



REPORT

Council

Meeting Date: October 21, 2024

FROM: Facilities and Construction Management Department
DATE: October 8, 2024
SUBJECT: Energy and Emissions of Town Owned Buildings 5-Year Plan
LOCATION: Town-wide
WARD: Town-wide

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RECOMMENDATION:

That the Energy and Emissions of Town Owned Buildings 5-Year Plan (the Conservation and Demand Management Plan) be received.

KEY FACTS:

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

- The Conservation and Demand Management (CDM) Plan for 2025-2029 (Appendix A) guides the actions of staff to progress toward climate goals related to town owned buildings.
- This is the third iteration of a 5-year Conservation and Demand Management (CDM) Plan, mandated by provincial regulation O.Reg 25/23.
- The town maintains a robust energy management program, implementing numerous cost-effective initiatives that have achieved 10% reductions on average compared to the 2015 baseline.
- The new CDM Plan encompasses three key components: (1) Energy efficiency improvements; (2) Standardize decarbonization in design of new buildings and retrofits; and (3) Explore renewable energy when cost-effective.

BACKGROUND:

The Conservation and Demand Management (CDM) Plan is a 5-year plan for reducing energy use and emissions at town-owned buildings (see Appendix A). This is mandated by provincial regulation [O.Reg 25/23](#). The town created plans for 2015-2019, 2020-2014 and now in 2025-2029.

As part of the town's 2023-2026 Strategic Plan, the priority Environmental Sustainability has a key focus area of climate change mitigation. In 2022 Council adopted a Net Zero Carbon target by 2050 for all corporate activities.

The next 5-year period is very important in making strides toward the goal of Net Zero by 2050. The new CDM Plan identifies strategies for incremental energy reductions and cost-effectively standardizing construction practices that will result in substantial impacts on the town's total emissions. Decarbonization refers to the process of reducing or eliminating carbon emissions from day-to-day operations. This involves reducing energy use and transitioning to electric heating (air source heat pumps, geothermal systems, etc.) in place of standard natural gas systems. Ontario generates low-emission electricity, but electricity costs more than natural gas, which can make it challenging to cost-effectively implement projects that make the largest gains toward decarbonization. The town's transition to electric-based facilities must be strategically implemented over time.

Energy efficiency improvements include advanced building controls, equipment recommissioning, insulation, air tightness, heat recovery, and usage reduction. These cost-effective initiatives enhance comfort and wellness while extending the lifespan of capital assets. Incremental energy efficiency measures are cost-effective with relatively short payback periods. Implementing these types of projects has led to an average 10% reduction in GHG emissions from the 2015 baseline, even with a 9% increase in the total square footage of the town's facilities. To make more impactful changes, with respect to energy efficiency and support the transition to a low carbon pathway, higher levels of investment and longer payback periods may be required.

Standardizing decarbonization for new builds and retrofits will be strategically aligned with asset renewal timelines. Many replaced assets will still be operational by the 2050 net zero target. Over the next 5-10 years, complete building replacements and major retrofits for facilities responsible for nearly 75% of the town's carbon emissions are planned. If these replacements are like-for-like without decarbonization measures, making necessary changes before 2050 will be challenging and costly.

Facility Services will analyze the costs and benefits of updating the Sustainable Building Standards to enhance carbon reduction, guided by the principles in the Asset Management Plan. This includes assessing the effects of adding the Zero Carbon Building (ZCB) Certification requirement in addition to the current LEED Silver standard. The updated standards will also consider factors like embodied carbon and how buildings can withstand climate risks such as extreme weather. The findings of this analysis will be shared with Council in 2025, and staff will be seeking direction on a preferred approach.

Renewable energy like solar, wind, and batteries are being explored. Even though a large solar PV system has been successfully installed at the Oakville Trafalgar Community Centre, relying solely on rooftop solar will not achieve net zero for the corporate building portfolio. However, with renewable energy costs expected to decrease, future investments will benefit the town's budget. The current CDM plan will focus on improving building design to reduce energy usage and incorporate infrastructure that will facilitate the integration of future renewable energy systems.

The above points are addressed in the CDM Plan to guide the town's activities over the next 5 years on how to reduce energy and greenhouse gas emissions.

CONSIDERATIONS:

(A) PUBLIC

There is no impact to the public with the receipt or discussion of this report.

(B) FINANCIAL

There are no direct financial implications to approval of the CDM Plan. A Council report will be brought in 2025 to consider options for an updated approach to the Sustainable Building Standards and any associated budget impacts related to the options.

(C) IMPACT ON OTHER DEPARTMENTS & USERS

Facility Services will continue to liaise with various departments to identify and implement actions that reduce energy and emissions through how the buildings are used. Facility Services will work closely with Asset Management and Finance to investigate the best path forward for reducing greenhouse gas emissions in construction practices and facility operations. The Climate Change Advisory Committee will be engaged to review and advise as needed.

(D) COUNCIL STRATEGIC PRIORITIES

This report addresses Council's strategic priority: Environmental Sustainability.

(E) CLIMATE CHANGE/ACTION

This report addresses highly important activities for achieving climate change goals.

APPENDICES:

Appendix A: Town-Owned Buildings Energy and Carbon Plan 2025-2029

Prepared by:

Nathaniel Magder, Energy Solutions Manager

Recommended by:

Kendall Wayow, Director - Facility Services

Submitted by:

Paul Damaso, Commissioner - Community Services