



Staff Report for Council Meeting

Date of Meeting: December 9, 2020

Report Number: SRPI.20.030

Department: Planning and Infrastructure

Division: Policy Planning

Subject: SRPI.20.030 Interim Report on the Community Energy & Emissions Plan

Purpose:

To provide an update to Council on the background and community engagement findings as well as the proposed greenhouse gas (GHG) emissions reduction target for Richmond Hill's Community Energy & Emissions Plan (CEEP).

Recommendation(s):

- a) That Staff Report SRPI.20.030 Interim Report on the Community Energy & Emissions Plan be received; and,
- b) That the Draft Community Energy & Emissions Plan be prepared based on a proposed reduction target of Net Zero GHG emissions by 2050.

Contact Person:

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Report Approval:

Submitted by: Kelvin Kwan, Commissioner of Planning and Infrastructure Department

Approved by: Mary-Anne Dempster, City Manager

All reports are electronically reviewed and/or approved by the Division Director, Treasurer (as required), City Solicitor (as required), Commissioner, and City Manager. Details of the reports approval are attached.

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Background:

Introduction

The Community Energy and Emissions Plan (CEEP) is a community plan to reduce our greenhouse gas (GHG) emissions and promote related economic benefits in Richmond Hill. The CEEP is one of two major initiatives under the “Resilient Richmond Hill” program, which was initiated to develop a coordinated approach to addressing climate change through mitigation and adaptation (Council C#24-18, Item 13.2.4, June 2018). Largely focused on improving the resiliency of community and corporate assets through climate mitigation, the CEEP will identify actions to reduce our community’s GHG emissions, conserve energy and explore related economic opportunities. It will also inform climate change policies in the Official Plan as mandated by the Growth Plan for the Greater Golden Horseshoe, 2019 and consistent with direction in the *Planning Act* and the Made-in-Ontario Environment Plan.

Like many other communities, Richmond Hill is not immune to the consequences of severe weather patterns and changing climate conditions, which include disruptions to business continuity, infrastructure damage, risks to health and safety, and increased financial costs. Local communities must now adapt to the impacts of climate change and, conversely, each has a responsibility to mitigate their own contributions to climate change. Richmond Hill’s Community Energy & Emissions Plan (CEEP) will help the City meet its legislative requirements and municipal obligations by demonstrating due diligence and affirmative action in reducing our community’s GHG emissions which contribute to climate change¹. The development of the CEEP will also incorporate some of the more specific climate actions directed by Council in its confirmation of the City’s commitment to climate change action (Council C#04-20, Item 13.8, February 2020).

The purpose of this staff report (SRPI.20.030) is:

- a) To provide an interim update on the background findings and analysis including what we heard through community engagement; and
- b) To obtain Council endorsement of the proposed GHG emissions reduction target for the draft plan.

Community Energy & Emissions Plan: Interim Update

Project Process and Timeline: what we did

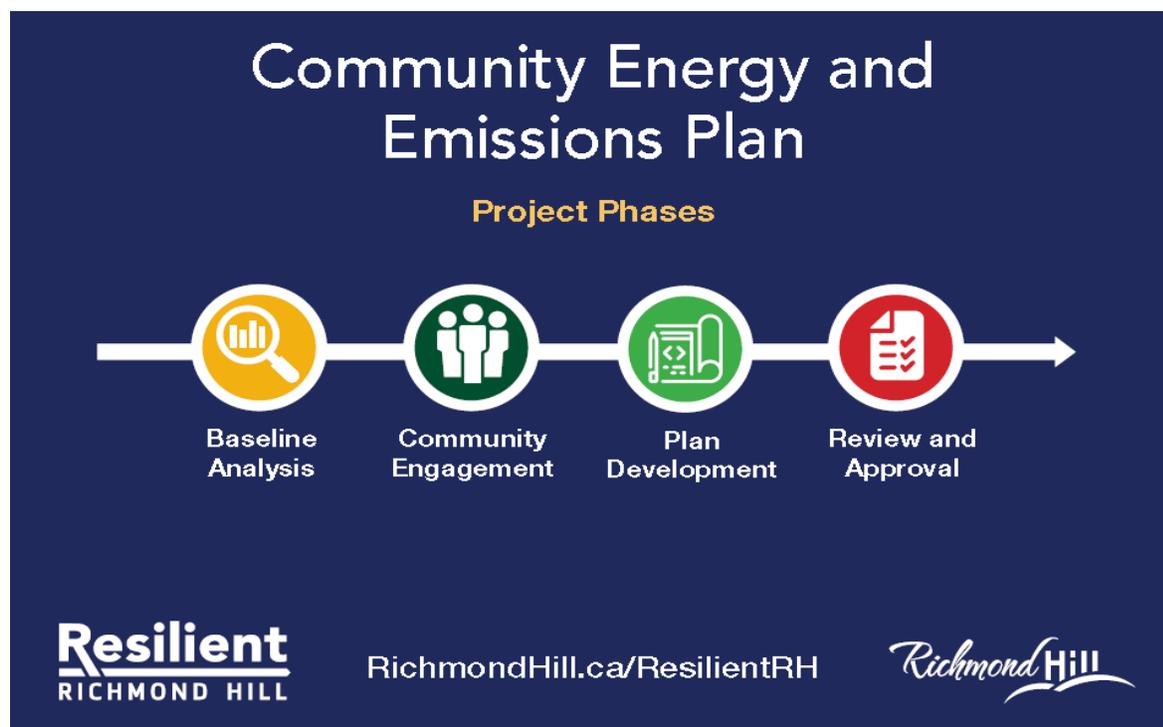
The CEEP is being developed in four project phases, as outlined in the figure below. At the time of this Interim Report, the first two phases are completed.

1. The Baseline Analysis Phase consisted of two main activities:
 - a. Determining a baseline of current energy use and greenhouse gas (GHG) emissions for the city; and

¹ Insurance requirements and funding grant eligibility are increasingly tied to a municipality’s ability to demonstrate climate action and due diligence.

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- b. Creating a business-as-planned (BAP) scenario. The BAP scenario projects what GHG emissions would be in the year 2050 starting with the baseline and incorporating only changes that are currently planned and committed to happen (i.e. currently approved projects, population projections, etc.).
2. The Community Engagement Phase involved going out to the community and gathering their thoughts related to possible actions that could be taken to reduce GHGs.
3. The Plan Development Phase includes the following:
 - a. Using a model to explore various options for reducing GHGs;
 - b. Determining a draft target and actions to reach that target;
 - c. Completing a financial analysis of the actions to reach the draft target; and
 - d. Creating an initial draft of the plan based on the analysis and information generated to this point.
4. Lastly, the Review and Approval Phase consists of the various stages of review and approval of the draft plan, including
 - a. Bringing the draft plan to Council;
 - b. Releasing the draft plan for public comment; and
 - c. Final approval from Council.



Addressing climate change is complex and the City as a municipal corporation alone cannot reduce GHG emissions without the help of the entire community. The CEEP is a community plan intended to be implemented by residents, businesses, institutions and

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the City in conjunction with other levels of government. To incorporate input from the public and community stakeholders, two advisory committees were formed.

Technical Advisory Committee (TAC) - comprised of City staff from relevant departments to provide guidance and input from the local government perspective and as technical experts in their field.

External Advisory Committee (EAC) – comprised of ‘major community climate change stakeholders’ to provide input from a variety of community perspectives. The EAC includes the following organizations: Toronto and Region Conservation Authority, Richmond Hill Board of Trade, Oxford Properties (Hillcrest Mall), Alectra, Enbridge, York Region, Building Industry and Land Development Association (BILD), York Region District School Board, York Catholic District School Board, Mackenzie Richmond Hill Hospital, Windfall Ecology Centre, Smart Commute Markham-Richmond Hill, Blue Dot York Region, Global Warming Drawdown Richmond Hill Group, Targeting Climate Change, and Neighbours for the Planet.

Baseline Data Analysis: what we learned about Richmond Hill

The baseline data analysis (BAP) revealed that in 2016 approximately 1,210,000 tonnes of eCO₂ community GHG emissions were generated in Richmond Hill. That amount of emissions is equivalent to 242,000 cars on the road for one year. Sectors with the largest emissions in Richmond Hill are buildings (40%) and transportation (39%). Emissions from residential buildings comprise the biggest share (67%) of all building emissions. Under the BAP scenario, total emissions in Richmond Hill are projected to grow to 1,330,000 tonnes eCO₂ in 2050.

With respect to energy use, Richmond Hill uses 21 petajoules (PJ) of energy each year. This amount includes energy used in buildings and transportation. This amount of energy is equivalent to the electricity used in 508,441 homes for one year. In line with community GHG emissions, the majority of this energy use (75%) comes from residential buildings and transportation. Under the BAP scenario, energy use is projected to grow to 26 PJ in 2050.

The increases in both community GHG emissions and energy use are largely due to continuing population growth in Richmond Hill, which drives emissions growth in the sectors of buildings, transportation, and waste.

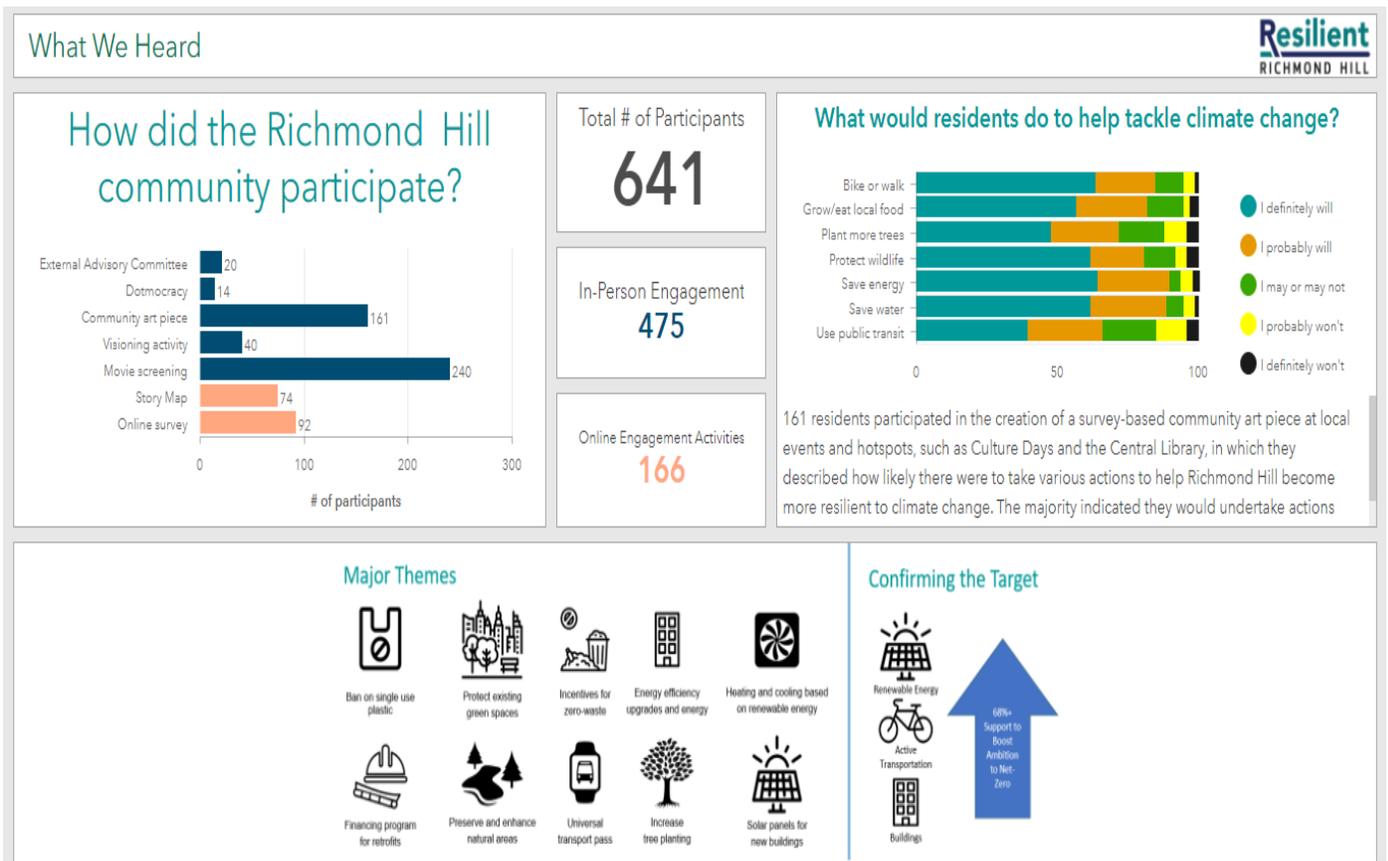
Community Engagement: what we heard

As outlined in the infographic below, a robust suite of community engagement activities were undertaken to gather the public’s thoughts on GHG reductions and energy conservation in Richmond Hill. The results of participation are as follows:

- More than 475 contributed their ideas at public engagement events and in public venues.

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- 250 attendees watched a screening of “Anthropocene” and participated in a Q&A with the filmmaker, discussions at community group and partner agency booths, and a “dotmocracy” activity.
- 161 residents participated in the creation of a survey-based community art piece about how likely they were to take various actions to help Richmond Hill become more resilient to climate change.
- Residents of Richmond Hill also submitted 166 responses to online engagement activities (see figure below), including a Story Map and a crowdsourcing survey in which they could vote on their priorities for sustainable actions.



The community was asked to give their input on a wide range of themes, ideas, and actions related to the major areas for reducing greenhouse gas emissions in Richmond Hill: transportation; waste; buildings; land-use; and renewable energy. The major themes highlighted in the engagement were as follows:

- Universal transport pass that works on multiple transit, bike share, and rideshare services;
- Ban on single use plastic;
- Incentives for retail businesses to have zero-waste options;

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- Financing program for retrofits in existing buildings and energy efficiency upgrades and energy benchmarking for large buildings;
- Solar panels for new apartments, condos, and/or commercial buildings and heating and cooling systems based on renewable energy;
- Protect, preserve and enhance natural areas and increase tree planting across the city.

The feedback collected was synthesized to inform the development of actions for the plan.

Key Directions and Draft Emissions Reduction Target: what's proposed

The information generated and collected in the first two phases was used to generate options for a future climate change target and the key directions to support that target for emissions reduction. Target options and respective actions were modeled and workshopped with the TAC and EAC to determine the feasibility and desirability of those directions.

A key consideration through this process was the idea of examining and identifying the co-benefits of possible actions. For example, actions to improve energy efficiency can create jobs, save residents money, and increase home comfort. Creating complete communities and converting to electric vehicles help make our urban communities healthier by reducing air pollution and increasing opportunities of walking and cycling. The co-benefits and spin-off effects of climate actions were identified and examined as a part of the discussion.

A survey of the TAC and EAC was done to gauge interest in boosting ambition and finalize alignment on the proposed final target. Subsequently, an online public survey was conducted to gauge support for the proposed target and the outcomes needed to reach that target which are outlined below. That survey showed a majority of the participants supported the draft target.

Proposed Draft GHG Emissions Reduction Target:

A target of Net-Zero Greenhouse Gas Emissions by 2050 is proposed for Richmond Hill's Community Energy and Emissions Plan; this means that in 30 years community GHG emissions in Richmond Hill would be reduced to zero or offset by other means. To achieve this target, all community members (including residents, businesses and all levels of government) would need to take actions to transform Richmond Hill.

Key Directions for Reducing GHG Emissions and Reaching Net-Zero:

The following key directions for the CEEP and necessary outcomes to reach net zero were identified through the community engagement and preliminary modeling exercise.

Transportation: *Promote and support electric vehicles, active transportation (walking, cycling) and public transit in Richmond Hill.*

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- To reach net-zero,
 - All buses (and all other municipal vehicles) would be electric;
 - Active transportation networks would be expanded/completed and higher order transit (e.g. subway) would be prioritized and expanded.

Waste: *Promote and support three-stream waste diversion in multi-residential buildings and places of employment in Richmond Hill.*

- To reach net-zero,
 - Recycling and organics collection services would be available in all apartments and workplaces.

Buildings and Land Use: *Promote and support compact and complete development patterns (including protecting greenspace²) and energy-efficient buildings utilizing renewable energy sources, low carbon design and technology, and sustainable modes of transportation particularly in Richmond Hill's urban growth centre and corridors.*

- To reach net-zero,
 - A district energy system would be implemented in Richmond Hill Centre to reduce heating related emissions in that area;
 - Energy efficiency would be maximized and electric vehicle (EV) charging and solar panels would be incorporated into all new buildings;
 - 90% of existing houses would be retrofitted to be more energy efficient with 50% having solar panels;
 - 90% of all buildings (new and existing) would switch from natural gas heating to a low carbon heating source (i.e. heat pumps, renewable natural gas, etc.);
 - Most new development would be directed along routes with subways and bus rapid transit lines (e.g. Yonge Street and Highway 7).

Renewable Energy: *Promote and support renewable energy options as much as possible.*

- To reach net-zero,
 - Renewable energy generation (i.e. solar) would be expanded as much as possible within the city and opportunities would be created to expand that generation beyond the city's borders to meet the city's needs.

² The City recognizes the importance of greenspace and green infrastructure in climate change mitigation and adaptation as indicated in its Climate Change Framework. Since the City addresses the protection and enhancement of greenspace through other program areas (e.g. Greenway designation in Official Plan, tree canopy cover target, Urban Forest Management Plan, restoration plantings, etc.), the scope of the CEEP will focus on the use of energy/fuel and emissions from growth and development.

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Support for Net-Zero Target

The proposed net-zero target is in line with the federal government's target and York Region's draft Climate Change Action Plan which was brought to Regional Council earlier this year. The City of Markham has also adopted a community energy plan with a net-zero target. The proposed target puts us in line with other municipalities known for leading and innovative climate action or who have recently approved net-zero targets, such as the City of Toronto, City of London, and Town of Caledon.

Communities that have established a net-zero target often cite the following benefits of community energy planning: job creation and investment in the local economy; less strain on energy infrastructure; lower energy costs for residents and the municipality; improved resilience to power outages; and reduced GHG emissions. In Toronto, community energy plans are also prepared for neighbourhoods where there is a desire to improve existing buildings and integrate renewable energy as a long-term cost-savings measure – particularly in mixed-use centres and corridors with planned higher-order transit. In Markham, where the City has already invested in district energy in its urban growth centres, post-secondary areas and hospital hub, other renewable energy sources (e.g. geothermal) are now being integrated through development. Markham's municipal energy plan is projected to generate 20,000 - 35,000 person years of employment by 2050. Richmond Hill's CEEP will also look at the potential for investments and savings which will be outlined in the plan.

Through this report, staff is seeking Council's endorsement of the net-zero target conditional on the details that will be contained in the draft Community Energy & Emissions Plan. This conditional endorsement will allow staff to move forward with preparing the draft CEEP, at which point Council will have another opportunity to weigh in on the proposed target and the actions to support it.

Next Steps:

Based on Council's decision on the proposed target, staff will continue to develop the draft CEEP including recommended actions. An exercise will be undertaken to determine specific actions to reach the high level key directions outlined above, determine the financial and economic implications of, and prioritize those actions. Once that draft plan is complete, it will be reviewed by the TAC and EAC for comment. After that review, the draft CEEP will be brought forward to Council for comments, in advance of releasing it to the public for a review period. Following the public review period, the draft plan will be revised based on comments and brought back to Council for final approval in early spring 2021.

Financial/Staffing/Other Implications:

There are no immediate financial or staffing implications associated with this staff report which provides an interim update and seeks direction on a proposed target for the draft Community Energy & Emissions Plan.

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Relationship to the Strategic Plan:

Richmond Hill's efforts to advance climate change mitigation and adaptation measures in the City support the Strategic Plan's goal of *wise management of resources* and *better choices*. By promoting initiatives that reduce GHG emissions, Richmond Hill's climate change mandate encourages the planning of energy efficient buildings, renewable energy, water conservation and low emission vehicles. As a co-benefit, it also supports the creation of improved live-work balance and quality of life through the planning of sustainable, low carbon communities with access to sustainable transportation alternatives, greenspace and a healthy urban canopy. Likewise, proposed initiatives to improve resiliency against the impacts of climate change demonstrate the City's willingness to prepare for necessary infrastructure projects, ensure residents have continued access to City services, and act responsibly as a role model for municipal management.

Conclusion:

This staff report, SRPI.20.030, recommends Council endorse a direction to staff to prepare a Community Energy and Emissions Plan that is based upon a reduction target of net-zero GHG emissions by 2050. This net-zero target means that in 30 years community GHG emissions in Richmond Hill would be reduced to zero or offset by other means. The proposed target is based on information and feedback from baseline data analysis, community and stakeholder engagement, and municipal benchmarking. The proposed net-zero target is also consistent with York Region's proposed emissions reduction target for the draft York Region Climate Change Action Plan. Based on Council's decision on the proposed target, staff will continue to develop the draft plan and actions therein.

Attachments:

- There are no attachments to this staff report.

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Report Approval Details

Document Title:	SRPI.20.030 Interim Report on the Community Energy and Emissions Plan (CEEP).docx
Attachments:	
Final Approval Date:	Nov 17, 2020

This report and all of its attachments were approved and signed as outlined below:

Patrick Lee - Nov 16, 2020 - 3:54 PM

Kelvin Kwan - Nov 16, 2020 - 4:21 PM

MaryAnne Dempster - Nov 17, 2020 - 10:34 AM