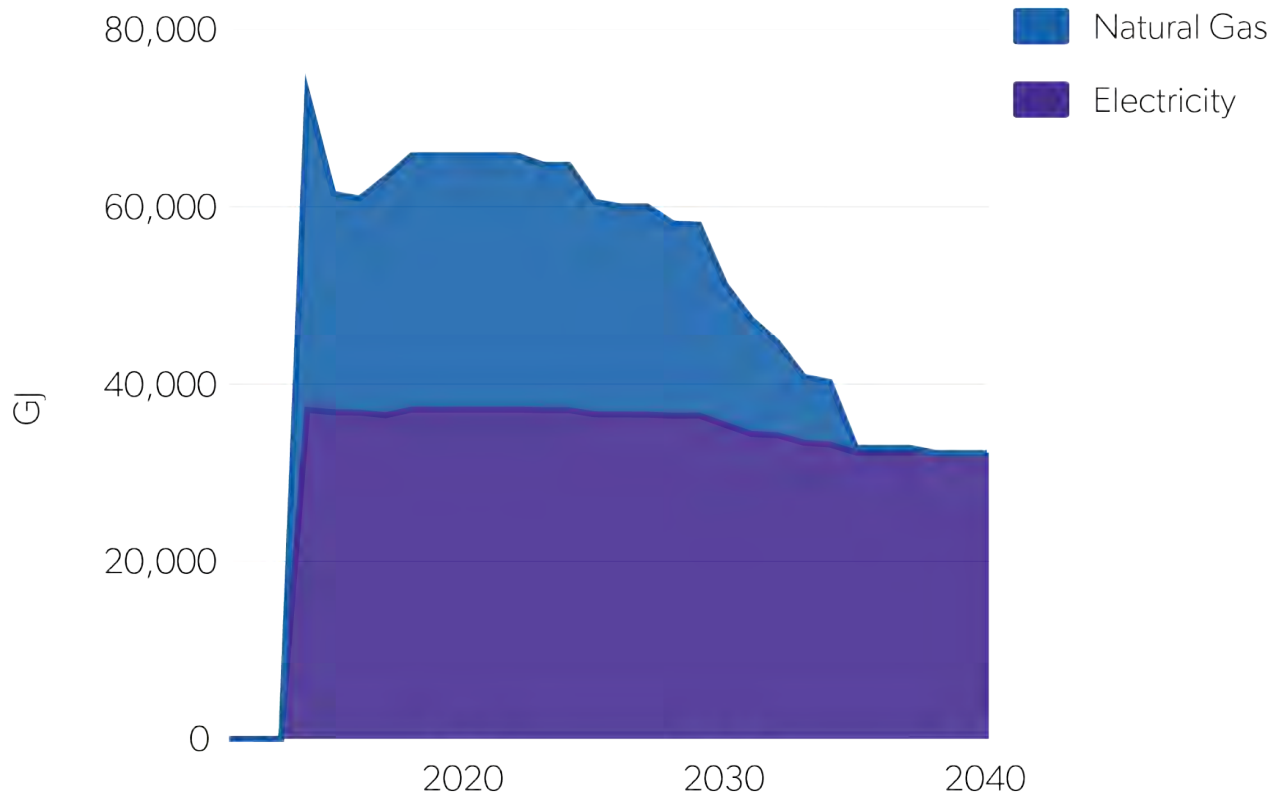


Figure 5. Buildings energy consumption (GJ), 2018-2040

Buildings GHG emissions

By 2040, the City’s retrofit efforts will reduce corporate GHG emissions by 57%. Annual emissions from municipal buildings will fall below 1,000 tCO₂e. These remaining emissions reflect emissions from Ontario’s grid. Though heat pumps are overall much more efficient than natural gas heating systems, they still rely on electricity to power them, and that electricity comes from Ontario’s grid. As Ontario has no immediate plans to decarbonize its own grid, to reach net-zero corporate emissions, Orillia will need to develop or purchase renewable energy. The four suggested clean energy options are outlined in the Clean Electricity section.

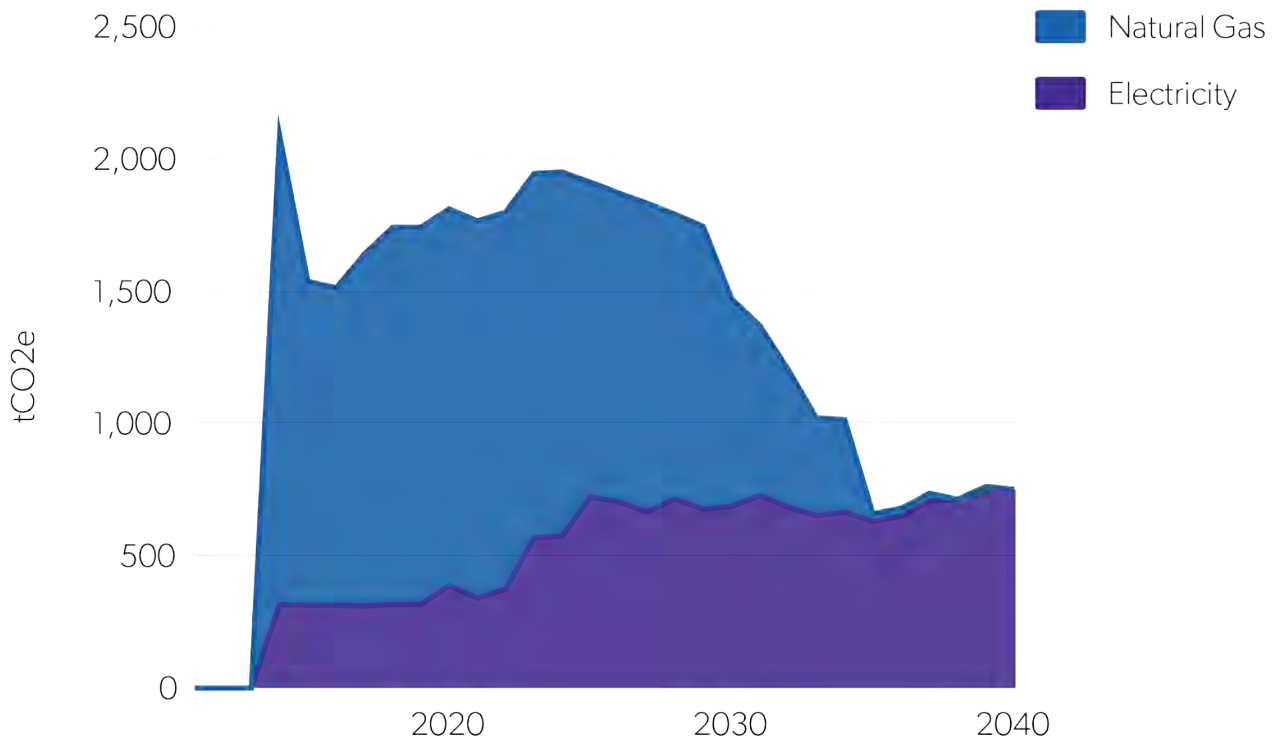


Figure 6. GHG emissions in Buildings (tCO₂e), Net-Zero Transition 2018-2040.

THE FLEET ENERGY & EMISSIONS TRAJECTORY

Figure 8 shows how Orillia's fleet will grow from just under 100 vehicles in 2018 to 130 in 2050. Fleet growth is based on a simple linear projection that is aligned with overall community population growth. The assumption here is that by 2040 more vehicles will be required to meet the needs of the city.

2. Vehicle Fleet

2.1 Light-duty vehicles:

After 2023, the City will purchase electric light-duty vehicles where available/possible, with the goal of solely purchasing electric vehicles by 2030.

2.2 Medium and heavy-duty vehicles:

The City will delay procurement of medium-duty pick-up trucks until a new fleet of electric pick-ups are available in 2025.

By 2025, the City will convert 100% of utility and maintenance ATVs to electric.

By 2030, the City will convert 50% of heavy-duty vehicles (e.g. snow removal, dump truck) to electric or hydrogen-powered.

By 2040, the City will only procure zero-emission vehicles (electric or hydrogen).

By 2030, the City will replace all gas powered light vehicles with electric vehicles. Though some heavy-duty vehicles still be diesel-powered, most of them will be transitioned out by 2035.

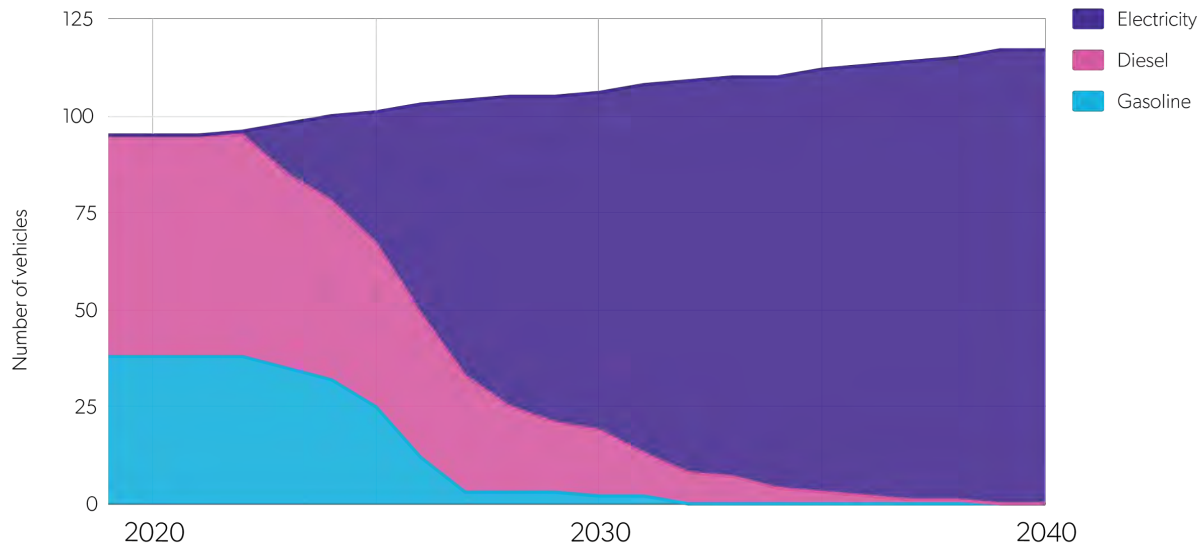


Figure 7. The fleet transition timeline, # of vehicles, 2018-2040.

Fleet energy consumption

By transitioning to electric for its light-duty vehicles, the City will reduce its energy consumption from approximately 9,600 GJ in 2018 to approximately 5,000 GJ in 2030. Once full electrification is reached, the City’s energy consumption will decline further to approximately 4,000 GJ by 2050.⁹ The City will reduce its energy consumption by more than 50%, which will also help reduce the City’s operating costs.

⁹ Some heavy-duty vehicles may remain diesel-powered after 2040 depending on whether electric heavy-duty vehicles of the necessary types have been developed and released for public sale.

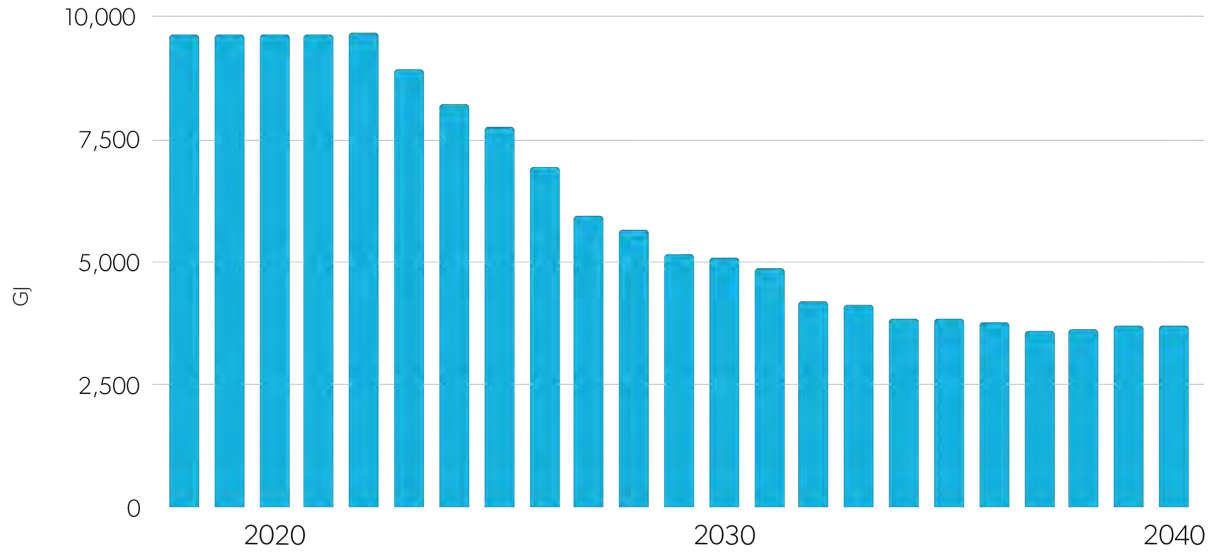


Figure 8. Corporate fleet projected energy consumption (GJ), 2018-2040.

Fleet GHG emissions

By 2030, the City’s corporate fleet GHG emissions will drop by 66%. By 2035, they will drop by 85% as nearly all diesel heavy-duty vehicles are replaced. Electric vehicles are charged using Ontario’s electricity grid, and as such the remaining emissions in the corporate fleet result from charging the vehicles. These emissions can be offset by pursuing one of the four clean electricity strategies outlined in the Clean Electricity section.

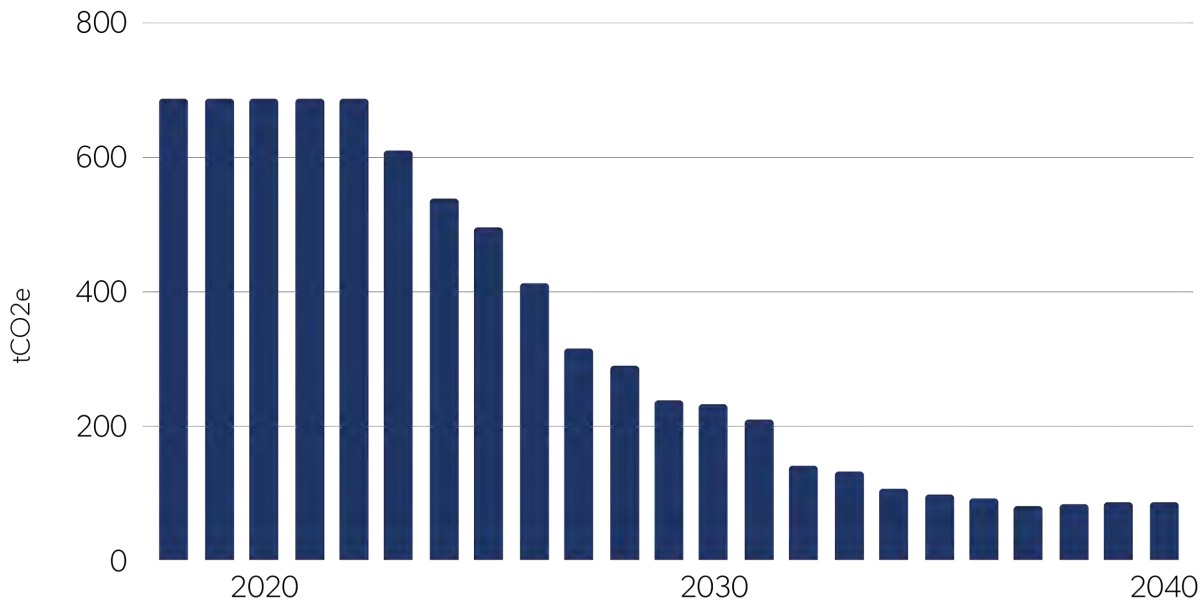


Figure 9. Corporate Fleet projected GHG emissions (tCO2e) , 2018-2040.

ENERGY AND EMISSIONS FROM ASSETS BY 2040

By 2035, the City will depend on electricity to power 92% of its buildings and vehicle fleet. By 2040 that number is closer to 100%. As the City switches to higher efficiency heat pump systems to heat buildings, the overall demand for energy will decline by 51%. Electric vehicles are also more energy efficient than their gas and diesel counterparts.¹⁰

Thanks to the City's fuel-switching efforts, there is virtually no natural gas in the building stock and very little diesel in the fleet.

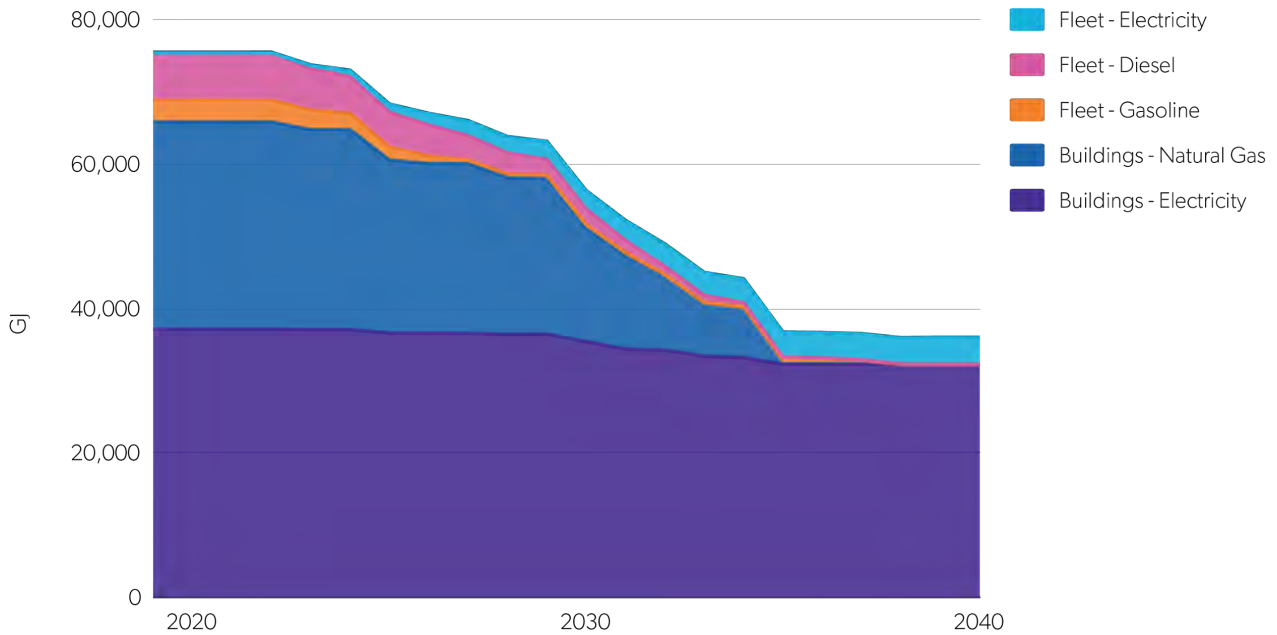


Figure 13. Energy Consumption by Buildings and Fleet (GJ) , Net-zero scenario, 2018-2040.

¹⁰ Electric vehicles convert over 77% of the electrical energy from the grid to power at the wheels, whereas the internal combustion energy vehicles convert about 12%–30%. US Department of Energy (n.d.) All-electric vehicles. Retrieved from: <https://fueleconomy.gov/feg/evtech.shtml>

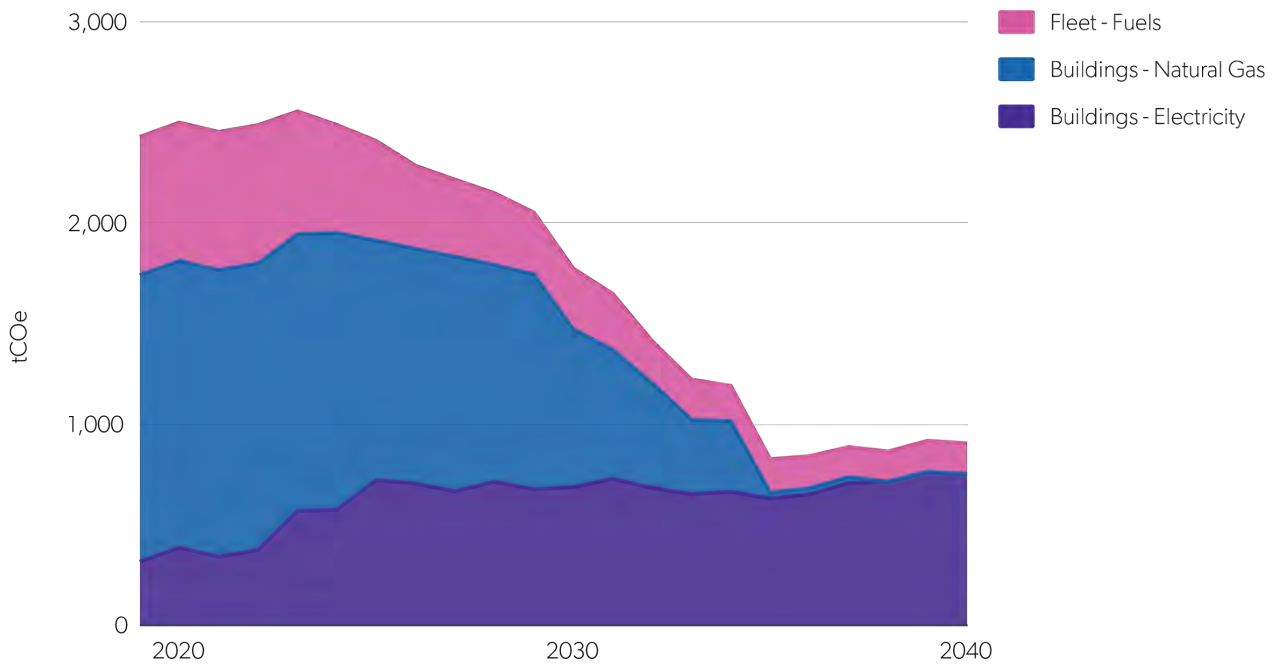


Figure 14. GHG emissions by Buildings and Fleet (tCO₂e), Net-zero scenario, 2019-2040.

As the City transitions to systems that rely more heavily on the Ontario electricity grid, the emissions associated with that electricity use will go up. Ontario phased out its coal plants in 2014; aside from its reliance on natural gas plants to meet peak demand, the grid is now mostly fossil-free. For example, in 2019, only 6% of Ontario’s electricity was supplied by natural gas or oil.¹¹ However, this percentage is expected to increase through to 2040. As Ontario’s population grows and more people and municipalities switch to electric systems, natural gas plants will be called upon to meet the increased demand.¹²

The City will need to generate or procure approximately 8 MW of renewable energy to offset the remaining emissions in corporate activities and to align with the carbon budget targets. Figure 15 below shows how solar PV generation eliminates approximately 550 tCO₂e by 2030, and 840 tCO₂e. Clean electricity, the third pillar of the strategy, offsets the emissions left over after all efficiency improvements have been carried out.

¹¹ IESO, 2019 Year in Review. Retrieved on Sept. 2, 2020, from: www.ieso.ca/en/Corporate-IESO/Media/Year-End-Data.

¹² IESO, Annual Planning Outlook (January 2020).

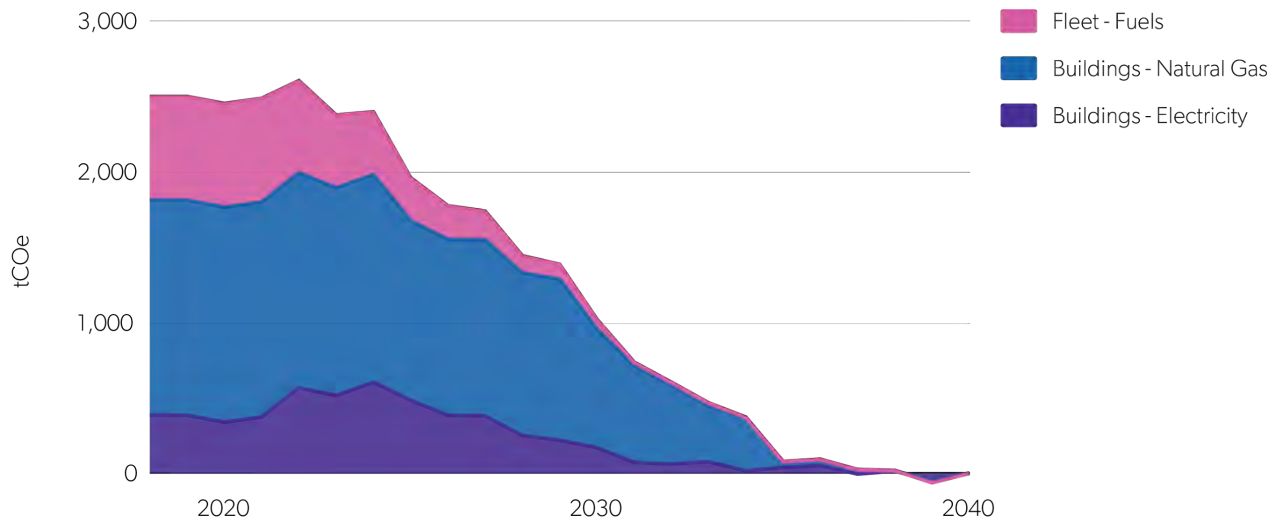


Figure 15. GHG emissions of buildings and fleet (tCO₂e) with renewable energy generation, Net-zero scenario, 2018-2040.¹³

Clean Electricity

Clean electricity is a key part of the path to decarbonizing the City’s operations.

To reach Orillia’s target of net-zero corporate emissions, the City will need to either generate or purchase 6 MW of renewable energy by 2030, and then as much as 8MW by 2040. The steady increase between now and 2040 reflects increases in electricity demand as the City retrofits buildings and buys electric vehicles for its fleet.¹⁴

Clean Electricity

By 2040, the City will develop the capacity to generate 6–8 MW of renewable energy, or engage in another strategy to purchase renewable energy and/or its benefits.

¹³ The small dip below zero near 2040 is a result of the staggered building retrofit schedule. As buildings are retrofitted, they over-correct, and when their systems come back online they begin to use electricity and contribute emissions.

¹⁴ The wastewater treatment plant is not included in this analysis as biogas capture from the treatment plant itself would be a more applicable source of clean energy.

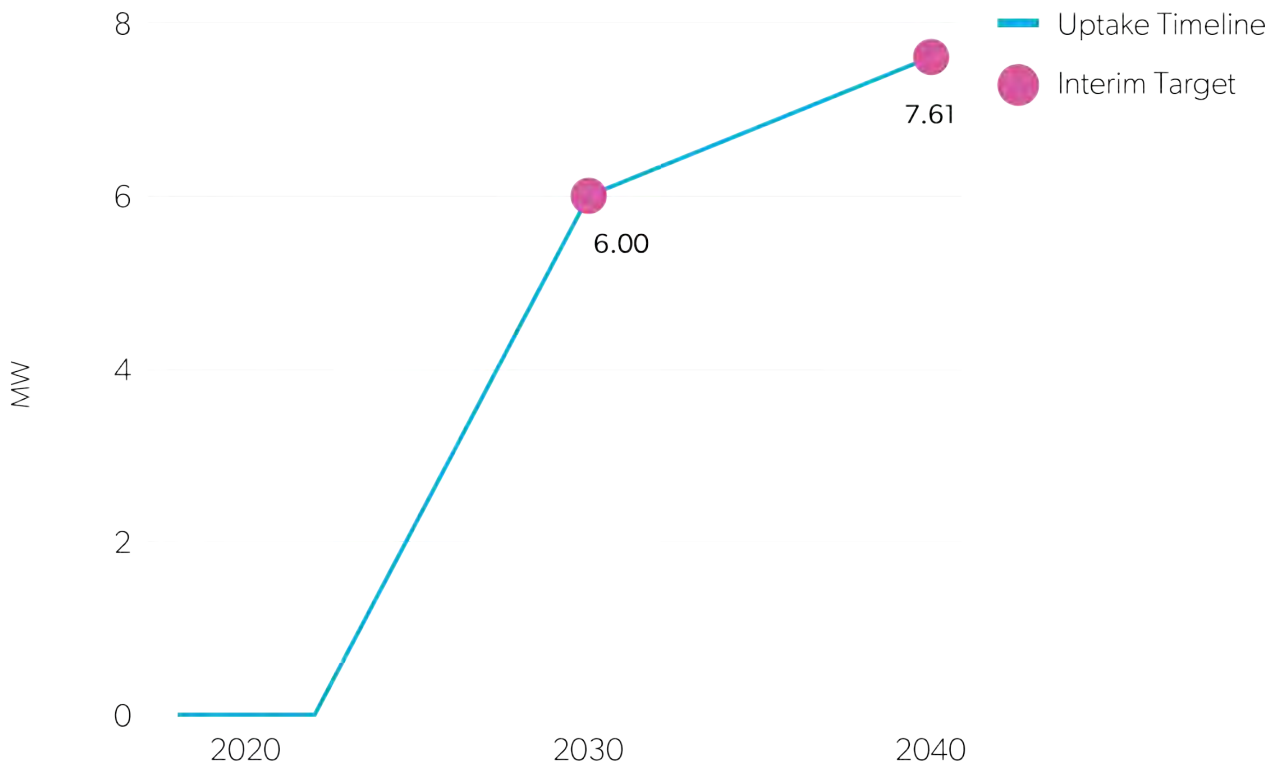


Figure 10. Suggested renewable energy targets.

There is an advantage to developing solar PV in that extra electricity can be sold for revenue. Installing solar PV can also buffer peak demand for electricity during day-time periods. As of now, the Ontario electricity grid meets Orillia's peak demand, and Ontario's electricity grid relies on its high-emitting gas plants to generate that extra power.

However, the policy framework needed to operate such a scheme is not currently in place. Ontario's "Feed-in-Tariff" (FIT) program, where extra electricity could be sold back to the grid, is currently on hold.¹⁵

That said, Ontario's net metering program could allow extra electricity to be fed back into the grid in exchange for a credit on the City's electricity costs.

Given this context, there are four strategies that the City can consider to either produce or purchase the clean electricity needed to reach the target.

Strategy 1. Local Generation

Local generation on municipal sites would provide the greatest financial and economic benefits for the community and the City. Local generation involves building and maintaining solar PV on roofs and other sites. Solar power does require an initial capital investment and its use is governed by provincial policy.

¹⁵ "Feed in Tariff Program. Accessed 2021. Government of Ontario. Retrieved from: Archived - Renewable energy development in Ontario: A guide for municipalities: 4.0 Feed-In Tariff Program | Ontario.ca

Strategy 2. Advocacy for a Decarbonized Ontario Electricity Grid

At present, Ontario has no plans to decarbonize its electricity grid before 2030.¹⁶ That said, many cities in Ontario have developed similar plans to decarbonize both their corporate and community operations and are advocating for a zero-emissions provincial electricity grid. It is possible that Ontario will phase out its gas plants by 2040, which would eliminate the emissions Orillia is responsible for when the City makes use of Ontario's electricity.

Strategy 3. Renewable energy certificates

Renewable energy credits (RECs) are a mechanism used to procure the clean attributes of renewable electricity that is being generated off-site. If the City finds that generating its own solar power is infeasible for logistical, financial, and/or policy reasons, then RECs could be used to offset the City's remaining corporate emissions. Examples of organizations that provide RECs in Ontario are Bullfrog Power and Blue Earth Renewables.^{17,18}

Strategy 4. Power purchasing agreements (PPA)

A Power Purchase Agreement (PPA) is a mechanism to directly purchase electricity from an off-site provider. In this case, the desired energy would be renewable electricity. The City would have to investigate and/or create the policy conditions needed to develop a PPA. Orillia Power Generation could prove advantageous as it could enter into a PPA with a provider. Some cities have also established renewable energy cooperatives.

Investing in Orillia's Decarbonized Corporate Operations

Decarbonizing Orillia's buildings and vehicle fleet will cost money. As will investing in the development or purchase of renewable energy. However, these investments can be worked into the routine costs of operating buildings and maintaining vehicles. For instance, the City can incorporate retrofits into established building maintenance and upgrade plans, and gas vehicles can be swapped out for electric when they reach the end of their useful life.

Over the next twenty years, total investments into the decarbonization plan will cost roughly \$53 million (in 2018 dollars). Though some years will see higher investments than others, particularly as large City buildings come up for retrofit, this total amounts to an average of \$2.9 million per year. That said, as buildings are transitioned to electricity-powered heat pumps and as diesel and gas vehicles are phased out, the operating costs for these assets will actually decrease. After fuel cost savings and reduced carbon taxes¹⁹, the total net investment drops to \$27 million, or \$1.5 million per year. Please note this assessment only takes into account Clean Electricity Strategy 1: Local Generation as it is the strategy over which the City would have the most financial control.

¹⁶ According to its October 2021 report, the IESO will not phase out its natural gas power plants before 2030. However, it has stated that given enough time and resources it would consider phasing them out at some point in the future. Source: Independent Electricity System Operator. (2021) Decarbonization and Ontario's Electricity System: Assessing the impacts of phasing out natural gas generation by 2030. Toronto.

¹⁷ Power Purchase Agreements | Bullfrog Power

¹⁸ Our Approach | BlueEarth Renewables

¹⁹ For more information on Canada's carbon pricing, see the Government of Canada's page on its carbon pollution pricing system.

For a comparison of investments and cost savings in five-year periods between now and 2040, see Table 1.

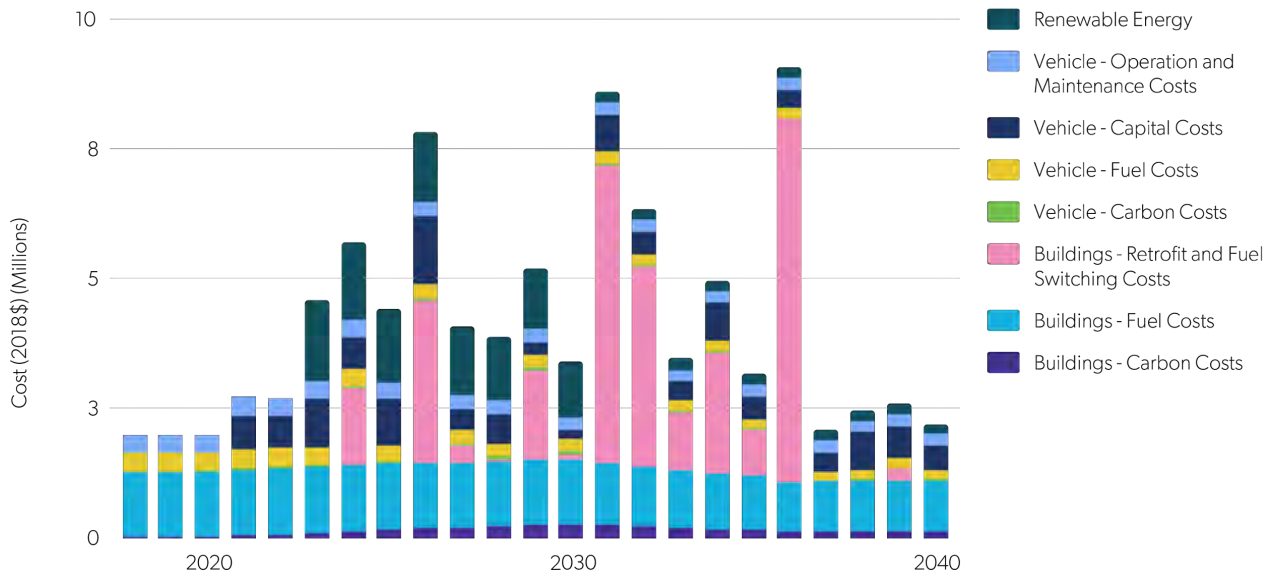


Figure 16. Costs by sector in 2018 Dollars, 2018-2040.

Table 1. Estimated total investment cost (2021-2040).

	2021-2025	2026-2030	2031-2035	2036-2040	Total
Twenty year investments (in millions, \$2018)					
Buildings	4.6	7.9	15.2	0.2	27.9
Fleet	3.7	3.4	2.7	2.5	12.3
Renewable energy ²⁰	4.5	6.1	1.0	1.0	12.6
Total investment	53				
Fuel cost savings (in millions, \$2018)					
Buildings	0.07	0.4	1.4	1.9	3.8
Fleet	0.25	1.2	1.8	2.1	3.6
Renewable energy	0.6	3.1	4.6	5.1	13.5
Total fuel cost savings	21				
Carbon cost avoided (in millions, \$2018)					
Fleet and buildings	0.08	0.6	1.5	1.9	4.1
Renewable energy	.03	.3	.52	.65	1.5

²⁰ The total for fuel cost savings is high-level and does not account for the nuance of hourly electricity supply and demand. An analysis of this detail is outside the scope of this report.

	2021-2025	2026-2030	2031-2035	2036-2040	Total
Total carbon cost savings	5.6				
20-year transition total	27				

Financial Modelling

Table 2 breaks down the key financial items that have been modelled to arrive at these investment costs. Table 3 outlines what is not included and why. For an indepth look at key data points and assumptions used to develop the financial summary, see Appendix 4.

Table 2. Items included in the financial summary.

Asset	Expenditures
City buildings	Fuel costs Retrofit & fuel switching capital cost Carbon costs
Vehicle fleet	Fuel costs Vehicle capital costs Operations and maintenance costs Carbon costs
Renewable energy	Capital costs of solar PV generation

Table 3. Items not included in the financial summary.

Assets and investments	Rationale
Electric vehicle charging infrastructure	Charging infrastructure is often handled by a mix of private and public actors, so it is difficult to put a fixed price on its development.
Grid upgrades	The ability of the grid to incorporate these changes has not yet been evaluated.
Electricity storage equipment	The need for energy storage will depend on provincial energy policy and on the renewable energy generation approach that is chosen.
Evaluation of energy tariff structures (fixed costs vs variable costs; peak demand charges; etc) ²¹	The future of the electricity tariff structure is uncertain and decided by political bodies that are beyond the scope of this report.
BAU building asset management capital costs	Routine costs of managing buildings that are not affected by the decarbonization plan have not been incorporated into the financial model.

²¹ Energy costs are modelled using projected consumption and projected average energy prices.

Plan Limitations & Items Out of Scope

The quantitative analysis presented in this report is designed to support high-level strategic planning.

The likely impacts of the low-carbon pathway described in this corporate action plan are subject to a number of caveats. Financial costs and savings are, like so many municipal processes, subject to the uncertainties that come with long-term scenarios.

The analysis presented here is not an engineering study, which would likely be required as a subsequent step to inform many of the specific investments considered in this analysis.

That being said, the quantification of key variables, including energy consumption, GHG emissions, and selected financial flows (i.e. fuel costs, vehicle O&M costs, carbon costs, capital investments), acts as a guide in the City's efforts to reduce its corporate emissions, and can support subsequent decision-making processes for specific buildings and vehicles.

The following list identifies aspects of the plan that will need to be fine-tuned when the City approaches actions like specific building retrofits and vehicle purchases:

Buildings

A proposed retrofit schedule for the corporate building portfolio was developed in consultation with staff. As the city moves forward with implementation and more information becomes available, such as building energy audits, the schedule can be adapted accordingly.

The capital costs of building deep energy retrofits and fuel switches are estimated using high-level cost intensities (per floor area), without knowledge of specific building conditions, HVAC systems, asset management plans, etc. Refined retrofit costs will vary on a building-by-building basis, informed by building energy audits.

Building energy tariffs—the structures that natural gas and electricity utilities use to charge for the provision of energy—contain fixed and variable components. They can also depend on hourly demand patterns. Given the uncertainty of how these tariffs may evolve in the coming decades and the detailed analysis required to project hourly demand, this analysis uses a simplified energy consumption and average energy price approach to project energy costs.

This analysis holds climatic assumptions fixed over the time horizon considered, and does not reflect the trend of increasing cooling degree days and decreasing heating degree days.

Vehicles

Subsequent green fleet implementation plans will analyze the usage patterns of specific vehicle roles and match them with specific electric commercially-available offerings.

Conclusion

The Corporate Climate Action Plan is a viable pathway for Orillia to achieve net-zero GHG emissions by 2040 in terms of buildings, fleet, and energy generation. The driving force of this analysis is the recognition that climate change will dramatically change the quality of life for Orillia residents and businesses, while also recognizing that future generations and marginalized communities will endure greater effects of climate change.

The net-zero sectoral targets for buildings (2040), fleet (2030), and renewable energy generation (2040) are considered evidence-based targets that apply a carbon budget to ensure reductions are aligned on an appropriate downwards trajectory. The targets reflect an aggressive emissions reduction while also respecting staff and corporate capability to reasonably achieve the targets.

The financial summary indicates that the investment required to achieve the transition is challenging, but does result in positive co-benefits namely reduced fuel expenditures, reduced maintenance costs for fleet, and avoided cost of carbon pricing. Ensuring that the city financial budget is not overburdening the city financial budget and ensuring city employees and the public did not lose access to facilities was considered a priority in the transition of buildings.

Next Steps

The strategic-level analysis in this paper will need to be further substantiated by detailed analysis on a building-by-building level, more information on the availability of electric vehicles, and scoping of renewable energy generation opportunities. The guiding targets and analysis in the CAP will ensure that GHG emissions align with the decision making.

Suggested next steps:

- 6.** Adopt a net-zero by 2040 target for corporate emissions.
- 7.** Begin implementation planning by completing detailed analysis on buildings, fleet, and renewable energy to create a 4-year work plan in line with the city budget.
- 8.** Identify financial instruments and grant money that can be available to help this transition.
- 9.** Align targets and outcomes of the CAP for the Community Climate Action Plan (CCAP) for alignment.
- 10.** Create a detailed implementation in the CCAP that further identifies corporate timelines.

Appendix 1: Glossary

Base year: the starting year for energy or emissions projections.

Biogas (renewable natural gas): methane captured from bacterial decomposition of sewage, manure, waste, plant crops, or other organic waste products. It can be used as a natural gas replacement.

Building retrofit: changes to the structure or systems of an existing building to achieve energy and water consumption reductions.

Business-as-usual (BAU): a scenario illustrating energy use and greenhouse gas emissions if no additional plans, policies, programs, and projects are implemented.

Capacity factor: the ratio of a power plant's actual output over a period of time to its potential output if it were possible to operate continuously over the same period of time.

Carbon dioxide equivalent (CO₂e): a measure for describing the global warming potential of a greenhouse gas using the equivalent amount or concentration of carbon dioxide (CO₂) as a reference. CO₂e is commonly expressed as million metric tonnes of carbon dioxide equivalent (MtCO₂e).

Cooling degree days (CDD): the number of degrees that a day's average temperature is above 18°C, requiring cooling.

Deep energy retrofit: a whole-building analysis and construction process minimizing building energy use by 50% or more compared to the baseline energy use.

Distributed generation: technologies that generate electricity on-site through solar photovoltaic (PV) systems, combined heat and power (CHP) systems, and/or other technologies.

District energy systems: provision of heating and/or cooling to multiple buildings from centralized energy systems.

Emissions: greenhouse gas emissions, measured in grams, kilograms, or metric tonnes (CO₂e), unless otherwise indicated.

Emissions intensity: the ratio of emissions released per unit of electricity generated, measured in gCO₂e/kWh.

Energy efficiency improvement: an improvement in the ratio of energy consumed to the output produced or service performed. This improvement results in the delivery of more services for the same energy inputs or the same level of services from less energy input.

Electric vehicles (EVs): an umbrella term describing a variety of vehicle types that use electricity as their primary fuel source for propulsion or as a means to improve the efficiency of a conventional internal combustion engine.

Energy storage: technologies that store energy for consumption at a later time. Energy storage includes electric systems such as batteries as well as thermal systems, such as hot and cold water storage tanks.

Feed-in-Tariff: A policy mechanism designed to accelerate investment in renewable energy technologies by offering long-term contracts to renewable energy producers. The energy produced is sold to the grid rather than consumed directly (termed, "net-metering").

Geexchange energy: low-temperature thermal energy collected from soil and water near the

Earth's surface by heat pumps for use in building heating.

Geothermal energy: high temperature thermal energy collected from deep in the Earth for use in building heating and industrial applications.

Greenhouse gases (GHG): gases that trap heat in the atmosphere by absorbing and emitting solar radiation, causing a greenhouse effect that unnaturally warms the atmosphere. The main GHGs are water vapor, carbon dioxide, methane, nitrous oxide, and ozone.

Heat pump: a device that transfers heat energy from a source of heat to a target area using mechanical energy.

Heating Degrees Days (HDD): number of degrees that a day's average temperature is below 18°C, requiring heating.

HVAC: heating, ventilation and air conditioning systems, referred to in the context of a building.

Indicator: an observable or measurable result that shows evidence of whether an impact has occurred and the nature of that impact. It provides a metric by which one can quantify and define the scale of a resulting change.

Net-metering: This is an electricity billing mechanism that allows consumers who generate some or all of their own electricity to use that electricity anytime, instead of when it is generated.

Passive House buildings: buildings designed and constructed to stringent standards resulting in up to 90% increased energy efficiency as compared to a typical buildings' energy use.

Re-commissioning: a process of examining and optimizing a building's HVAC systems after a building has been fully operational for a period of time.

Renewable energy: energy that comes from resources which are naturally replenished on a human timescale, such as sunlight, wind, moving water, and geothermal heat.

Solar photovoltaic (PV): also known as solar electric systems or solar panels, these are systems that convert sunlight into electricity. Any excess electricity produced that a building does not use can be sold to the utility through a process called net-metering.

Vehicle kilometres travelled (VKT): distance traveled by vehicles within a defined region over a specified time period.

GHG emissions	Energy
1 ktCO _{2e} = 1,000 tCO _{2e}	1 MWh = 1,000 kWh
1 tCO _{2e} = 1,000 kgCO _{2e}	1 MWh = 3.6 GJ
1 kgCO _{2e} = 1,000 gCO _{2e}	1 GJ = 278 kWh
	1 GJ = 1,000,000 J
	1 MJ = 0.001 GJ
	1 Tj = 1,000 GJ
	1 PJ = 1,000,000 GJ

Appendix 2: Orillia's Corporate Buildings Inventory

Table 1: Orillia's Corporate Buildings Inventory

#	Building Name	Primary Activity	Year of Retrofit
1	Barnfield Point	Recreation	2023
2	Brian Orser Arena	Recreation	2025
3	City Centre	Office	2031
4	Couchiching Park Concession (140 Canice St.)	Recreation/Concession	2025
5	Couchiching Park Greenhouse (140 Canice St.)	Recreation/Concession	2038
6	Couchiching Park Washroom (140 Canice St.)	Washroom	2038
7	Fire Hall 1	Office/ Operations	2028
8	Fire Hall 2	Office/ Operations	2026
9	Forest Home Community Centre (995 Memorial Ave)	Office / Recreation	2028
10	Homewood Park (68 Woodside Dr)	Utility Room	2025
11	Kitchener Park Washroom - Concession (25 Kitchener St)	Washroom	2025
12	Leacock Swanmore Hall (Café) (50 Museum Dr)	Public Facing / Recreation	2028
13	Leacock Swanmore Hall, Admin Office (50 Museum Dr)	Office	2028
14	Library - 36 Mississaga St	Public facing	2033
15	McKinnell Square Park – 135 Dunedin St.	Utility Room	2025
16	MOC - Admin / Garage (20 James St.W) (Public Works)	Operations	2025
17	MOC - Electrician / Storage (188 Jarvis St)	Utility Room	2025
18	Moose Beach Washroom (450Atherley Rd)	Washroom	2025
19	Museum (50 Museum Dr)	Office / Public	2028
20	Orillia Opera House (20 Mississaga St. W)	Public	2032
21	Parks -Garage/Equip Storage (30 James St.W)	Storage	2025
22	Port (6 Centennial Dr) (new May 2017)	Operations	2034
23	Regan House (Scouts Valley)	Recreation	2025
24	Rotary Place - Field Washroom (100 University Ave)	Washroom	2025
25	Rotary Place Arena (100 University Ave)	Arena	2030
26	Sir Sam Steele Bldg.	Public Recreation	2026

#	Building Name	Primary Activity	Year of Retrofit
27	Tudhope Park - Jerry Udell Wshrm and Rowing Club (450 Atherley Rd)	Washroom / Storage	2034
28	Tudhope Park Admin Bldg (450Atherley Rd)	Office	2025
29	WDS - Admin Office - NEW 2016 (100 Kitchener St)	Office	2025
30	WFP - Filter Bldg (188 Jarvis St) (Stripper/Air scrubber Bldg.) *	Operations	2029
31	WFP - Filtration Bldg (200BaySt)**	Operations	N/A
32	WFP - Generator Bldg (188JarvisSt)*	Operations	2029
33	WWTC - Admin Bldg (40 Kitchener St)**	Operations / Office	N/A

*These process buildings are mostly electric and a conservative 10% efficiency upgrade is considered alongside heat pumps for space heating of the buildings.

**The WWTP will be covered in greater detail in/fuel switching the Community Climate Action Plan and in consultation with the current and ongoing Wastewater Management Plan (2021).

Appendix 3: Energy and GHG transition (2018-2040)

Table A1.1. Emissions targets under a net-zero by 2045 pathway, in tCO₂e.

	Net-Zero By 2040	Business as Usual
2018	2,429	2,429
2019	2,327	2,429
2020	2,226	2,499
2021	2,125	2,453
2022	2,024	2,492
2023	1,923	2,709
2024	1,822	2,727
2025	1,720	2,891
2026	1,619	2,896
2027	1,518	2,862
2028	1,417	2,920
2029	1,316	2,880
2030	1,214	2,918
2031	1,093	3,006
2032	971	2,967
2033	850	2,956
2034	729	2,975
2035	607	2,978
2036	486	3,008
2037	364	3,079
2038	243	3,092
2039	121	3,171
2040	0	3,157

Appendix 4: Summarized Financial Assumptions

Retrofit Cost Intensity for 50% retrofit intensity

\$ / sq. ft 50

Source: Frappé-Sénéclauze, T., Heerema, D., Tam Wu, K. (2017). Deep emissions reduction in the existing building stock. The Pembina Institute. <https://www.pembina.org/reports/retrofit-strategy-bc-report-2017.pdf>

Cost Intensity of Heat Pump

\$ / sq. ft Included in above figure

Source: Frappé-Sénéclauze, T., Heerema, D., Tam Wu, K. (2017). Deep emissions reduction in the existing building stock. The Pembina Institute. <https://www.pembina.org/reports/retrofit-strategy-bc-report-2017.pdf>

Carbon Price

\$/tonne CO2eq	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
	20	20	30	40	50	65	80	95	110	125	140	155	170	170	170	170	170	170	170	170	170	170	170

source: Government of Canada. Greenhouse Gas Pollution Pricing Act

Government of Canada. A Healthy Environment and a Healthy Economy. Backgrounder.

Electricity

\$/GJ	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Commercial	27.78	27.78	28.34	28.48	28.62	28.78	28.92	29.06	29.20	29.35	29.51	29.65	29.79	29.83	29.86	29.88	29.93	29.95	29.97	29.99	30.04	30.06	30.09

source: Base year informed by actual electricity bills; NEB Canada's Energy Future 2020, End - Use Prices, Reference Case

*Linear extrapolation applied after 2040

Natural Gas

\$/GJ	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Commercial	7.31	7.31	7.40	7.48	7.55	7.60	7.64	7.67	7.70	7.73	7.77	7.80	7.83	7.87	7.90	7.93	7.96	8.00	8.03	8.06	8.09	8.13	8.16

source: Base year informed by actual NG bills; NEB Canada's Energy Future 2020, End - Use Prices, Reference Case

Linear extrapolation applied after 2040

Appendix E: Modelling Results

Data, Modelling Scope, Method, and Process

March 2022

Summary

This Data, Methods, and Assumptions (DMA) Manual details the modelling approach used to provide community energy and emissions benchmarks and projections and provides a summary of the data and assumptions used in scenario modelling. The DMA makes the modelling elements fully transparent and illustrates the scope of data required for future modelling efforts.

Accounting and Reporting Principles

This municipal greenhouse gas (GHG) inventory baseline development and scenario modelling approach correlates with the Global Protocol for Community-Scale GHG Emissions Inventories (GPC). The GPC provides a fair and true account of emissions via the following principles:

Relevance: The reported GHG emissions shall appropriately reflect emissions occurring as a result of activities and consumption within the municipal boundary. The inventory will also serve the decision-making needs of the municipality, taking into consideration relevant local, subnational, and national regulations. Relevance applies when selecting data sources and determining and prioritizing data collection improvements.

Completeness: The inventory will account for all emissions sources within the inventory boundary. Any exclusions of sources shall be justified and explained.

Consistency: Emissions calculations shall be consistent in approach, boundary, and methodology.

Transparency: Activity data, emissions sources, emissions factors, and accounting methodologies require adequate documentation and disclosure to enable verification.

Accuracy: The calculation of GHG emissions should not systematically overstate or understate actual GHG emissions. The accuracy should be enough to give decision makers and the public reasonable assurance of the integrity of the reported information. Uncertainties in the quantification process should be reduced to the extent possible and practical.

I. Modelling Scope

1. Geographic Boundary

The geographic boundary of the modelling assessment is the municipal boundary of the City of Orillia (Figure 1).

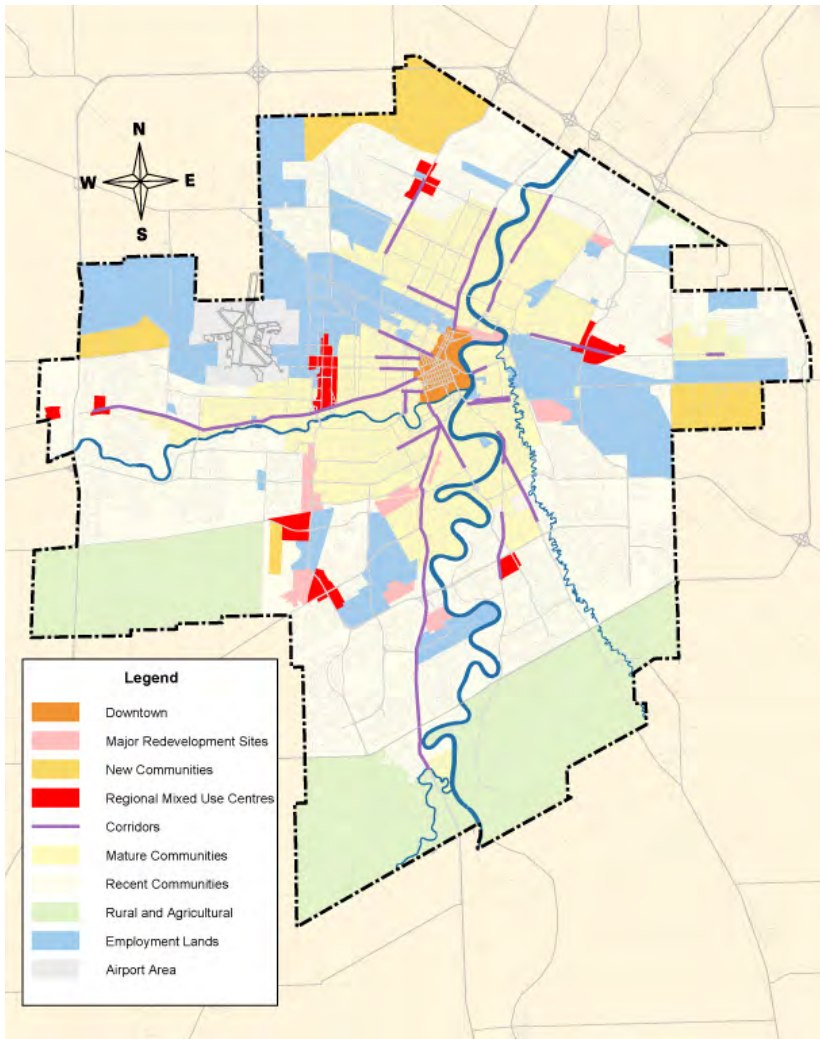


Figure 1. City of Orillia boundaries that will be used in the modelling process.²²

2. Time Scope

- The assessment will cover the years from 2018 (base year) to 2050 (target year).
- The year 2018 will be used as a base year within the model. The rationale for using this as the base year is that:
- Census data is a key data source for the model. At the time of modelling, the most recent census year for which data is available is 2016.

²²Winnipeg Urban Structure. Our Winnipeg. Retrieved in 2021.

- The model requires a calibration of a base year system state (known as the initial conditions) using as much observed data as possible to develop an internally consistent snapshot of the city.
- One-year increments are modelled from the 2016 baseline year until the 2050 target year. The first simulation period/year is 2016.
- The forecasts of energy use and emissions will extend to 2050.

3. Emissions Scope

The emissions assessed are those from the stationary energy (buildings), transportation, and waste sectors. The inventory will include Global Protocol for Community Greenhouse Gas Emissions Inventories (GPC) Scope 1 and 2 and some aspects of Scope 3 emissions. Refer to Table 1 and Table 2 for GPC scope definitions and a list of included GHG emission sources by scope.

Table 1. GPC scope definitions.

SCOPE	DEFINITION
1	All GHG emissions from sources located within the municipal boundary.
2	All GHG emissions occurring from the use of grid-supplied electricity, heat, steam, and/or cooling within the municipal boundary.
3	All other GHG emissions that occur outside the municipal boundary as a result of activities taking place within the boundary.

Table 2. Sources included in the Orillia model.

	SCOPE 1	SCOPE 2	SCOPE 3	NOTES ²³
Stationary energy				
Residential buildings	Y	Y	Y	
Commercial and institutional buildings and facilities	Y	Y	Y	
Manufacturing industries and construction	Y	Y	Y	
Energy industries	N	N	N	NR
Energy generation supplied to the grid	N			Additional renewable electricity is included beyond what is currently included in emissions factors projections.
Agriculture, forestry, and fishing activities	N	N	N	NR
Fugitive emissions from mining, processing, storage, and transportation of coal	N			NR
Fugitive emissions from oil and natural gas systems	Y			

²³ N/A= Not applicable; Not included in scope; ID= Insufficient data; NR= No relevant or limited activities identified

	SCOPE 1	SCOPE 2	SCOPE 3	NOTES ²³
Transportation				
On-road	Y	Y	Y	
Railways	N	N	N	NR
Waterborne navigation	N	N	N	NA
Aviation	N	N	N	NR
Off-road	N	N		NR
Waste				
Disposal of solid waste generated in the city	Y		Y	
Disposal of solid waste generated outside the city	N			NA
Biological treatment of waste generated in the city	Y		N	
Biological treatment of waste generated outside the city	N			NA
Incineration and open burning of waste generated in the city	N		N	NA
Incineration and open burning of waste generated outside the city	N			NA
Wastewater generated in the city	Y		N	
Wastewater generated outside the city	N			NA
Industrial processes and product use (IPPU)				
Industrial processes	N			ID
Product use	N			ID
Agriculture, forestry, and other land use (AFOLU)				
Livestock	N			NR
Land	N			NR
Aggregate sources and non-CO2 emissions sources on land	N			NR
Other Scope 3			N	NA

4. Emissions Factors

Table 3. Emissions accounting framework and global warming potential.

CATEGORY	BASELINE DATA/ASSUMPTION	SOURCE
Emissions accounting framework		
Accounting framework	Global Protocol for Community-Scale GHG Emission Inventories (GPC)	Global Protocol for Community-Scale GHG Emission Inventories (GPC)
Emissions scope	Scope 1, 2, and partial Scope 3	See GPC emissions scope table for Scope 3 items included.
Sectors	Stationary energy (buildings) Transportation Waste	See GPC emissions scope table for sectors and subsectors included.
Boundary	Municipal boundary of the City of Orillia	City of Orillia
Reporting	GPC BASIC and partial BASIC+	Global Protocol for Community-Scale GHG Emission Inventories (GPC)
Transportation methodology	GPC-induced activity method	Global Protocol for Community-Scale GHG Emission Inventories (GPC)
Baseline year	2018	N/A
Projection year	2050	N/A
Global warming potential (GWP)		
Greenhouse gases	CO ₂ = 1 CH ₄ = 34 N ₂ O = 298	Myhre, G. et al., 2013: Anthropogenic and Natural Radiative Forcing. Table 8.7. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Table 4. Emissions factors for fuels in the Orillia model.

CATEGORY	BASELINE DATA/ASSUMPTIONS	SOURCE
Emissions factors		
Natural gas	49 kg CO ₂ e/GJ	Environment and Climate Change Canada. National Inventory Report 1990-2015: Greenhouse Gas Sources and Sinks in Canada. Part 2. Tables A6-1 and A6-2.

CATEGORY	BASELINE DATA/ASSUMPTIONS	SOURCE
Electricity	2016: CO2: 28.9 g/kWh CH4: 0.007 g/kWh N2O: 0.001 g/kWh 2050: CO2: 82.32 g/kWh CH4: 0.02 g/kWh N2O: 0.00 g/kWh	National Energy Board. (2016). Canada's Energy Future 2016. Government of Canada. Retrieved from https://www.neb-one.gc.ca/nrg/ntgrtd/ft/2016pt/nrgyftsr_rprt-2016-eng.pdf
Gasoline	g / L CO2: 2316 CH4: 0.32 N2O: 0.66	NIR Part 2 Table A6-12 Emission Factors for Energy Mobile Combustion Sources
Diesel	g / L CO2: 2690.00 CH4: 0.07 N2O: 0.21	NIR Part 2 Table A6-12 Emission Factors for Energy Mobile Combustion Sources
Fuel oil	Residential g/L CO2: 2560 CH4: 0.026 N2O: 0.006 Commercial g/L CO2: 2753 CH4: 0.026 N2O: 0.031 Industrial g/L CO2: 2753 CH4: 0.006 N2O: 0.031	Environment and Climate Change Canada. National Inventory Report 1990-2015: Greenhouse Gas Sources and Sinks in Canada. Part 2. Table A6-4 Emission Factors for Refined Petroleum Products
Wood	Residential kg/Gj CO2: 299.8 CH4: 0.72 N2O: 0.007 Commercial kg/Gj CO2: 299.8 CH4: 0.72 N2O: 0.007 Industrial kg/Gj CO2: 466.8 CH4: 0.0052 N2O: 0.0036	Environment and Climate Change Canada. National Inventory Report 1990-2015: Greenhouse Gas Sources and Sinks in Canada. Part 2. Table A6-56 Emission Factors for Biomass

CATEGORY	BASELINE DATA/ASSUMPTIONS	SOURCE
Propane	g/L ! transport CO2: 1515.00 CH4: 0.64 N2O: 0.03 ! residential CO2: 1515.000 CH4 : 0.027 N2O: 0.108 ! all other sectors CO2: 1515.000 CH4: 0.024 N2O: 0.108	NIR Part 2 Table A6–3 Emission Factors for Natural Gas Liquids Table A6–12 Emission Factors for Energy Mobile Combustion Sources
Waste/ WW	wastewater emissions factors CH4: 0.48 kg CH4/kg BOD N2O: 3.2 g / (person * year) from advanced treatment 0.005 g /g N from wastewater discharge landfill emissions are calculated from first order decay of degradable organic carbon deposited in landfill derived emission factor in 2016 = 0.015 kg CH4 / tonne solid waste (assuming 70% recovery of landfill methane), .05 kg CH4 / tonne solid waste not accounting for recovery	CH4 wastewater: IPCC Guidelines Vol 5 Ch 6, Tables 6.2 and 6.3, we use the MCF value for anaerobic digester N2O from advanced treatment: IPCC Guidelines Vol 5 Ch 6 Box 6.1 N2O from wastewater discharge: IPCC Guidelines Vol 5 Ch 6 Section 6.3.1.2 Landfill emissions: IPCC Guidelines Vol 5 Ch 3, Equation 3.1

5. Model Assumptions

The modelling assessment uses a series of data assumptions to model the three scenarios: business-as-usual, business-as-planned, and net-zero scenarios. Appendix A details the data assumptions used in the City of Orillia’s energy and emissions assessment.

II. Modelling Method

1. About CityInSight

CityInSight is an integrated, spatially-disaggregated energy, emissions, and finance model developed by Sustainability Solutions Group and whatIf? Technologies. The model enables bottom-up accounting for energy supply and demand, including renewable resources, conventional fuels, energy-consuming technology stocks (e.g. vehicles, heating systems, dwellings, and buildings), and all intermediate energy flows (e.g. electricity and heat).

CityInSight incorporates and adapts concepts from the system dynamics approach to complex systems analysis. Energy and GHG emissions are derived from a series of connected stock and flow models. The model accounts for physical flows (e.g. energy use, new vehicles, and vehicle kilometres travelled) as determined by stocks (e.g. buildings, vehicles, and heating equipment). For any given year within its time horizon, CityInSight traces the flows and transformations of energy from sources through energy currencies (e.g. gasoline and electricity) to end uses (e.g. personal vehicle use and space heating), energy costs, and GHG emissions. The flows evolve based on current and future geographic and technology decisions/assumptions (e.g. EV uptake rates). An energy balance is achieved by accounting for efficiencies, conservation rates, and trade and losses at each stage in the journey from source to end use. The characteristics of CityInSight are described in Table 5.

The model is spatially explicit. All buildings, transportation, and land-use data are tracked within the model through a GIS platform and by varying degrees of spatial resolution. Where applicable, a zone-type system can be applied to break up the city into smaller configurations. This enables consideration of the impact of land-use patterns and urban form on energy use and emissions production from a baseline year to future dates using GIS-based platforms. CityInSight's GIS outputs can be integrated with city mapping systems.

Table 5. Characteristics of CityInSight.

CHARACTERISTIC	RATIONALE
Integrated	CityInSight is designed to model and account for all sectors that relate to energy and emissions at a city scale while capturing the relationships between sectors. The demand for energy services is modelled independently of the fuels and technologies that provide the energy services. This decoupling enables exploration of fuel switching scenarios. Physically feasible scenarios are established when energy demand and supply are balanced.
Scenario-based	Once calibrated with historical data, CityInSight enables the creation of dozens of scenarios to explore different possible futures. Each scenario can consist of either one or a combination of policies, actions, and strategies. Historical calibration ensures that scenario projections are rooted in observed data.
Spatial	The configuration of the built environment determines people's ability to walk and cycle, the accessibility of transit, the feasibility of district energy, etc. Therefore, CityInSight includes a full spatial dimension that can include as many zones—the smallest areas of geographic analysis—as are deemed appropriate. The spatial component to the model can be integrated with City GIS systems, land-use projections, and transportation modelling.
GHG reporting framework	CityInSight is designed to report emissions according to the GHG Protocol for Cities (GPC) framework and principles.

CHARACTERISTIC	RATIONALE
Economic impacts	CityInSight incorporates a full financial analysis of costs related to energy (expenditures on energy) and emissions (carbon pricing, social cost of carbon), as well as operating and capital costs for policies, strategies, and actions. It allows for the generation of marginal abatement curves to illustrate the cost and/or savings of policies, strategies, and actions.

2. Model Structure

The major components of the model (sub-models) and the first level of modelled relationships (influences) are represented in Figure 2. These sub-models are all interconnected through various energy and financial flows. Additional relationships may be modelled in CityInSight by modifying inputs and assumptions specified directly by users or in an automated fashion by code or scripts running “on top of” the base model structure. Feedback relationships are also possible, such as increasing the adoption rate of non-emitting vehicles in order to meet a particular GHG emissions constraint.

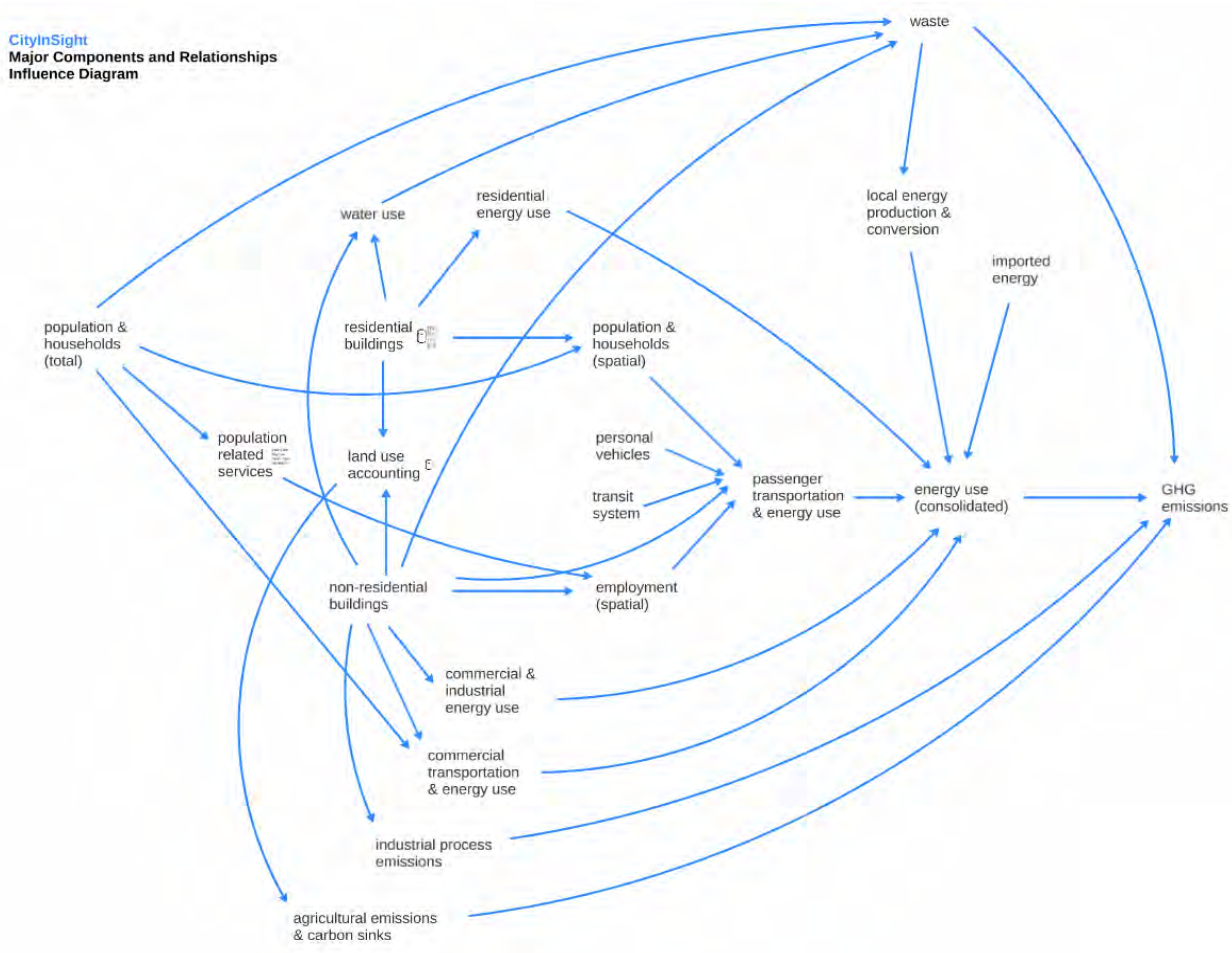


Figure 2. Representation of CityInSight’s structure.

3. Stocks and Flows

Within each sub-model are a number of stocks and flows that represent energy and emissions processes in cities. For any given year, various factors shape the picture of energy and emissions flows in a city, including the population and the energy services it requires, commercial floor

space, energy production and trade, the deployed technologies that deliver energy services (service technologies), and the deployed technologies that transform energy sources to currencies (harvesting technologies). The model creates an explicit mathematical relationship between the factors—some contextual and some part of the energy consuming or producing infrastructure—making up the energy flow picture.

Some factors are modelled as stocks (i.e. counts of similar things classified by various properties). For example, population is modelled as a stock of people classified by age and gender. Population change over time is projected by accounting for the natural aging process, inflows (births, immigration), and outflows (deaths, emigration). The fleet of personal-use vehicles, an example of a service technology, is modelled as a stock of vehicles with a similarly classified fuel consumption intensity classified by size, engine type, and model year. As with population, projecting change in the vehicle stock involves aging vehicles and accounting for major inflows (new vehicle sales) and major outflows (vehicle discards). This stock-turnover approach is applied to other service technologies (e.g. furnaces, water heaters) and harvesting technologies (e.g. electricity generating capacity).

4. Sub-Models

The stocks and flows that make up each sub-model are described below.

POPULATION, HOUSEHOLDS, AND DEMOGRAPHICS

City-wide population is modelled using the standard population cohort-survival method, which tracks population by age and gender on a year-by-year basis. It accounts for various components of change such as births, deaths, immigration, and emigration.

Population is allocated to households and these are placed spatially in zones via physical dwellings (see the land-use accounting sub-model).

The age of the population is tracked over time and is used for analyzing demographic trends, generational differences, and implications for shifting energy-use patterns.

The population sub-model influences energy consumption in various sub-models:

School enrollment totals (transportation)

Workforce totals (transportation)

Personal vehicle use (transportation)

Waste generation

BUILDING LAND-USE ACCOUNTING

Land-use accounting identifies buildings in space and over time, through construction, retrofits, and demolitions. In the baseline, this is often directly informed by building-related geospatial data. Land-use accounting consists of the following elements:

- Quantitative spatial projections of residential dwelling units by:
- Residential structure type (single detached, semi detached, row house, apartment, etc.);
- Development type (greenfield, intensification); and
- Population assigned to dwelling units.

- Quantitative spatial projections of non-residential buildings by:
- Non-residential structure type (retail, commercial, institutional);
- Development type (greenfield, intensification);
- Classification of buildings into archetypes (such as school, hospital, industrial—see Table 2).²⁴ This allows the model to account for differing intensities that would occur in relation to various non-residential buildings; and
- Job allocation to zones via non-residential floor area, using a floor-area-per-worker intensity.
- Land-use accounting takes the following “components of change” into account year over year:
 - New development;
 - Removals/demolitions; and
 - Year of construction.
- Land-use accounting influences other aspects of the model, notably:
 - Passenger transportation: The location of residential buildings influences where home-to-work and home-to-school trips originate, which in turn, influences their trip length and the subsequent mode selected. Similarly, the location and identification of non-residential buildings influences the destination for many trips. For example, buildings identified as schools would be identified in home-to-school trips.
 - Access to energy sources by buildings: Building location influences access to energy sources. For example, a rural dwelling may not have access to natural gas or a dwelling may not be in proximity to an existing district energy system. It can also be used to identify suitable projects. For example, the location and density of dwellings is a consideration for district energy development.
 - Non-residential building energy: The identification of non-residential building archetypes influences their energy consumption based on their use type. For example, a building identified as a hospital would have a higher energy-use intensity than a building identified as a school.

Table 6. Non-residential archetypes represented in the model.

CATEGORY	UNIT
Education	College, university School
Government buildings and space	Municipal building Fire station Penal institution Police station Military base or camp

²⁴Where possible, this data comes directly from the municipality.

CATEGORY	UNIT
Healthcare	Retirement or nursing home Special care home Hospital
Community and culture	Greenspace Recreation Community centre Museum, art gallery Religious institution
Commercial space	Restaurant Hotel, motel, inn Retail Commercial retail Commercial Commercial residential Retail residential Warehouse commercial Warehouse Warehouse retail
Utilities	Energy utility Water pumping or treatment station
Transportation	Transit terminal or station Airport Parking
Agriculture	Industrial farm Barn Greenhouse
Industry and manufacturing	Vehicle and heavy equipment service Industrial generic Manufacturing plant, miscellaneous processing plant Chemical manufacturing plant Printing and publishing plants Food processing plant Textile manufacturing plant Furniture manufacturing plant Refineries—all types Fabricated metal product plant Asphalt manufacturing plant Concrete manufacturing plant
Miscellaneous large surfaces	Golf course Surface infrastructure

RESIDENTIAL AND NON-RESIDENTIAL BUILDING ENERGY

Building energy consumption is closely related to the land-use accounting designation it receives based on where the building is located, its archetype, and when it was constructed. Building energy consumption is calculated in the model by considering:

- Total energy-use intensity of the building type (including the proportion from thermal demand) is built from energy end uses in the building. End uses include heating, lighting, and auxiliary demand. The energy intensity of end uses is related to the building or dwelling archetype and its age.
- Energy use by fuel is determined based on the technologies used in each building (e.g. electricity and heating system types). Heating system types are assigned to building equipment stocks (e.g., heating systems, air conditioners, water heaters).
- Building energy consumption in the model also considers:
 - Solar gains and internal gains from sharing walls;
 - Local climate (heating and cooling degree days); and
 - Energy losses in the building.
- Building equipment stocks (e.g. water heaters and air conditioners) are modelled with a stock-turnover approach that captures equipment age, retirements, and additions. In future projections, the natural replacement of stocks is often used as an opportunity to introduce new (and more efficient) technologies.

The model has residential and non-residential building energy sub-models. They influence and produce important model outputs such as:

- Total residential energy consumption and emissions and residential energy and emissions by building type, end use, and fuel;
- Total non-residential energy consumption and emissions and residential energy and emissions by building type, end use, and fuel; and
- Local/imported energy balance (i.e. how much energy will need to be imported after considering local capacity and production).

Figure 3 details the flows in the building energy sub-model at the building level.

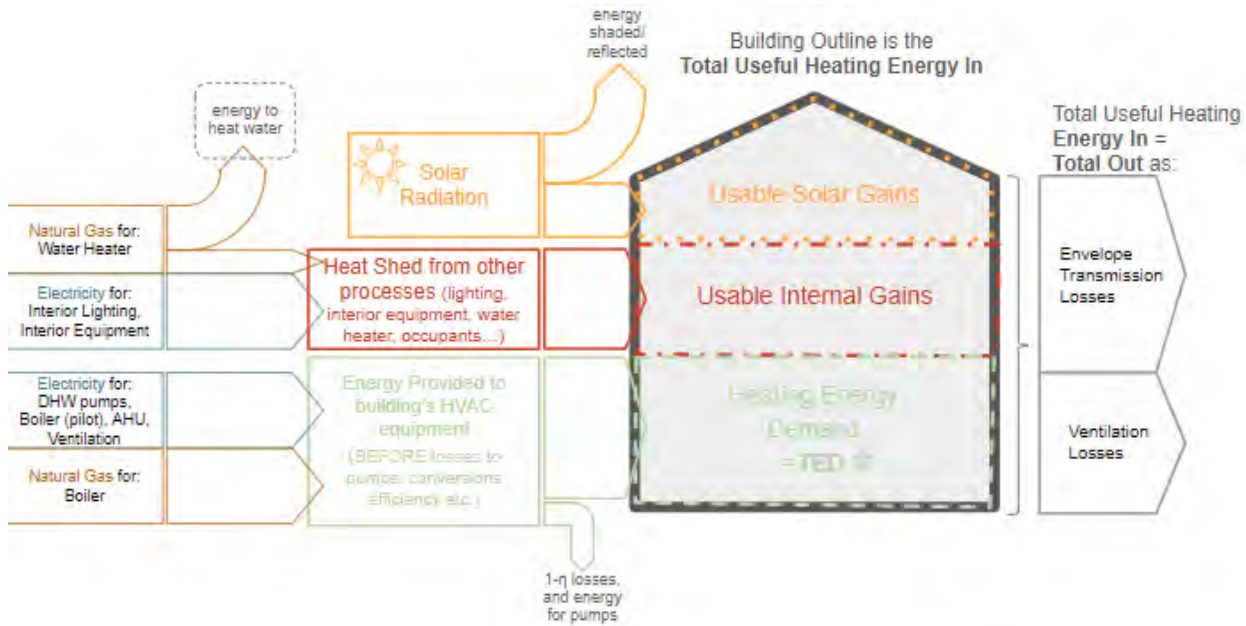


Figure 3. Building energy sub-model schematic.

TRANSPORTATION

CityInSight includes a spatially explicit passenger transportation sub-model that responds to changes in land use, transit infrastructure, vehicle technology, travel behaviour changes, etc. The sub-model has the following features:

CityInSight uses the induced method for accounting for transportation-related emissions; the induced method accounts for in-boundary trips and 50% of transboundary trips that originate or terminate within the city boundary. This shares energy and GHGs between municipalities.

The model accounts for “trips” in the following sequence:

1. Trip generation. Trips are divided into four types (home-work, home-school, home-other, and non-home-based) that are each produced and attracted by different combinations of spatial influences identified in the land-use accounting sub-model: dwellings, employment, classrooms, and non-residential floor space.
2. Trip distribution. Trips are distributed by the number of trips specified for each zone of origin and zone of destination pair. Origin-Destination (O-D) matrix data is based on local travel surveys and transportation models.
3. Mode share. For each origin-destination pair, trips are shared over walk/bike, public transit, and automobile.
 - a. Walk/bike trips are identified based on a distance threshold of ~2 km for walking and ~5–10 km for biking.
 - b. Transit trips are trips with an origin or destination within a certain distance to a transit station.
4. Vehicle distance. Vehicle kilometres travelled (VKT) are calculated based on the number of trips by mode and the distance of each trip based on a network distance matrix for the

origin-destination pairs.

VKT is assigned to a stock of personal vehicles based on vehicle type, fuel type, and fuel efficiency. The number of vehicles is influenced by the total number of households identified in the population sub-model. The model also uses a stock-turnover approach to model vehicle replacements, new sales, and retirements.

The energy use and emissions associated with personal vehicles are calculated using the VKT of the stock of personal vehicles and their type, fuel, and efficiency characteristics.

The personal mobility sub-model is one of the core components of the model. It influences and produces the following important model outputs:

Total transportation energy consumption by fuel, including electricity consumption.

Active trips and transit trips by zone distance.



Figure 4. Trips assessed in the personal mobility sub-model.

WASTE

Households and non-residential buildings generate solid waste and wastewater, and the model traces various pathways to disposal, compost, and sludge. If present in the city, the model can also capture energy recovery from incineration and biogas. Waste generation is translated to landfill emissions based on first order decay models of carbon to methane.

LOCAL ENERGY PRODUCTION

The model accounts for energy generated within city boundaries. It models energy produced from local sources (e.g. solar, wind, biomass) alongside energy imported from other resources (e.g. the electricity grid and the natural gas distribution system) and accounts for conversion efficiency. Local energy generation can be spatially defined.

FINANCIAL AND EMPLOYMENT IMPACTS

Energy-related financial flows and employment impacts are captured through an additional layer of model logic. Costs are calculated as new stock is incorporated into the model through energy flows (annual fuel costs) and other operating and maintenance costs. Costs are based on a suite of assumptions that are inputted into the model. See Section 6 for financial variables tracked within the model.

The model calculates employment based on non-residential building archetypes and their floor area. Employment related to investments is calculated using standard employment multipliers and is often expressed as person-years of employment per million dollars of investment.

5. Energy and GHG Emissions Accounting

CityInSight accounts for the energy flows through the model, as shown in Figure 6. Source fuels crossing the geographic boundary of the city are shown on the left. The four “final demand” sectors—residential, commercial, industrial, and transportation—are shown towards the right. Some source fuels are consumed directly in the final demand sectors (e.g. natural gas used by furnaces for residential heating and gasoline used by personal vehicles for transportation). Other source fuels are converted to another energy carrier before consumption in the final demand sectors (e.g. solar energy converted to electricity via photovoltaic cells and natural gas combusted in heating plants and the resulting hot water distributed to end-use buildings via district energy networks). Finally, efficiencies of the various conversion points (e.g. end uses, local energy production) are estimated to split flows into either “useful” energy or conversion losses at the far right side of the diagram.

Energy Flows - main node groups

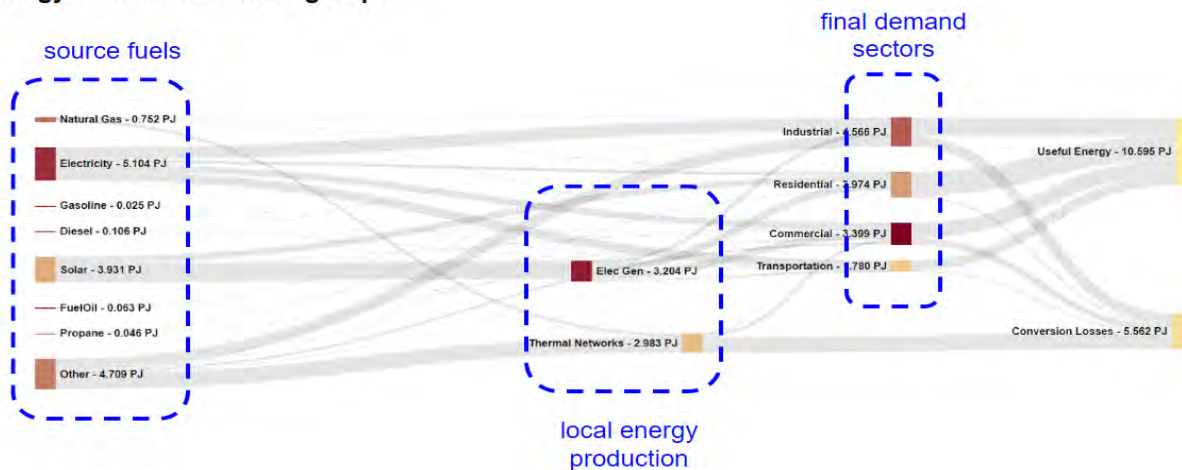


Figure 5. Energy flow Sankey diagram showing main node groups.

Figure 5 above shows the potential for ambiguity when energy is reported. For example, which of the energy flows circled are included and how do you prevent double counting? To address these ambiguities, CityInSight defines two main energy reports:

- Energy demand (shown in Figure 6). Energy demand includes the energy flows just before the final demand sectors (left of the dotted red line). Where the demand sectors are supplied by local energy production nodes, the cut occurs after the local energy production and before demand.

- Energy supply (shown in Figure 7). Energy supply includes the energy flows just after the source fuel nodes (left of the dotted red line). Where the source fuels supply local energy production nodes, the cut occurs between the source fuels and local energy production.

Energy Reporting - Demand 1

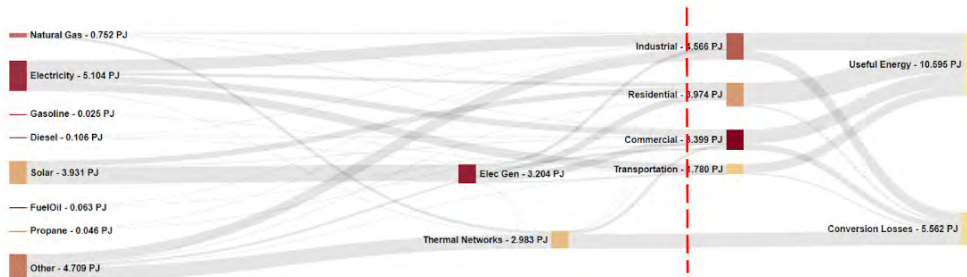


Figure 6. Energy demand report definition.

Energy Reporting - Supply 1

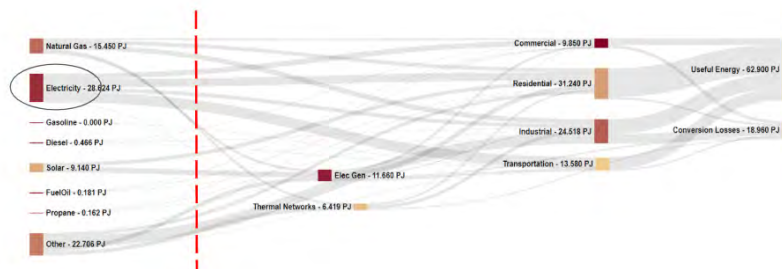


Figure 7. Energy supply report definition.

In the integrated CityInSight energy and emissions accounting framework, GHG emissions are calculated after energy consumption is known.

6. Financial Accounting

The model also expresses a financial analysis for most of its stocks and flows. Costs and savings modelling considers:

Upfront capital expenditures related to new stocks such as new vehicles or new building equipment;

Operating and maintenance costs (annualized costs, such as vehicle maintenance, associated with stocks);

Energy costs related to energy flows in the model and accounting for fuel and electricity costs; and

Carbon pricing calculated based on emissions generation.

The expenditure types evaluated in the model are summarized in Table 7. Financial assumptions will be included in further iterations of the Winnipeg model.

Table 7. Categories of expenditures.

CATEGORY	DESCRIPTION
Residential buildings	Cost of dwelling construction and retrofitting and operating and maintenance costs (non-fuel).
Residential equipment	Cost of appliances and lighting, heating and cooling equipment.
Residential fuel	Energy costs for dwellings and residential transportation.
Residential emissions	Costs resulting from a carbon price on GHG emissions from dwellings and transportation.
Commercial buildings	Cost of building construction and retrofitting and operating and maintenance costs (non-fuel).
Commercial equipment	Cost of lighting, heating, and cooling equipment.
Commercial vehicles	Cost of vehicle purchase and operating and maintenance costs (non-fuel).
Non-residential fuel	Energy costs for commercial buildings, industry, and transport.
Non-residential emissions	Costs resulting from a carbon price on GHG emissions from commercial buildings, production, and transportation.
Energy production emissions	Costs resulting from a carbon price on GHG emissions for fuel used in the generation of electricity and heating.
Energy production fuel	Cost of purchasing fuel for generating local electricity, heating, or cooling.
Energy production equipment	Cost of the equipment for generating local electricity, heating, or cooling.
Municipal capital	Cost of the transit system additions (no other forms of municipal capital assessed).
Municipal fuel	Cost of fuel associated with the transit system.
Municipal emissions	Costs resulting from a carbon price on GHG emissions from the transit system.
Energy production revenue	Revenue derived from the sale of locally generated electricity or heat.
Personal use vehicles	Cost of vehicle purchase and operating and maintenance costs (non-fuel).
Transit fleet	Costs of transit vehicle purchase.
Active transportation infrastructure	Costs of bike lane and sidewalk construction.

FINANCIAL REPORTING PRINCIPLES

The financial analysis is guided by the following reporting principles:

6. Sign convention: Costs are negative; revenue and savings are positive.
7. The financial viability of investments will be measured by their net present value.

8. All cash flows are assumed to occur on the last day of the year and, for purposes of estimating their present value in Year 1, will be discounted back to time zero (the beginning of Year 1). This means that even the initial capital outlay in Year 1 will be discounted by a full year for purposes of present value calculations.
9. We will use a discount rate of three percent in evaluating the present value of future government costs and revenues.
10. Each category of stocks will have a different investment horizon.
11. Any price increases for fuel, electricity, carbon, or capital costs included in our analysis will be real price increases, net of inflation.
12. Where a case can be made that a measure will continue to deliver savings after its economic life (e.g. after 25 years in the case of the longest lived measures), we will capitalize the revenue forecast for the post-horizon years and add that amount to the final year of the investment horizon cash flow.
13. When presenting the results of the financial analysis, we will round them to the nearest thousand dollars unless additional precision is meaningful.
14. Only actual cash flows will be included in the financial analysis.

7. Inputs and Outputs

The model relies on a suite of assumptions that define the various stocks and flows within the model for every time step (year) in the model.

BASE YEAR

For the baseline year, many model inputs come from calibrating the model with real energy datasets. This includes real building and transportation fuel data and city data on population, housing stock, and vehicle stock. Other assumptions come from underlying relationships between energy stocks and flows identified through research, like the fuel efficiency of personal vehicles or the efficiency of solar PV.

FUTURE PROJECTIONS

CityInSight is designed to project how the energy flow picture and the emissions profile will change in the long term by modelling potential changes in:

- the context (e.g. population, development patterns) and
- emissions reduction actions that influence energy demand and the composition of stocks.

Potential changes in the system are also based on a suite of input assumptions and are frequently referred to as “actions”. Actions are intervention points in the model that change the relationship between a certain stock and flow at a certain time. Action assumptions can be based on existing projections and on proposed policy design and can be as wide ranging as the stocks and flows present in the model.

Stock-turnover models enable users to directly address questions about the penetration rates of new technologies over time that are constrained by assumptions such as new stock, market shares, and stock retirements. Examples of projection outputs include energy mix, mode split, vehicle kilometres of travel (VKT), total energy costs, household energy costs, and GHG

emissions. Energy, emissions, capital, and operating costs are outputs for each scenario. The emission and financial impacts of alternative climate mitigation scenarios are usually presented relative to a reference or “business as planned” scenario. For example, an action may assume that starting in 2030, all new personal vehicles will be electric. This assumption would be input into the model, and, starting in 2030, every time a vehicle reaches the end of its life, rather than be replaced with a gas- or diesel-powered vehicle, it is replaced with an electric vehicle. As a result, the increase in the electric vehicle stock means greater VKT allocated to electricity and less to gasoline, thereby lowering emissions.

8. Spatial Disaggregation

As previously discussed, a key feature of CityInSight is the geocoded stocks and flows that underlie the energy and emissions in the community. All buildings and transportation activities are tracked within a discrete number of geographic zones specific to the city. This enables consideration of the impact of land-use patterns and urban form on energy use and emissions production from a baseline year to future years in the study horizon. CityInSight outputs can be integrated with city mapping and GIS systems. This feature allows CityInSight to support the assessment of a variety of urban climate mitigation strategies that are out of reach of more aggregate representations of the energy systems. Some examples include district energy, microgrids, combined heat and power, distributed energy, personal mobility (the number, length, and mode choice of trips), local supply chains, and EV infrastructure.

For stationary energy use, the foundation for the spatial representation consists of land use, zoning, and property assessment databases routinely maintained by municipal governments. These databases have been geocoded in recent years and contain detailed information about the built environment that is useful for energy analysis.

For transportation energy use and emissions, urban transportation survey data characterizes personal mobility by origin, destination, trip time, and trip purpose. This, in turn, supports the spatial mapping of personal transportation energy use and greenhouse gas emissions by origin or destination.

III. Modelling Process

CityInSight is designed to support the development of a municipal strategy for greenhouse gas mitigation. Usually, the model is engaged to identify a pathway for a community to meet a greenhouse gas emissions target by a certain year or to stay within a cumulative carbon budget over a specified period.

1. Data Collection, Calibration, and Baseline

The CityInSight engagement begins with an intensive data collection and calibration exercise in which the model is systematically populated with data on a wide range of stocks and flows in the community that affect greenhouse gas emissions. From this data, a picture emerges that begins to identify where opportunities for climate change mitigation are likely to be found in the modelled community.

The calibration and inventory exercise helps establish a common understanding among affected and interested parties about how the greenhouse gas emissions in their community are connected to the way they live, work, and play. Relevant data are collected for variables that

drive energy and emissions, such as characteristics of buildings and transportation technologies, and these datasets are reconciled with observed data from utilities and other databases. The surface area of buildings is modelled in order to accurately estimate energy performance by end use. Each building is tracked by vintage, structure, and location, and a similar process is used for transportation stocks. Additional analyses at this stage include local energy generation, district energy, and the provincial electricity grid. The primary outcome of this process is an energy and GHG inventory for the baseline year, with corresponding visualizations.

2. The Base Year and Reference Projection

Once the baseline is completed, a reference projection—referred to as the business-as-planned scenario—to the target year is developed. The reference projection is based on a suite of input assumptions inserted into the model that reflect the future conditions. This is often based on existing municipal projections for buildings and population and historical trends in stocks that can be determined during model calibration. In particular, the project allocates future population and employment to building types and spaces. During this process, the model is calibrated against historical data, providing a technology stock as well as a historical trend for the model variables. This process ensures that the demographics are consistent with the municipality's GIS and transportation modelling.

The projection typically includes approved developments and official plans combined with the simulation of committed energy infrastructure to be built, existing regulations and standards (e.g. renewable energy and fuel efficiency), and communicated policies. The projection incorporates conventional assumptions about the future development of the electrical grid, uptake of electric vehicles, building code revisions, changes in climatic conditions, and other factors. The resulting projection serves as a reference line against which the impact and costs of GHG mitigation measures can be measured. Sensitivity analyses and data visualizations are used to identify key factors and points of leverage within the reference projection.

3. Low-Carbon Scenario and Action Plan

The low-carbon scenario—referred to as the net-zero scenario—uses a new set of input assumptions to explore the impacts of emissions reduction actions on the emissions profile. This begins with developing a list of candidate measures for climate mitigation in the community and is supplemented by additional measures and strategies identified through the engagement process. For many actions, CityInSight draws on an in-house database that specifies the performance and cost of technologies and measures for greenhouse gas abatement.

The low-carbon scenario is analyzed relative to the reference projection. The actions in the low-carbon scenario are grouped together to ensure that there is no double counting and that the interactive effects of the proposed measures are captured in the analysis.

IV. Addressing Uncertainty

There is extensive discussion about the uncertainty in models and modelling results. The assumptions underlying a model can be from other locations or large datasets that do not reflect local conditions or behaviours, and in cases where they do accurately reflect local conditions, it is still exceptionally difficult to predict how the conditions and behaviours will respond to broader societal changes and what those changes will be (the “unknown unknowns”).

The modelling approach identifies four strategies for managing uncertainty related to community energy and emissions modelling:

- 1.** Sensitivity analysis: From a methodological perspective, one of the most basic ways of studying complex models is the sensitivity analysis, which quantifies uncertainty in a model's output. During this assessment, each of the model's input parameters is drawn from a statistical distribution in order to capture the uncertainty in the parameter's true value (Keirstead, Jennings, & Sivakumar, 2012).
 - a.** Approach: Each of the variables will be increased by 10–20% to illustrate the impact that an error of that magnitude has on the overall total.
- 2.** Calibration: One way to challenge untested assumptions is to use backcasting to ensure the model can forecast the past accurately. The model can then be calibrated to generate historical outcomes, which usually refers to "parameter adjustments" that "force" the model to better replicate observed data.
 - a.** Approach: The model calibrates variables for which there are two independent sources of data. For example, the model calibrates building energy use (derived from buildings data) against actual electricity data from the electricity distributor.
- 3.** Scenario analysis: Scenarios are used to demonstrate that a range of future outcomes is possible given the current conditions that no one scenario is more likely than another.
 - a.** Approach: The model will develop a reference scenario.
- 4.** Transparency: The provision of detailed sources for all assumptions is critical to enabling policy-makers to understand the uncertainty intrinsic in a model.
 - a.** Approach: The assumptions and inputs are presented in this document.

Appendix A: Model Assumptions

Table 8. Summary of business-as-usual (BAU) and low carbon scenario assumptions modelled for the City of Orillia's Community Climate Action Plan.

CATEGORY	BAU ASSUMPTION	SOURCE	LOW CARBON ASSUMPTION	SOURCE
Population and Employment				
Population	Population growth according to City projections	Land Needs Assessment: Hemson Consulting Report. Prepared December 2020	Same as BAU	Land Needs Assessment: Hemson Consulting Report. Prepared December 2020
Employment	Employment growth according to City projections	Same as BAU	Same as BAU	City
Buildings				
New buildings growth				
Building growth projections	Dwelling projections according to Environics data.	Land Needs Assessment: Hemson Consulting Report. Prepared December 2020	Current approach is to maintain the current Orillia Boundary and ensure population and dwelling growth falls within it.	Same as report.
Demolition Rate	.3% of ground-based units demolished per year (may be refined)		.3% of ground-based units demolished per year (may be refined)	Conservative assumption
New buildings energy performance				
Residential	Energy performance under code improves by 10% every five years over the preceding five-year period.	Adapted from the Report by the Environmental Commissioner of Ontario. Conservation: Let's Get Serious 2015-2016. And, based on correspondence with Brendan Hayley, Policy Director at Efficiency Canada.	Progressive Green Standard, align with TGS benchmarks - Energy performance under code improves by 25% every five years over the preceding five-year period. - Solar PV is added to all new construction by 2030 (net - Zero)	Toronto: https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/toronto-green-standard Whitby: https://www.whitby.ca/en/work/whitby-green-standard.aspx
Multi-residential	No improvements to new building standards	Assume base rate of 5% improvement every 5 years		

CATEGORY	BAU ASSUMPTION	SOURCE	LOW CARBON ASSUMPTION	SOURCE
Commercial & Institutional	No improvements to new building standards	Assume base rate of 5% improvement every 5 years	Include rooftop PV. All new buildings are substantially more efficient and electric by 2030. Efficiency improvements are modelled as follows: 2022: NECB 2020 2024: 25% better 2026: 50% better 2030: 60% better	
Industrial	No improvements to new building standards	Assume base rate of 5% improvement every 5 years		
Existing buildings retrofitting				
Residential	Existing building stock efficiency increases at 1%/year 2016-2050. A light renovation occurs resulting in 10% improvement of TEDI	Pembina, Pathway Study on Existing Residential Buildings in Ottawa, 2019 (at 22).	Pre-1980 Buildings 65% retrofit by 2030 85% retrofit by 2040 95% retrofit by 2050 95% of all existing buildings are retrofit by 2050	Research: - Pembina: 40-80% energy reductions involved air sealing and re-insulation, mechanical ventilation, fuel source conversions. Moderate (30-50%) reductions involving lighting retrofits, daylighting, controls, mechanical systems. Shallow retrofits (10-20%) include recommissioning, fixture replacements, weatherization. https://www.oeb.ca/sites/default/files/2019_Achievable_Potential_Study_20191218.pdf
Multi-residential			Post 1980 Buildings 40% by 2030 65% by 2040 95% by 2050	
Commercial and institutional			Same as above (#5)	

CATEGORY	BAU ASSUMPTION	SOURCE	LOW CARBON ASSUMPTION	SOURCE
Industrial			Retrofit to lighting and thermal heating demand. (See Industrial process below)	
Municipal			100% retrofit by 2040, achieve 50% TEDI, 10% EUI reduction	Corporate Climate Action Plan (2021)
End use				
Space heating	Fuel shares for end use unchanged; held from 2016-2050.	Canadian Energy Systems Analysis Research. Canadian Energy System Simulator. http://www.cesarnet.ca/research/caness-model .	Generally follow retrofit schedule (existing), TGS (new construction) - retrofit activities shifts to on-demand water heating, and heat pumps for space heating (not applicable to primary industry) - heat-pumps applied to all new construction after 2025 (in-line with TGS standard) - 15% of large institutional buildings choose ground-source / geoexchange heat pumps	TAF Recommendations Report; Accelerating Heat pump adoption 2018
Water heating				
Space cooling				
Projected climate impacts				
Heating and cooling degree days	Heating Degree days are expected to decrease, and cooling degree days will increase	Climateatlas.ca - BCCAqv2 downscaled climate data from Pacific Climate Impacts Consortium	Same as BAU	
Energy Generation				
Low- or zero-carbon energy generation (community scale)				

CATEGORY	BAU ASSUMPTION	SOURCE	LOW CARBON ASSUMPTION	SOURCE
Rooftop Solar PV	Existing solar PV hold constant held constant	IESO active generation contract list (as of March 2020) http://www.ieso.ca/en/Power-Data/Supply-Overview/Distribution-Connected-Generation	8 MW by 2040 for Corporate Energy - Of applicable rooftops: 40% of rooftops have solar PV by 2030 75% by 2050 Solar PV accounts for 50% of building (both residential and commercial) electricity energy demand, post-fuel switching for space and water heating	
Ground mount solar	0 MW held constant	IESO active generation contract list (as of March 2020) http://www.ieso.ca/en/Power-Data/Supply-Overview/Distribution-Connected-Generation	- Investigate up to 10 MW by 2030, in-boundary - See Actions around Renewable Energy Certificates / Power Purchase Agreements (#28/#29)	
District Energy Generation	Lakehead University has Geothermal Heating System No further DE expansion	https://www.lakeheadu.ca/about/sustainability/sustainable-building/orillia	- Likely no DE Expansion recommended. Rely more on building-level heat pumps. However, a thermal energy density scan can give more insight. - 10-15% of large new buildings use ground-source heatpumps (rest can use air-source).	District Energy 101: https://www.integralgroup.com/district-energy-101/
Wind	None	IESO active generation contract list (as of March 2020) http://www.ieso.ca/en/Power-Data/Supply-Overview/Distribution-Connected-Generation	- See Actions around Renewable Energy Certificates / Power Purchase Agreements (#28/#29)	Wind generation will occur outside of Orillia
Energy Storage	None		Reduce curtailment of in-boundary generation; targets or ranges still TBD	
Transport				
Transit				

CATEGORY	BAU ASSUMPTION	SOURCE	LOW CARBON ASSUMPTION	SOURCE
Expanded transit	Current Stock is 14 Diesel Buses. Transit Modal Share held constant Existing transit service unchanged 2016-2050; no expansion of transit assumed 2016-2050.	2016 Data from Orillia Transit	To reflect direction from MMTP - Modehsare results (Action #15)	Lakehead University is assumed to have a U-pass system in place
Electrify transit system	No electrification anticipated		100% of rolling transit is electric by 2030	City of Halton Hills, City of Richmond Hill CEEP
Active				
Mode share	Modal Share held constant from VKT 2016 Status Quo Modeshare: Driving: 87% Other: 5% Walking: 5% Cycling: 1% Transit: 1%	Multi-Modal Transportation Master Plan (2019). City of Orillia. Retrieved from: 1_Orillia_MMTMP_20191125.pdf	Aggressive Change: Driving 66% Transit 10% Walking and cycling 10% Other 9%	Multi-Modal Transportation Master Plan (2019). City of Orillia. Retrieved from: 1_Orillia_MMTMP_20191125.pdf
Private/personal use				
Electrify municipal fleet	No change to municipal fleets.		Procurement of zero-emission vehicles after 2023	Corporate Action Plan (2021)
Electrify personal vehicles	14% new sales by 2030, then held constant	Axsen, J., Wolinetz, M. (2018). Reaching 30% plug-in vehicle sales by 2030: Modeling incentive and sales mandate strategies in Canada. Transportation Research Part D: Transport and Environment Volume 65, Pages 596-617	80% by 2030, 100% new sales EV by 2035	Aligned with new federal target of 100% of vehicle sales to be EV by 2035 (assuming a 13-year vehicle life cycle)

CATEGORY	BAU ASSUMPTION	SOURCE	LOW CARBON ASSUMPTION	SOURCE
Electrify commercial vehicles	EVs make up 15% of new light duty sales, 18% medium duty sales and 1% heavy duty sales by 2030; share holds constant from 2030 to 2050.	https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/whats-sparking-electric-vehicle-adoption-in-the-truck-industry	light duty: 80% by 2030, 100% new sales EV by 2035 med duty: 80% by 2030, 100% new sales EV by 2035 heavy duty: post 2045 everything is equally shared electric/hydrogen,	california mandate: all heavy duty electric by 2045 https://www.greencarreports.com/news/1128652_california-mandate-electric-trucks-all-ev-by-2045
Vehicle fuel efficiencies / tailpipe emission standards	CAFE Fuel standards: Vehicle fuel consumption rates reflect the implementation of the U.S. Corporate Average Fuel Economy (CAFE) Fuel Standard for Light-Duty Vehicles, and Phase 1 and Phase 2 of EPA HDV Fuel Standards for Medium- and Heavy-Duty Vehicles. ----- Light duty: 2015: 200gCO ₂ e/km 2025: 119 gCO ₂ e/km 2030: 105gCO ₂ e/km Heavy Duty: 20% reduction in emissions intensity by 2025, relative to 2015, 24% reduction in emissions intensity in 2030 relative to 2015	EPA. (2012). EPA and NHTSA set standards to reduce greenhouse gases and improve fuel economy for model years 2017-2025 cars and light trucks. Retrieved from https://www3.epa.gov/otaq/climate/documents/420f12050.pdf http://www.nhtsa.gov/fuel-economy/SOR/2010-201 . Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations. Available from: http://laws-lois.justice.gc.ca/SOR/2018-98 . Regulations Amending the Heavy-duty Vehicle and Engine Greenhouse Gas Emission Regulations and other Regulations Made Under the Canadian Environmental Protection Act, 1999. Available from: https://pollution-waste.canada.ca	Same AS BAU, and reflects actions 17&18	

CATEGORY	BAU ASSUMPTION	SOURCE	LOW CARBON ASSUMPTION	SOURCE
Vehicle stock	All vehicle stock unchanged other than natural turnover. The total number of personal use and corporate vehicles is proportional to the projected number of households in the BAU.	Personal vehicle stock changes between 2016 and 2050. Commercial vehicle stock unchanged between 2016 and 2050. The total number of personal use and corporate vehicles is proportional to the projected number of households in the BAU.	Personal vehicle stock changes between 2016 and 2050. Commercial vehicle stock unchanged between 2016 and 2050. The total number of personal use and corporate vehicles is proportional to the projected number of households in the BAU.	CANSIM and Natural Resources Canada's Demand and Policy Analysis Division.
Water and Waste				
Waste, Wastewater, and Water				
Waste generation	173 kg / person / year - no change (2020)	https://www.orillia.ca/en/living-here/resources/Environmental_Services/2020-SWM-Annual-Report.pdf	Zero Waste Programming/ Behavioural Change Program - 5% less waste per person by 2030 - 10% by 2050	
Water use reduction	N/A		By 2050, 25% reduction in water / wastewater consumption (behaviour change, leak detection system, greywater re-use)	
Waste diversion	Baseline waste diversion rate 62% (2016), 65% (2019) Hold 2019 rate constant	https://www.orillia.ca/en/living-here/resources/Environmental_Services/2020-SWM-Annual-Report.pdf	90% Waste Diversion by 2050	

CATEGORY	BAU ASSUMPTION	SOURCE	LOW CARBON ASSUMPTION	SOURCE
Waste treatment	Waste is treated in Boundary Landfill gas capture of 75% (2016) and held constant Wastewater: Methane recovery of 32% (2016) rest of methane is flared (held constant)	Communications with City of Orillia environmental services	95% of landfill and wastewater methane is captured	
Industry and Agriculture				
Industrial efficiencies	No change.		20% improvement of industrial performance by 2050 Fuel switch remaining diesel fuel oil use to electricity	IESO: Achievable Potential Study. The report describes potential with upper and lower boundaries.
Agriculture	No change.		no major agricultural activity within Orillia	
Sequestration	Carbon Sequestration rates from 2016 and reflect community growth and rates of de-forestation		100 - 200 trees per year until 2050	Conservative assumption
Renewable Energy Procurement				
Purchases of Renewable Electricity Certificates	N/A	N/A	In 2030, The community purchases offsets to offset 100% emitting electricity sources by 2050	
Renewable Natural Gas	N/A	N/A	Starting in 2035, begin procuring RNG to offset community natural gas use. 100% by 2045	



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Clerk's Division

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To: Gayle Jackson, CAO/City Clerk
Copy to: Lori Bolton, Director of Human Resources
Michael Clark, Fire Chief
Robin Cadeau, Assistant Clerk
Ashley Stafford, Executive Assistant to Mayor & Council
Nancy Wilding, Health and Safety Officer
Clerk's Division Referrals
From: Kristine Preston, Assistant Clerk
Date: January 25, 2022
Subject: **Outreach Worker**

The following recommendation was adopted by Council at its meeting held on January 24, 2022:

"THAT as recommended in Report CAO-22-01 dated January 10, 2022 from the Chief Administrative Office, a Working Group be established to evaluate and recommend to Council the best approach to assist the City in dealing with the mental health, provision of outreach services, and socioeconomic challenges observed and experienced in municipal facilities and the Business Improvement Area;

AND THAT the Working Group consist of members with representation from:

- Ontario Provincial Police*
- Downtown Orillia Management Board*
- Orillia Public Library*
- A community member with a social service skillset (to be determined by the Mayor and Chief Administrative Officer)*
- If possible, a member representing the Canadian Mental Health Association or County of Simcoe, or other applicable agency;*

AND THAT the City's Health and Safety Officer (with support from the Chief Administrative Officer and Director of Human Resources) facilitate and coordinate this Working Group;

...2

AND THAT the Working Group be mandated to:

- Evaluate current situations in the downtown, as well as the Library, the Orillia Recreation Centre and the Orillia City Centre;*
- Evaluate the current services being provided by the various community agencies and any partnership opportunities;*
- Evaluate and recommend options and opportunities for Council to consider that would assist in dealing with mental health, provision of outreach services, and socioeconomic challenges observed and experienced in municipal facilities and the Business Improvement Area; and*
- Prepare a report for Council's consideration no later than the April 11, 2022 Council Committee meeting;*

AND THAT the Working Group be dissolved upon the submission of their findings to Council.”

Please proceed as authorized.

[signed original on file]

KP:jf

Attachment: CAO-22-01 Outreach Worker

CITY OF ORILLIA

TO: Council Committee – January 17, 2022
FROM: Chief Administrative Office
DATE: January 10, 2022
REPORT NO: CAO-22-01
SUBJECT: Outreach Worker

Recommended Motion

THAT a Working Group be established to evaluate and recommend to Council the best approach to assist the City in dealing with the mental health, provision of outreach services, and socioeconomic challenges observed and experienced in municipal facilities and the Business Improvement Area;

AND THAT the Working Group consist of members with representation from:

- Ontario Provincial Police
- Downtown Orillia Management Board
- Orillia Public Library
- A community member with a social service skillset (to be determined by the Mayor and Chief Administrative Officer)
- If possible, a member representing the:
 - Canadian Mental Health Association or County of Simcoe, or other applicable agency;

AND THAT the City's Health and Safety Officer (with support from the Chief Administrative Officer and Director of Human Resources) facilitate and coordinate this Working Group;

AND THAT the Working Group be mandated to:

- Evaluate current situations in the downtown, as well as at the Library, the Orillia Recreation Centre and the Orillia City Centre;
- Evaluate the current services being provided by the various community agencies and any partnership opportunities;
- Evaluate and recommend options and opportunities for Council to consider that would assist in dealing with mental health, provision of outreach services and socioeconomic challenges observed and experienced in municipal facilities and the Business Improvement Area; and
- Prepare a report for Council's consideration no later than the April 11, 2022 Council Committee meeting;

AND THAT the Working Group be dissolved upon submission of their findings to Council.

Purpose

The purpose of this report is to provide a recommendation to Council regarding a direction forward to provide outreach services.

Background & Key Facts

- During the 2022 Budget process, Council authorized the allocation of approximately \$73,000 for the purposes of contracting an outreach worker.
- The original request was submitted by the Library Board.
- Budget Committee discussed the need for this type of service not only at the library, but also in the downtown and other City facilities.
- Council requested staff to report back in January on the best approach to move this initiative forward.
- Mental Health (including addictions), provision of community outreach services, and socioeconomic issues are facing many communities now more than ever. Many areas are impacted by these challenges. For the purposes of this report, the areas of focus include the library, downtown and other municipal facilities.
- **Library**
 - The Library Board's original request was for a security guard. That request has evolved to a request for an outreach worker.
 - In 2021, a Crime Prevention Through Environmental Design (CPTED) report was completed by the Ontario Provincial Police (OPP). Environmental and Infrastructure Services (EIS) have the following work included in their workplan as a result of this report:
 - Room door locks
 - Knee wall doors at the circulation desks
 - Remote door openings for main floor public washrooms
 - Other work requirements continue to be evaluated
 - The Library believes that outreach services is required to help connect those in need with the best services available.
- **Downtown**
 - The Downtown Orillia Management Board - Business Improvement Area (DOMB-BIA) has expressed concerns on several occasions about some activities in the BIA that are not conducive to ensuring that the BIA is a safe environment for commerce.
 - The Mayor along with the Police Service Board (PSB) implemented the Security Camera Registry and Mapping (SCRAM) program in 2021. This program creates a rebate opportunity for residents and businesses to purchase, install and register their security cameras. These cameras are then mapped by the OPP to assist with investigations.

- **City Facilities**

- Other municipal facilities that are impacted by mental health issues include the Orillia Recreation Centre and Orillia City Centre. Generally speaking, when issues arise, staff contact the OPP for assistance.

Options & Analysis

Option 1 – Recommended

THAT a Working Group be established to evaluate and recommend to Council the best approach to assist the City in dealing with the mental health, provision of outreach services, and socioeconomic challenges observed and experienced in municipal facilities and the Business Improvement Area;

AND THAT the Working Group consist of members with representation from:

- Ontario Provincial Police
- Downtown Orillia Management Board
- Orillia Public Library
- A community member with a social service skillset (to be determined by the Mayor and Chief Administrative Officer)
- If possible, a member representing the:
 - Canadian Mental Health Association or County of Simcoe, or other applicable agency;

AND THAT the City's Health and Safety Officer (with support from the Chief Administrative Officer and Director of Human Resources) facilitate and coordinate this Working Group;

AND THAT the Working Group be mandated to:

- Evaluate current situations in the downtown, as well as at the Library, the Orillia Recreation Centre and the Orillia City Centre;
- Evaluate the current services being provided by the various community agencies and any partnership opportunities;
- Evaluate and recommend options and opportunities for Council to consider that would assist in dealing with mental health, provision of outreach services and socioeconomic challenges observed and experienced in municipal facilities and the Business Improvement Area; and
- Prepare a report for Council's consideration no later than the April 11, 2022 Council Committee meeting;

AND THAT the Working Group be dissolved upon submission of their findings to Council.

As Council is aware, the County of Simcoe is the primary service provider regarding social services in the City of Orillia.

Orillia Councils over time have made several decisions to augment the services provided by the County by funding services such as youth, affordable housing, Information Orillia etc. A high-level chart is attached as Schedule "A" to this report noting the associated costs. Notably, it does not include costs associated with policing, library and/or recreational services, which in some ways do provide elements of social services.

Worth noting is that currently, the OPP has one officer dedicated to the Crisis Outreach and Support Team (COAST) with a second officer that has other duties but assists with contacts. The OPP only has one Canadian Mental Health Association (CMHA) worker provided to them at this time but have been working on access to more. Over the past year, the OPP have had more than one CMHA worker assisting but they were not dedicated to the program and were the pilot/trials to their expansion.

The OPP's COAST is integrated within the Community Mobilization Unit (CMU) and accesses social services for many calls for service. Currently, the CMU is structured to five members (one dedicated to COAST, two for schools/youth, two for CMU). The main goal of the CMU is to work with calls for service/individuals/families to get to the root social issue(s) and provide solutions. Many of the challenges the OPP take on are as a result of a social service or need such as homelessness, addictions, and mental health (thefts/shoplifting, unwanted persons, loitering, warming rooms etc.)

The OPP has CMHA workers within the communications centre to assist with mental health/addiction calls when they come in from the service area (Central Region and various parts of the province when necessary) but they are not dedicated to detachments or specific areas and used primarily as a crisis call resource.

The PSB is submitting two applications in January under the Community Safety and Policing – Local Priorities Funding Stream, as well as the Community Safety and Policing – Provincial Priorities Funding Stream. Should these grants be successful, the funding will be utilized for the salary dollars of one dedicated OPP Constable (under local priorities) and another dedicated Constable (under provincial priorities) to maintain and enhance the established Detachment's COAST program.

These grants will allow COAST to expand its dedicated constables to be partnered with available CMHA workers to provide coverage in the community seven days a week.

The Detachment Commander also acts as an advisor to the Geographical Municipal Coordinating Committee and is currently participating in Phase 2 of the implementation of the [Couchiching Community Safety and Well-Being Plan](#).

Additional agencies that provide social service type functions include, but are not limited to:

- Empower Simcoe
- Building Hope
- CMHA
- Simcoe Muskoka Family Connexions
- Helping Hands
- Elizabeth Fry
- Green Haven
- Children's Aid Society
- Sharing Place
- Couchiching Jubilee House

As indicated, Council has authorized additional funding in the amount of \$73,000/year to provide outreach services. As the City is not the primary service provider, limited skillset is available in-house to determine the best direction to move forward with the additional funding allotment. Furthermore, as assurance that tax dollars are attributed to areas that will have a significant, positive impact, it is prudent to ensure that there is no duplication in service. Additionally, is there an opportunity to partner with one or more of the existing community agencies that specialize in social service type work? Worth noting is that Phase 2 of the Community Safety and Well-Being Plan is exploring these options and opportunities.

Staff recommend Option 1 as a direction to move forward to ensure that a proper analysis is conducted to ensure that the most effective and thoughtful use of the additional funding is considered.

Option 2 – Not Recommended

THAT Council support the business case as submitted by the Library Board for the creation of a Community Outreach Worker position for the Library.

Based on the discussion at Budget Committee, the need for this type of service goes beyond the library and consequently this option is not recommended.

Financial Impact

Council has allocated \$73,000 / year for this initiative.

Consultation

The recommendation contained herein will ensure that appropriate consultation with community experts does occur.

Economic Development Impact

Orillia businesses, specifically within the BIA, benefit from a safe and healthy community. Community outreach programs help alleviate and minimize stress due to mental health and socioeconomic challenges. Establishing the BIA as a safe and inclusive place to live, walk, shop and dine will increase traffic, extend visitation to the BIA and offer a sense of security and ultimately prosperity.

Communications Plan

Communication requirements have not been identified at this time.

Relation to Formal Plans, City of Orillia Policy Manual and/or Guiding Legislation

The recommendation included in this report supports the following project/goals identified in Council's Strategic Plan:

- Quality of Life
 - 1.2 - Improve health and well-being of citizens.
 - 1.3 - Actively pursue a welcoming, caring, inclusive and accessible community.
 - 1.5 - Provide supports and services for vulnerable citizens including a strong partnership with the County and other levels of government.

Conclusion

This report outlines a strategy/process that includes community partners to help Council evaluate the best and most effective way to leverage community resources and utilize tax dollars to alleviate social type challenges in the downtown and municipal facilities.

Schedules

- Schedule "A" – Social Service – Current Funding

Prepared, Approved by and Key Contact: G. Jackson, Chief Administrative Officer

	Organization	2022 Contribution
A.	Simcoe County Social Services	
1	Ontario Works	1,384,000
2	Social Housing	2,341,903
3	Children's Services	673,000
4	Long Term Care	2,001,131
5	Paramedic Services	1,825,967
		8,226,001
B.	Orillia Youth Centre	
1	Youth Centre	425,274
		425,274
C.	Other Organizations	
1	Information Orillia	35,000
2	Physician Recruitment	18,000
3	Child Advocacy Centre	20,000
4	Simcoe Muskoka District Health Unit	470,596
5	Mariposa House Hospice	50,000
6	Lighthouse Warming Centre	17,000
		610,596
D.	Other Reserves (Annual Contribution)	
1	Affordable housing	100,000
		100,000
	TOTAL CONTRIBUTION IN 2022	9,361,871

CITY OF ORILLIA

TO: Council Committee - April 11, 2022
FROM: Community Outreach Working Group
DATE: April 1, 2022
REPORT NO: HR-22-06
SUBJECT: **Community Outreach Worker**

Recommended Motion

THAT a Community Outreach Worker be hired to provide outreach services to those in need at the Orillia Public Library, Orillia City Centre, and at various other locations in the downtown area;

AND THAT this position be housed at the Library and report to the Library's Chief Executive Officer, or designate;

AND THAT an agreement be negotiated with an existing social service or mental health agency, or qualified individual, to offer supplemental clinical supervision, professional development and mentoring to the successful candidate.

Purpose

To evaluate and recommend to Council the best approach to assist the City in dealing with mental health concerns, provision of outreach services and socioeconomic challenges observed and experienced in municipal public facilities and the Business Improvement Area.

Background & Key Facts

The Community Outreach Working Group (herein after referred to as "Working Group") consisted of members representing:

- Ontario Provincial Police
- Downtown Orillia Management Board
- Orillia Public Library Board and Staff
- Canadian Mental Health Association
- County of Simcoe
- City of Orillia

The Working Group was chaired by Brian Adams, retired Clinical Social Worker, formerly associated with the Community Mental Health Service at Orillia Soldiers Memorial Hospital.

The mandate of the Working Group included:

- Evaluation of current situations in the downtown, as well as at the Library, the Orillia Recreation Centre and the Orillia City Centre;
- Evaluate the current services being provided by the various community agencies and any partnership opportunities;
- Evaluate and recommend options and opportunities for Council to consider that would assist in dealing with mental health, provision of outreach services and socioeconomic challenges observed and experienced in municipal facilities and the Business Improvement Area; and
- Prepare a report for Council's consideration no later than the April 11, 2022, Council Committee meeting

The Working Group wishes to acknowledge the commitment of City Council to allocate funding of an outreach position to help address the needs of an increasing number of individuals with a diverse range of psychosocial problems including mental health, addictions, poverty, homelessness, and lifestyle choices, who are gravitating to downtown and public locations such as the Library, City Centre, Recreation facilities and various businesses, primarily as a go-to place to be in the company of others. The Working Group is also appreciative of the allocation of City staff resources to support its task of preparing this report for review by Council.

The Working Group met 5 times over 9 weeks, with members completing assignments between meetings to gather information and feedback from various agencies bring to the next meeting. Members of the Working Group surveyed Library and City staff to gather their input and ideas related to the mandate.

The following is a summary of the information gathered and evaluations made by the Working Group under the first and second point of the mandate.

Evaluation of Current Situation

Orillia has a commendable and enviable number of health and social services and supports for a community of its size for individuals who struggle with a myriad of health, psychological and social problems.

It is important to note that having a mental illness and/or addiction, experiencing poverty and/or homelessness, or even having a criminal history, does not predispose an individual to aggressive or abusive behavior. Problematic behavior is often triggered or intensified by current circumstances and the nature of the person's interactions with others. However, individuals who struggle with the overuse, abuse, and addiction to alcohol, illicit drugs and pharmaceutical drugs, present with a range of problems when under the influence of these substances, including risks of imminent harm to themselves (e.g. overdose) and problems of behavior in public places. Additionally, those in withdrawal also present with a similar range of behaviors which are equally as difficult to manage.

People who do not have safe alternatives tend to gravitate to public buildings, particularly during times of inclement weather as public buildings offer a respite from the elements.

Evaluation of Current Situation in the Orillia Public Library:

- 206 incidents logged in three years involving 382 patrons
- 45% of these incidents involved the OPP
- 30% of incidents resulted in a notice of trespass or suspension from use of library
- 117 people were ejected, 61 of whom were teens
- All respondents to the Library staff survey said they regularly deal with high needs client base with mental health, addiction, homelessness and poverty issues.
- 90% report volatile interactions with patrons on a regular basis.
- Staff often do not feel equipped to assist patrons in crisis which increases their job stress.
- Staff are always “on watch” adding to a continual feeling of high alert and unease.
- Library staff need to monitor safety in washrooms which requires constant vigilance, particularly in the single use washroom. There is a plan in place to install a key/card system to monitor washrooms to allow this to be locked so access may be better controlled. Staff will provide the key upon request and will know the washroom is vacated when the key is returned.
- Survey conducted by U. of T. professor in four large metropolitan public libraries found that 97% of employees witnessed verbal intimidation and 84% reported experiencing it themselves. 75% experienced physical intimidation or invasion of personal space. See Schedule A for the full article.
- CBC recently reported that the City of London Public Library now has a social worker on staff funded and overseen in partnership with the Canadian Mental Health Association. See Schedule B for the full article.

Root Cause of Incidents at the Library:

- 47% involved defiant, disruptive or aggressive behaviour
- 14% involved theft or vandalism of property
- 12% involved illegal drug or alcohol use, intoxication or overdose
- 12% involved violence, threats and/or harassment
- 8% involved people in crisis due to mental health concern or housing insecurity

Evaluation of Current Situation in the Downtown BIA:

- Downtown Orillia Management Board (DOMB) members expressed concerns with increased panhandling, drug use and loitering, particularly this winter.
- A DOMB staff member suffered an unprovoked attack in September 2020.
- DOMB staff called OPP during 18 out of 20 “See You on the Patio” (SYOTP) events in 2021 to address intoxicated persons, screaming, yelling profanity, drug overdoses, and fist fights.
- 12% of respondents to the SYOTP visitor survey indicated they did not feel safe downtown during the street closure.
- Aggressive panhandling has increased in the past two years. Customers complain to business owners about being approached and followed on the street and in parking lots.

Evaluation of Current Situation in the Orillia Recreation Centre:

- Increase in people using ORC for personal hygiene (washroom and shower). Issue is worse in early morning and late evening when reduced staff are in the facility.
- There have been incidents where patrons in mental health crisis have disrupted program delivery and other patrons' enjoyment of the facility.
- Individuals have been suspended when what they really need is mental health assistance.
- Some families are using the ORC to hangout which has led to concerns with unsupervised children.
- Threats have made against staff and other patrons as well as physical altercations.
- Disturbances take staff away from other patrons and programming activities.
- Staff often do not feel equipped to assist patrons in crisis which increases job stress.
- Staff are always "on watch" adding to a continual feeling of high alert and unease.

Evaluation of Current Situation in the Orillia City Centre:

- At City Centre, unhoused people have been sleeping in the hallways. Use of City Centre as warming centre has increased visits by people in crisis; sometimes they are brought in by OPP.
- One incident where a person overdosed on illegal drugs occurred in the City Centre washroom.

Evaluation of Current Services Provided by the Various Community Agencies:

Beginning with a listing of various community services provided by Information Orillia, the Working Group compiled a listing of all known social services available in the Orillia area with input from all members. That listing is attached as Schedule C to this report.

Highlights include:

- 47 different agencies listed that provide social services
- Of these, only 18 were identified as regularly able to accept new referrals
- 32 offer information or education to assist people in need
- 28 offer some type of mental health support or information
- 18 offer housing support and/or assistance
- 12 are focused on physical health
- 13 provide crisis assistance and/or suicide prevention efforts
- 14 offer in-kind supports such as food, clothing, etc.
- 10 offer employment supports
- 8 offer income or financial support

All agencies have their own unique mandate and target group. Many offer services that over-lap with other agencies. The majority of these services were considered to be at full capacity and were not able to regularly accept new referrals. Many have an annual budget for support that may run out before the end of the fiscal year.

Social Service Gaps Identified by Working Group:

Due to the complexity of 47 different services providers, people often report that they are unable to access the service they need when they need it. Many say they are often

referred to a different service because they don't meet the eligibility criteria. Or they are told the service is "full" – either not able to accept new referrals or the annual budget is spent. The result is that people are "giving up" and going without the service or supports they need. This leads to more and more people reaching a crisis point and acting out of desperation in City facilities because they cannot get the social services they need.

Areas identified by the Working Group with Very Limited Resources Available:

- Social & recreation drop-in programs for adults and seniors to promote life skills
- Brief service mental health support with outreach workers available every day
- Housing navigators for emergency needs
- Warming centers during evenings and weekends and when temperatures do not meet the threshold of minus 15°C which currently triggers the opening of warming centers
- No food support available on weekends. Need for an outdoor emergency food hamper where people could help themselves 24/7
- Ability to book an "appointment room" equipped with computer and internet so people without these resources at home could attend medical, mental health and service apts.
- Need for safe injection site that provides safe materials and is overseen by staff who can respond to an overdose
- Limited mental health resources on the weekend (COAST is now available on weekends as are crisis lines and OMSH crisis services)
- Access to a private, secure space with technology and internet access is often a barrier for people in poverty or who are housing insecure, especially during the pandemic when the majority of appointments with social service providers were held virtually.

The primary gap in the network of services appears to be the lack of availability of immediate interventions for persons requiring assessment and treatment following initial outreach engagement. Eligibility criteria and wait lists for services remain the most frequently cited barriers from the perspective of those who most need them.

Persons who are struggling have needs which they perceive to be acute but are not necessarily in a psychiatric or mental health crisis because they are not at imminent risk of harm. Community services simply do not have the capacity to be available on a more immediate basis for individuals with this urgent level of need. Unfortunately, these same individuals are often directed to the hospital's emergency department to be seen by a crisis worker simply because of the 24-7 availability of staff or, more unfortunately, simply walk away when they perceive the doors to service closed to them.

Ways that a Community Outreach Worker Could Improve the Current Situation:

- Meet basic needs by assisting with navigation of service systems
- Provide brief short-term support in life skills, developing coping strategies
- Provide de-escalation and naloxone training to front line staff at OPL, DOMB, City
- Provide referrals to community supports and liaise with service providers
- Outreach brief service or support to help individuals access mental health services

The Working Group clearly acknowledges that the proposed Community Outreach Worker will be unable to fill these gaps and will have to work within them. The responsibility for eliminating the gaps in service ultimately rests with the established agencies in the community.

Qualifications Required in a Community Outreach Worker:

- Bachelor of Social Work degree with 2 years of work experience or a Social Service Worker diploma combined with 4 years of work experience in community outreach
- Member of the Ontario College of Social Workers and Social Service Workers
- Experience working in a front-line community setting with at-risk individuals
- Knowledge of short term, single session modalities
- Non-Violent Crisis Intervention, First Aid & Mental Health First Aid training including administering naloxone an asset, with preference for “train the trainer” certification in each area
- Acceptable criminal reference check with vulnerable sector screening
- Access to a reliable vehicle and a valid driver’s license

Suggested Support Structure and Resources for Community Outreach Worker:

- It is vital to have a manager and/or mentor who is knowledgeable about social work who can guide and support the Community Outreach Worker while ensuring professional standards are maintained
- Community Outreach Worker needs to be on the front line, highly visible to those who need service and using plain language – not tucked away in an office
- Need safe, private space to connect with people in need
- Flexibility to assist short term, be visible in community, and immediately available
- Aim for minimal administrative responsibilities recognizing that some documentation is required
- Hours of work may include early evenings, weekends, seasonal (summer is busy) and vary with the needs of community in coordination with other support services
- Safety, security & connection with team to avoid sense of isolation
- Adequate technology – cell phone, laptop, Wi-Fi, office space with proper security
- Clearly defined emergency back-up that could include OPP and the COAST program, the Emergency Department of the hospital and/or Community Mental Health Services at OSMH
- Concern is that OPP response time will vary, and this may pose a safety issue so there needs to be a clear safety plan in place that includes immediate assistance when called for by the Community Outreach Worker
- Community Outreach Worker should connect with the Situation Table to be aware of high needs individuals in the community

Analysis

To maximize the impact of a Community Outreach Worker funded through the City of Orillia, it would be helpful if existing services in the community buy into the value of having a full time Community Outreach Worker available in the community. The Working Group suggests the City work with existing services to be more receptive to the need for immediate clinical interventions with those people identified by outreach. This may necessitate some

reallocation of staff resources within said agencies to accommodate the more immediate needs, but in doing so, may reduce the overall rate of referrals for those whose problems may have intensified due to wait times for service.

The Community Outreach Worker position is being funded as an interim pilot project, and accordingly a number of service evaluative indicators will need to be monitored to ensure that the right persons are being engaged with the service, are directed to appropriate resources in the community and, most importantly, are being connected with the service to which they are directed.

To monitor the effectiveness of the Community Outreach Worker program in addressing the initial concerns brought forward by the Orillia Public Library, the City of Orillia and Downtown Orillia Management Board, there will continue to be the need to log incidents and track trends and to share their findings with the City of Orillia and the Ontario Provincial Police.

The need for education and awareness training of staff in crisis de-escalation, mental health first aid, and principles of engagement with acutely distressed individuals was clearly identified in the survey of downtown merchants, library and city staff. These community education requests should be addressed by accessing existing agencies whose funding includes the provision of such education services.

Proposed Job Specifications of Community Outreach Worker Position

The Working Group determined that, in order to successfully achieve the desired results, the Community Outreach Worker position needs to be focused on crisis intervention and de-escalation “in the moment” primarily for individuals at the Library, where the Working Group found the need was highest, with support provided to other City Facilities and the downtown area.

The Working Group proposes the following Job Specifications for the Community Outreach Worker position:

- Proactively provide engagement and support to people identified (or self-identified) in need of social services
- Respond to requests for assistance with de-escalation when it is safe to do so, including contacting emergency back-up services when required
- Direct people to the appropriate service once a need is identified
- Follow-up with individuals after initial contact to ensure they received the assistance they need
- Maintain accurate records of contact as required
- Develop partnerships with community resources and services to make referrals, understand what services are available and how to best access them
- Support providing training for front line staff at the Library, City and downtown, in conjunction with other social service agencies, in:
 - mental health awareness,
 - crisis intervention and de-escalation, and
 - trauma debriefing.

Option 1

THAT a Community Outreach Worker be hired to provide outreach services to those in need at the Orillia Public Library, Orillia City Centre, and at various other locations in the downtown area;

AND THAT this position be housed at the Library and report to the Library's Chief Executive Officer, or designate;

AND THAT an agreement be negotiated with an existing social service or mental health agency, or qualified individual, to offer supplemental clinical supervision, professional development and mentoring to the successful candidate.

PRO's	CON's
In a team with other library staff for support, decompression, comradery, and immediate assistance in case of emergency.	Limited awareness, experience of the Library fitting in with other social services – lack of connection between OPL and other social service agencies – although this is partially compensation for by having experienced social workers on the Library Board.
Immediate support for people in crisis with low barrier to accessible, open safe space.	Library does not have security, enforcement role or resources to back up this person, therefore it will need a formal connection to OPP, COAST
Community Outreach Worker has support and easy referral from library staff to identify individuals needing assistance - to be their eyes and ears.	May limit availability to assist in other locations, downtown – could be offset by partnerships with other agencies (CMHA, Lighthouse, OSMH, Gilbert Centre)
Central downtown location is already a place people go to for support.	Will lead to an increasing number of individuals in crisis accessing the library – however they are already doing that – this could be considered both a pro and a con.
Less documentation requirements, more flexible, less formal than working with other agencies with their own mandates and regulations. Lower administrative costs and infrastructure is already in place.	Will need to arrange for professional clinical oversight from an experienced social service agency such as CMHA, Catholic Family Services or Orillia Soldiers Memorial Hospital, or even a qualified individual, perhaps on an hourly fee for service basis.
Physical space is available for Community Outreach Worker along with tech support and resources such as internet and Wi-Fi.	Less access to professional development that may be available from an existing social service or mental health agency.
City resources and staff, particularly in Recreation and Youth Services, are available to support Library staff and Community Outreach Worker.	Limited access to resources such as vehicles for transporting individuals, some in-house social support programs.

Option 2

Option 2, which is not recommended, is to position the Community Outreach Worker within the Canadian Mental Health Association or similar social service agency that offers mental health services in the community. It would be vital that the position maintains a strong and defined focus on community outreach initiatives. It will be necessary to develop a Memorandum of Understanding between the City and host agency to document the particulars of how the position will be administered. Other public libraries have gone this route, including the London Public Library.

PRO's	CON's
Some agencies have expressed an interest including CMHA, Information Orillia and Soldiers Hospital. Lots of details would need to be worked out. City and OPL could support finalizing the arrangements to provide resources Community Outreach Worker will need.	Community Outreach Worker may be pulled away by other priorities of host agency—could be burdened with lower value add administrative duties, inter-agency meetings, etc.
Team already in place with strong social work backgrounds to support Community Outreach Worker. Access to professional Development & Training with like-minded individuals; provides opportunities for venting, decompression	Relinquishes control of position, including deciding on things like what tasks the Community Outreach Worker does, hours of work, feedback on performance, etc.
Access to resources and programs that run internally to agencies that others may not be aware of – participate in internal discussions	Higher overhead costs and administration costs as CMHA or a similar agency would want these fully funded by the City.
Affiliation with an existing organization may reduce the isolation that can be experienced by those who work in the community and increase the sense of personal safety knowing there are back-up resources immediately available.	

Financial Impact

\$72,000 has been designated in the 2022 budget for the Community Outreach Worker position

Consultation

Consultation requirements beyond the Working Group have not been identified at this time.

Economic Development Impact

There is no direct economic development impact associated with the recommended motion.

Communications Plan

Should Council adopt the recommended option, the City's Human Resources Department can assist the Library in recruitment communications including posting in the Weekly Bulletin and on the City's website.

Relation to Formal Plans, City of Orillia Policy Manual and/or Guiding Legislation

2019 City of Orillia's Strategic Plan:

- Goal 1.3 – Quality of Life – Actively pursue a welcoming, caring and accessible community.

Conclusion

In conclusion, the Working Group recommends that Council adopt Option 1 for the following reasons:

- The direction of the work of the Community Outreach Worker would be under the management of the Orillia Public Library which the Working Group recognizes as the location with the highest rate of disruptive incidents
- Inclusive, accessible environment at the Library is inviting and welcoming to people from all walks of life as a safe space where everyone can get the information they need as demonstrated by the successful outreach service currently provided by CMHA in the library for a half-day each week
- Support structure already in place for overhead costs, physical space, and access to technology means that the lion's share of the budget allocation will go to providing direct outreach services.
- Important to negotiate an agreement for clinical supervision and mentoring with a Social Service partnership for the Community Outreach Worker
- Centrally located to support City facilities and downtown area

The Working Group is to be commended for its commitment to the project and for maintaining its focus during the brief turnaround time for preparation of its report. There were diverse views on some of the issues, but a collective sense to move toward a proposal which could be easily supported as a pilot project for continuing evaluation.

Schedules

- Schedule "A" - CBC article re: University of Toronto survey of Library Staff in four large metropolitan areas.
- Schedule "B" – CBC article re: London Public Library adds Social Worker to Staff
- Schedule "C" – Listing of Social Services in Orillia

Prepared by Brian Adams, retired Clinical Social Worker

On behalf of the Community Outreach Working Group members listed below:

- Andrea English, Community Outreach, Canadian Mental Health Association
- Bessie Sullivan, Chief Executive Officer, Orillia Public Library
- Brian Adams, Clinical Social Worker (Retired)
- Kate Hunter, Program Supervisor, Community Services, County of Simcoe
- Kelly Seymour, Chair of the Orillia Public Library Board
- Sgt. Matt Stoner, COAST, Ontario Provincial Police
- Michael Fredson, Chair of Downtown Orillia Management Board
- Nancy Wilding, Health and Safety Officer, City of Orillia

Sexual harassment, intimidation, violence on the job worsened during pandemic, librarians report

84% of librarian respondents verbally assaulted, University of Toronto survey finds

Samantha Beattie · CBC News · Posted: Oct 02, 2021 | Last Updated: October 2, 2021

Librarian Nancy Duncan has been shouted and sworn at and called names so many times on the job, she says she's lost count.

She's been sexually harassed and routinely witnesses patrons refusing to wear masks and making racist remarks toward her colleagues. She's intervened in an overdose, jabbing a patron with naloxone and saving their life. But sometimes she wonders how much longer she'll be able to cope.

"We brush it off, but as the weeks go by and these incidents keep repeating, it starts to weigh on your mental health," Duncan told CBC News.

"Libraries are like a microcosm of society. All of the problems you see at the larger level, we're experiencing at the local, individual level."

Duncan and librarians Cameron Ray and Eila McLeish are speaking out about the harassment, assaults and threats they face every day in Ontario libraries, which they say have become more prevalent over the course of the pandemic as other public spaces closed.

Libraries opened first at the end of the lockdowns and have emerged as a vital social safety net, a place for everyone free of charge, said Ray.

However, he said he's been subjected to three death threats and three physical assaults. Often, he feels out of his depth responding to the growing number of patrons experiencing mental illness, homelessness or addictions.

"It is still a place I very much believe in and love," Ray said. "But at the same time we simply do not have the time to diagnose somebody and then be able to give them the appropriate attention that would be right for them."

McLeish said she has been physically assaulted at work multiple times, too. Once she discovered the body of a deceased patron and has since been diagnosed with post-traumatic stress disorder.

"I demoted myself to a lower level because I couldn't take the incidents I was going through again and again and again," McLeish said.

"And it hasn't been much better."

Their accounts follow the results of a University of Toronto study that surveyed 527 librarians in four large Ontario cities from January 2020 to April 2021. CBC News has agreed not to disclose the cities to protect respondents' privacy and to align with the study's ethics.

The survey found almost all respondents, who are predominately female, have witnessed or experienced violence, intimidation and harassment while working in libraries. Just over two thirds stated they feel unsafe at work a minimum of a few times per month.

Siobhan Stevenson, a professor with U of T's faculty of information who led the project, said while incidents of abuse are not happening in every library branch, the survey results indicate many librarians are facing the same kinds of challenges as other front-line workers, but are often overlooked.

"The main findings were stunning," said Stevenson. "It's very stressful for these workers and they're kind of invisible."

The results show:

- 97 per cent of respondents witnessed verbal intimidation like shouting, swearing and disrespectful name calling at least once — 84 per cent experienced it themselves.
- 75 per cent experienced physical intimidation, such as when someone intentionally wanted to make them feel uncomfortable by getting in their way or standing too close.
- 75 per cent had an unwelcome invasion of personal space, like a patron leaning over or touching them.
- 61 per cent reported receiving unwelcome suggestive looks or gestures.
- 60 per cent said they've been insulted, mistreated, ignored or excluded because of their gender.

Librarians say they need more support. Sexual assaults were also reported. Fourteen librarians said someone had tried to rape them at work. Eight said they'd been sexually assaulted. Twenty said they witnessed a sexual assault or rape of a colleague or patron.

"It is a small number, but the fact it exists at all is concerning," Stevenson said.

Patrons watching pornography on library computers is also a problem, the research suggests. Seventy-one per cent of respondents reported seeing this sexually oriented material.

The three librarians CBC News interviewed all said they need more support from their municipalities, such as hiring public nurses to assist patrons in need, as well as more security guards, social workers and staff.

What's often the hardest situation is not being able to help, said Ray.

"You see someone arrive to the city and get involved in drugs and you see their body diminish, their mental capacity diminish and then you have to exclude them because they can no longer function," said Ray.

"It's really tragic that the library can't be more of a resource for them.

"We are the ones expected to pick up the pieces, but we simply can't."

Do libraries need social workers on staff? Some librarians say yes

Jackie Sharkey - CBC News · Posted: Mar 16, 2022 3:33 PM ET | Last Updated: March 16

London, Ont., is the latest library to hire a full-time worker from the Canadian Mental Health Association

Librarians have always known their work is about people, as much as it's about books. But as patrons to downtown branches change to include more people with complex mental health and addiction issues, some librarians say they need new skills and better help.

This week, the public library in London, Ont., said it would be hiring a full-time addiction and mental health specialist from the Canadian Mental Health Association to its staff, a step other libraries in bigger urban centres have also taken.

"Many members of our community, in London, are struggling. And there are inadequate supports for the community, and this leaves the public library as one of these places to go to stay warm, or cool, that is available to anybody in the public," said Heather Hill, chair of Western University's Master of Library and Information Science program.

Last week, a security guard at the London Public Library's central branch was left with a concussion and minor injuries as he was trying to keep a barred patron from entering the library.

Staff have said there is a growing problem, and Hill understands the concerns. She said librarians are typically in one of two positions: desperate to help or overwhelmed.

"Some are feeling that this is way too much," said Hill. "Some are feeling that we're expected to continually add to our job description until we're burned out. And some are trying to figure out where that balance is."

Hill said Western's master's program does include some coursework that helps prepare graduates for these realities, but most public library staff don't have that degree.

"I'm the only person with [my master's degree] at my library," said Erika Heesen, past president of the Ontario Public Library Association.

Heesen works in a 10-person community library in Perth outside Ottawa, and her operating budget is too small to give staff the support she really wants to provide.

"We can't afford some of the training that we would love to have," said Heesen.
"Unfortunately that's not something that's within our reach."

Instead, she does train staff so they know who to call if a patron is ever in crisis, staff never work alone, and each is equipped with a panic button in case of personal danger.

"There is a point where we have to step back and rely on our local police or EMS to step in and handle that situation — if it is enough of an emergency."

But if budget was no consideration, she'd hire trained social workers to be embedded in the library. It's been tried in places like Mississauga, Ont., and Edmonton — and has worked.

"There's certainly the need," said Heesen. "I think that would provide the best of both worlds."

Hill agrees, saying the vast majority of library workers don't get formal training, so a more ideal setup is to bring properly trained social workers on staff.

"They're the ones who have the training and supports, and they know how to do this role in the way that library staff don't."

The London Public Library says the new staff member, supplied by Canadian Mental Health Association Middlesex, starts work in April. They will spend four days a week at the central branch and Wednesdays at the Crouch branch.

Summary of Social Service Organizations in Orillia

Name of Agency	Target Group	Address & Phone Number	Description of Services
Biminaawzogin Regional Women's Circle (BRAWC)	Indigenous women	(705) 325-1299 80 Colborne St W, Orillia, ON	Transitional housing, housing supports, employment supports
Enahtig Healing Lodge and Learning Centre	Indigenous People	705-330-4059 334 West Street North, Orillia	Health, wellness and healing
Kinark Child & Family Services	Children & Youth	1-888-454-6275	Mental health, autism supports, forensic mental health youth justice services
Orillia Native Women's Group	Indigenous Women	705-329-7755	Programs for children, nutrition, community garden, family well-being
Agilec	Individuals requiring employment supports	705-325-1203 50 Andrews Street South, Suite 100	Employment support and training for workers and employers
Big Brother Big Sister	Children & Youth	(705) 325-3151 102 – 17 Colborne Street East, Orillia	Mentoring for at-risk children & youth
Canadian Mental Health Association	Adult & Youth experiencing mental health and/or addiction concerns	705-726-5033 20 and 76 Nottawasaga St., Orillia	Mental health supports related to addictions (adults), release from custody and court diversion (adult & youth).
Canadian Mental Health Association – Crisis Services	24/7 telephone support for people and their support systems to help resolve challenges, which could relate to suicide, mental health, housing, addiction, or financial struggles	705-728-5044 1-888-893-8333	Assist with pre- and post-crisis stabilization, developing coping strategies, and plans for going forward. We can also call and have a wellness check done on a candidate.
Catholic Family Service	Children, youth, couples, and families	1-888-726-2503 169 Front Street South Orillia	Supporting families through counselling, webinars, support groups, etc.
Catulpa Community Support Services	Children, youth, families, and adults with unique needs	705-326-6502 ext. 3102 169 Front Street Orillia	Support families who have an individual with a disability
Child & Youth Advocacy Centre	Children & Youth	705-327-0118 359 West Street North, Orillia	Promotes wellbeing of children and families, responds to trauma.
Christian Horizons	Individuals with developmental and/or intellectual disabilities	Multiple group homes within the community	Supported living in a group home setting for individuals with developmental and/intellectual disabilities

Name of Agency	Target Group	Address & Phone Number	Description of Services
Community Connection	No specific target group	199 Campbell St., Collingwood 705-444-0040	Community navigation support and assistance with community referrals and resources
Community Legal Clinic	People with low incomes, experiencing legal issues	705 326 6444 71 Colborne St. Orillia	Supports people with low incomes with legal help/ advice and assistance. Does not include legal matters such as family court etc..
Community Mental Health Service	Individuals experiencing mental health crises	(705) 327-9122 170 Colborne St W, Orillia, ON L3V 2Z3	Located within the hospital to provide treatment plans to people with severe mental illness.
ConnexOntario	Focus on mental health, addiction and gambling. Support through phone, webchat and email 24/7	1-866-531-2600 https://www.connexontario.ca/en-ca/	Information and referral service, focusing on mental health, addiction, and gambling. Support offered through phone, webchat, and email 24/7.
Couchiching Family Health Team	No specific target group	705-329-3649 119 Memorial Avenue, Orillia	If the candidate's doctor belongs to this group, candidates can access a one-hour counselling session with a registered clinician.
Couching Jubilee House	Women & Children	705-326-4437 79 Colborne Street East, Orillia	Transitional housing, group sessions, linking individuals to resources
County of Simcoe	No specific target group	1110 Highway 26, W., Midhurst 705-726-9300	Online service mapping tool to help provide and locate available supports and resources based on specific search criteria
EarlyON Simcoe North	Children & families	(705) 325-1299 80 Colborne St W, Orillia, ON	Programs support parents & caregivers; pre and post natal nutrition; development screening; community referrals
Elizabeth Fry Association	Individuals interacting with the justice system	705-725-0613 ext. 0 138 Mississauga Street West, Orillia	Restorative justice program; youth justice
Elizabeth Fry Society	Youth	102 Maple Ave., Barrie, 705-725-0613	Youth Trusteeship Program - providing help in the process of applying for financial benefits through OW for 16/17 year olds not residing with a parent or guardian
Empower Simcoe	Adults, Children, & Families	705-327-5391 35 West Street North, Orillia	Respite, employment programs for people with developmental disabilities. Housing supports & retention.

Name of Agency	Target Group	Address & Phone Number	Description of Services
Empower Simcoe	Chronically homeless or homeless individuals with high acuity	39 Fraser Court, Barrie, 705-	Regional Housing First Program prioritizes chronically/episodically homelessness individuals and connects them with the specific components of the program catered to their individual needs (rent subsidies, wrap around supports, intensive case management)
Green Haven Shelter for Women	Women & Children	705-327-7319	Provide temporary shelter for women and their children and assist with transitions from abusive homes
Habitat for Humanity	Community members	(705) 327-3279 220 James St W, Orillia, ON	Providing affordable furnishing, and appliances for homes
Helping Hands	Seniors	705-325-7861 575 West St. S., Unit 13A, Orillia	Supports seniors with meals, personal care, social visiting and check-in, etc.
Hospice Orillia	Individuals dealing with loss & grief	705-325-0505 169 Front Street S. Orillia	Palliative care, grief supports
Information Orillia	No specific target group	705-326-7743 36 Mississauga Street West, Orillia	Connect people to resources they need
John Howard Society Orillia	People involved with the criminal justice system	17 Colborne St E (705) 325-6561 x 222	Youth attendance centre, anger management programs, Community service order programs, and a reintegration worker
Kayla House	Individuals requiring supportive daily living ages 18+	84 Coldwater Rd., W Orillia 705-327-2464	Congregate care setting, offering 24 hour residential care to adults (including Domiciliary Program beds)
March of Dimes	Seniors & individuals with physical disabilities	1 705-325-2253 6604 Rama Rd, Orillia	Assistive devices and house accommodations; supportive housing; brain injury support
New Path Youth & Family Services	Children & Families	705-725-7656 169 Front Street Orillia, L3V 4S8	Mental health counselling for parents, children, and families.
North Simcoe Victim Services	Anyone deemed a "victim"	1 University Avenue, Orillia ON L3V 0Y7 Within the Orillia OPP detachment	Supports for any individuals who have been impacted by a crime, tragic circumstance, or disaster

Name of Agency	Target Group	Address & Phone Number	Description of Services
Ontario 211	No specific target group	*211	Free helpline that connects a caller to community and social services 24 hours/day, 365 days/year in 150 languages
Ontario 211	all people looking for help with employment, housing, abuse, government, legal, mental and physical health, addictions, and so on	Dial 211	Connects people with social and community services province-wide
Ontario Works	No specific target group	705-722-3132 50 Andrew Street South, 2nd Floor , Orillia	Provincial social assistance; Ontario Disability Support Program
OPP - COAST program	Individuals in crisis, primarily mental health challenges	1 University Avenue, Orillia	Follow up support after 911 calls for mental health crisis; referrals to support services; situation de-escalation
Orillia Pregnancy Resource Centre	Pregnant women & newborns	705-326-8228 79 Colborne Street East, Orillia	Pregnancy testing, education, post-abortion supports, nurturing father program
Orillia Youth Centre	Children & Youth	705-325-8082 9 Front Street South, Orillia	Free programs for youth engagement
Settlement Workers in Schools (SWIS)	new immigrants and their families	Offered jointly by Simcoe County District School Board and YMCA of Simcoe Muskoka	provide culturally sensitive, inclusive services to assist with settlement, integration and full participation in communities
Simcoe Muskoka Family Connexions	Children & Families	94 Colborne Street West	Child and youth walk-in counselling sessions, child protection, etc.
Situation Table	People in crisis	705-326-7743	Members from various social service and public safety agencies meet every Tuesday (currently on-line) to co-ordinate social services for people in crisis.
St. James Anglican Church	People experiencing food insecurity	705-325-2742 58 Peter Street North, Orillia	Loonie lunch on Wednesdays
St. Vincent de Paul-Guardian Angels Parish	People experiencing food insecurity	05-326-2849 115 West Street North, Orillia	Orillia good food box, food bank, Vinnie's thrift store

Name of Agency	Target Group	Address & Phone Number	Description of Services
Telecare Distress Line of Greater Simcoe	Open to individuals of all ages experiencing a variety of hardships related to areas such as relationships, work, mental health, addictions, finances, sexuality, or suicide.	705-325-9534 705-726-7922	Free, anonymous, and confidential 24/7 phone line staffed by volunteers who listen without judgement and provide information and support.
Telecare Distress Line of Greater Simcoe County	Individuals in distress	705-325-9534	Suicide prevention and crisis support through a phone
The Orillia Lighthouse	Individuals experiencing homelessness	75 Queen Street East, Orillia 705-329-2265	Emergency shelter, food assistance, transitional housing programs
The Salvation Army	For people experiencing or at risk of experiencing homelessness	175 Coldwater Road West, Orillia 705-326-3284	Food bank, food truck, thrift store, income tax clinic
The Salvation Army	For people experiencing or at risk of experiencing homelessness	175 Coldwater Road West, Orillia 705-326-3284	Outreach - van located in the downtown on Friday evenings to provide food, referral services and to distribute supplies to homelessness individuals
The Sharing Place	Individuals experiencing food insecurity	705-327-4273 ext. 106 95 Dufferin Street, Orillia	Food bank, meals 4 change, community kitchen
The United Way of Simcoe Muskoka	People in urgent need due to poverty	https://uwsimcoemuskoka.ca/unf/ - if you live in Simcoe apply by calling 211	modest, one-time grants to households when no existing services could meet the needs of Simcoe Muskoka residents
Walk-in counselling Clinic North Simcoe Muskoka	Waypoint Centre for Mental Health Care	Catholic Family Services of Simcoe County at 1-888-726-2503	Quick Access Mental Health Walk-In counselling for immediate mental health issues
Youth Haven	Youth 16-24	246 Oxford St., Unit B7, Orillia 705-790-6112	Regional Outreach Program - supporting youth 16-24 with counselling supports, advocacy and housing supports.



Corporate Services Department
Clerk's Division

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To: Ian Sugden, General Manager of Development Services and Engineering
Copy to: Jill Lewis, Senior Planner
Corporate Services Department - Clerk's Division (Referrals)
From: Kristine Preston, Assistant Clerk
Date: March 8, 2022
Subject: **Enquiry - Technical Land Evaluation**

The following recommendation was adopted by Council at its meeting held on March 7, 2022:

"THAT staff be directed to prepare a report with respect to the following:

The status of the Technical Land Evaluation process currently underway;

AND THAT the report include what additional planning evaluations and studies would need to be undertaken if the City were to consider further increasing the intensification targets and minimum designated greenfield density target to provide options for Council in connection with the need for a future boundary expansion as part of this Municipal Comprehensive Review planning process;

AND THAT staff report back on the process for establishing 'Made in Orillia' planning principles that would manage growth from environmental, cultural, economic and social perspectives as part of the next update to the City's Official Plan."

Please prepare a report to Council Committee.

If you require further information regarding this enquiry, please contact Mayor Clarke and/or Councillor Campbell.

[signed original on file]

KP:jf

CITY OF ORILLIA

TO: Council Committee – April 11, 2022
FROM: Development Services and Engineering Department
DATE: April 4, 2022
REPORT NO: DSE-22-08
SUBJECT: **Project Update – Technical Land Evaluation Project
City of Orillia Municipal Comprehensive Review Process**

Recommended Motion

THAT Report No. DSE-22-08 be received;

AND THAT staff be directed to include within the Request For Proposal for the City's Comprehensive Review and Update to the Official Plan a specific Council and Public consultation process for establishing a 'Made in Orillia' set of planning principles to manage growth from an environmental, cultural, economic and social perspective.

Purpose

The purpose of this report is to provide a status update on the City's Municipal Comprehensive Review process, and the current Technical Land Evaluation project. Additionally, the purpose of this report is to address an outstanding Council Referral requesting information about the additional planning evaluations that would need to be undertaken if the City were to consider further increases to the intensification and density targets, together with exploring 'Made in Orillia' planning principles as part of the next update to the City's Official Plan.

Background & Key Facts

Council, at its meeting held on March 7, 2022, adopted the following resolution:

"THAT staff be directed to prepare a report with respect to the following:

The status of the Technical Land Evaluation process currently underway;

AND THAT the report include what additional planning evaluations and studies would need to be undertaken if the City were to consider further increasing the intensification targets and minimum designated greenfield density target to provide options for Council in connection with the need for a future boundary expansion as part of this Municipal Comprehensive Review planning process.

AND THAT staff report back on the process for establishing ‘Made in Orillia’ planning principles that would manage growth from environmental, cultural, economic and social perspectives as part of the next update to the City’s Official Plan.”

The following are key terms to understand when reviewing this report:

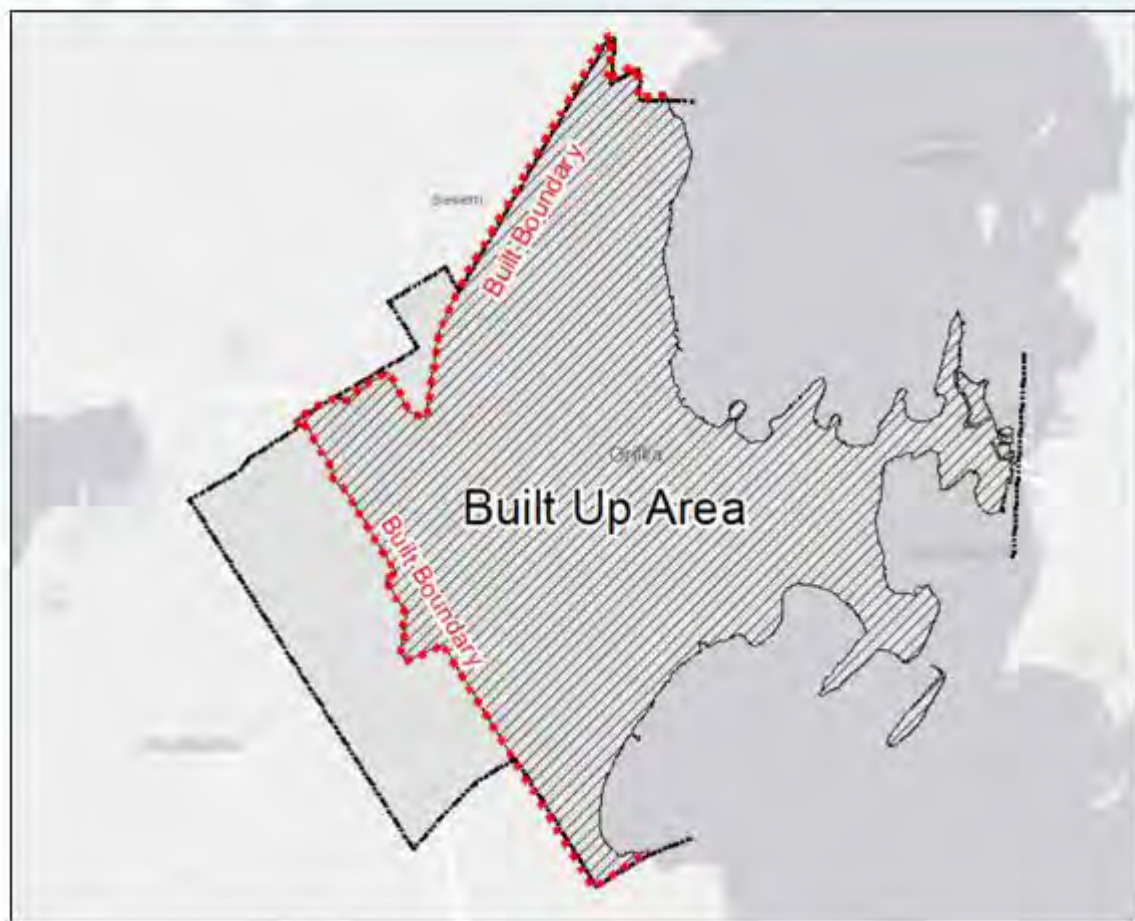
- “Official Plan” – The City’s Official Plan is a high-level policy document that contains the City’s vision for future growth; it guides the short and long-term physical development of all lands within the City. The City’s Official Plan must be brought into conformity with all Provincial plans and policies through the Municipal Comprehensive Review (MCR) process. The Ministry of Municipal Affairs and Housing is the approval authority for the City’s Official Plan. The last comprehensive overhaul of City’s Official Plan was approved by the Ministry of Municipal Affairs and Housing on March 17, 2011¹.
- “A Place to Grow: Growth Plan for the Greater Golden Horseshoe (Provincial Growth Plan)” – The Provincial Growth Plan is a regional growth management policy for Southern Ontario that provides specific direction to upper-tier and single-tier municipalities within the Greater Golden Horseshoe. It provides the Province’s vision for building complete communities that makes optimal use of infrastructure. The City is identified as a *Primary Settlement Area* in the Provincial Growth Plan, which is required to be the focus of growth and development. The City’s Official Plan must be brought into conformity with the Provincial Growth Plan by July 1, 2022.
- “Municipal Comprehensive Review (MCR)” – As defined in the Provincial Growth Plan, a MCR is a new Official Plan or an Official Plan Amendment, initiated by an upper or single-tier municipality under Section 26 of the *Planning Act* that comprehensively applies to the policies and schedules of the Provincial Growth Plan. More generally, an MCR can be understood as a long-range planning process. It is the technical process which upper and single-tier municipalities within the Greater Golden Horseshoe will use to inform and update a new Official Plan and apply the policies of the Provincial Growth Plan. The MCR is made up of several required technical studies. Through the MCR, all municipalities that are upper or single-tier within the Greater Golden Horseshoe will plan for where and how to accommodate the population and employment growth that is forecasted for that respective municipality to the year 2051.
- “Land Needs Assessment (LNA)” – The Provincial Growth Plan requires all upper and single-tier municipalities within the Greater Golden Horseshoe to plan for enough land to accommodate its growth in accordance with the Provincial forecasts to 2051. As set out in the Provincial Growth Plan, the Ministry of Municipal Affairs and

¹ The MCR planning process is required by the Provincial Growth Plan; however, the City of Orillia has continued to keep the City’s Official Plan up-to-date with other changes to Provincial legislation and planning policy by implementing Official Plan Amendments over the course of the past decade. Most notably, the City’s Official Plan was updated to incorporate the planning policies required by the implementation of the South Georgian Bay Lake Simcoe Source Protection Plan which came into effect in 2015 and to incorporate *Planning Act* changes to permit up to three dwelling units on a residential lot and the elimination of density bonusing.

Housing is responsible for producing a methodology for assessing land needs to implement the Provincial Growth Plan forecasts. This is titled: *Land Needs Assessment Methodology for the Greater Golden Horseshoe* and it was last amended in August of 2020 to establish a market-based approach to determine a municipality's land needs². The City, like many other single and upper-tier municipalities in the Greater Golden Horseshoe, has prepared a Land Needs Assessment based on the latest Provincial methodology. This Land Needs Assessment is a foundation study in the MCR process; this study determines how and if a municipality can accommodate its forecasted employment and population growth to the year 2051.

- “Settlement Area Boundary Expansion” – The City’s settlement boundary is its municipal boundary. The City’s settlement boundary establishes the limits of its urban area; this is where growth is to be directed and focused. Where it is expected that more urban land is needed to accommodate the growth forecasts of a particular municipality, a municipality will have to undertake a “Settlement Area Boundary Expansion”.
- “Technical Land Evaluation” – When considering a Settlement Area Boundary Expansion, a Technical Land Evaluation process is required to comprehensively consider suitable growth scenarios before proposing a final growth option. The Technical Land Evaluation work addresses a number of technical feasibility requirements outlined in the Provincial Growth Plan and includes an analysis of: municipal servicing capacity, water resource evaluation, natural heritage system assessment, agricultural impact assessment, community connectivity review, fiscal analysis, fire and emergency services assessment, and policy conformity exercise.
- “Built Up Area (BUA)” – The Province established the Built Boundary for Orillia in 2008 shortly after the introduction of the Provincial Growth Plan in 2006. The land located within the Built Boundary established by the Province is known as the “Built Up Area”. This is the location in the City where a minimum of 40% of residential building permits on an annual basis are required to be achieved by the Provincial Growth Plan and will be increasing to a minimum of 50% with the next Official Plan when the MCR process is completed. For illustration purposes, the following map identifies the location of the City’s “Built Up Area”:

² The market-based approach taken by the Provincial Methodology for the Land Needs Assessment means that LNAs are to be based on 1) the housing supply and demand in terms of total housing and housing by type 2) market contingency factors may be considered in determining available land supply 3) “market-based supply of housing” to be provided to the extent possible.



- “Intensification Target” – This is the percentage of residential building permits being issued on an annual basis from the lands located within the City’s Built Up Area (BUA) relative to all the residential building permits issued throughout the entire City limits.
- “Intensification Strategy” – The Provincial Growth Plan requires that single and upper-tier municipalities within the Greater Golden Horseshoe develop an Intensification Strategy to achieve a minimum Intensification Target throughout the Built Up Area. It is another foundation study as part of the MCR process.
- “Designated Greenfield Area (DGA)” – The Provincial Growth Plan identifies the land outside of the City’s Built Up Area (BUA) as the Designated Greenfield Area, which is shown on the map as the grey areas within the City’s existing municipal boundary. The Provincial Growth Plan establishes a minimum density target of 50 persons and jobs per hectare on the DGA lands.
- “Employment Strategy” – The Provincial Growth Plan requires all single and upper-tier municipalities within the Greater Golden Horseshoe to establish minimum density targets for all employment areas and to identify employment lands. The Provincial Growth Plan places great emphasis upon the importance of planning not only for residential growth, but also planning extensively for employment growth to ensure that municipalities are building complete communities where people can live, work

and play without having to commute and placing additional strain on intra-regional and intra-provincial transportation networks. The Employment Strategy is another foundational study as part of the MCR process.

- “Community Area” – The City’s Land Needs Assessment divides the City’s land needs into two types of geography: Community Area and Employment Area. Community Area is focused around housing and local employment, infrastructure and services necessary to sustain residential areas.
- “Employment Area” - The City’s Land Needs Assessment divides the City’s land needs into two types of geography: Community Area and Employment Area. Employment Area is focused around land for the exclusive use of employment activity. In Orillia, such land is generally found in business parks and industrial areas.

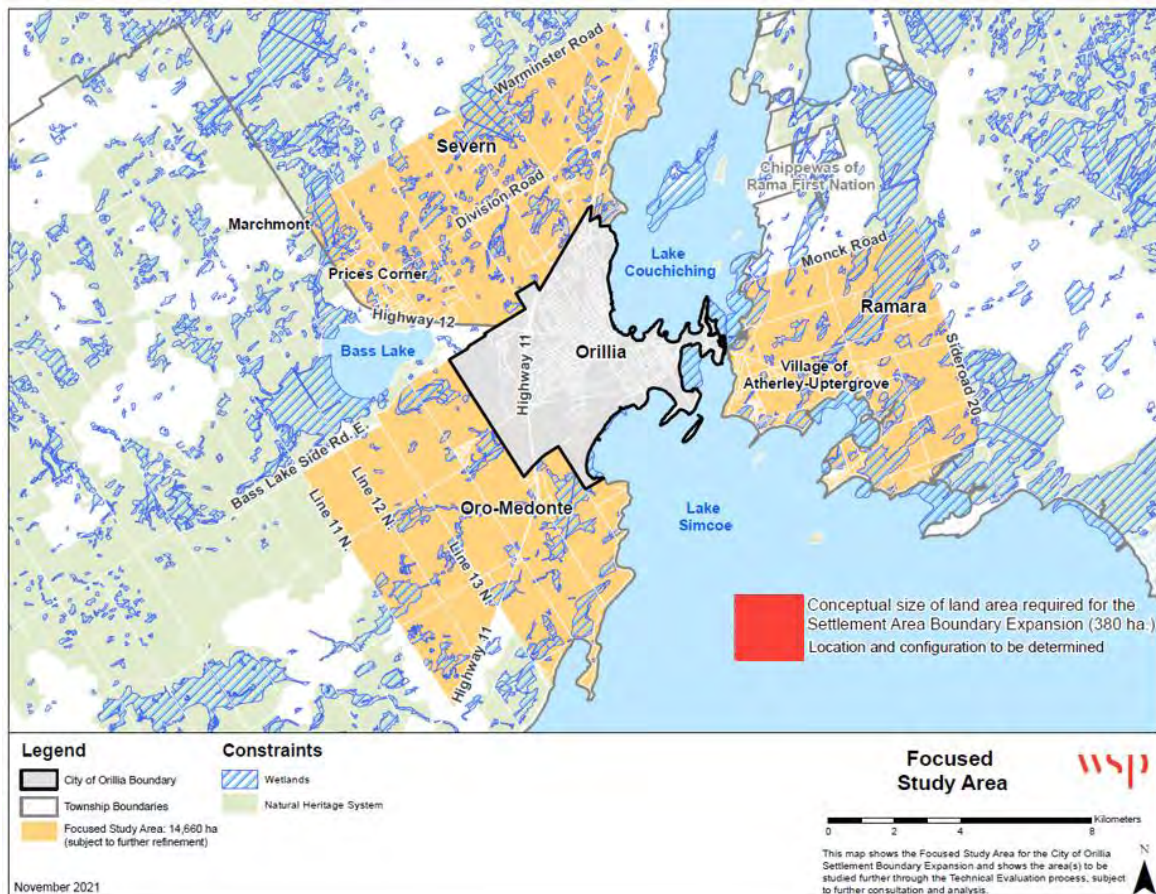
In response to the first portion of the Council Referral, the following is a timeline associated with the City’s current MCR process and a status update on the Technical Land Evaluation process currently underway:

- By July 1, 2022, the City is required to complete its Comprehensive Review and Update of the City’s Official Plan to ensure the City’s Official Plan is in conformity with the Provincial Growth Plan. The City is not on track to meet this conformity deadline for the reasons outlined below.
- In September 2018, the City hired Hemson Consulting Ltd. to prepare the City’s Land Needs Assessment, Employment Strategy and Intensification Strategy which are the foundational reports necessary to complete the City’s Comprehensive Review and Update to its Official Plan. This work was originally slated to be completed by September 2019.
- During Winter 2019, a letter was issued to municipalities from the Minister of Municipal Affairs and Housing, Steve Clark, which suggested municipalities pause on their review of major planning documents until the Province had completed its work on implementing legislative and policy changes that impact planning.
- Subsequently, in Summer 2019, work on the City’s Land Needs Assessment, Employment Strategy and Intensification Strategy was temporarily suspended in adherence to the Province’s request to halt activity on major planning documents until the Province had completed their updates.
- On May 1, 2020, the Provincial Policy Statement was amended which extended the planning horizon to 25 years.
- On August 28, 2020, *A Place to Grow: Growth Plan for the Greater Golden Horseshoe* was amended which extended the growth forecasts from 2041 to 2051 and established a growth forecast of 49,000 people and 26,000 employees for Orillia by 2051.
- On August 28, 2020, the Provincial Land Needs Assessment methodology was amended to take a more market-based approach.
- In September 2020, work on the City’s Lands Need Assessment was recommenced since the Province had completed its review and update of Provincial planning policy documents.
- In December 2020, the final Land Needs Assessment was completed by Hemson Consulting Ltd., and presented to Council Committee at its meeting on March 22, 2021 ([Report No. DSE-21-09](#)), at which time Council received the report as information and

provided a copy of the City's Land Needs Assessment to the County of Simcoe and the Townships of Severn, Ramara and Oro-Medonte.

- The City's Land Needs Assessment identified that the City will need more land beyond its existing municipal boundaries to accommodate Provincially-required population and employment growth to the year 2051. The City's Land Needs Assessment projected the City's land needs based on both a historic (low growth scenario) and on a high growth scenario. Under the high growth scenario, with a population of 58,749 and employment base of 30,480 jobs, the City would require 380.6 hectares (940.5 acres) of additional land. Of that, 123.6 hectares (305.4 acres) are required for Employment Area and 257 hectares (635.1 acres) are required for Community Area. The City's Land Needs Assessment also identifies the City's land needs to accommodate the minimum forecasted growth as set out in the Provincial Growth Plan to accommodate a population of 49,420 and an employment base of 26,200 jobs to the year 2051, which is referred to as the low growth scenario. In this low growth scenario, the City would require an additional 176.5 hectares (436.1 acres) of land beyond its existing municipal boundaries, of which 120 ha (296.5 acres) would be for the Community Area and 56.5 ha (139.6 acres) would be for the Employment Area.
- The City's Land Needs Assessment also determined that it is appropriate for the City to increase its Intensification Target for lands located within the City's existing Built-Up Area from 40% to 50% with the next comprehensive update to the City's Official Plan.
- The next step after producing the City's Land Needs Assessment is to embark on the Technical Land Evaluation to begin to look outside the City's current municipal boundaries to determine the best lands from a planning perspective for the City's future population and employment growth.
- In May 2021, the City retained the services of WSP, together with Colville Consulting Inc. and Emergency Management Training Inc. to complete the Technical Land Evaluation project.
- As part of the first phase of this three phase Technical Land Evaluation project, WSP presented [Report DSE-21-31](#) at a Special Meeting of Council held on October 22, 2021. This report was received as information and Council authorized the Mayor to request an extension to the conformity deadline of July 1, 2022, to bring the City's Official Plan into conformity with the Provincial Growth Plan.
- On November 15, 2021, the Mayor submitted a letter to the Minister of Municipal Affairs and Housing indicating that the City does not have sufficient land within our existing municipal boundaries to accommodate the City's growth needs to the year 2051 based on the findings of the City's Land Needs Assessment and requested that an extension be granted to July 1, 2024 to allow the City more time to complete its planning process to bring the City's Official Plan into conformity with the Provincial Growth Plan. To date, no response from the Minister has been received despite follow-up from the City.
- Sharing information with the affected Townships, County and Indigenous communities is critical in the process of evaluating lands beyond the City's existing municipal boundaries. To that end, the following discussions have occurred during the Technical Land Evaluation project:
 - On June 14, 2021, a meeting with County of Simcoe staff was held.
 - On July 29, 2021, a meeting with staff from the County of Simcoe, Township of Severn and Township of Oro-Medonte was held.

- On September 29, 2021, a meeting with staff from the County of Simcoe, Township of Severn, Township of Oro-Medonte and Township of Ramara was held.
- On March 10, 2022, a meeting with staff from the County of Simcoe and Township of Severn was held.
- On March 11, 2022, a meeting with staff from the County of Simcoe and Township of Oro-Medonte was held.
- Two letters of correspondence were sent from the Mayor's office to 10 Indigenous communities: September 27, 2021 and November 16, 2021 informing them of this planning process and requesting they let the City know their preferred method of consultation.
- A virtual meeting was held with the Chippewas of Rama First Nation on January 20, 2022.
- Another virtual meeting is scheduled for April 5, 2022 with Curve Lake First Nation.
- The first Public Open House for the Technical Land Evaluation project was held virtually on December 1, 2021 with over 200 people in attendance. At this Public Open House, WSP shared the Focused Study Area which included studying 14,660 hectares of land surrounding Orillia's existing municipal boundary, as shown on the map below:



- During Phase 2 of the Technical Land Evaluation project, WSP will be refining the Focused Study Area from the initial 14,660 hectares down to approximately 2,000 – 3,000 hectares to focus WSP’s technical review. The Refined Focused Study Area now excludes the Township of Ramara which was communicated via email to the affected Township on February 14, 2022, and included in the Council Information Package on February 18, 2022. Minor refinements to the Refined Focused Study Area were still underway at the time this report was written and is expected to be released to the public before the end of April 2022.
- WSP is now actively working on Phase 2 of the Technical Land Evaluation project which is the detailed technical study to determine the best lands from a planning perspective for a future boundary expansion. This planning evaluation is based on a prescribed set of criteria set out in the Provincial Growth Plan which includes:
 - Avoiding areas with high potential to negatively impact water quality and quantity
 - Avoiding areas of Provincial significance such as Provincially Significant Wetlands.
 - Avoiding higher priority agricultural lands where possible within prime agricultural areas.
 - Meeting the requirements of the Lake Simcoe Protection Plan.
 - Adapting to climate change and transitioning to climate-friendly communities.
 - Accommodating community and employment growth to the year 2051.
- The next step in the Technical Land Evaluation process is the release of a Draft Technical Evaluation Report for public review and comment which will include the following:
 - Municipal Servicing Review
 - Agricultural Impact Assessment
 - Water Resource Evaluation
 - Natural Heritage System Assessment
 - Policy Conformity Exercise
 - Community Connectivity Review
 - Fiscal Analysis
 - Fire and Emergency Services Assessment

The following is a brief summary of the future steps to be taken in the MCR process:

- Phase 3 of the Technical Land Evaluation process will determine the 380 hectares that would be recommended as the best lands from the planning perspective for a future Settlement Area Boundary Expansion. This determination will be accompanied by a Planning Justification Report which provides the professional planning analysis for the selection of those lands. This Planning Justification Report, together with the recommended 380.6 hectares of additional land, would be presented to Council as the recommended lands for a potential future boundary expansion. At which time, Council would provide direction to staff on how to proceed with the next steps in the MCR process, which could begin the municipal restructuring (annexation) discussions with the

affected Townships and County, depending on Council's direction. Consideration of the decisions of whether to endorse the Planning Justification Report and the recommended lands for a future boundary expansion and authorize proceeding with municipal restructuring negotiations will likely be a decision made by the next Council (2022 – 2026 Council).

- The Technical Land Evaluation project and Municipal Comprehensive Review process is a planning process governed by planning policy. It is not a municipal restructuring (annexation) process. The recommendations made in the Technical Land Evaluation report will help to inform Council in their future decisions with respect to a potential municipal restructuring (annexation) process. But an actual boundary expansion, in Orillia's case, would be through a municipal restructuring (annexation) process which is not a planning process, but rather it is a lengthy, complex political process regulated by the Ontario *Municipal Act*.
- Once the Technical Land Evaluation has been completed, Council will consider a report with the recommendations. If a boundary expansion is approved by Council, the City would then begin to discuss with the affected Townships and County the municipal restructuring process which is governed by the Ontario *Municipal Act*. During this process, it would be very important for the affected parties to come up with a local agreement. The *Municipal Act* requires that Public Meetings be held for all affected municipalities and that a majority of support from County Council, City Council and Township Councils be obtained. If local agreement and majority of support from the affected Councils cannot be achieved, then the Province can legislate annexation. The time required to undergo a municipal restructuring process is unknown.
- Currently, Hemson Consulting Ltd. is working on preparing a draft Intensification Strategy and draft Employment Strategy to be included in the update to the City's Official Plan. This work is expected to be completed prior to the City embarking on the Comprehensive Update to the City's Official Plan in 2023.
- In 2023, the City intends to embark on the public planning process to start writing the City's new Official Plan. This process will involve extensive public consultation and is expected to be a multi-year planning process.
- With the update to the next Official Plan, Council has directed that Orchard Point be down-designated from being an "Intensification Area" to "Stable Neighbourhood" save and except for the existing pre-developed sites with existing site-specific approvals and the lands along Highway 12. This down-designation is supported by the findings of the City's Land Needs Assessment.

Options & Analysis

Option 1 - Recommended

THAT Report No. DSE-22-08 be received;

AND THAT staff be directed to include within the Request For Proposal for the City's Comprehensive Review and Update to the Official Plan a specific Council and Public consultation process for establishing a 'Made in Orillia' set of planning principles to manage growth from an environmental, cultural, economic and social perspective.

Establishing planning principles is the foundation of any City Official Plan, as these planning principles guide the creation of policy and they guide applications for the Official Plan Amendments. Planning staff is intending to make a 2023 Capital Budget request to hire a consultant(s) to write the next comprehensive update to the City's Official Plan. This is an extensive planning process that involves significant consultation from members of Council and the public. It is typically a multi-year process given the extensive nature and gravity of a new Official Plan. The City's current Official Plan also contains a set of planning principles which has guided the City's growth for the last 11 years. For members of Council who wish to review the existing set of planning principles, please read Section 2 of the [City's Official Plan](#).

Planning staff recommends that Council direct staff to include in the Request For Proposal for the next Official Plan a specific Council and Public consultation process for establishing 'Made in Orillia' planning principles to manage growth from an environmental, cultural, economic and social perspective, as requested for consideration through this Council Referral. The next Council (2022 – 2026) will be responsible for reviewing and approving the City's next Comprehensive Update to the City's Official Plan. As such, it is critically important that members of Council shape the 'Made in Orillia' set of planning principles together with significant input from the public. This direction will not have an impact on the proposed budget for the new Official Plan, as establishing planning principles is a core tenet of updating an Official Plan.

With respect to the other aspects of the Council Referral, Planning staff recommends this report be received as information. The Background & Key Facts portion of this report has provided Council with a status of the Technical Land Evaluation process currently underway.

Regarding the additional planning evaluations and studies that would need to be undertaken to consider a higher intensification and density target in connection with the need for a future boundary expansion, Planning staff is recommending that this report be received as information for the following reasons:

- It is a rare occurrence for municipalities in the Greater Golden Horseshoe to have their municipal boundaries align with the settlement boundaries. Orillia is in this situation. A few years ago, the City of Barrie was in the same situation and the Province legislated annexation of lands from the Township of Innisfil. Orillia is a *Primary Settlement Area* in the Provincial Growth Plan and is expected to be the focus of growth and development, while the Provincial Growth Plan has taken great effort to limit development from occurring outside of settlement areas with the imposition of Provincial natural heritage and agricultural protections.
- Growth is inevitable in the Greater Golden Horseshoe and the annexation process is lengthy, complicated, and time-consuming process for everyone involved. On that basis, the City's Land Needs Assessment has evaluated the City's land needs based on exceeding the Provincially-forecasted minimums until 2051 to minimize the number of times the City needs to go through an annexation process in the coming

years and decades. It is on that basis that the City's work program for the MCR process has been established to seek a future boundary expansion in the quantum of 380.6 hectares based on a high-growth scenario³.

- The City has a robust Intensification Strategy in place. It was established in 2011 with the last Comprehensive Update to the City's Official Plan. It established a minimum intensification target of 40% in the Existing Built Up Area and designated and pre-zoned lands within the Downtown Area and Intensification Areas for development of significant building height and massing. Up until 2014, the City was actually achieving a 70% intensification rate. This dropped down to 50% after 2015 but over the recent years has continued to hold steady at 50%. With the establishment of the City's Downtown Tomorrow Community Improvement Plan in 2017, the City continues to incentivize intensification through the City's large Downtown Area. With the launch of the Tier 3 program in 2022, the City further encourages development on the underutilized, brownfield sites within the Downtown Area.
- The City has many future land needs to consider:
 - The City's Land Needs Assessment expects that the City will exhaust its lands within its current municipal boundaries by the early 2030s. This is less than 10 years away.
 - The City is running out of serviced land for Employment purposes. At a minimum, the City will need an additional 56.5 hectares of Employment Land to the year 2051 as identified in the City's Land Needs Assessment. Employment Lands are where traditional business parks and industry locate. Planning for Employment Land is very difficult to accommodate through intensification given the need for distance-separation between sensitive land uses (such as residential) and industry and the need for land expansive uses. It is important that Orillia not become a bedroom-community, but rather be a robust employment centre as well. For this to occur, the City must have sufficient land to allow for employment growth, as being a complete community (with a wide variety of employment opportunities), minimizes the need for people to commute for employment and daily needs.
 - It is critically important that traditional industry be sufficiently separated from sensitive land uses (such as residential, long-term care facilities, child care centres, and hospitals) as land use compatibility is a principle tenet of good land use planning encapsulated throughout the Provincial Policy Statement 2020. Members of Council and City administration frequently field complaints from existing industries located with the City's existing Built-Up Area (BUA)

³ The 2021 Census population data was released in February 2022, the City of Orillia experienced the lowest population growth rate between 2016 and 2021 compared to the surrounding Townships of Severn, Oro-Medonte and Ramara. Comparatively, Orillia's population grew by 7.2% with a population density of 1,171.1 people per km², while the Township of Severn grew by 8.3% with a population density of 27.9 people per km², Township of Oro-Medonte grew by 9.2% with a population density of 39.3 people per km² and the Township of Ramara grew by 9.4% with a population density of 25 people per km². The average population density in these surrounding Townships is 30.7 people per km², whereas the City of Orillia has a population density of 38 times that of the surrounding Townships.

when residential intensification is proposed. Sometimes intensification and densification are directly juxtaposed with appropriate land use separation between incompatible uses. Both land uses are valued and needed in the City but they need to be appropriately planned and sufficiently separated from one another otherwise conflicts arise.

- Potential businesses wanting to locate in the City are struggling to find pre-zoned and serviced land for their employment uses, as the only greenfield, serviced Employment Land available has been designated and zoned for prestige industrial and office uses. New car dealerships, new self-storage facilities, and other quasi-commercial/industrial uses are only available on lands located within the City's Built Up Area and most of this land already has existing development on it or is significantly compromised by constraints (such as no servicing, protection of natural heritage features, etc.).
 - The City's Hospital is looking to locate on a different site in the City. It is looking to expand its size from 135 beds to 179 beds. The Hospital is looking for an 8 – 10 hectare (20 – 25 acres) site which must be located in the Community Area, not the Employment Area (as the hospital is considered a sensitive land use). There also must be consideration for surrounding land to accommodate hospital-supportive uses such as medical clinics, pharmacies, parking lots, restaurants, etc.
 - The City will also require a future operations centre and sand/salt dome, and may require a future fire station and transit hub, to accommodate the City's expanded growth. There are no specifications at this time but would be looking at approximately 2 – 3 hectares (5 – 7 acres) of land in a non-residential and highly accessible location.
- It is also important to take into consideration that Orillia has a strong small-town character that has been traditionally very sensitive to building heights beyond three storeys.
 - Worth noting is that the proposed land needs required for Orillia's future boundary expansion relative to the total land base in the Townships of Oro-Medonte and Severn accounts for 0.3% of the combined Townships' land base.

Staff has considered the impacts of no further boundary expansion. Staff is aware that a grassroots group has formed titled 'Stop Sprawl Orillia' and are actively opposing any future boundary expansion. Staff also acknowledges the concerns shared at the City's first Public Open House on the Technical Land Evaluation process which was held on December 1, 2021, which attracted over 200 attendees. Staff have also read and considered the correspondence received on the proposed boundary expansion and have attached this correspondence as Schedule "A" to this report for Council's consideration as well. Concerns have been expressed about urban sprawl, the loss of farmland, the destruction of natural heritage features, new development running counter to climate change mitigation efforts, and the addition of more low and medium density housing.

However, there are significant implications to the City of Orillia if no further boundary expansion were to be pursued by Council. Furthermore, minimizing a boundary expansion when municipal restructuring (annexation) is required is not worth the City's efforts, time, aggravation, and financial resources as municipal restructuring is a complex, protracted negotiation process. Annexation is not a process that any municipality takes lightly (but is necessary to accommodate future growth). However, if a municipality is forced to pursue annexation, then it's something that should only be undertaken if absolutely necessary and should rarely be a process pursued by a municipality.

A future boundary expansion is the City's only avenue forward to accommodate Provincially-required growth to 2051. An option where the City's employment and population growth is accommodated without any boundary expansion is untenable for the following reasons in addition to the reasons previously identified:

- The City at minimum has a 56.5 hectare need for more Employment Land to plan for employment growth to the year 2051 and this land cannot be 'shoe-horned' into the existing fabric of the City without significantly negatively impacting landowners that would be forced to have their residential lands re-designated and re-zoned for employment purposes and without negatively impacting existing citizens that may experience noise, dust, and/or odor nuisances from incompatible land uses being located in too close of proximity to sensitive land uses (such as residential).
- The citizenry of Orillia has traditionally been very sensitive to building heights over 3 storeys. The pushback by residents of Orillia experienced by members of City staff and Council when apartment building proposals are made on lands that are designated and zoned "Intensification Area" has been significant⁴ and in some situations would only increase if all residential lands within Orillia's current municipal boundary were required to 'do their part' by intensifying and densifying throughout the City's existing municipal boundaries. It would be to the detriment and loss of Orillia's small-town character.
- Without a future boundary expansion, all areas in Orillia will be forced to build up. In the past, Stable Neighbourhoods in Orillia have vigorously opposed certain infill development in/near their neighbourhoods. Despite the Stop Sprawl Orillia movement, not all of Orillia's citizenry is in favour of more building height, which would be required throughout the City if a future boundary expansion is not pursued.
- The market demand for low density residential housing will not go away. Rather, it would cause people to relocate to surrounding municipalities where such desired housing would be available. Rather than "stopping sprawl", it would result in greater urban sprawl shifting development to other municipalities forcing people to commute farther for employment and services offered by the City of Orillia.

For these aforementioned reasons, Planning staff recommends Council stay the course and continue its planning process to determine the most appropriate location for the additional 380.6 hectares (940.5 acres) of land for a future boundary expansion.

⁴ The City, coincidentally, is also receiving pushback to "gentle density" with the recent changes to the City's planning documents to permit a third dwelling unit (referred to as an Additional Dwelling Unit) to be located in a detached structure on a residential lot, as required by Provincial legislation.

Option 2

THAT the City's Land Needs Assessment be updated and revised to consider a higher minimum intensification target and a higher minimum designated greenfield density target;

AND THAT staff be directed to report back on the implications to the City's Intensification Strategy and the Technical Land Evaluation's Planning Justification Report with respect to the amount of recommended lands for future boundary expansion;

AND THAT the Mayor be authorized to write a letter to the Minister of Municipal Affairs and Housing requesting that the Province update the City's Built Boundary to reflect the expansion of the City's Built Up Area since 2008;

AND THAT staff be directed to include within the Request For Proposal for the City's Comprehensive Review and Update to the Official Plan a specific Council and Public consultation process for establishing a 'Made in Orillia' set of planning principles to manage growth from an environmental, cultural, economic and social perspective;

AND THAT the overall contract for the Land Needs Assessment, Employment Strategy and Intensification Strategy be increased from \$85,836 to \$135,736 plus HST to accommodate the additional scope of work with funding appropriated from the existing approved 2018 Capital Budget.

Planning staff is of the opinion that the current Technical Land Evaluation planning process should continue, as there is no harm in studying the lands surrounding the City's existing municipal boundaries to find the best lands from a planning perspective for a future boundary expansion. If Option 2 were to be pursued by Council, the work on the City's Technical Land Evaluation process would continue in parallel with the additional studies that would be undertaken.

If Council wishes to explore the implications for a future boundary expansion if a higher intensification target and minimum designated greenfield target were to be implemented, then an update to the City's Land Needs Assessment will be required. But it would be prudent for Council to fully understand the implications to the built-form and character of Orillia if a higher intensification target and higher designated greenfield density target were to be explored.

Therefore, if Council selects Option 2, it is recommended that the City's Land Needs Assessment be further updated and revised to consider a higher intensification target and higher designated greenfield target and report back to Council on the implications this will have on the City's Intensification Strategy in terms of:

- What minimum building heights would be required in the City?
- What minimum built form would be required in the City?

- What neighbourhoods would be affected in terms of needing to accommodate additional building height and larger massing for the Provincial Growth Plan's Strategic Growth Areas (i.e. formerly referred to as Intensification Areas)?
- How would the additional land need be impacted in terms of the amount of land required for Community Area versus Employment Area by the City pursuing a higher intensification and densification targets within the City's existing municipal boundary?

It is also important for Council to be aware that if it were to pursue a higher intensification target and minimum designated greenfield density target, then the next Comprehensive Update to the City's Official Plan and Zoning By-law will require significant amendments to allow for more as-of-right building heights, a range of built forms, and densities throughout the entire City⁵.

Another consideration for Council to be aware of when considering Option 2, is that it will not result in no boundary expansion because at a minimum the City requires an additional 56.5 hectares of Employment Land to meet its Provincially-mandated employment growth of 26,000 jobs to the year 2051. Council's Enquiry from March 7, 2022 specifically did not ask staff to consider the implications of pursuing a higher employment density target. Accordingly, at a minimum the City will need to undertake a boundary expansion of 56.5 hectares of additional land. Given the complexities associated with negotiating a municipal restructuring (i.e. annexation), it is not a process that the municipality should embark on with the objective of minimizing the land associated with the boundary expansion because it is not a process that should be occurring on a frequent basis.

The timing for this additional work on the Land Needs Assessment is dependent on how quickly Planning staff will be able to assemble the updated building permit activity, updated approved units, new applications, and updated vacant land inventory. In the past, the City relied on the assistance of a University of Waterloo planning co-op student to assemble and submit this background information for our Land Needs Assessment. However, the Planning Division currently doesn't have that additional co-op student staff resource to assist and the Planning Division is currently operating with one FTE vacancy in the Division. Given the currently stretched resources in the Planning Division and the requirement for Hemson Consulting Ltd. to undertake more analysis on the Land Needs Assessment and assess implications on the Intensification Strategy, the timing of this additional work is not able to be accurately estimated at this time. This is further impacted by the 2022 municipal election, which has resulted in fewer opportunities for staff to report back to the existing Council on this additional work.

Furthermore, if Council selects Option 2, then Council may wish to approach the Ministry of Municipal Affairs and Housing to see if they would be willing to update the City's Built Boundary to more accurately reflect the City's existing Built Up Area (BUA) to encourage more intensification to occur in the City's existing municipal boundary. As stated earlier in the report, the City's Built Boundary was established by the Province in 2008 shortly after the

⁵ As-of-right refers to zoning permissions which only require an applicant to obtain a Building Permit, and are not required to go through a Public Planning process to obtain permission for their zoning rights from Committee of Adjustment or Council.

first Growth Plan was released and has not been updated since that time. However, in the intervening 14 years the City has seen extensive development in the Designated Greenfield Area. Stone Ridge Subdivision is now concluding its planning approvals for its 10th and final phase (which is a Draft Plan of Subdivision with approximately 2,200 units); Lakehead University's campus was established in 2010; and the Horne Business Park is almost fully committed in terms of future development. However, this development is all occurring in the City's Designated Greenfield Area which is not subject to the City's Intensification Target.

Since 2008 significant infill development has occurred within the City's Existing Built Up Area (BUA) leaving fewer infill opportunities which makes achieving and sustaining a higher intensification target more difficult over the 30-year lifespan of the City's next Official Plan. It would be prudent for the Province to move the Built Boundary to include areas of the City that have been developed on over the last 14 years to encourage further intensification on these lands. For example, the lands west of Highway 11 are entirely devoid of any apartment buildings but there are several large vacant parcels of land which could be developed on for apartment buildings. To that end, the Mayor could write a letter to the Minister requesting an update to the City's Built Boundary to expand the area of the City that will be subject to the minimum Intensification Target in the next Official Plan.

If Option 2 were to be selected, Council should also take into consideration that there will be very limited ability (within the City's legal rights) to increase the designated greenfield density target within the City's existing municipal boundaries. Currently under review with the City planning staff are two major developments located in the City's Designated Greenfield Area:

- Trailside Neighbourhood Plan for approximately 1,300 units
- Inch Property Residential Subdivision for 356 units.

Once the City grants Draft Approval for these subdivision developments, then the City is obligated to only require a minimum designated greenfield density target of 50 persons and jobs per hectare, which aligns with the current target set in the City's Official Plan. This only changes if the Draft Approval expires prior to full-build out and then the balance of the undeveloped Draft Plan of Subdivision can be required to be modified to align with the next Official Plan's minimum designated greenfield density target. The next Official Plan (which likely wouldn't come into effect until 2024 at the earliest) would then employ a higher designated greenfield target which would apply to the balance of undeveloped Designated Greenfield lands within the City's municipal boundaries (which is primarily consumed by the Inch Property and Trailside subdivisions).

As elaborated upon in the Options & Analysis for Option 1, Planning staff recommends that Council direct staff to include in the Request For Proposal for the next Official Plan a specific Council and Public consultation process for establishing 'Made in Orillia' planning principles to manage growth from an environmental, cultural, economic and social perspective, as this represents good land use planning.

Financial Impact

The financial impact of the two options is outlined as follows with respect to the costs of completing the MCR planning process:

Option 1: No budgetary impact. The Technical Land Evaluation will be completed within the approved 2020 Capital Budget of \$200,000.

Option 2: The 2018 Capital Budget for the Land Needs Assessment, Employment Strategy and Intensification Strategy is \$150,000. The current approved contract with Hemson Consulting Ltd. for this work is \$85,836 (plus HST) or \$87,347 (including the City's 1.76% portion of HST). Hemson Consulting Ltd. has provided a quote for the additional work involved with updating and revising the City's Land Needs Assessment as well as providing impacts on the Intensification Strategy if a higher minimum intensification target and minimum designated greenfield target were to be pursued by the City at an additional cost of \$49,900 (plus expenses and HST), including one Public Open House and three Council meetings. This would result in a total contract cost of \$135,736 (plus expenses and HST), which is still within the Council-approved 2018 Capital Budget expense for this project.

Option 2 has no budgetary impact on the Technical Land Evaluation which will be completed within the approved 2020 Capital Budget of \$200,000.

If Council wishes to pursue Option 2, then Council's authorization will be required to approve the additional contract amount to update the Land Needs Assessment and assess the implications of higher intensification and greenfield density targets. This additional work can be completed within the existing approved 2018 Capital Budget of \$150,000. However, the additional work required to be undertaken as explained in the Options & Analysis Section of this Report under Option 2, will result in an increase in the scope of work with respect to the Land Needs Assessment and the Intensification Strategy.

Consultation

Consultation requirements have not been identified at this time as this report is a status update. Extensive public consultation is underway with the Technical Land Evaluation project as described earlier in this report.

Economic Development Impact

The City's Land Needs Assessment has determined that the City will need to acquire 56.5 hectares (139.6 acres) of Employment Area in order to have enough land to accommodate our employment growth of 26,000 employees by 2051 with an ultimate acquisition of 123.6 hectares (305.4 acres) for a "high growth scenario" with 30,480 employees. It is necessary for the economic health of the City to ensure there is sufficient Employment Area available for new growth.

The Downtown Tomorrow CIP Grant Program has the potential to incentivize intensification of the more than 100 acres of vacant/underutilized brownfield land within the downtown core, however, intensification will likely play a key role in making the redevelopment of these brownfields financially feasible. The growth in this area would need to align with the City's Official Plan and other guiding legislation and as such it will be important for any future

guiding policies to balance the retention of the City's character with the need for, and community benefits of, intensification.

Further, it will be important for the City to secure additional employment lands in areas with appropriate setbacks from sensitive land uses to ensure the continued ability for Orillia to attract and retain industry and jobs.

Communications Plan

As part of the MCR process, the City continues to provide updates to stakeholders as milestones are reached through website updates, direct correspondence, new releases, Weekly Bulletin notices, etc. If Option 1 is selected by Council, no additional communications would be required as work on the Technical Land Evaluation process would be continuing in accordance with the City's Land Needs Assessment.

If Option 2 is selected by Council, planning staff will work with communications staff to develop and implement a communications plan to advise all stakeholders including the public, Indigenous communities, affected Townships and the County that the City will be revising its Land Needs Assessment with a future report back to Council with a description of the implications. This communication plan will also need to address the impact this change in direction will have on the current Technical Land Evaluation planning process that is currently underway.

Relation to Formal Plans, City of Orillia Policy Manual and/or Guiding Legislation

The recommendation included in this report is supported by:

- Provincial Policy Statement, 2020;
- 2019 A Place to Grow: Growth Plan for the Greater Golden Horseshoe, as amended.

The recommendations included in this report support the following strategic goal identified in Council's 2018 – 2022 Strategic Plan Realizing Our Potential:

4. Sustainable Growth

- 4.1 Manage growth to accommodate 41,000 residents and 21,000 employment opportunities.
- 4.4 Promote economic development to create employment investment opportunities.

Conclusion

The purpose of this report is to provide Council with a status update on the City's Technical Land Evaluation planning process. WSP is currently completing Phase 2 of the work program with the Draft Technical Evaluation Report which could be released within the coming weeks depending on Council's direction with respect to this Council Referral.

It is prudent to plan for future growth in Orillia, while respecting the City's existing small-town character. As such, staff recommend WSP continue their work program to identify the best

lands for a future boundary expansion in the quantum of 380.6 hectares to minimize the need for future annexations.

Schedules:

Schedule "A" – Public Comments regarding Future Boundary Expansion (received after March 7, 2022 but before April 6, 2022)

Prepared by & Key Contact: Jill Lewis, MCIP, RPP
Senior Planner

Approved by: Ian Sugden, MCIP, RPP
General Manager of Development Services and
Engineering

**Schedule "A" – Public Comments regarding Future Boundary Expansion
(received after March 7, 2022 but before April 6, 2022)**

From: Nancy Hurst [REDACTED]
Sent: Tuesday, March 8, 2022 9:11 PM
To: MAYOR EMAIL <mayor@orillia.ca>; Ted Emond <tedemond@me.com>; David Campbell <DCampbell@orillia.ca>; Rob Kloostra <RKloostra@orillia.ca>; Ralph Cipolla <cipolla@orilliapronet.com>; Mason Ainsworth <MAinsworth@orillia.ca>; Jay Fallis <JFallis@orillia.ca>; Pat Hehn <PHehn@orillia.ca>; Tim Lauer <TLauer@orillia.ca>
Cc: Clerks Internet Email <Clerks@orillia.ca>
Subject: A message from Hamilton

Dear Clerk, could you please add my letter below to the next council meeting that will be addressing the boundary expansion issue? Thank you.

Dear Councillors and Mayor of Orillia,

I am writing to you from Hamilton and I am a community organizer of the campaign to stop the boundary expansion in this city. I recently watched the Feb 28 Orillia council meeting and listened to a councillor discussing the outcome of the vote in Hamilton and feel you might benefit from some insight directly from here. Bookmarked link [HERE](#)

-Yes Hamilton has chosen to accommodate 80% of it's growth within our boundary and 20% on designated greenfield areas, DGAs. Mapping experts here in the city spent months inventorying underutilized and vacant land in Hamilton. From vast surface parking lots to vacant land to sprawling single storey strip malls to abandoned big box stores to empty city owned buildings, we found 3000 acres of empty space within our city. Map is attached below. Once these areas were identified, accommodating 80% of our growth within these vast empty spaces became a lot easier.
Has Orillia undertaken a similar review of your underutilized and vacant space?

-Ottawa found (after they expanded their boundary) that sprawl would cost each resident an additional \$465 per year in taxes. Has Orillia done a similar cost analysis?
[CBC Ottawa - Suburban expansion costs increase to \\$465 per person per year in Ottawa](#)

-DGA density was previously set to be very low at 50 people/jobs/ha but in order to run "frequent transit" = a bus once every 15 minutes, the density of an area must be at least 80ppl/jobs/ha. As a result the city is now working to increase those DGA densities so that they at the very least will support public transit.
What density is needed in Orillia to support "frequent" bus service of a bus every 15 minutes?

-The councillor said that 79% of housing will now have to be apartments all over the city including in established neighbourhoods. In fact Hamilton is now in the process of

creating our draft Official Plan and the numbers are clear about what exactly what is planned for building types in Hamilton.

Overall the breakdown for the 80% intensification is:

Downtown Growth Centre = 30%

Urban Neighbourhoods = 30%

Nodes/Corridors = 40%

Hamilton will be building an LRT and in order to achieve the minimum density needed of 160 pl/j/ha *that is vital to make it a success* in the downtown growth centre, apartments will be built in the area already zoned for towers, not in existing neighbourhoods.

Our new draft OP states this about residential areas:

E.3.4.3 Uses permitted in low density residential areas: a) shall include single-detached, semi-detached, duplex, triplex, fourplex, and street townhouse dwellings; and, b) may include multiple dwellings containing a maximum of 6 units for lots in proximity to collector roads or arterial roads.

So yes, missing middle and gentle densification up to the size of a fourplex will be allowed and encouraged within existing neighbourhoods. This is not what I would call "apartment buildings". There are plenty of examples here and possibly in Orillia of monster homes being permitted in residential areas yet current zoning will not allow that same sized structure to be a duplex, triplex or quad. This is what Hamilton is now aiming to change. Exclusionary zoning benefits no one if only R1 single family homes are permitted to be built for the simple reason that the median house price in Hamilton is now over \$1M. VERY FEW people in Hamilton can afford to finance a mortgage of that amount and are desperately looking for smaller, more compact ground oriented homes that they can afford.

For reference this is a recently built 6 plex in Hamilton It's only slightly larger than a monster house owned by one family on my street. If we are to save prime agricultural land and address both the climate emergency and housing affordability, then building this type of accomodation along arterial roads is what Hamilton has decided to be the best way forward.



And here is a duplex. Can we really say that accommodations like these will "destroy the character of the neighbourhood" or will they provided much needed more affordable housing?



-The Nanos poll that was referenced was commissioned by WEHBA (West End Homebuilders Association) who represent the land speculators who stood to benefit very substantially from boundary expansion. When multi-millions of dollars are on the line you can be sure that a biased poll will be produced but what you may not know is that it was widely ridiculed by councillors in Hamilton and died a quick death, never to be referred to again by the WEHBA as it became an embarrassment to be buried.

-The demand for Single family homes in Hamilton has plummeted due to price. Hamilton is awash with single family homes but very low on any other type of smaller, more budget friendly options. Our very sizeable Baby Boomer population are indicating

to local realtors that what is actually lacking here are *smaller homes such as condos and apartments within their current neighbourhoods which they can downsize to*. Building this kind of medium density housing within existing neighbourhoods will not only allow seniors to age in place but also allow young adults to live affordably in different areas of town before such time as they have kids and then possibly want a single fam. home. I have a 20 year old daughter. She doesn't want to live in a house! She wants to live in a funky walkable neighbourhood with bars and cafes! If we lived in Montreal she would have that at her fingertips since all neighbourhoods there integrate middle density housing with services to make them walkable and interesting.

I believe that if you follow the money you will see just who is pushing to build unaffordable single family homes on farmland. I also believe that if you look with an unbiased eye you will find plenty of available space to build a variety of "made in Orillia accommodation options" within existing neighbourhoods, close to public transit and amenities, as we have done here in Hamilton. Are these not some spaces that could be used?





Do not follow in the same sprawl plan path as we've been doing for decades. Now is the time to look at the new reality. Climate change, biodiversity loss, loss of farmland aren't things that 'happen elsewhere' or can be dealt with by other levels of government. The decisions that matter are made at the municipal level. Please make the right one for Orillia and for Ontario and do not expand your urban boundary.

Kind regards,
Nancy Hurst
Hamilton



Dear Mayor Steve Clarke,

My name is Rachael and my parents live in Orillia, near Bass Lake. I come to visit them often, spending weeks at a time. Orillia is my second home. I have come to love taking walks with our dogs around the various parks and open areas that are within the proposed expansion area. This would be a devastating loss to us as a family, but more broadly to the community. On these walks I have come to know many local farmers who are working hard to produce local, sustainable food for the community. This land is the best kind of land for farming and farmland in the Greater Golden Horseshoe is disappearing at an alarming rate. I care about these initiatives and believe that these kinds of projects that support the community and provide affordable and healthy options to local people, especially those who are in need, is essential to a sustainable and shared future.

We are living through a climate emergency, there is absolutely no denying that. Ruining wetlands and farmland would only exacerbate that. The City of Orillia is in the midst of developing our 'Climate Change Action Plan'. It is ESSENTIAL that they acknowledge the primary role that land use planning has on achieving greenhouse gas emission targets. Expanding the urban boundary to accommodate sprawl is not a climate-friendly strategy and goes against the goals of this Climate Change Action Plan.

It doesn't matter if this land is not YET being farmed or cared for in these ways, but it should be PRESERVED for this potential. The alternative - urban sprawl - is explicitly counter productive to environmental goals and does nothing to meet housing needs of

those already residing in our communities that are unable to afford the exorbitant housing costs. Single family, detached dwellings that would require daily vehicle use do nothing to help this. We should focus on sustainable approaches to housing that consider access to the city - such as gentle density initiatives.

Please DO NOT SUPPORT THE SPRAWL. Save out wetlands, farms, and climate, and help build a sustainable and supportive community.

Sincerely,
rachael desborough

From: Shelle Hossack [REDACTED]
Sent: Friday, March 11, 2022 12:18 PM
To: MAYOR EMAIL <mayor@orillia.ca>
Subject: Freeze the urban boundary

Dear Mayor Steve Clarke,

Mr. Clarke and city council members: I am a resident of Severn Township. We live in one of the most beautiful areas in the province; the townships that surround Orillia need to be preserved for future generations to enjoy. And these lands need to be preserved for better uses than urban sprawl. There are so many studies and reports that Stop Sprawl Orillia is sharing that dispute this type of "affordable housing" solution. 939 acres of prime farmland, wetlands and forests are at stake. Once they are gone they are gone forever. Is this the type of legacy you want for your children, grandchildren, friends, neighbours? Urban intensification has been proven to be a better solution than urban sprawl. The reports and the facts are there. Have you driven the 400 corridor between Barrie and Toronto lately? All the farmland that is being sold will no doubt be used for urban sprawl and that is so disturbing and so very sad. We have the capability of feeding so many more people fresh and local produce by using the lands that we have. I don't want my "fresh" foods in my local stores coming from Mexico or even the United States when it can be grown locally. Supporting our local farmers is a huge deal for many of us who are aware of what it means for our local economy. If you are looking for a solution to affordable housing urban sprawl is not the solution. Besides urban intensification there is also gentle density housing. This has also been proven to be a better solution for affordable housing. Sprawl is bad for the environment, bad for our mental health, bad for our flora and fauna. Disturbing the natural habitat can be a very destructive issue in many ways. Urban sprawl is way more expensive to manage and outweighs the taxes that you will take in. It is the children and young people of today who will face the worst effects of climate change in the future. This is OUR future. It is

our right to advocate for a sustainable one. I shop locally and I am in Orillia regularly. I constantly shake my head and question why you are so intent on the urban sprawl rather than the intensification solution. I see so many vacant pieces of property within the city limits that could be utilized for affordable housing and it would also be so much better for those who need the affordable housing as they would be close to work, to amenities, busing, schools for the children etc. As a resident of Severn I love the beauty of nature, I love being part of a small neighbourhood community, I love the peace and quiet, I love riding my bike or running in a beautiful serene natural setting. I want our forests, farms, lakes, streams, wetlands, etc. protected. These are the reasons why I live here and I am so lucky to be able to have the choice. Not many people have that opportunity. I have the option of driving a short distance to a city for my shopping needs. As a member of Stop Sprawl Orillia we are presenting, and very well I must say, the very obvious reasons why this sprawl needs to stop and why the City of Orillia needs to focus on how to be a positive partner in finding solutions to problems rather than causing more harmful and huge problems for our local economy and environment. The information that is being shared can be effective in showing you, Mr. Mayor and council a more meaningful and positive way to be part of a positive legacy that will affect us and our future generations. Is that not what your family would want and would expect of you? Thank you.

Sincerely,
Shelle Hossack

[REDACTED]

Dear Mayor Steve Clarke,

I am writing today because I recently learned of the urban sprawl and boundary expansion. I don't believe this to be beneficial for current and future generations. I believe many will suffer negative consequences from this and in the midst of a housing crisis, I really believe it is the wrong direction. I hope you will consider the voice of the people.

Sincerely,
Emma Dawson

[REDACTED]

[REDACTED]

Orillia, ON
Canada

Dear Mayor and Council,

My husband and I have lived in Orillia for 55 years, always in the centre of town so that we could easily walk to stores, the library, the YMCA (and now the Rec Centre), parks and the trail system. We chose Orillia to escape the sprawl of Scarborough, where everything was geared to car traffic. Now we regret that Orillia is contemplating following in the footsteps of too many parts of our province, where sprawl has taken the place of good planning.

Here are just a few reasons why expanding Orillia into 939 acres of farmland and greenspace is a bad idea:

- sprawl means less walking and more driving, which leads to a deterioration in health and an increase in pollution
- sprawl means added cost to the municipality through the need for more infrastructure
- sprawl means a loss of farmland for food production
- sprawl means a loss of habitat for wildlife
- sprawl means a deterioration in the environment, as wetlands are lost
- sprawl means a hollowing out of the core of the city.

If you have ever been to an American city where no one lives in the downtown, and everyone is out in the suburbs, you know what a heartless place that is.

We are encouraged by the fact that young, educated people are taking up the cause of stopping the proposed sprawl. This is their future, and they intend to make it a good one. We applaud their commitment, and hope that Council will be equally visionary.

Ruth and Jim Watt

Dear Mayor Steve Clarke,

My names Haven Hache I have had the blessing of being a residents in Oro-Medonte my whole life. Hearing about the boundary expansion that would expand into prime farmland, wetland and forest made me very upset. Being a member of this area and spending a lot of time in Orillia I feel as if I should be able to express my concern. We are in a climate crisis and as a young woman who plans on spending the rest of her life in this area I feel passionate about making sure that this town is focusing on putting the environment first. Sprawl is expensive and this town should prioritize spending it money towards more environmentally friendly solutions. My generation deserve to live in a city that prioritizes its future generation and so on. Sprawl is a band-aid solution and will only create more problem with time.

Sincerely,
Haven Hache

Sincerely,
Haven Hache

[REDACTED]

[REDACTED]
coldwater, ON [REDACTED]
Canada

From: noreply@orillia.ca <noreply@orillia.ca> On Behalf Of Don Ross
Sent: March-23-22 9:25 PM
To: Lorrie Jackson <LJackson@orillia.ca>
Subject: Urban Sprawl

orillia needs an urban plan that is focused on URBAN not on RURAL so stop claiming we need to sprawl out into the township to build more houses.

Dear Mayor Steve Clarke,

PLEASE! NO URBAN BOUNDARY EXPANSION

As a long-time area resident, I am baffled by the recent announcement that Orillia doesn't have enough space to meet mandated growth targets, and is considering expanding its municipal boundaries.

While I understand that a land use study has been done, and that experts advise that an enormous expansion is necessary, I simply don't see it. My admittedly non-professional eyes see a LOT of potential expansion space within city limits – expansion that would be more efficient, cheaper and healthier for both people and planet.

As the City of Orillia is preparing a Climate Change Action Plan, and since half of domestic carbon emissions come from sources that are under municipal control (i.e. transportation and buildings), I am surprised that greater effort is not being made to avoid expanding development into neighbouring farmland, wetlands, and forests. Urban sprawl is usually characterized by low-density residential housing, single-use zoning, and increased reliance on the private automobile for transportation. None of these is a climate-friendly strategy. Good farmland in Canada is disappearing at an alarming rate.

I understand that the provincial government holds the big stick in regard to population growth. I also know that the provincial government responds to public pressure and that several municipalities have simply said "no" to provincially mandated growth targets. I ask the City of Orillia to reconsider an urban boundary expansion in the absence of a

comprehensive urban intensification plan. Surely we can meet population growth targets within the existing urban boundary by embracing “gentle density” - i.e. townhouses, second suites, 3-4 storey apartments and condominiums that blend in with existing neighbourhoods. This will mean more affordable, walkable neighbourhoods and support public transit and local businesses.

Gordon Ball, [REDACTED] Orillia, Ont. [REDACTED]

Dear Mayor Steve Clarke,

Agricultural land and wetlands absorb water to prevent flooding and can sequester carbon. Without forests and natural wetlands nature will not filter and clean water as it is now and thousands of species depending on these habitats will be in further danger of extinction; our food sources from local farms will be gone and replaced by paved roads, homes, and further pollution from emissions, and will impact our food prices even worse than recent months. Sprawl is expensive: extra infrastructure (roads, utility lines, etc.) costs more to maintain than is generated in tax revenue. I suggest we build up not wide....add affordable hi-rise apartments and condos in the already Barrie-burger joint-style housing in Westridge area which already wiped out forests to build existing homes.

Sincerely,
Jeannine Huty

[REDACTED]

[REDACTED]

Orillia, ON [REDACTED]
Canada

Dear Mayor Steve Clarke,

I've been living in Orillia for just over four years now. In this time I've gotten to know the physical layout of the city, attended a variety of city events, and tried to understand some of the decision-making that happens in the community. From my understanding of the provincial mandate to plan for population growth scenarios, a boundary expansion is a possible outcome. The Stop The Sprawl movement in Orillia and other communities in Ontario summarizes many of my personal concerns with a boundary expansion, including the permanent destruction of agricultural or wetland areas, the increased cost of city infrastructure, bigger distances to travel within the community, and an overall assumption of a growth mentality that is not sustainable. I perceive the short-term

benefits of a boundary expansion and single-zone low density sprawl to be for a very small number of people, with a net negative effect on housing prices and quality of life for most citizens. If this is not seen as an immediate issue, or an inevitability, I still want to empower and encourage everyone representing the community in Council to look at this as an opportunity to invest in a sustainable strategy that prioritizes the wellbeing of our local and global environment for the future, addresses population growth with a commitment to gentle density affordable housing, and manages overall city planning towards a 15-minute community model with mixed-zoning and a high focus on community members' quality of life. Thank you for your continued work to advocate for our community.

Sincerely,
Thomas Kaethler

[REDACTED]

[REDACTED]
Orillia, ON [REDACTED]
Canada

Dear Mayor Steve Clarke,

I have lived in Severn Township for my whole life (almost 18 years) and go to school in Orillia. I do all my extra curricular activities in Orillia; driving lessons, sports, work, etc. And know many who do the same. The expansion of Orillia is becoming an increasing concern in my household as we fear for the future of surrounding wetlands, forests, and farmlands. Even if buildings are not being planned to be built, air and water pollution will. Urban expansion not only effects people's time and money; it also contributes to CO2 emissions, adding to the already astronomical amount that our country emits every single year. With the planning of more sustainable housing and more accessible communities, I believe that Orillia can become a sustainably conscious city. As an environmental youth advocate, I understand that this doesn't come with risks and expenses, but let me plant this seed in your mind, if I may; issues we see now that are expensive and outside the budget will be more expensive and dangerous to fix in 5 or 10 years time. What will our town look like if we don't take action now? These are all important points of a much larger picture that the Orillia City council needs to take a look at. The city needs to pay attention to the people, and think of the future of this town from an environmental standpoint; money can always be made, but we only have one planet.

Sincerely,
Lauren Mihills

[REDACTED]

Washago, ON
Canada

Dear Mayor Steve Clarke,

Dear Council Members,

I am writing to you with great concern regarding the proposed Orillia boundary expansions involving hundreds of acres of natural lands and wetlands.

I am someone who has lived in the area since my childhood (with parents and grandparents also having lived their lives here) and I take pride in the beauty that Orillia and the surrounding areas have to offer. However, I fear that we simply aren't willing to do the hard things that are necessary in order to protect our home and make this earth a place that our grandchildren and great grandchildren can live with in safety and in health. I am not writing with intention of being dramatic in order to make a point - I genuinely find myself concerned for my 7 year old daughter and the future she will face, as well as that of her peers. I have been teaching my daughter principles of kindness, right and wrong, and stewardship and responsibility in caring for those around us and our environment. Yet, when we look around, although many are trying, there are countless opportunities where we could make a better choice but we simply are not. And it is not enough and it won't be in time. I know these issues are not without complexity, but we must focus on the factors that matter most for a sustainable future. If not now, when? The multitude of issues at play here will impact my daughter's generation within her lifetime.

I am well aware that there are density requirements and increases being imposed at the provincial level over the next 20-30 years. However, as someone who has lived in the area for so long, I also know that there are multiple areas within the current city boundaries that would allow for an appropriate level of development and intensification to meet these targets. There are lots of areas in Orillia that would also benefit from some form of revitalization. I have heard that members of council feel that many constituents would not respond positively to such developments/new buildings but I don't believe this is true for many Orillians and other locals that are aware of the appropriate context. If locations were chosen wisely and with thought, I feel development could be welcomed with the goal of improving the appearance of the city, especially in the heart of the city or in areas with buildings that have remained untouched since their last use. Designs with character would liven areas of the city that need it. Furthermore, it is my understanding that contracted engineering experts involved in reviewing the proposed boundary expansion made this recommendation without even visiting the city to see what it actually has to offer within its existing boundaries. This is the easier path, not the most thoughtful.

The “downsides” to urban sprawl are many and I am sure that you are receiving messages listing these same issues. The loss of wetlands, trees and farmland would be a significant and obvious negative outcome in relation to our fight on climate change. We need this environmental balance to reduce flooding, reduce emissions and to allow for important wildlife habitats to thrive. Not to mention that if the boundaries are allowed to “sprawl” this will be less efficient and more costly in terms of maintenance and how the city is accessed on a daily basis by its constituents. It makes much more sense to intensify in areas of the city that are already urban. And these are all things that experts acknowledge. It may take more effort and thoughtful planning of how to create character in these developments but it has the potential to also promote a healthier lifestyle for those that live within the city.

My daughter currently spends two days every week at an outdoor forest school that is child-led. At this forest school, they often discuss concepts of how they leave an impact - an impact on the friends and strangers around them, an impact on the animals and living creatures that share their home, and an impact on the earth and the space that they have the privilege of using. Having volunteered at this school for a few years, I have heard the thoughts and ideas that come from this young generation, as well as their ability to come together and compromise, finding solutions that aren't just about one person. Their proposed solutions, which are varied, are insightful and promising to say the least. It always strikes me that they are capable of so much compassion and that they choose solutions for the betterment of others around them. They are not self-serving. This is the generation that will inherit this earth without any real say in the current climate crisis that they will also inherit.

How would they deal with increasing housing needs and density targets? We should consider what the children of today would want us to do. My hope is that we can say to them that we chose the more thoughtful path and not the easy path; nor the path that makes the most money (for other stakeholders that are not as invested in maintaining the quality of the lands that we hope to call home for years to come).

I believe it is our responsibility to create a better plan. Provincially, some of the strategies that are being applied may not be tailored to small cities such as ours. Orillia is unique just as I am sure other cities are unique. We should advocate and take a closer look at solutions that can be developed within the current city limits that fit the needs of our tomorrow.

Thank you for your time.

Sincerely,

Kirstyn Katarynych

Sincerely,
Kirstyn Katarynych

[REDACTED]
[REDACTED]
Severn, ON [REDACTED]
Canada

From: noreply@orillia.ca <noreply@orillia.ca> On Behalf Of Jane Bonsteel
Sent: April-03-22 3:40 PM
To: Clerks Internet Email <Clerks@orillia.ca>
Subject: Sprawl

To Mayor and Members of Council - I have been indecisive about putting a "Stop Sprawl Orilla" sign on my lawn as I do not want to be accused of NIMBY-ism. I live in a single, detached house in an area with very little multi-residential housing. However, what I would actually like is for more multi-residential housing (gentle density) to be available in my area. I like my current location because of its walkability to downtown, the library, parks and waterfront, but I don't need a single, detached house. I believe there are many people in my situation. In the face of the climate emergency, Orillia needs smart, progressive intensification in places which are walkable and have good access to services, not sprawl into farmland, wetlands and forests. I urge you to vote against expansion of Orillia's urban boundary.

Dear Mayor Steve Clark and Council Member Mason Ainsworth,

I am Amber Mallon, a resident of Orillia from birth, 25 years. I live in Ward 4 and I have lived in this ward for 10+ years. I am writing today to express my concerns over urban boundary expansion.

I feel strongly that urban boundary expansion will diminish the wildlife, pose risks to fellow Orillians and our wildlife, our historic and greatly remembered farmlands, wetlands, and forests. As a proud Orillia member, I believe that expanding over these great lands will lead to consequences that will in turn be unforgiving. Here are a few other reasons as to why I do NOT want urban boundary expansion:

- The City of Orillia is in the midst of developing our 'Climate Change Action Plan'. It is ESSENTIAL that they acknowledge the primary role that land use planning has on achieving greenhouse gas emission targets. Expanding the urban boundary to accommodate sprawl is not a climate-friendly strategy and goes against the goals of this Climate Change Action Plan!

- Orillia/Oro-Medonte/Severn wildlife will diminish - along with a proposed risk of wildlife coming into cities and towns as they will have no place to go
- It does not matter who currently owns the land or whether it is currently being farmed – it is still prime agricultural land and should be preserved for future food security and climate mitigation
- “Land-use planning is the key lever to locking in or locking out greenhouse gas emissions at the municipal level” (Yuill Herbert, Consultant to 60 Canadian Municipalities, Principal for Sustainability Solutions Group)
- Agricultural land and wetlands absorb water to prevent flooding and can sequester carbon
- Suburban Sprawl is the rapid expansion of the geographic extent of cities and towns, often characterized by low-density residential housing, single-use zoning, and increased reliance on the private automobile for transportation.
- Sprawl is bad for the environment – it paves over agricultural land, wetlands, etc. and forces us to be car-dependent
- Sprawl is bad for our health – it forces us to spend more time being sedentary while driving

Please take into consideration the lasting effects urban expansion may have, and reconsider. As a proud Orillia member, I do NOT believe in the expansion and I hope that you fine people of Orillia can see this too.

Sincerely,
 Amber Mallon
 [REDACTED]
 Orillia Ontario

Dear Mayor Steve Clarke,

Please stop the expansion, we enjoy the peaceful small area of Cumberland beach, we enjoy the wildlife and prefer not to expand.

I'd rather not see my taxes raised or farm/wetlands/ destroyed.

Sincerely,
Carly Whitford

[REDACTED]

[REDACTED]

Severn, ON [REDACTED]
Canada

Dear Steve Clark and everyone who works for the city council,

Since you have been the mayor of Orillia, you have done barley anything good for people. Taking away our beautiful waterfront by adding a bunch of houses there, yet no one in Orillia wanted that but you went ahead and did it anyway. You do not work for the people as you claim, and it has been clear the whole time. Now you want to build more houses on farmland. Some of the free farmland you want to take away it A BAD IDEA! Yes we need more houses but stop building on all the free land we have, it will create problems. You will drive out the life of animals there which you have done so much over the past years its horrible. The Canadian government claims to care about the environment so much but that is a lie, and it is really clear to see with what you, and many other mayors have done.

You are ruining our city and making it worse. I am strongly against building houses in the free land we have behind west ridge. What you are doing is not right, you do not listen to the people you are supposed to work for, the people who pay your salary, you just do whatever you want to. Well let me tell you Steve Clark, I'm 21 years old and just learning about politics and you are a bad one! That's for sure. Maybe listen to the people of Orillia for once and DO YOUR [REDACTED] JOB! You're a bad person and you will never have my vote! And many people of my generation will never be with you either. I know you will be out of the position come next election because you never do anything for the people. Bye.

Sincerely,
Erin Brodie-Canning

[REDACTED]

[REDACTED]

Oro-Medonte, ON [REDACTED]
Canada



April 5, 2022

Mayor Steve Clarke and Council, City of Orillia
President Stan Mathewson, Sustainable Orillia

We, the cosigners of this letter, would like to express strong concern about current and proposed developments that will lead to the destruction of some of Orillia's wetlands.

We are concerned, for example, that a proposed greenfield development will essentially pave over the Inch Farm wetland and seriously degrade an important cold-water stream habitat for brook trout. Another major proposed development would threaten an environmentally sensitive wetland at Victoria Point. These two examples suggest that Orillia's wetlands face an uncertain future.

The destruction of wetlands has come to a critical point. More than 70 percent of wetland habitat that was present in Southern Ontario has been destroyed. Only an estimated 20-25 percent of the historic wetlands remain in the Lake Simcoe watershed.

Wetlands are important for many reasons. For one, they provide habitat for fish and wildlife species and vegetation. At the Inch Farm site, a recently completed environmental study for the City as part of a Municipal Class EA identified 32 species of breeding birds.

Wetlands also provide many ecosystem benefits such as groundwater protection and run off collection from major precipitation events. The Inch Farm wetland, for example, forms part of a groundwater discharge area that feeds the cold-water stream. Thanks to the efforts of the Orillia Fish and Game Conservation Club, brook trout are thriving there again. But their spawning grounds will be threatened by excess stormwater runoff that contains salt, silt and other contaminants.

Where development does take place near a wetland, it must include sufficient buffer zones to allow for flooding and impacts from new roads and development. We are concerned that currently only a buffer of 15 metres is proposed for Silver Creek that runs through the Inch Farm wetland rather than the 60-metre buffer that is required for natural heritage sites.

The protection of wetland and other natural spaces is very important because of the climate crisis occurring on our planet. Wetland protection is part of a nature-based approach to fighting climate change and adaptation whereby ecosystem services are used to reduce greenhouse gas emissions and to conserve and expand carbon sinks.

One of the reasons that wetlands are so important in the fight against climate change is that they take in greenhouse gases from the air and so help to clean it. These gases eventually settle in the soil at the bottom of the wetland. If the wetland is drained greenhouse gases including methane are released. Methane is about 20 times more potent as a greenhouse gas than carbon dioxide.



We commend the City of Orillia for embarking on the development of a Climate Change Action Plan (CCAP) towards a low-carbon future. The plan is currently a work in progress, but we note the latest progress report by staff does not even mention any nature-based tactics. Yet, elsewhere on the web page for Orillia's Climate Future it states: "Keeping our natural spaces intact and choosing to redevelop previously occupied land is a strong climate action."

This statement embodies an important message: it is better to develop brownfield rather than greenfield sites. "Every hectare of brownfield re-developed saves an estimated 4.5 hectares of greenfield from development," according to the Climate Future web page.

Council can demonstrate effective and bold leadership towards a low-carbon future by directing staff responsible for the development of Orillia's Climate Change Action Plan to include more serious consideration of nature-based options, such as the protection of wetlands.

We do not oppose development that attracts investment, provides housing and creates jobs in Orillia. But it should be environmentally sustainable. When considering development proposals, we request that the City Council adopt a strong commitment to the protection of existing wetlands as natural heritage sites, as well as prioritize the development of brownfield over greenfield sites.

Sincerely,

Morris Ilyniak and Patricia Woodford, members of the Orillia Naturalists' Club.

Copy MPP - Jill Dunlop
President of Orillia Fish and Game Club, Gord Pye
Orillia Matters

From: [Kristine Preston](#)
To: [Kristine Preston](#)
Subject: 210823 Referral re Amending Chapter 700 - Local Produce
Date: August 26, 2021 12:33:03 PM

[The following recommendation was adopted by Council at its meeting held on August 23, 2021. Please prepare a report to Council Committee.](#)

Description: The following recommendation was adopted by Council at its meeting held on August 23, 2021. Please prepare a report to Council Committee.

Comments: []

Item Number: CF - 324

Due Date:

Staff Responsible: Cheyenne Johnson, Ian Sugden, Kristine Preston, Megan Williams, Shawn Crawford

Department/Group: Development Services and Engineering

Follow-Up Status: Assigned

Meeting Item Description Report 2021-10 of Council Committee.

Agenda Item #: 2.

Meeting Date: 23 Aug 2021

Meeting: 210823 - C

Meeting Type: Regular Council

Resolution Number:

THAT staff be directed to prepare a report with respect to the following:

The feasibility of amending Chapter 700 of the City of Orillia Municipal Code - Business Licensing to change the definition of "local produce" from "products grown on lands in the Townships of Severn, Ramara and Oro-Medonte" to "products grown on lands in the Province of Ontario";

Resolution Text:

AND THAT staff be requested to:

- consult with the Orillia Food Committee, Farmers' Market Advisory Committee, Sustainable Orillia, and local grocers
- define "local"
- provide a brief history on the by-law
- include benchmarking.

Moved By: Moved by A, seconded by B:

Disposition: Carried.

CITY OF ORILLIA

TO: Council Committee - April 11, 2022
FROM: Development Services and Engineering Department
DATE: April 4, 2022
REPORT NO: DSE-22-01
SUBJECT: Local Produce – Fruit/Vegetable Stands

Recommended Motion

THAT Chapter 700 of the City of Orillia Municipal Code - Business Licensing be amended by removing the requirement that a licensed fruit/vegetable stand must only sell products grown on lands in the Townships of Severn, Ramara and Oro-Medonte.

Purpose

The purpose of this report is to explore the feasibility of amending Chapter 700 of the City of Orillia Municipal Code - Business Licensing to change the definition of "local produce" from "products grown on lands in the Townships of Severn, Ramara and Oro-Medonte" to "products grown on lands in the Province of Ontario".

Background & Key Facts

- Council, at its meeting held on August 23, 2021 adopted the following motion:

“THAT staff be directed to prepare a report with respect to the following:

The feasibility of amending Chapter 700 of the City of Orillia Municipal Code - Business Licensing to change the definition of "local produce" from "products grown on lands in the Townships of Severn, Ramara and Oro-Medonte" to "products grown on lands in the Province of Ontario";

AND THAT staff be requested to:

- consult with the Orillia Food Committee, Farmers’ Market Advisory Committee, Sustainable Orillia, and local grocers*
- define “local”*
- provide a brief history on the by-law*
- include benchmarking.”*

- Chapter 700 stipulates that before operating a fruit/vegetable stand within the City, a business licence must first be obtained by the owner/operator and a licence fee paid. The 2022 fee is \$508 and increases by 2% each year.

- Chapter 700 does not require a business licence be obtained in certain instances. A licence is not required if:
 - the fruit and vegetables are being sold on behalf of a non-profit charitable organization or a non-profit non-charitable organization;
 - the fruit and vegetables being sold are such that are offered for sale in the business premise and if such items are sold on the property owned/occupied by the said business; or
 - the fruit/vegetable stand is operating in conjunction with any Council approved special event.
- An owner/operator of a fruit/vegetable stand is required to comply with the following restrictions:
 1. Permitted to sell “local produce” only, which by definition means: “products grown on lands in the Townships of Severn, Ramara and Oro-Medonte”;
 2. Prohibited from operating on City property;
 3. Only permitted to operate on property zoned commercial, and provided permission has been obtained from the private property owner;
 4. Must obtain a separate licence for each location; and
 5. Obtain a criminal record check (dated within 90 day of application).
- Section 151 of the *Municipal Act*, 2001, c. 25 provides the authority for a municipality to implement a system of licences with respect to a business.
- The City’s rationale for licensing businesses is for one or more of the following reasons: health and safety, consumer protection, or nuisance control.
- Over the past five years, the City has received on average one complaint per year respecting a fruit/vegetable stand selling produce that was not grown on lands in the Townships of Severn, Ramara, or Oro-Medonte.
- Below is the history of the fruit/vegetables stands licensed over the past five years:

Year	Number Licensed	Location(s)	Name of Business
2021	0	N/A	N/A
2020	0	N/A	N/A

2019	1	117-121 Atherley Road	Hewitt's Sweet Corn
2018	2	117-121 Atherley Road and 450 West St. S.	Hewitt's Sweet Corn
2017	2	117-121 Atherley Road and 13 Fittons R. W.	Hewitt's Sweet Corn

- In a letter dated March 23, 1999, addressed to Mayor and Members of Council, John Ward, owner of Country Produce, expressed concerns about the operators of fruit/vegetable stands not paying any taxes to the City. At the time of the letter, the City of Orillia did not license fruit/vegetable stands.
- On September 21, 1998, the City's Ad Hoc Licensing Committee (no longer exists) discussed fruit/vegetable stands. In the minutes of the meeting, the following was noted: "Since the municipality now has the ability to license fruit stands it was suggested that in order to "level the playing field" we begin to license these stands." The change in ability was referring to amendments made to the *Municipal Act* by the province which is the enabling legislation for a Business Licensing By-law to be passed by Ontario municipalities.
- On May 26, 1999, the Ad Hoc Licensing Committee presented a report to Council Committee regarding a comprehensive business licensing review. Included in that report was the following recommendation respecting fruit/vegetable stands: "To promote internal equity, it is suggested that this particular by-law be expanded to include the requirement for an owner of a fruit/vegetable stand to obtain a business licence to operate and to sell local produce only."
- On September 20, 1999, Council passed By-law Number 1999-134 which adopted Chapter 700 of the City's Municipal Code - Business Licensing. Contained therein was a requirement that fruit/vegetable stands obtain an annual business licence, and to sell "local produce" only.

Options & Analysis

Letter to businesses requesting feedback

On October 21, 2021 a letter was delivered to businesses located in Orillia that sell produce requesting written feedback by November 5, 2021 regarding the following possible by-law changes:

1. Amending the by-law to change the definition of "local produce" from "products grown on lands in the Townships of Severn, Ramara and Oro-Medonte" to "products grown on lands in the Province of Ontario"; or

2. Amending the by-law such that there was no limitation whatsoever on the products that could be sold by a licensed fruit/vegetable stand (i.e. products could come from any jurisdiction).

Letters were delivered to the following businesses:

- Costco
- Country Produce
- Foodland
- Food Basics
- Giant Tiger
- Metro
- Refillery District
- Shoppers Drug Mart (both locations)
- Walmart
- Zehrs

The City did not receive written submissions in response to the delivered letter from any of the above-referenced businesses.

Benchmarking exercise

All municipalities in the County of Simcoe were contacted (responses below). In summary, it was determined that none of the municipalities restrict the origin of product sold from a fruit/vegetable stand.

Municipality	License Fruit/Vegetable Stands?	Does your municipality only allow produce grown locally to be sold from a stand?	2021 Licence Fee?
Barrie	Yes	Do not restrict origin of produce	\$240.98
Wasaga Beach	Yes	Do not restrict origin of produce	\$267.00
Penetanguishene	Yes	Do not restrict origin of produce	\$350.00
Midland	Yes	Do not restrict origin of produce	\$250.00
Ramara	Yes	Do not restrict origin of produce	\$150.00
Bradford West Gwillimbury	Yes	An owner of a stand is exempt from obtaining a business licence if the produce is	\$75.00

		grown or produced by a farmer resident in Ontario who offers for sale or sells only the produce of his own farm. If the owner of the stand does not qualify for the exemption, then a licence must be obtained, however, there is no restriction in terms of the origin of the produce that they can sell.	
Innisfil	No	N/A	N/A
New Tecumseth	No	N/A	N/A
Severn	No	N/A	N/A
Clearview	No	N/A	N/A
Collingwood	No	N/A	N/A
Adjala-Tosorontio	No	N/A	N/A
Oro-Medonte	No	N/A	N/A
Tiny	No	N/A	N/A
Springwater	No	N/A	N/A
Essa	No	N/A	N/A
Tay	No	N/A	N/A

Option 1 - Recommended Option (Do not have any restriction on the origin of the produce sold by fruit/vegetable stand owners).

THAT Chapter 700 of the City of Orillia Municipal Code - Business Licensing be amended by removing the requirement that a licensed fruit/vegetable stand must only sell products grown on lands in the Townships of Severn, Ramara and Oro-Medonte.

Staff recommends Option 1. If Option 1 is approved by Council, there would be no limitations on the origin of the fruit/vegetables that are sold from licensed stands, meaning the products could come from any jurisdiction including another country. Factors in support of Option 1:

1. No other municipality in the County of Simcoe restricts the origin of the products that can be sold from fruit/vegetable stands;

2. Easiest to enforce of the three options in this report as there would be no need for an enforcement officer to determine the origin of the products that are being sold at the stand on a particular date;
3. Reduces “red tape” for owners of fruit/vegetable stands looking to operate in Orillia;
4. The City of Orillia does not currently restrict the source of products in other retail operations nor in other grocery outlets. Local consumers have the option to purchase from a range of current grocery stores, some of which source their products from around the globe and some of which exclusively source their products from a local source. Access to local food and promotion of the local agri-culinary community continues to be supported by the City through initiatives such as the Orillia Farmers’ Market, Orillia & Lake Country Tourism initiatives such as the “Fall Flavours” and “Tap into Maple” events, as well as through events like the Farmer and Chef Connect events which have been delivered through the City’s Business Development Division; and
5. The Downtown Tomorrow Plan (2012) identified the need for a retail mix study to address retail gaps in the downtown core including the need for increased access to specialty food stores (small scale grocery retail). The City of Orillia Retail Mix Study (2016) further identified an existing service gap in the broader downtown Orillia area for convenience and specialty food stores. Over 70% of public survey respondents indicated there are existing gaps with respect to specialty food stores. A review of comparator municipalities found that communities similar to Orillia in size and demographics typically had a market share of 3-8% of specialty food stores whereas Orillia was underserved in this area with only 1.6% target share. Since 2016 there have been few changes in this regard as the number of new specialty food stores which have opened since that time are approximately equal to the number of stores which have either closed or have reduced their specialty food offerings.

As the City incentivizes increased residential growth in the core to meet Growth Plan residential projections, it will be increasingly important to ensure residents in the core have ample access to healthy produce. Increased access to produce through various retail formats such as grocery stores, specialty food stalls and farmers’ markets will support growth in the core and reduce reliance on vehicular traffic.

Despite the various factors noted above in support of Option 1, this option may not be considered supportive of “brick and mortar” businesses that sell fruit and/or vegetables and pay property taxes to the City of Orillia. However, no business contacted provided written objection to changes being made to the by-law.

Option 2 - (Allow only produce grown in Ontario to be sold by fruit/vegetable stand owners).

THAT Chapter 700 of the City of Orillia Municipal Code - Business Licensing be amended by changing the definition of "local produce" from "products grown on lands in the Townships of Severn, Ramara and Oro-Medonte" to "products grown on lands in the Province of Ontario".

If Option 2 is approved by Council, any products grown in Ontario would be permitted to be sold from a licensed stand. Products grown anywhere other than Ontario would be prohibited from being sold at a stand. Staff does not recommend Option 2 based on the following factors:

1. No other municipality in the County of Simcoe restricts the origin of the products that can be sold from fruit/vegetable stands;
2. Amending the by-law as proposed under Option 2, is more difficult to enforce than having no limitation on the origin of the products. For example, under Option 2, an officer would need to determine whether the peaches being sold at the stand at a given time were grown in Ontario. These peaches could have been obtained from another Ontario region where peaches grow such as Niagara, or grown indoors. If it was determined that the peaches were grown in another province or country, this would be an offence under the by-law;
3. Imposes "red tape" for owners of fruit/vegetable stands looking to operate in Orillia as the origin of the products are still restricted;
4. The City of Orillia does not currently restrict the source of products in other retail operations nor in other grocery outlets; and
5. Increased access to produce through various retail formats such as grocery stores, specialty food stalls and farmers' markets will support growth in the downtown core and reduce reliance on vehicular traffic.

Despite the various factors noted above, Option 2 could be considered more supportive of "brick and mortar" businesses that sell fruit and/or vegetables from all over the world. However, as noted previously, no business contacted provided written objection to changes being made to the by-law. An additional consideration with Option 2 is that by limiting to produce grown in Ontario, the by-law would support the local Ontario economy, and reduce the carbon footprint by limiting to produce grown in Ontario (i.e. less travel required to move produce, etc.).

Option 3

THAT Report DSE-22-01 be received as information.

If Council selects this option, the status quo will be maintained. Therefore, only products grown on lands in the Townships of Severn, Ramara and Oro-Medonte

would be permitted to be sold from licensed stands. Staff does not recommend this option which is the most restrictive of the three options presented in this report.

Financial Impact

If Option 1 or 2 is approved, it is possible that more stands will operate in Orillia due to there being less restrictions in place in terms of the products that can be sold. Should more stands operate, the City would receive additional revenue through payment of an annual licence fee per stand. As licence fees are intended to offset the costs of administering and enforcing the Business Licensing By-law, any impact will be neutral.

Consultation

Chamber of Commerce

Allan Lafontaine, Executive Director, Orillia District Chamber of Commerce provided the following comments:

“Supporting Ontario is fundamentally important and these stands do draw visitors to Orillia who purchase farm fresh foods and then do other shopping in our community, or at least as a regional place to head to purchase supplies.”

Orillia Food Committee

The Orillia Food Committee, at its meeting held on March 16, 2022 adopted the following motion:

“THAT the draft report dated November 20, 2021 from the Development Services and Engineering Department regarding Local Produce - Fruit/Vegetable Stands be received;

AND THAT the Orillia Food Committee suggests that Option 2 is the preferred option;

AND THAT the Orillia Food Committee provides the following comments:

- Waive fees for local producers from the local area including the City, adjacent townships, and Rama First Nation*
- That staff be requested to consider amendments to the City's Zoning By-law to allow Fruit and Vegetable Stands in more areas of the City within predetermined designated areas*
- Reducing red tape for producers may provide improved access to local produce for consumers.”*

Farmers' Market Advisory Committee

The Farmers' Market Advisory Committee at its meeting held on February 10, 2022 adopted the following motion:

“THAT the draft report dated November 29, 2021 from the Development Services and Engineering Department regarding Local Produce - Fruit/Vegetable Stands be received;

AND THAT Option 2 is the preferred option of the Farmers’ Market Advisory Committee.”

Sustainable Orillia

On February 9, 2022, Sustainable Orillia provided the following recommendations/comments:

“The adoption of Option 2 (i.e. sellers of “local produce” may only sell goods produced in the province of Ontario) PLUS the addition of a clause that says “anyone selling produce in the City of Orillia that is grown within the city limits, in Rama First Nation, or the adjacent townships of Ramara, Severn and Oro-Medonte (i.e. is “really local”) will be exempt from having to pay a business licence fee AND can set up a “pop-up stand” in any part of the city.

Rationale provided by Sustainable Orillia:

1. The changes we are urging would make the distinction between “local products” and “products grown in Ontario,” thereby supporting local producers (no fee and permission to set up in non-traditional areas—i.e. neighbourhoods) and also encouraging all other stands to offer only Ontario products. Most consumers and tourists EXPECT that local farm stands sell LOCAL produce and food. While option 2 enforces the expectation that food being sold is at the very least “grown in Ontario,” the amendment would create some stands that are “more local” than other “local” stands, thereby providing an incentive to those farmers who live in this area.

2. The City of Orillia SHOULD be encouraging the selling of “more local” produce (which cuts down on emissions and supports local farming initiatives) as a feature of a sustainable city, now and in future. Farmland around our city is harder to turn into real estate development a) if it’s productive and being worked, and b) if it’s earning its owner a living wage. Waiving of the business fee for local producers just makes sense in regard to sustainability.

3. Let’s encourage pop-up stands in residential neighbourhoods rather than only in specific areas of town. This may require Zoning By-law changes. We create food deserts in some areas when we restrict the selling of food to certain areas. Our transit services don’t allow residents in some areas to easily shop if they don’t own a car. Allowing a local farmer to set up a pop-up stand for a day/evening or two each week may be a new idea, but it makes sense. As the city strives for sustainability, a multitude of things may have to be done differently from “the way we’ve always done it.”

Notes from report writer respecting comments made by the Orillia Food Committee and Sustainable Orillia:

Staff does not support waiving the annual licence fees for fruit/vegetable stand owners if they sell produce that is grown within the City of Orillia, Rama First Nation, Ramara, Severn, or Oro-Medonte. The primary purpose of licensing fees is to offset the costs of administering and enforcing the Business Licensing By-law. Generally speaking, those that make use of a service, or create the review/approval/record keeping work, should be responsible for paying for that service, as opposed to transferring the entire cost of that service to all ratepayers. Should Council wish to explore waiving the annual licence fee for fruit/vegetable stands, then this should occur during the 2023 budget process and include consideration of waiving the fees for other licensed businesses such as refreshment vehicles, salvage yards, taxicab stands, door-to-door salespersons, salvage yards, and adult entertainment stores.

In terms of the comment by Sustainable Orillia to encourage pop-up stands in residential neighbourhoods, please note that such an approach is not lawfully permitted in the City's Zoning By-law. Retail sales of food products and/or produce is only permitted on land that is zoned in a manner that permits commercial activities including a retail store. To allow fruit/vegetable stands to operate in residential areas would detract from the residential character of the neighbourhood it operates in, and potential implications include increased vehicular traffic, reduced available on-street parking, parked vehicles obstructing traffic or blocking driveways, or children in particular being struck while in the process of exiting or entering a vehicle.

Economic Development Impact

The Business Development Division supports Option 1 being the removal of restrictions for the origin of produce. Retail has evolved to include various commerce formats including "bricks and mortar" retail operations, e-commerce sites, pop-up markets and temporary vendor locations at forums such as trade shows, farmers' markets and community events. These operations, regardless of their format have the ability to create jobs, income streams, trade opportunities, access to food, products and services, as well as other benefits to the community. Therefore, the City should support a diverse range of retail formats including food stands.

Communications Plan

Should Council adopt Option 1 or 2, changes to the Business Licensing By-law will be communicated on the City's website, the Weekly Bulletin in the Orillia Today, and to past licensees of fruit/vegetable stands.

Relation to Formal Plans, City of Orillia Policy Manual and/or Guiding Legislation

- Municipal Code Chapter 700 - Business Licensing

- Downtown Tomorrow Plan (2012)
- Retail Mix Study (2016)

Conclusion

Staff recommends Option 1 which would mean having no restrictions on the origin of fruits and vegetables that can be sold from licensed stands. Staff recommends Option 1 for various reasons including that it would be the easiest to enforce of the three options, reduces “red tape” for owners of such stands, and the approach would be consistent with other municipalities in the County of Simcoe that regulate such stands.

Prepared by & Key Contact: Shawn Crawford, Manager of Legislative Services

Approved by: Ian Sugden, General Manager of Development Services and
Engineering

CITY OF ORILLIA

TO: Council Committee – April 11, 2022

FROM: Human Resources Department
Chief Administrative Office

DATE: April 5, 2022

REPORT NO: HR-22-05

SUBJECT: **Bill 27 - Employees Disconnecting from Work Policy**

Recommended Motion

THAT Policy 5.7.1.5. – Employees Disconnecting from Work be adopted as set out in Schedule “A” of this report.

Purpose

The purpose of this report is for Council to consider the adoption of a policy that supports the right for City of Orillia employees to disconnect from work.

Background & Key Facts

- On November 30, 2021, the provincial government passed Bill 27, *Working for Workers Act*, 2021.
- This legislation mandates employers with more than 25 or more employees to implement a written policy by June 2, 2022 pertaining to employees disconnecting from work.
- The health and wellbeing of City employees is of the utmost importance and the City encourages and supports employees to prioritize their own wellbeing.
- Disconnecting from work is vital for a person’s wellbeing as well as sustaining an appropriate work-life balance.

Options & Analysis

As this is a legislative requirement, there is only one option for Council consideration.

Option 1

THAT Policy 5.7.1.5. – Employees Disconnecting from Work be adopted as set out in Schedule “A” of this report.

The proposed policy provides guidance for the right of employees to disconnect from work outside their normal working hours. The policy does address specific exceptions to this requirement, such as:

- A situation that would be constituted an emergency that would require timely or immediate attention and/or action.
- Any unforeseen circumstances that unless addressed can reasonably lead to an adverse impact on City services, programs and/or impacts the health and safety of employees or the community.
- Collective Agreement articles that include standby or on-call articles that would require communications after hours.

The City has many different hours of works for different types of employee classifications, such as evening, weekend and 24 hour shifts which are considered an employee's normal hours of work.

The policy is in conjunction with the City's Code of Conduct, specifically sections .27.12.3. and 27.12.4, as set out below:

27.12.3 Employees - under direction - Chief Administrative Officer

Employees serve Council and work for the municipal corporation under the direction of the Chief Administrative Officer. Council directs employees through its decisions as recorded in the minutes and resolutions of Council. Members have no individual capacity to direct employees to carry out particular functions.

27.12.4 Members - inquiries

Inquiries of employees from Members should be directed to the Chief Administrative Officer or the appropriate Senior Management as directed by the Chief Administrative Officer.

Adhering to the above noted Code sections will help assure that the proposed policy is adhered to.

Similarly, Supervisors/Managers will be required to ensure that communications outside an employee's regular hours of work occur within the parameters of the proposed policy.

This policy is coming forward to Council at this time due to the legislative requirement to have such a policy in place by June 2, 2022. This policy will be used in conjunction with other policies/procedures that will be introduced over the next few months. The City continues to experience difficulty attracting and recruiting appropriate candidates for position vacancies. The future policies/procedures will address further work/life balance issues that will be helpful in attracting and retaining potential candidates, as well as remaining competitive with such practices at other municipalities.

This policy was created after discussion at an Ontario Municipal Human Resources Association information session regarding items to be included in the legislated policy. The session included approximately 90 participants from other municipalities who will be preparing very similar policies to meet the mandated legislative requirement.

Financial Impact

There is no financial impact regarding the adoption of the policy.

Consultation

This policy was provided to the Senior Leadership Team (SLT) for review and SLT are supportive of this policy.

Economic Development Impact

There is no direct economic development impact associated with the recommended motion.

Communications Plan

Once this policy has been adopted by Council, it is a requirement that the policy be provided to all employees within 30 days.

Relation to Formal Plans, City of Orillia Policy Manual and/or Guiding Legislation

2019 City of Orillia's Strategic Plan:

- Goal 1.3 – Quality of Life – Actively pursue a welcoming, caring and accessible community.

City of Orillia Code of Conduct sections 27.12.3. and 27.12.4, as referenced above.

Conclusion

Provincial legislation has been passed that requires employers enact policies that support the right of employees to disconnect from work after normal hours of work. Policy 5.7.1.5. ensures that the City meets the requirements under Bill 27.

Prepared by:
Lori Bolton, Director of Human Resources

Approved by:
Gayle Jackson, CAO

Attachments:

- Schedule "A" – City of Orillia Policy 5.7.1.5.

CITY OF ORILLIA POLICY MANUAL

Part	5	Human Resources	5.7.1.5.
Section	7	Administrative Policy	
Sub-Section	1	Guidelines	
Policy	5	Employees Disconnecting From Work	

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PURPOSE

The health and wellbeing of City employees is of the utmost importance and the City encourages and supports employees to prioritize their own wellbeing. Disconnecting from work is vital for a person's wellbeing as well as sustaining an appropriate work-life balance.

The City recognizes that every employee has the right to, and should, disconnect from work outside of their normal working hours unless there is an emergency or agreement to do so in such incidents as designated and compensated for being on standby or on-call or as included in an employee's job description.

The City of Orillia (the City) has an obligation under Provincial legislation (Bill 27) as an employer that employs 25 or more employees to provide a written policy addressing the matter of disconnecting from work.

SCOPE

This policy applies to all employees of the City, including full-time, part-time, contract, casual, and students, although it is primarily intended for employees who can remain connected to the workplace outside their regular hours of work because of their use and/or access to their personal and/or City-issued technology, including through remote work/hybrid work arrangements.

DEFINITIONS

Disconnecting From Work

Not engaging in work-related communications, including emails, telephone calls, video calls or the sending or reviewing of other messages, so as to be free from the performance of work outside the employer's normal working hours.

Hours of Work

Includes core hours of work for a Department/Division based on operational requirements and which may include evening and weekend shifts.

Includes scheduled on-call and standby hours, as outlined in collective agreements and includes alternative hours of work as agreed to by an employee and their Manager/Supervisor.

CITY OF ORILLIA POLICY MANUAL

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Emergency

A situation or impending situation that requires timely or immediate attention and/or action.

Unforeseen Circumstance(s)

An unforeseeable incident or occurrence that unless addressed can reasonably lead to an adverse impact on the City's services, programs and /or impacts the health and safety of employees or the community.

Work

Executing employment duties and/or responsibilities including but not limited to engaging in work-related communications, including telephone calls, text messages, emails, and video calls.

PROCEDURE

Employees have the right to disconnect from work outside of their regular hours of work. This applies to employees working core hours or alternative hours. Should an employee have concerns surrounding their working time or an inability to disconnect from work, it is important to bring this to the attention of their Manager/Supervisor to resolve any concerns.

Managers/Supervisors will first contact employees who are on-call and/or on standby for emergencies, unforeseen circumstances and/or operational requirements, wherever possible, as outlined in the applicable collective agreements.

Employees may need to be occasionally contacted outside of their hours of work if an emergency or an unforeseeable circumstance arises, and/or when operational requirements arise. This contact will be made through communication methods established between the Manager/Supervisor and the employee.

Where a Manager/Supervisor communicates outside an employee's regular hours of work and no immediate response is required, employees should not feel they need to respond until their next scheduled hours of work. All employees should be mindful when sending work-related emails, texts, and telephone calls recognizing an employee's regular hours of work.

There may be situations where employees voluntarily wish to communicate with another employee for work-related purposes outside of their normal working hours and this policy would not apply in those situations.

CITY OF ORILLIA POLICY MANUAL

Part	5	Human Resources	5.7.1.5.
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Employees should use communication methods such as out-of-office alerts, voice messages and calendar settings to indicate their hours of work. Employees are encouraged to use other technologies, such as 'delayed send' emails, where their hours of work may not coincide with a colleague's hours of work.

Employees who are excessively contacted while exercising their right to disconnect from work are encouraged to discuss the matter with their Manager/Supervisor, General Manager/Director, and the Director of Human Resources.

RESPONSIBILITIES

To build a culture where employees feel supported to disconnect from work. It is important to recognize that everyone has obligations, and a joint approach is required as outlined below:

Managers/Supervisors

- Respecting an employee's right to disconnect from work by not routinely emailing or calling outside the normal hours of work, except in the event of an emergency and/or when operational requirements require contact through communication methods established with the employee directly or through the appropriate collective agreement.
- Following on-call and standby processes, where applicable, for emergencies and unforeseen circumstances.
- Where on-call and/or standby employees are not available, establishing appropriate communication methods with employees for emergencies and unforeseen circumstances.
- Not penalizing an employee for acting in compliance with this policy.
- Role modelling appropriate disconnect behaviours after their own regular hours of work finish for the workday.
- Scheduling and using allotted annual vacation entitlements.
- Activating out of office notifications when away for an extended period that indicates the start and end date of the leave period and who to contact.

Employees

- Reading and acknowledge the policy.
- Performing the required daily and weekly hours of work as specified for their position which includes any on-call or standby requirements of their role.
- Scheduling and using allotted annual vacation entitlements.
- Discussing with their Manager/Supervisor if being contacted repeatedly while exercising their right to disconnect from work.
- Activating out of office notifications when away for an extended period that indicates the start and end date of the leave period and who to contact.

CITY OF ORILLIA POLICY MANUAL

Part	5	Human Resources	5.7.1.5.
Section	7	Administrative Policy	
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Human Resources

- Providing a copy of the written policy to each employee within 30 days of preparing or amending this policy.
- Providing a copy of the written policy to every new employee at the time of orientation with 30 days of the date of commencement of employment.
- Ensuring that Managers/Supervisors and employees are aware of, and comply with, related legislation in all jurisdictions such as the *Employment Standards Act, 2000* and applicable collective agreements.
- Supporting problem solving where challenges are experienced in disconnecting from work.

COMPLIANCE

In accordance with the City policies, collective agreements and applicable legislation and policies, Managers/Supervisors, General Managers/Directors and the Human Resources Department will collaboratively work with employees to resolve issues related to disconnecting from work to ensure all employees experience an appropriate work-life balance.

(Council Resolution and Date)