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**Subject:** Climate Change Update

**Report to:** Planning and Economic Development Committee

**Report date:** Wednesday, May 10, 2023

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## **Recommendations**

1. That the recommended corporate greenhouse gas (GHG) emissions reduction target of an 80% emissions reduction below 2018 levels by 2050 **BE APPROVED**; and
2. That a copy of report PDS17-2023 **BE CIRCULATED** to the Local Area Municipalities (LAMs).

## **Key Facts**

- Climate change is a global threat to infrastructure, human health, and biodiversity. Without significant GHG emissions reduction, 1.5°C warming will increase climate hazards and risks to ecosystems and humans. Setting GHG emissions reduction targets is crucial to mitigate effects and prevent risks.
- This report updates on the Region's Climate Change Emergency Declaration of 2021, outlines staff progress on climate change action, and recommends a corporate GHG emissions reduction target.
- Niagara Region joined the Partners for Climate Protection program in 2009, a five-step framework to reduce emissions and combat climate change.
- Milestone 1: Completed a corporate emissions inventory (Appendix 3). As well, thoroughly evaluated climate initiatives, and successfully held a climate change summit.
- Milestone 2: Recommends a corporate GHG emissions reduction target of 80% below 2018 levels by 2050. This would contribute to climate change mitigation and align Niagara Region with other municipalities working towards Canada's Net-Zero carbon emissions goal.
- Next steps include developing a Corporate Climate Change Action Plan to achieve the target.

## **Financial Considerations**

In 2021, Council approved a two-year program and funding initiative (CA0-21-2021) to advance the commitments outlined in the resolution. This funding was directed towards the creation of a Climate Change Specialist position and the allocation of consulting funds to develop a comprehensive Corporate Climate Change Action Plan. The initiative also encompasses the organization of an annual Climate Change Summit and other relevant programs, which are scheduled to be carried out in 2023.

In 2023, Council approved a budget reduction of \$50,000 to the Climate Change portfolio. Despite this, some planned initiatives for the year, such as the Corporate Climate Change Action Plan and the annual Climate Change Summit, are still being pursued with the remaining funds. However, the reduction will influence other intended initiatives, including the development of the Community Energy Plan/Municipal Energy Plan. As part of preparations for the 2024 budget, staff will assess the resources needed to carry out various climate change projects and initiatives. Based on this evaluation, specific areas will be identified where additional funding is necessary. Notably, there are currently no earmarked funds for the Climate Change portfolio, including the Climate Change Specialist role for 2024.

## **Funding and Partnerships**

Regional staff will work to secure financial support from a diverse array of sources to fund climate change projects and initiatives, including the Green Municipal Fund (GMF) and various governmental entities. In addition, the Region is investigating alternative funding avenues, including provincial government partial funding for Community/Municipal Energy Planning, and partnerships with utilities, institutions, and private enterprises.

## **Analysis**

### **2021-2022 Climate Change Action Progress**

Climate change is a local, national, and global issue affecting individuals and systems around the world, such as infrastructure, human health, and biodiversity. If global GHG emissions are not significantly reduced by 2030, projections indicate that we would globally reach 1.5°C warming in the near-term, which would cause increases in multiple climate hazards and present multiple risks to ecosystems and humans.

Progress has been made within the 2021-2022 year to address climate change. This can be attributed to the efforts made by Regional Council and staff to move the needle implementing key actions and reducing greenhouse gas emissions. Notable initiatives include (a full-detailed list of initiatives can be found in Appendix 1):

1. Regional Council Climate Emergency Declaration
2. Climate Projections for Niagara Region Report
3. Niagara Official Plan Climate Change Policies
4. Corporate Climate Change Working Group (CCWG)
5. Long-term Region Climate Change Action Summary (a full summary is found in Appendix 2):
  - Examples: the Welland Waste Water Treatment Plant Boiler Upgrade and the 3450 Merritville Hwy, Thorold. EMS, LEED Certified
6. 2022 Niagara Climate Change Summit
7. Niagara Climate Change Action Network (NCCAN)
8. Niagara Climate Change Municipal Community of Practice (NCCMCP)

As we look to 2023 and beyond, it is evident that significantly more work needs to be done at Niagara Region to combat climate change. Municipalities are already experiencing the impacts of climate change and are uniquely positioned to take action.

### **Accelerating Climate Change Action at the Region**

#### **Partners for Climate Change Protection Program (PCP)**

Niagara Region has been a member of the PCP program since 2009. The program consists of a five-step milestone framework that guides municipalities as they take action against climate change by reducing emissions.

The five milestones are:

1. Creating a baseline emissions inventory
2. Setting emissions reduction targets
3. Developing a local climate action plan/strategy
4. Implementing a local climate action plan/strategy
5. Monitoring and reporting results

Milestone 1: Corporate GHG Emissions Inventory (complete)

In October 2022, staff began the process of completing a GHG emissions inventory for corporate operations and services. This included emissions generated by buildings, outdoor lighting and traffic signals, water and wastewater, waste and fleet. Members of the Climate Change Working Group (CCWG), representing various departments across the Region gathered and provided data to contribute to the development of the Niagara Region corporate GHG Emissions Inventory (Appendix 3). 2018 was selected as the baseline year for the emissions inventory, as it is the most recent year with a complete dataset. The corporate GHG Emissions Inventory helps track and anticipate emissions, energy use and spending, and measure progress over time. Having a forecast also allows to project future emissions based on assumptions about population, economic growth, fuel mix, and technological change.

The GHG Emissions Inventory summarized that in terms of energy dollars, Niagara Region spent \$18,350,788 on energy in 2018. As shown in Figures 1, 2, and 3, energy used for power and heating in Niagara Region's building portfolio were the highest contributors to emissions and energy consumption, accounting for 56% of emissions, 47% of energy use, and 41% of energy costs. The second largest contributor was the water and wastewater sector, accounting for 28% of emissions, 45% of energy use, and 47% of energy costs. The municipal fleet contributed 16% to total emissions, 7% of energy use and 9% of energy costs. Outdoor lighting and traffic signals accounted for less than 1% of emissions, 1% of energy use, and 3% of energy costs.

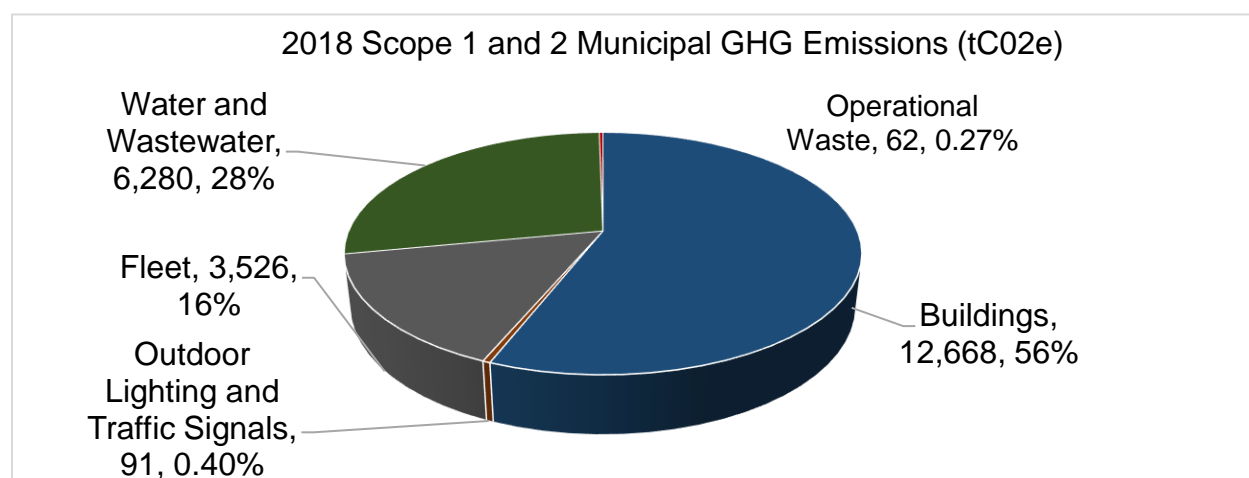


Figure 1: Scope 1 and 2 municipal GHG emissions by sector in 2018

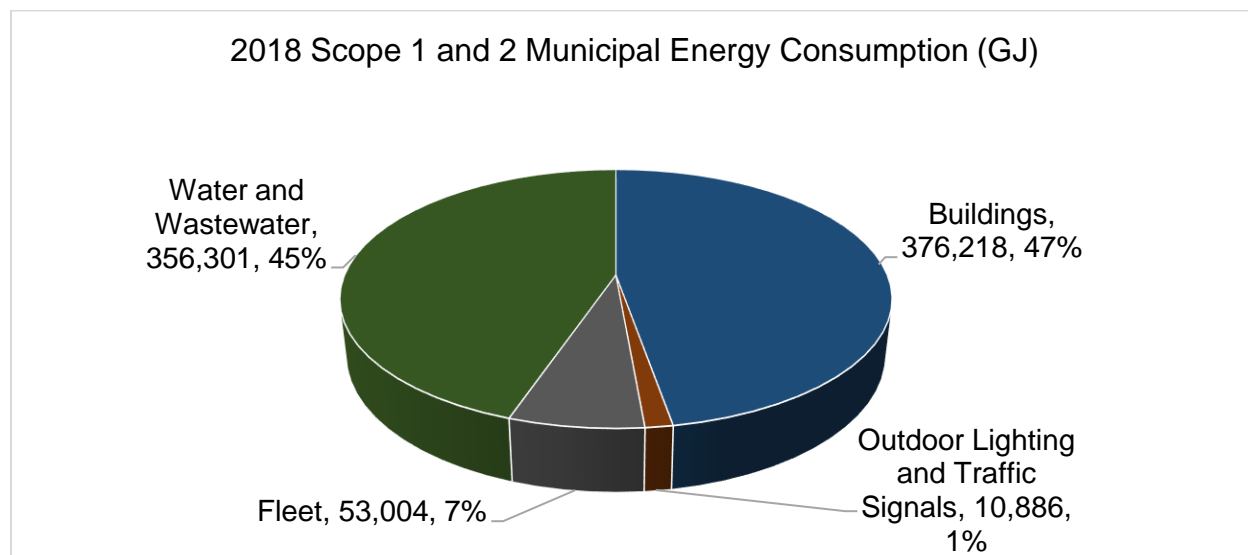


Figure 2: Scope 1 and 2 municipal energy consumption by sector in 2018

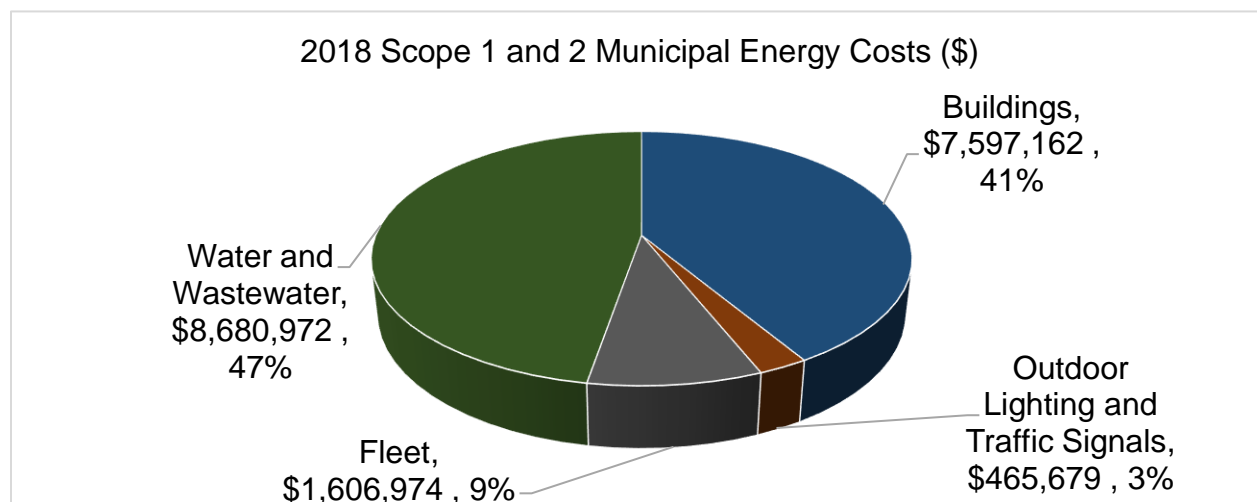


Figure 3: Scope 1 and 2 municipal energy costs by sector in 2018

## Milestone 2: Corporate GHG Reduction Targets

Having garnered an understanding of our corporate emissions via the corporate Emissions Inventory, the subsequent step within the PCP framework is to establish corporate emissions reduction goals. Corporate GHG emissions reduction targets set the foundation and direction for our emissions reduction efforts. Setting targets is essential to developing a Corporate Climate Change Action Plan, as the strategy will

determine how to meet the established targets, identify priority areas, propose recommended actions, and secure funding.

To better align with the Intergovernmental Panel on Climate Change (IPCC) science, and the Niagara Climate Change Summit Call to Action, staff recommends that Niagara Region set the recommended corporate emissions reduction target of:

- 80% corporate GHG emissions reduction below 2018 levels by 2050.

Despite being an ambitious target, achievement is within our reach. Appendix 4 illustrates the GHG reduction targets set by other Ontario municipalities, some of which match or even surpass our proposed target. Furthermore, the proposed target is open to future review and updates. It serves as an excellent starting point and will be monitored and evaluated over time to ensure its efficacy.

For the Region, achieving a corporate target of 80% GHG emissions reduction will require a comprehensive and integrated approach to reducing emissions across all sectors, including buildings, fleet, water and wastewater and waste. For an 80% GHG reduction in buildings by 2050, the Region could take practical steps such as retrofitting existing Regional buildings with energy-efficient technologies and materials, promoting the use of low-carbon energy sources, and incorporating sustainable design principles in new construction projects. For example, all new Regional buildings should be built with Net-Zero standards (Regional case study can be found in Appendix 5). To reduce emissions from water and wastewater systems, the Region could invest in renewable energy sources to power treatment facilities, implement water conservation measures, and explore innovative wastewater treatment technologies that minimize emissions. (Regional case study can be found in Appendix 5).

In terms of fleet, the Region could investigate the feasibility to transition the corporate fleet to electric vehicles, implement fuel-efficient driving practices, and explore alternative transportation options, such as public transportation or active transportation for staff. In terms of waste, the Region should investigate alternative waste technologies, and continue to work with staff and residents to educate on the importance of reducing waste.

To achieve an 80% reduction in Corporate GHG emissions by 2050, a collective effort is required from all Regional departments to transition towards sustainable practices and technologies. As previously mentioned, Regional staff will strive to obtain financial support from various sources to finance climate change projects and initiatives. By

leading this transition, the Region can serve as a leader, set an example for other municipalities to emulate, and contribute towards a more sustainable and resilient future for all.

## **Next Steps**

Following the adoption of the recommended corporate GHG emissions reduction targets, a Corporate Climate Change Action Plan will be developed (which will align with the new Energy Conservation and Demand Management Plan [CDMP] 2024-2028), as well as other initiatives, to accelerate climate change work across the region. A full list of initiatives and timelines can be found below with additional details in Appendix 6.

2023-2024 Climate Change Regional Initiatives:

- Niagara Climate Change Municipal Community of Practice (NCCMCP)
- Corporate Climate Change Action Plan
- Niagara Climate Change Action Network (NCCAN)- Community/Municipal Energy Plan Funding
- Host an Annual Climate Change Summit
- Energy Conservation and Demand Management Plan (CDMP) Update

In order for Niagara Region to effectively address and mitigate the impacts of climate change, it is imperative that the recommended corporate targets are fully integrated into the decision-making processes and operations. This requires a comprehensive approach, whereby a climate lens is applied to all relevant aspects of the Niagara Region's services and functions within all departments. By embedding the principles of sustainability and resiliency into the core of the Region's operations, we will be better positioned to effectively address the challenges of a changing climate and create a more resilient and sustainable future for our staff, residents, and community.

## **Alternatives Reviewed**

### **The Cost of Inaction**

Significant changes in our climate have already been seen globally and locally and are expected to become more severe in the future, affecting our natural and built environments. Lack of mitigation and adaptation will have significant negative impacts on municipal government budgets, which support public infrastructure, health care, and other vital services. These costs are expected to increase as the climate continues to

warm, and municipalities must work to gain a better understanding of climate impacts and prioritize adaptive measures to limit costs. Options 1 and 2 serve as alternatives to the prescribed corporate target of an 80% GHG emissions reduction by 2050.

#### Option 1: No set target

Failure to set such a target would lead to a continuation of current emissions levels, exacerbating the impacts of climate change.

#### Option 2: A more ambitious target (Net-Zero)

In contrast, Regional Council could consider a more ambitious corporate target for Net-Zero by 2050 to align with the IPCC science.

### **Return on Investment – Energy Cost Savings**

Upfront costs associated with climate adaptation and mitigation methods provide long-term savings.<sup>1</sup> Implementing energy-efficient technologies and practices can reduce energy consumption, lower energy bills, and avoid potential energy cost increases caused by rising energy prices. Transitioning to renewable energy sources can also protect Niagara Region from the volatility of fossil fuel prices. Failure to implement corporate GHG emissions reduction targets can have implications for Niagara Region regarding carbon pricing and taxes in the long term. Therefore, it is crucial for Niagara Region to set GHG emissions reduction targets to ensure they are financially stable and environmentally sustainable in the long term.

### **Relationship to Council Strategic Priorities**

This report and the recommended GHG emissions reduction targets contribute to and support all of Council's 2019-2022 Strategic Priorities, which include:

- Supporting Businesses and Economic Growth: climate change and increasing GHG emissions will exert economic impact across the globe. Damages caused by climate change will take a toll on the growth of business and the health of the economy in

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<sup>1</sup> Financial Accountability Office of Ontario, 2021. Costing Climate Change Impacts to Public Infrastructure: Building and Facilities



Niagara region. Setting GHG emissions reduction targets will support the economy by planning for a healthier future.

- **Healthy and Vibrant Community:** climate change has an immense impact on public health. Setting and committing to GHG emissions reduction targets will ensure current and future Niagara residents are protected against the dangers of climate change.
- **Responsible Growth and Infrastructure Planning:** Niagara Region is committed to protecting our natural environment. To demonstrating this commitment, ambitious targets for reducing GHG emissions must be set. By investing in sustainable infrastructure, transit, and waste management, the Region will aim to reduce emissions and foster responsible growth.
- **Sustainable and Engaging Government:** setting GHG emissions reduction targets will demonstrate Niagara Region's commitment to being open, accountable, and responsive to the needs of residents.

### **Other Pertinent Reports**

PLN	Climate Projections for Niagara Region, February 15, 2023.
CAO 10-2022	2022 Niagara Climate Change Summit Overview and Next Steps, August 25, 2022.
CAO 21-2021	Climate Change Action Program Update, December 9, 2021.
CAO 6-2021	Climate Change Work Program Update, January 13, 2021

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**Appendices**

Appendix 1	2021-2022 Climate Change Action Progress
Appendix 2	Long-term Region Climate Change Action Summary
Appendix 3	2018 Corporate Greenhouse Gas Emissions Inventory- Summary
Appendix 4	GHG Emissions Reduction Targets- Ontario Municipalities
Appendix 5	Case Study- 80% Greenhouse Gas Reduction by 2050
Appendix 6	2023-2024 Climate Change Regional Initiatives