

CITY OF ORILLIA

TO: Council – October 22, 2021
FROM: Environment and Infrastructure Services
DATE: October 15, 2021
REPORT NO: EIS-21-14
SUBJECT: **Climate Change Action Plan – Project Update**

Recommended Motion

THAT Report No. EIS-21-14 be received as information.

Purpose

The purpose of this report is to provide an update to Members of Council regarding the Climate Change Action Plan capital project. The culmination of work completed to date has produced a draft Corporate Climate Action Plan (CAP) and corporate emission reduction target options for review and discussion. An overview of the findings of the report will be presented, in addition to a strategic analysis of the emission reduction targets and corresponding low-carbon pathways that would be necessary to achieve them.

This report does not seek Council direction at this time. Instead, the opportunity will be provided to review the information in a fulsome manner and bring forward contemplated options for Council direction at a subsequent meeting. The Community Climate Action Plan (CCAP) is anticipated to come before Council in early 2022. Together these Plans, if adopted, will serve to tackle the ambitious challenge of climate change at the local level.

Background & Key Facts

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

- “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) in order 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.
- “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.
- “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.
- “IPCC” - The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body and foremost expert for assessing the science related to 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.
- “Net Zero” - Net Zero Emissions refers to releasing either no greenhouse gas emissions or offsetting emissions (via GHG-storing initiatives) such that the resulting effect 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.
- “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 CO₂e.
- “CO₂e” – “Carbon dioxide equivalent” or “CO₂e” 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 ‘CO₂e’ distills the total warming impact of all GHGs into a single quantifiable unit. The quantity of CO₂e 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.
- “Evidence-Based Target” – is a GHG reduction target that is designed to decarbonize as quickly as possible while taking into consideration the realities in 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.

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 - 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.
- Currently, over 400 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.
- 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 also key staff through the City Staff Working Group.
- Broader public engagement focused primarily on the Community Plan was launched in September 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 will form a comprehensive strategy for responding to climate change, titled as "Orillia's Climate Future".
- Prior to development of the plans, the City moved forward with key projects to take action locally on climate change. As part of the engagement and education components of the project underway, past initiatives undertaken by the City have been promoted. These initiatives include:
 - 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 produced by streetlights.

- Upgrade of lighting at City facilities to LED throughout 2020 – 2021.
- Environmentally sustainable building materials utilized as part of the Orillia Waterfront Centre construction and Orillia Public Library being a LEED Silver certified building with plenty of sustainable features.
- Solar panels on top of recreation facilities that generate a total of 600 kW of electricity.

Local Climate Action and Emission Reduction Targets

- To date, 2,050 jurisdictions in 35 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, 517 municipalities have declared a climate emergency, including area municipalities the City of Barrie, Town of Gravenhurst, Town of Huntsville, and District Municipality of Muskoka.
- 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 what is currently recognized as best practice in climate 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.
- 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 to the Cities Race to Zero Campaign. This campaign is aimed at encouraging businesses, municipalities, and all sectors to rally leadership and support to support a resilient,

zero carbon recovery. The United Nations Climate Change Conference (COP26) is set to occur October 31 – November 12, 2021.

- Table 1, below, has been prepared to illustrate an overview of municipal comparator emission reduction targets.

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	-40%	Net Zero (2045)	2019	2021
Toronto	-65%	Net Zero	1990	2019
District of Muskoka	-50%	Net Zero	2018	2020
Hamilton	-	Net Zero	N/A	2019
Caledon	-36%	Net Zero	2016	2020
Aurora	-16% (2023)	-80%	2018	2021
Tiny Township	-30% (2028)	Not specified	2015	2018
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 Council directed staff to create mitigation plans that would search for ways of reducing the City's carbon emissions with a goal of net-zero emissions by 2050.

Options & Analysis

Option 1 - Recommended

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Consistent with the purpose of the report, different options with respect to corporate emission reduction targets will be presented for Council's information. A decision regarding which reduction target and path forward will be presented at a future Council Committee meeting. Options presented for consideration at this stage in the report are framed as resolutions, to assist Members of Council in understanding how options will be brought forward for decision-making in the future meeting.

Business as Usual (BAU) Scenario - Overview

Understanding the City's current corporate emissions is the first step towards moving forward with an emission reduction target. The BAU scenario extrapolates from past emissions to model what emissions will look like in the future should reduction targets not be pursued.

It should be noted, in addition to the corporate scenario a community wide BAU will be presented as part of the CCAP. As illustrated by Figure 2, if the City does not set GHG emission reduction targets and continues to emit under a BAU scenario the City's emissions over time will continue to increase. In 2018 the City's buildings and fleet emitted 2,400 tCO₂e of carbon dioxide. If no action is taken, it is projected that the same inventory would emit roughly 3,150 tCO₂e (growth of 30%) by 2040. This will not achieve emission reductions required to be in line with the IPCC and Federal targets. Although a relatively small percentage of the community's total emissions (~1%) are produced directly by the City, the City is in a position with both direct and indirect control over emissions generated in the community itself. The share of community emissions in this context are estimated to be approximately 50% across Canada. This concept will be brought forward to Council with the CCAP; however, it is important to highlight the opportunity for the City to lead by example when it comes to GHG emission reduction targets to catalyze action within the community.

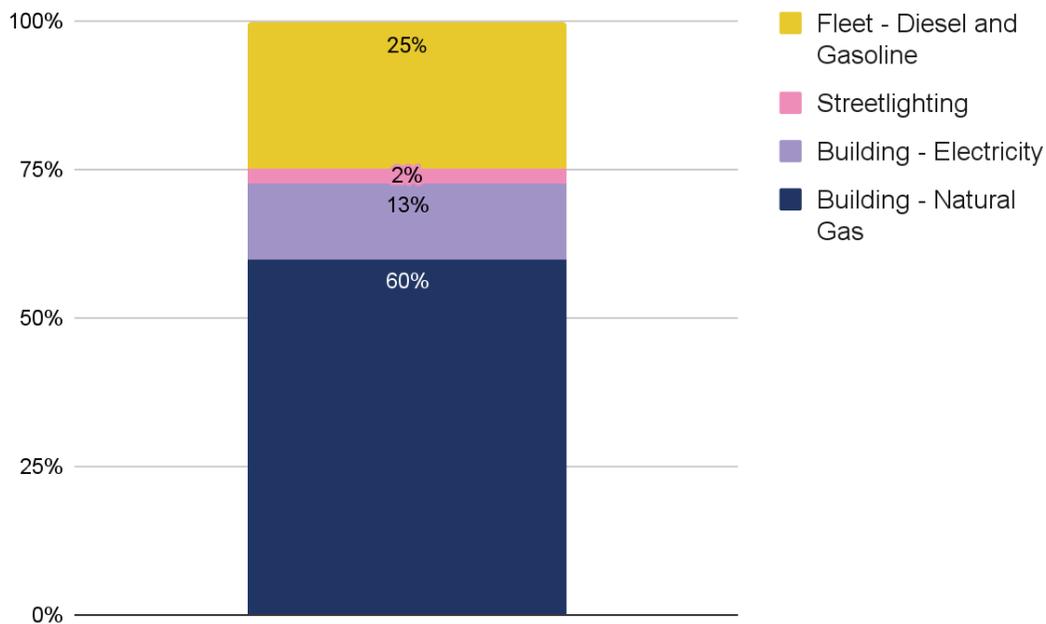


Figure 1: Presents baseline year (2018) corporate GHG emissions percentage by source.

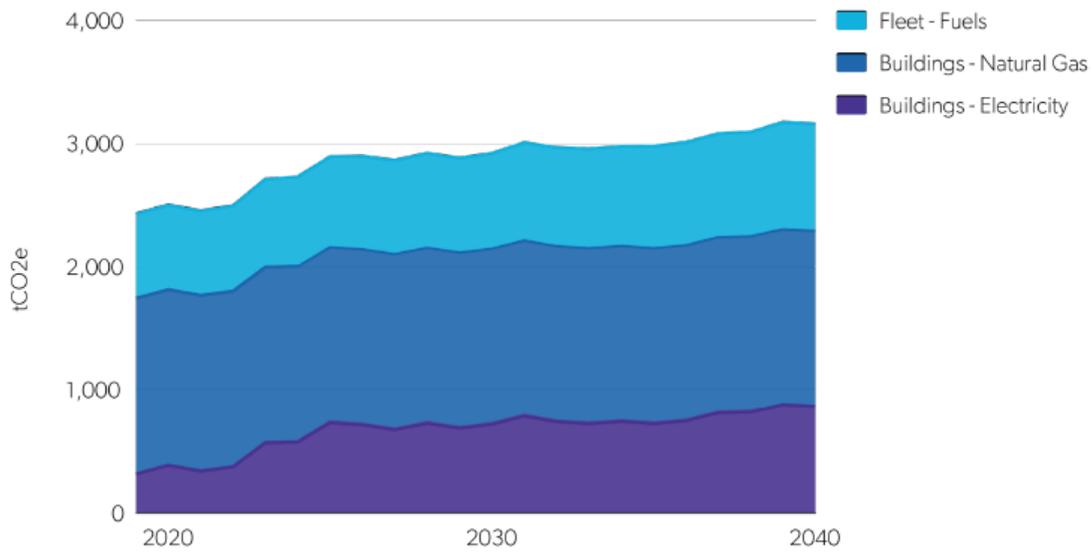


Figure 2: Modelling future corporate GHG emissions under a BAU scenario through to 2040.

Emission Reduction Targets

The options presented below provide Council with different GHG emission reduction targets to act locally on climate change. The CAP report presented in Schedule “A” is in draft form at this time. Bringing the report forward in draft form allows Members of Council the opportunity for discussion and input towards the final report. The final report will be prepared to align with Council’s approved Corporate GHG emission reduction target (to be decided upon at a future meeting) and is anticipated to be brought forward as a final report along with the CCAP in early 2022.

To allow the presentation of a draft report at this stage, the Option A emission reduction target specified below is included in the report. It should be noted that not all emission reduction targets are created equal. Targets that achieve the greatest reduction possible in the shortest timeframe (i.e., 2030) will ultimately achieve the lowest overall emissions throughout the course of the timeline. As a result, considerable focus on near-term actions have been included in the science-based target methodology and IPCC report.

With all targets, there is a great amount of uncertainty surrounding external factors that may affect the City’s ability to achieve the target in the timeframe specified. Supply chains, technology availability as well as other levels of government influence through policy, code and regulation changes in addition to funding options will all play a significant role as implementation of the target progresses. Having a target provides accountability and a monitoring mechanism so that moving forward strategic focus and resources are applied in line with the commitments required of the target.

Target setting is first being considered at the corporate level. This is in-line with the Partners for Climate Protection program and would allow the City to have completed Milestones 1 through 3 by finalizing the corporate target and plan. Endorsing a community target and community plan will also complete Milestones 1 through 3 on the community action side. Milestone 4 is defined as implementing the plan and Milestone 5 is monitoring progress over time. All target options provided below would allow the City to advance through the program with the timing required based on the initial commitment to join the program (Milestones 1 – 5 within 10-years).

All options below also contemplate providing a copy of the resolution to the provincial and federal government as a means of continuing to advocate for the importance of climate action at other levels of government.

Option A

THAT the draft Corporate Climate Action Plan prepared by Sustainability Solutions Group (SSG) be 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 funding associated with priority actions and projects outlined within the Corporate Climate Action Plan be referred to the 2022 Budget Process, and future year budget processes;

AND THAT staff be directed to continue work focused on Corporate Climate Action Plan implementation and report back to Council annually with an update of the annual corporate GHG inventory, progress towards reduction targets and integrating carbon budgeting and climate change action within City processes;

AND THAT a copy of this resolution be forwarded to: FCM, Partners for Climate Protection, Global Covenant of Mayors, Ministers of Environment both Federal and Provincial.

This option allows the City to move forward with an evidence-based emission reduction target, in line with the recent IPCC report. It would also position Council to realize the strategic priority of moving towards leadership in local climate change action. For these reasons, this Option was most supported by the staff and consulting team on the project. When evaluating low-carbon pathways and actions, the requirement to achieve a greater than 50% reduction in emissions by 2030 was less feasible provided the current technology and operational realities of the City. Consideration was given to existing age of buildings and corresponding disruptions that could be caused by undergoing deep building retrofits. Overall, addressing reductions on a faster timeline

than net-zero by 2050 allows the City to still be considered a leader in municipal climate action and driven to achieve reductions in-line with IPCC's latest report. Upon reviewing emission reduction target setting across comparator municipalities, Option A would certainly position the City as a leader in climate change action, especially considering its population size.

The CAP is a strategic level plan, which will require time to focus on transitioning towards implementation. Should this option be approved at a future meeting, staff would bring forward several priority projects to the 2022 budget process to ensure the first steps towards achieving the corporate emission reduction target are taken. Staff within the Property and Environmental Sustainability Division will focus throughout 2022 on refining the implementation strategy for achieving the established corporate targets. Additional projects, as well as staffing resources, will be evaluated and brought forward to future budget processes. It is also recommended that the Staff Working Group established to provide input throughout the development of the CAP continue as a conduit to gather input and collaboration across Departments within the City to plan for implementation.

Pending the outcome of the CCAP, staff will also be able to evaluate staffing impacts and implementation considerations throughout 2022.

Option B

THAT the draft Corporate Climate Action Plan prepared by Sustainability Solutions Group (SSG) be adopted in principle;

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

- **70 - 75% reduction by 2030, below 2018 levels; and**
- **100% GHG reduction by 2045, below 2018 levels;**

AND THAT funding associated with priority actions and projects outlined within the Corporate Climate Action Plan, in addition to staffing specifically for 2022, be referred to the 2022 Budget Process, and future year budget processes;

AND THAT staff be directed to continue work focused on Corporate Climate Action Plan implementation and report back to Council annually with an update of the annual corporate GHG inventory, progress towards reduction targets and integrating carbon budgeting and climate change action within City processes;

AND THAT a copy of this resolution be forwarded to: FCM, Partners for Climate Protection, Global Covenant of Mayors, Ministers of Environment both Federal and Provincial.

Achieving emission reductions in-line with the guide for cities pursuing a science-based reduction target would be very ambitious for Orillia at this time. While there would certainly be tremendous local benefit with this approach, the investment required (both financial and staffing resources) would be extremely difficult to fund given the City's current financial position and the funding currently available through other levels of government. The financial impact of each option is further discussed within the Financial Impact Section, under the "Resource Summary" Table. Furthermore, there are constraints associated with aspects required to achieve this target that are not within the City's direct control and will likely require additional time to become available. For example, this includes supply chain availability of fleet replacement vehicles and net-zero contractor availability for the high volume of deep building retrofit projects.

Immediate staffing resources would be required to begin implementation in addition to finding a way to accelerate near term actions or pursue offsets/options to address the gap in actions required to achieve the 70 – 75% emission reductions specified by 2030.

Option C

AND THAT the draft Corporate Climate Action Plan prepared by Sustainability Solutions Group (SSG) be adopted in principle;

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

- **40 – 45% GHG reduction by 2030, below 2018 levels, and**
- **100% GHG reduction by 2050, below 2018 levels;**

AND THAT funding associated with priority actions and projects outlined within the Corporate Climate Action Plan be referred to the 2022 Budget Process, and future year budget processes;

AND THAT staff be directed to continue work focused on Corporate Climate Change Action Plan implementation and report back to Council annually with an update of the annual corporate GHG inventory, progress towards reduction targets and integrating carbon budgeting and climate change action within City processes;

AND THAT a copy of this resolution be forwarded to: FCM, Partners for Climate Protection, Global Covenant of Mayors, Ministers of Environment both Federal and Provincial.

Recent research and communications from the science and environmental advocacy community surrounding climate change action is clear – achieving a net zero (or 100% reduction in GHG emissions) by 2050 is no longer sufficient to limit warming to 1.5° Celsius. Setting this as an emissions reduction target would support positive climate change action planning work moving forward but would not position the City to be

considered a leading municipality in climate action. Disruption to City facilities will likely occur as deep building retrofits occur. As the least ambitious target, this would also result in projects being more spread out over time which in turn would minimize disruption compared to the other options being considered.

Early interventions (by 2030) to reduce emissions have been demonstrated through the IPCC's report as being key to limiting warming. This target is on par with the revised target committed by the federal government earlier this year. It should be noted that this commitment was made prior to the IPCC report release and is not in line with the report or the requirements of a science-based target. In addition, the baseline year for the federal target is 2005, which is also not in line with IPCC and science-based target guidance. Under Option C staff would still advise that 2018 be used as the emission baseline year.

A summary comparing the strengths, weaknesses, opportunities, and threats of each of the emission reduction targets has been compiled to help summarize the information presented for each of the targets above.

Options A – C: SWOT Summary



	Option A "Evidence-Based Target"	Option B "Science-Based Target"	Option C "Federal Target"
Emission Reduction Target	50% reduction by 2030. 100% reduction by 2040.	70 – 75% reduction by 2030. 100% reduction by 2045.	40 – 45% reduction by 2030. 100% reduction by 2050.
Strengths	Exceeds current Federal emission reduction commitment, on par with IPCC requirements. Cost savings – avoiding future costs of doing business (i.e., carbon tax).	Meets the criteria to be considered a true "science-based" target. Cost savings – avoiding future costs of doing business (i.e., carbon tax).	Meets current Federal emission reduction commitment.
Weaknesses	Does not meet "science-based" target criteria for 2030.	Pathway not available at present to achieve emission reduction target (gap based on modelling).	Does not achieve IPCC requirements. Not realizing maximum cost savings of doing business (i.e., carbon tax).
Opportunities	Leader in climate change action. Trend towards more ambitious Federal target – already in-line.	Leader in climate change action. Trend towards more ambitious Federal target – already in-line.	Longer implementation horizon, disruption mitigated to City facilities.
Threats	Supply chain/technology availability. Disruption to City facilities, corresponding services.	Contractor availability to deliver services required. High disruption to City facilities, corresponding services (prior to 2030). Supply chain/technology availability.	Supply chain/technology availability. Trend towards more ambitious Federal target, may need to accelerate City target later.

Financial Impact

As part of the CAP, high level cost estimates were provided to achieve a net-zero climate future for the Corporation of the City of Orillia (full details of the financial assumptions are provided within the report in Schedule “A”). 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, electricity storage equipment, etc. It should be noted that for the purposes of the information presented in this report the financial information was based on Option A. Updates and revisions to the costing will be pursued through finalizing the report in-line with Council’s emission reduction target (to be decided upon at a future meeting). Most of the cost associated with moving towards net-zero is attributed to:

- Deep-building retrofits to support lower energy consumption, and transition towards electrification.
- Fleet electrification.
- Clean electricity strategies (i.e., local renewable power generation) to potentially off-set 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 no funding allocated as part of the current 10-year capital plan. However, for fleet specifically there is currently \$1.2 million annually allocated towards replacement. Should Option A be pursued in the future, 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 can be evaluated and part of the assessment. It should be noted that if Option B is pursued, immediate staffing resources will be required and brought forward to Budget 2022. Option C may not have a staffing resource impact but will be further evaluated if adopted by Council.

Furthermore, costs and resource needs may also be brought forward through the Community Climate Action Plan. For example, should the CCAP seek out more stringent green development criteria for new residential buildings, there will be a corresponding impact to the local community and actions for the City to implement. The amount of staff time and resources will be specific to the action. More information with regards to this topic will be highlighted in the financial impact section when the community plan is brought forward. It is important to distinguish that the City will be the champion for the community plan but will not be the only party having influence over the plan and tasked with implementing the plan.

The cost of achieving net-zero across all options will equate to approximately the same cost (excluding staffing); however, depending on the urgency of the target those costs will be spread over different time horizons. A summary of the costs and resources involved has been compiled for each of the options.

Options A – C: Resource Summary



	Option A "Evidence-Based Target"	Option B "Science-Based Target"	Option C "Federal Target"
Emission Reduction Target	50% reduction by 2030. 100% reduction by 2040.	70 – 75% reduction by 2030. 100% reduction by 2045.	40 – 45% reduction by 2030. 100% reduction by 2050.
Building Pathway	\$27,900,000	\$27,900,000	\$27,900,000
Fleet Electrification Pathway	\$12,300,000	\$12,300,000	\$12,300,000
Renewable Energy Pathway	\$12,600,000	\$12,600,000	\$12,600,000
Staffing Resources	Staffing resources will be required – to be evaluated over 2022 and brought forward to Council as part of 2023 budget process.	Staffing resources will be required – option with greatest impact to near-term staffing needs (2022 budget impact).	Additional staffing resources may not be required.
Estimated Total Cost	\$53,000,000	\$53,000,000	\$53,000,000
Years to Implement	18	8	28
Estimated Cost Per Year	\$2,940,000	\$6,625,000	\$1,890,000
<i>*Estimated cost per year presented in 2018 dollars, exclusive of staffing resource costs. Strategic level cost estimates only.</i>			

While the estimated capital costs are outlined above, it is also important to identify that the longer actions to reduce GHG emissions take to implement the greater the cost of doing business becomes. Factors such as carbon tax increases, will contribute to additional costs applicable for fossil fuel/GHG emitting pathways. As a result, by taking action sooner, greater cost savings can be realized that may be of assistance funding capital costs. Projections indicate that 2027-2028 is anticipated to be when cost of gasoline factoring in carbon price will exceed that of electricity (per unit basis) and natural gas factoring in carbon price will exceed that of one unit of heating with an electric heat pump.

The table below provides a very high-level illustration of the combined estimated investment costs, factoring into carbon costs avoided and fuel savings as a result of moving forward with the emission reduction target presented as Option A. The investment cost across the target horizon of \$53,000,000 declines to \$27,000,000 when these are included in the analysis.

	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 energy¹⁹	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
TOTAL CARBON COST SAVINGS					5.6
20-YEAR TRANSITION					
TOTAL					27

Source: Draft Corporate Climate Action Plan, SSG. October 2021.

While the costs required for buildings and renewable energy are not currently captured on the City's capital forecast, annually \$1.2 million is allocated towards fleet replacement. Based on the financial modelling completed it is anticipated that this funding may be sufficient to replace existing fleet vehicles with an electric alternative over time. Certain types of vehicles may require additional funding; however, this will continue to change in the near-term as additional options become available. However, funds will be required to upgrade electrical servicing and to deliver charging infrastructure to support the new fleet. These costs are unknown at this point in time and will continue to be evaluated.

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 projects of late. Staff would continue to seek out all opportunities available to offset the funding required to support implementation of the CAP. In addition, it is recommended that the City advocate to senior levels of government for funding to support climate action in the City of Orillia.

Based on the City's current financial situation, it has been communicated to Council that with the current state of reserves and expected asset management investments a much larger investment will be required to bring many items up to the level required. There will be opportunities to leverage asset management requirements with upgrades and retrofits required to achieve emission reduction targets. However, overall a significant investment will be required of the City and will provide pressure associated with timing, prioritizing projects, asset renewal and underfunded projects.

Consultation

The full results of the public survey completed primarily for the Community Climate Change Action Plan will be presented to Council during the report coming forward in early-2022.

Survey results were utilized with respect to the CAP to determine the support locally for climate action guided by science-based targets. Of the 247 survey respondents who responded to this specific question, 86% either agreed or strongly agreed with climate action being guided by science-based targets. This means that 86% of interested and affected people, who live in Orillia and responded to the survey, provided this informed opinion with respect to target setting.

Economic Development Impact

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

Communications Plan

The City of Orillia communications team has worked closely with EIS and SSG on providing a diverse “Climate Future” communications and engagement plan to help inform the public about the CAP and CCAP and gain their input. Ongoing communications and engagement efforts will continue, including updating the project webpage at orillia.ca/climatefuture, utilizing social media for updates and education, and providing project information through various communications channels, such as the Weekly Bulletin.

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*
- City of Orillia Strategic Plan, 2019

Conclusion

Staff is providing a project update with respect to the Climate Change Action Plan project. The draft Corporate Climate Action Plan and corresponding emission reduction target options will be reviewed in full so that questions and discussion can occur. Council direction will be sought at a future meeting.

Schedules

- Schedule “A” – Draft Corporate Climate Action Plan, October 2021

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