



CORPORATE FACILITIES MEMORANDUM

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TO: MAYOR J. LEHMAN AND MEMBERS OF COUNCIL

FROM: A. MCMULLIN, MANAGER OF ENERGY MANAGEMENT, EXT. 5097

NOTED: R. PEWS, DIRECTOR OF CORPORATE FACILITIES
D. MCALPINE, GENERAL MANAGER OF COMMUNITY AND CORPORATE SERVICES
M. PROWSE, CHIEF ADMINISTRATIVE OFFICER

RE: COMMUNITY ENERGY AND GREENHOUSE GAS EMISSION PLAN UPDATE

DATE: MARCH 29, 2021

The purpose of this Memorandum is to provide members of Council with an update on the development of the Community Energy and Greenhouse Gas Emission Reduction Plan.

Background

In March of 2018, Council adopted motion 18-G-047 allocating \$180,000 in capital funds to develop a Community Energy and Greenhouse Gas (GHG) Reduction Plan.

The objective is to create a comprehensive and practical Community Plan that includes implementable actions and strategies for improving energy efficiency and reducing community wide GHG emissions. The plan is being developed utilizing energy and GHG emission mapping techniques based on various sources of data (including utility, transportation, land-use, MPAC data). The data and maps are being used to inform the development of evidence-based goals, strategies and targets that are founded in science and current best practices.

The Project Team for the Community Energy and Greenhouse Gas Reduction Plan is comprised of City of Barrie staff and consulting firm Land Use Research Associates Inc. (LURA), with ICLEI and Wood. To support the Project Team, a Stakeholder Advisory Group (SAG) was established to shape the Plan through more in-depth discussion from a variety of perspectives, providing sector-specific knowledge and expertise to define a vision, goals, and strategies that best meet the unique context of Barrie. The SAG has membership representing local conservation authorities, school boards, utility companies, Council, City staff, environmental organizations, local health care services, post-secondary institutions and the construction & development industry.

The following timeline summarizes the key milestones and actions achieved to date:

- **May 2018:** Applied for funding with Ministry of Energy, Northern Development and Mines to support up to 50% (\$90,000) of the project cost.
- **June 2019:** Completed Transfer Agreement with Ministry to receive funding support for the project.
- **November 2019:** Hired Land Use Research Associates (LURA) to facilitate plan development.
- **Dec 2019 – June 2020:** Data Solicitation and Analysis
- **May 2020:** SAG established, preliminary mapping completed.
- **August 2020 – February 2021:** SAG Actions
 - Established draft vision and principles
 - Developed baseline inventory and business-as-planned forecast
 - Generated draft strategies

- Investigated preliminary reduction targets, in alignment with Federal goals and the City's Climate Emergency Declaration

Plan Highlights

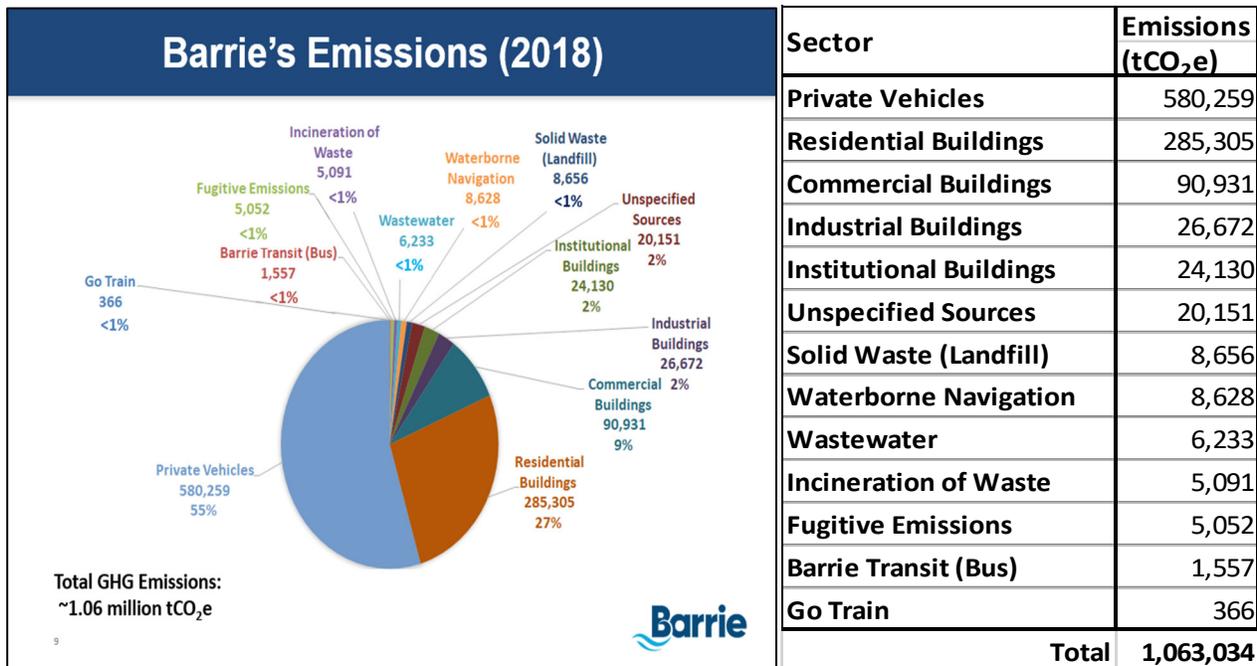
The Project Team worked to develop an energy and GHG emission profile from 2018 to serve as a baseline for the plan and community moving forward. From this baseline a business-as-planned (BAP) forecast to 2050 was developed to model future energy usage and associated greenhouse gas emissions from the community.

Inventory & Business-As-Planned Summary

Below are the key findings from the 2018 baseline energy and greenhouse gas emissions inventory for the community.

- The total energy consumption in Barrie in 2018 is 20 million GJ, total GHG emissions were 1 million tCO_{2e}.
- The total energy cost to the community exceeded \$590 million.
- Transportation and buildings contribute 98% of community emissions.
- Private vehicle use (personal & commercial) account for more than half of all emissions.
- Residential buildings consume 32% of the total energy and 27% of community emissions.
- Gasoline, electricity, and natural gas make up most of the energy sources and energy costs in the community.

The following chart summarizes the emissions from the community by source.

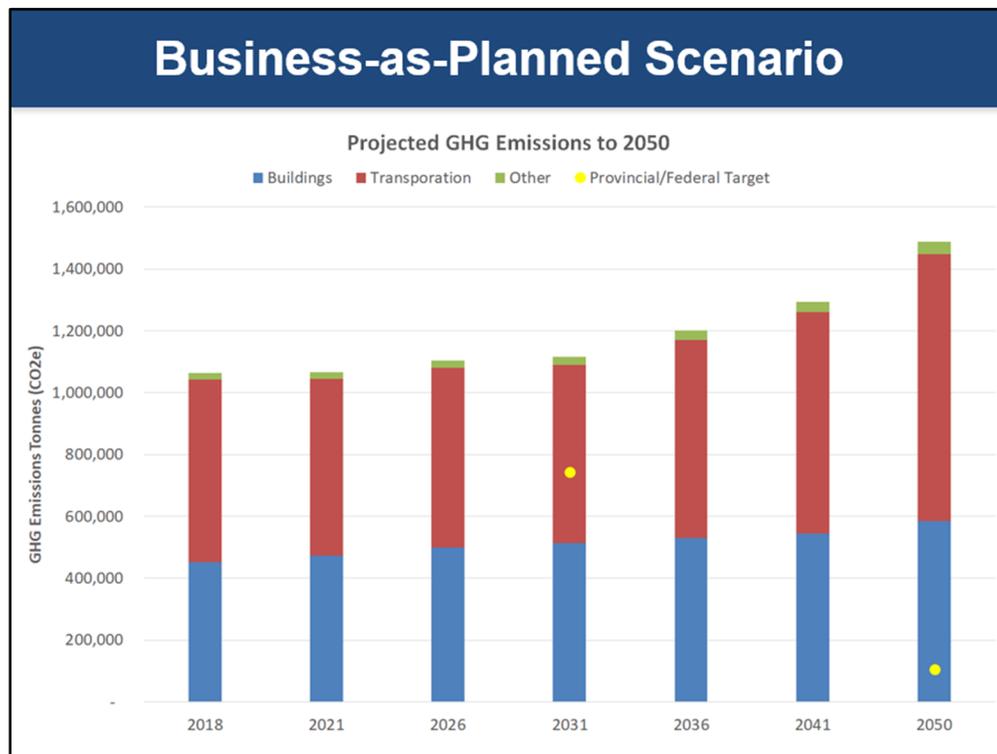


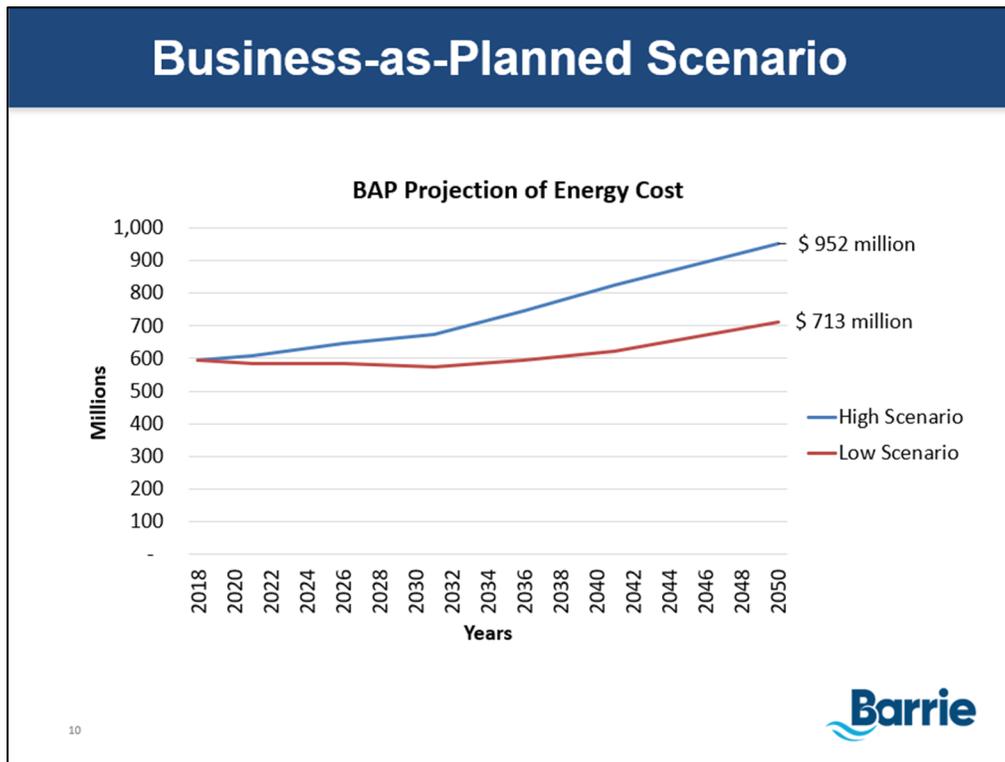
The Business-as-Planned (BAP) scenario is developed to understand future energy consumption, energy costs and emissions for the City of Barrie, assuming no action is taken to reduce energy or emissions. The BAP's methodologies and assumptions reflect the consulting team's expertise in building emissions and energy models for municipalities and follow best practices. The methodologies and assumptions used are in line with the Government of Ontario's *Community Emissions Reduction Planning: A Guide for Municipalities*.

There are several key findings arising from the BAP scenario:

- GHG emissions are expected to increase by 40% by 2050 from the 2018 baseline under the business-as-planned scenario.
- The primary drivers in the modelled BAP scenario are population and employment growth, which will lead to more houses, more businesses, more cars on the road, and more waste, and therefore changes to energy consumption and emissions.
- Energy costs will increase by 61% (~\$960 million) under the high-cost scenario and 21% (~\$720 million) under the low-cost scenario by 2050.
- Transportation and buildings (particularly residential) represent the largest opportunity to reduce energy and greenhouse gas emissions moving forward.
- **Without strong action, community emissions will significantly exceed federal emission targets in both 2030 and 2050.**

The following chart and table highlight the BAP emissions and cost scenario for the community.





Vision, Principles & Strategies

Over four meetings the SAG and Project Team have utilized the baseline and BAP forecast to develop a draft vision, principles, and strategies.

Vision: The City of Barrie is taking an integrated, ambitious and action-oriented approach to climate action, which provides positive environmental, social, economic and health outcomes for all.

Principles:

- There are economic benefits in pursuing climate action at the local level.
- Recognize and promote the inextricable link between the natural and built environments, climate change and our communities' health and wellbeing, and foster the health co-benefits of climate action.
- Pursue innovative solutions and an evidence-based approach to climate action.
- Educate and inspire residents and business to make positive environmental change, building on the City's leadership.
- Develop strategies that are equitable and enhance the quality of life for all residents.
- Benchmark against best practices and look for continuous improvement.
- Enable positive environmental actions amongst Barrie's residents.
- Advance Barrie's climate and energy goals in partnership with residents, organizations and businesses.

Strategies: The strategies are described as 'Big Moves' within the plan and are categorized within four areas; buildings, transportation, waste, natural environment and land use. Each Big Move includes a goal and supporting actions. **Please note: these strategies are in draft form and are subject to change.*

Buildings

Goal: Near zero emissions in new and existing building stock

Strategies:

- Develop and implement a deep energy retrofit program for all sectors.
- Develop and adopt a green development standard for all new buildings.
- Advance energy management and benchmarking at industrial facilities.
- Develop and implement a rooftop/ground-mounted solar program in all sectors.
- Explore district energy deployment.
- Undertake larger renewable energy infrastructure projects.

Natural Environment & Land-Use Planning

Goal: Liveable neighbourhoods that support energy efficiency, mixed-use, complete communities & protection of the natural environment.

Strategies:

- Create higher density, mixed-use developments.
- Develop a new zero-emissions neighbourhood.
- Promote a culture of growing and buying locally grown food.
- Protect and expand carbon sequestration through trees, wetlands and other nature-based solutions.

Transportation

Goal: Near zero emissions from transportation

Strategies:

- Advance local transit options for residents.
- Enable increased GO Train use.
- Advocate with the provincial government to create an HOV lane on Hwy 400
- Advance the adoption of electric vehicles.
- Increase active transportation.
- Promote and support car-sharing programs and networks.

Waste

Goal: Waste reduction through a circular economy

Strategies:

- Create additional specialized collection weeks.
- Advance a circular economy culture.
- Conduct a study of commercial, institutional, and multi-unit residential building's recycling practices and procedures.

Public Engagement

A project webpage (<https://www.buildingbarrie.ca/communityenergy>) on the Building Barrie platform serves as the primary communication tool to provide updated information to residents and community partners.

Public engagement is following a three-phase process. The pandemic significantly altered the original public engagement strategy planned for the project. In-person community-based activities have pivoted to virtual engagement alternatives (as outlined below).

- **Round 1** - The first round of engagement solicited input on community ideas for climate change action, mitigation and sustainability. In the fall of 2019, a public survey was posted to Building Barrie that included 10 questions relating to climate change action, mitigation and sustainability. Seventy-six (76) individuals completed the survey and a summary of the findings have been posted on the project webpage.
- **Round 2** – The second round of engagement will include presenting the baseline and base case energy scenarios, solicit feedback on proposed vision and goals, targets and generate and respond to ideas for strategies. A virtual public meeting (PIC) is scheduled on April 22, 2021 from 6:30 – 8:30 pm.
- **Round 3** - The final consultation will provide the community with an opportunity to review the full plan and understand the next steps as the plan transitions to implementation, prior to submission to Council.

Additional stakeholder engagement targeting the local business and construction industries will take place focusing on a review of the proposed plan strategies. This will assist to ensure that other community partners and industry not participating in the SAG have input into shaping the final plan.

Next Steps

The Project Team and SAG have two more meetings that will finalize the plan strategies, establish a reduction target and layout the proposed implementation framework. Following the public and stakeholder engagement activities planned for the spring and early summer, the draft of the final plan will be issued for review by the SAG and finalized for Council review and approval in the fall of 2021.

Should you have any questions about the contents of this memo, please do not hesitate to contact Adam McMullin at extension 5097.