



CITY OF HAMILTON
CITY MANAGER'S OFFICE
Administration
and
HEALTHY AND SAFE COMMUNITIES DEPARTMENT
General Manager's Office

TO:	Mayor and Members General Issues Committee
COMMITTEE DATE:	December 8, 2021
SUBJECT/REPORT NO:	Hamilton's Corporate-Wide Climate Change Update 2021 (CMO19008(b)/HSC19073(b)) (City Wide) (Outstanding Business List Item)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Trevor Imhoff (905) 546-2424 Ext. 1308
SUBMITTED BY: SIGNATURE:	Janette Smith City Manager
SUBMITTED BY: SIGNATURE:	Grace Mater General Manager Healthy and Safe Communities Department

RECOMMENDATION

- (a) That the Climate Change Reserve Policy attached as Appendix "A" to Report CMO19008(b)/HSC19073(b) be approved;
- (b) That the City of Hamilton's Corporate Climate Change 2021 Update attached as Appendix "B" to Report CMO19008(b)/HSC19073(b) for the City's update on climate change work be received;
- (c) That the Science of Climate Report for the City of Hamilton 2021 attached as Appendix "C" to Report CMO19008(b)/HSC19073(b) as part of the City's work on climate adaptation be received;

- (d) That Hamilton's Climate Impact Adaptation Plan Engagement Log attached as Appendix "D" to Report CMO19008(b)/HSC19073(b) as part of the City's work on climate adaptation be received; and,
- (e) That the following Outstanding Business List Items be removed:
 - (i) General Issues Committee March 2, 2020 (Budget) respecting the Establishment of a Climate Change Reserve for Sustainable Funding; and,
 - (ii) General Issues Committee November 4, 2020 respecting the Public Release of Internal Corporate Climate Change Task Force Agendas, Minutes and Names of Task Force Members be removed.

EXECUTIVE SUMMARY

This report and attached appendices comprise the City's corporate-wide climate change updates between November 2020 and October 2021. Council directed staff to report semi-annually, and as required, on climate change. Due to COVID-19 and staff's limited capacity there is only one corporate-wide update for 2021. In May 2021, Report CM21008/HSC21016 was brought forward to General Issues Committee regarding a funding application to the Federation of Canadian Municipalities (FCM) for the development of Hamilton's Home Energy Retrofit Opportunity (HERO) program. Moving forward staff intend to achieve Council's direction on reporting semi-annually on corporate-wide climate action.

Council allocated \$1.5 M to the Climate Change Reserve through the Tax and Rate Operating Budgeting Variance Report as of December 31, 2020 and Budget Control Policy (Report FCS20069(b)). Approval of the Climate Change Reserve Policy attached as Appendix "A" to Report CMO19008(b)/HSC19073(b) will guide the future spending of this reserve. This is an important first step to providing the required funding for innovative climate change actions.

The remaining appendices attached to this report contain detailed information on work that has been completed and is actively being worked on with respect to Hamilton's corporate-wide climate change actions.

Appendix "B" to Report CMO19008(b)/HSC19073(b) includes information on the Corporate Climate Change Task Force's (Task Force) current membership and contact information. Anyone seeking more information or wanting to make requests to the Task Force can find more information in that appendix or on Hamilton's Climate Change Action Website <https://www.hamilton.ca/city-initiatives/strategies-actions/climate->

[change-action](#). City staff will be updating this website on a regular basis to ensure the most up-to-date information is available to the public.

Detailed updates on climate change work across the Corporation are also found in Appendix "B" to Report CMO19008(b)/HSC19073(b). This report and appendix demonstrate that despite the resource implications of the COVID-19 emergency response, there has been important climate change work completed and actions that continue to be actively worked on.

Important climate change deliverables and work that have been completed include:

- Updated Hamilton's Corporate Energy and Sustainability Policy to align Corporate GHG emissions targets to those targets outlined in Hamilton's Climate Emergency Declaration;
- Council approved Hamilton's Green Fleet Strategy that once implemented is estimated to reduce Corporate emissions by 18.4% by 2024 which includes the conversion of 90 internal combustion vehicles to Battery All-Electric;
- The completion and ongoing installation of multi-use trails (4.8 KM in 2020), new bicycle lanes (11 KM in 2020) and upgrades to existing bike lanes (5.4 KM in 2020) to encourage active and sustainable modes of transportation. An additional 25 cycling projects are being implemented throughout 2021;
- In progress of installing 24 electric vehicle charging stations (48 chargeable spaces) with a total of 20 installed already. Additional federal funding application for an additional 49 charging stations is also being submitted.
- Piloting Ontario's first ever carbon-negative bus that will not only displace approximately 36,000 litres of diesel emissions but also 450 tonnes of organic waste will be diverted from landfills;
- Completion of Hamilton's Anti-Stagnation Valve project to reduce energy costs from pumping stations with total savings of 3,099,948 kWh, or 93 tonnes of Carbon Dioxide equivalent (tCO_{2e});
- Updated Revitalizing Hamilton Tax Increment Grant (RHTIG) program to include sustainability and green building certifications as eligibility for grants; and,
- Completion of Hamilton's Science of Climate Change Report for 2021 providing the most up-to-date climate scenarios based on Intergovernmental Panel on Climate Change (IPCC) Representative Concentration Pathway (RCP) detailed in the Fifth Assessment Report.

Work continues for the completion of Hamilton's Community Energy and Emission Plan (CEEP) and Climate Impact Adaptation Plan. Both plans will build off existing and ongoing climate change work across the Corporation. These plans will result in detailed actions, targets and indicators to help Hamilton reach a net-zero community that is resilient to the impacts of a changing climate.

Hamilton's Community Energy and Emissions Plan (CEEP) is nearing completion with a targeted draft report to General Issues Committee in Q1 2022. The CEEP builds on the strengths of the City's past and ongoing climate change actions and identifies a pathway to net-zero GHG emissions by 2050. This evidence-based, community-informed pathway was developed using detailed energy use and GHG emissions modelling for the entire City of Hamilton. A business-as-planned scenario was modelled using current trends out to 2050 which was used as the baseline to build the Low Carbon Scenario (LCS). The LCS is comprised of actions the City and community-stakeholders can implement to reach net-zero carbon by 2050. These implementation actions and targets are framed into five main pillars including:

- Pillar 1: Innovating our industry;
- Pillar 2: Transforming our buildings;
- Pillar 3: Changing how we move;
- Pillar 4: Growing green; and
- Pillar 5: Revolutionizing renewables.

The net-zero pathway also includes an economic and financial forecast, which enable the City and other stakeholders to prioritize actions that maximize the return on investment and GHG reductions. The proposed actions are also intended to maximize co-benefits such as improved air quality, healthier lifestyles, and job creation.

The development of Hamilton's Climate Impact Adaptation Plan works toward achieving milestone three of the ICLEI Canada's Building Adaptive and Resilient Communities (ICLEI-BARC) five milestone framework. The adaptation plan development process uses scientific regional climate modelling downscaled to the local level in order to identify the greatest climate impacts and risks to the City of Hamilton. Using the most up-to-date climate modelling and information is important to ensure the resulting Climate Impact Adaptation Plan identifies the most appropriate risks and vulnerabilities, in order to create actions to decrease risk and recover from un-avoided impacts. Hamilton's Climate Impact Adaptation Plan has experienced delays and City staff are targeting the end of Q2 2022 to submit a draft plan to the General Issues Committee.

Appendix "C" to Report CMO19008(b)/HSC19073(b) provides the updated Science of Climate Change (2021) which projects future climate scenarios. This information, along with local knowledge has been used to create climate risk statements which are continuing to undergo a re-scoring for risk and vulnerability. This scoring will ultimately be used to prioritize new and existing actions, plans and strategies to build-out Hamilton's Climate Impact Adaptation Plan. This plan will propose actions, based on scientific information, that will help the corporation and the community prepare and recover from the impacts of climate change.

Evidence shows that climate change disproportionately impacts equity-seeking groups such as Black, Indigenous and people of colour, immigrants and newcomers, women,

disabled people, low income, homeless/houseless and young people. Taking this into consideration, an engagement plan was developed to be as flexible as possible to allow the greatest possible level of engagement with our community organizations representing those people in our communities most likely to be at greatest risk. Through this flexibility, City staff have been able to engage in 2021 thus far:

- Six Environmental Non-Government Organizations;
- Seven Institutional and Commercial Partners; and
- Fourteen Community and Social Organizations.

A detailed breakdown of external stakeholders engaged to date through Hamilton's Climate Impact Adaptation Plan can be found in Appendix "D" to Report CMO19008(b)/HSC19073(b).

It is critical that the City of Hamilton continues to build on the climate change work outlined in this report and appendices. The most recent Intergovernmental Panel on Climate Change (IPCC) (2021) report is a stark reminder that the world is running out of time to avoid climate tipping points. Without reducing Greenhouse Gas (GHG) emissions by 50% by 2030 and 100% by 2050 the IPCC states, with high confidence, the impacts of climate change will be irreversible, including the loss of some ecosystems (IPCC, 2018).

The City's Senior Leadership Team (SLT) are committed to integrating the actions, once approved by Council, from the Community Energy and Emissions Plan and Climate Impact Adaptation Plan into their multi-year budget and business plans, which will include necessary resources to meet the targets. These plans will build off the progress made to date through the Corporate Goals and Areas of Focus for Climate Mitigation and Adaptation. Areas of focus that are yet to be completed and ongoing will be integrated into this holistic climate change implementation approach. With the completion of the Community Energy and Emissions Plan and the Climate Impact Adaptation Plan, staff will have specific targets and metrics to measure progress, as requested by Council during earlier updates.

Climate change impacts every part of the City of Hamilton and the community. Due to the complex nature of climate change, it is impossible to include every aspect of climate change into one or two plans. There are several existing and ongoing initiatives that either directly or indirectly work to achieve and/or align with Hamilton's climate change objectives. Forthcoming plans and policies related to climate change will also need to be integrated into the City's multi-year climate change budget and business plans. For example, these can include but not limited to:

- Urban Forest Strategy with actions to protect and enhance Hamilton's tree canopy cover. This works to address climate change impacts such as stormwater run-off and urban heat island effect;

- Biodiversity Action Plan and the recommendations contained therein and approved by Council;
- Flooding and Drainage Master Plan to include assessment of the impact of planned growth, land use intensification and climate change on Hamilton's flood risk; and,
- Economic Development Action Plan 2021-2025 with actions that include supporting a local building retrofit program and attracting clean tech companies to Hamilton.

It is equally important for all external stakeholders such as businesses, non-government organizations and individual citizens to not only contribute to the implementation of these climate change actions, but that they also commit to the targets and indicators. The collective commitment of all stakeholders is needed to reach the overall target of net-zero carbon emissions by 2050. This of course will ultimately achieve Hamilton's mission "To be the best place to raise a child and age successfully". For without a stable climate, the latter is impossible to achieve.

Alternatives for Consideration – See Page 9

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: Council has already allocated \$1.5 M to the Climate Change Reserve through the Tax and Rate Operating Budgeting Variance Report as at December 31, 2020 and Budget Control Policy (FCS20069(b)). Approval of this policy provides guidance to staff in the application of revenues and expenditure of funds related to this reserve.

Staffing: N/A

Legal: N/A

HISTORICAL BACKGROUND

May 16, 2018 - General Issues Committee Report 18-011 directed staff to establish a climate change reserve and funding strategy.

March 27, 2019 - City Council Report 19-006 approves Climate Emergency Declaration directing staff to investigate actions for Hamilton to reach net-zero emissions by 2050.

December 4, 2019 – City Council Report 19-027 approves the Corporate Goals and Areas of Focus for Climate Mitigation and Adaptation and directed staff to report back to their respective Standing Committees on implementation and resources required, with

goals that are specific, measurable, attainable, realistic, with clear timelines, and a well-defined distinction between the operating and capital budget requirements.

March 2, 2020 - General Issues Committee (Budget) directing staff to defer the discussion respecting the Climate Change Reserve to the forthcoming Climate Change Report, at an upcoming General Issues Committee meeting outside of the 2020 Operating Budget process.

November 4, 2020 - General Issues Committee Report 20-018 directed staff to report back to GIC on a semi-annual basis, with an update respecting the ongoing work and actions, as required, related to climate change mitigation. At this same meeting, Council also approved direction for the release of internal Corporate Climate Change Task Force membership, agenda and minutes.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

None

RELEVANT CONSULTATION

The Task Force collects and coordinates information on climate change actions across the corporation. It is comprised of each respective department and currently includes the following staff:

- Chair – Senior Project Manager, Air Quality & Climate Change, Healthy and Safe Communities;
- Director, Recreation, Healthy and Safe Communities;
- Manager, Community Planning & GIS, Planning and Economic Development;
- Director, Strategic Initiatives, Planning and Economic Development;
- Senior Project Manager, General Managers Office, Public Works;
- Manager, Energy Initiatives, Public Works;
- Manager, Budget and Fiscal Policy, Corporate Services; and,
- Procurement Analysts, Corporate Services.

Consultation and data collection occurred between the Task Force members and many of the divisions that make up each respective department in order to provide Council and the community with these climate change updates.

It should be noted here as well that ongoing community consultation occurs on a project-by-project basis. Some of those consultations are outlined in Appendix 'B' to Report CMO19008(b)/HSC19073(b), however as these projects come forward to their respective standing committees and to Council a more robust update on external consultation will be completed.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

It is being recommended that Hamilton City Council approve the Climate Change Reserve Policy. This policy will guide corporate spending and community-led project funding. This signals to City staff and the broader community that this reserve will be used to fund innovative climate actions and leverage other sources of funding, including higher levels of government. Incremental or ongoing program costs from climate change work will not be eligible for funding as this should be integrated into existing departmental operating and capital budgets.

The creation of the Climate Change Reserve and adjoining Guiding Principles are important in order to leverage existing and future funding opportunities from higher levels of government. For example, the Government of Canada in 2020 introduced A Healthy Environment and a Healthy Economy – Canada's strengthened climate plan. This updated plan includes additional future intake streams under the Green and Inclusive Community Buildings program which committed \$1.5 B to support green and accessible retrofits, repairs and upgrades of existing public community buildings and the construction of new publicly-accessible community buildings that serve high-needs, underserved communities across Canada¹.

The Climate Change Reserve will also be an avenue through which to fund climate adaptation and resiliency initiatives where funding from other levels of government will not cover the total costs identified, and where investments are required to avoid widespread property damage, health and safety impacts, or loss of life. As described in detail in Appendix "C" to Report CMO19008(b)/HSC19073(b) climate change impacts are expected to worsen, including but not limited to:

- Increasing number of days above 30°C from 16.1 currently to 37.2 by 2050 and 63.3 by the 2080s;
- Fivefold increase in number of night-time temperatures above 20°C by 2080 (reducing relief and magnifying health risks, especially for the most vulnerable);
- Increase in intensity, duration and frequency of 100-year rain fall events with 5-minute downpour in Hamilton increasing from 189.76 mm/h currently to 214 mm/h by 2050 and 209.35 mm/h by 2080.

These projected climate impacts are based IPCC's Fifth Assessment report's Representative Concentration Pathway (RCPs) 8.5 which represents a scenario with continued rising Greenhouse Gas (GHG) concentrations.

A report commissioned by the Federation of Canadian Municipalities (FCM) and Insurance Bureau of Canada (IBC) estimates that an annual investment at the municipal

¹ Government of Canada. (2021). Green and Inclusive Community Buildings. Retrieved from: <https://www.infrastructure.gc.ca/gicb-bcvi/index-eng.html>

level of between 0.2% to 0.3% of Gross Domestic Product (GDP) is needed to adapt to climate change. In national terms, this represents a total expenditure of \$5.3 B per year. This report further states that studies show that investing in community adaptation and resilience outweigh the cost of such investments by a ratio of six to one².

The forthcoming Community Energy and Emissions Plan (CEEP) will also require substantial funding from all levels of government, as well as from the private sector. The CEEP uses technical energy and GHG emissions data to model actions that will provide a low carbon transition pathway for Hamilton to achieve its net-zero carbon emissions target by 2050. The low carbon actions are broken down into five main pillars:

- Pillar 1: Innovating our industry;
- Pillar 2: Transforming our buildings;
- Pillar 3: Changing how we move;
- Pillar 4: Growing green; and
- Pillar 5: Revolutionizing renewables.

Included in these five main pillars are actions that include targets with quantifiable GHG reduction potential and financial forecasts. Through the CEEP there will also be an implementation strategy which outlines key responsibilities, required collaborations and in some cases examples of best practices. This implementation strategy will be a key component in the city and community collectively and efficiently implementing the actions contained within the CEEP which will contribute towards meeting Hamilton's GHG reduction targets.

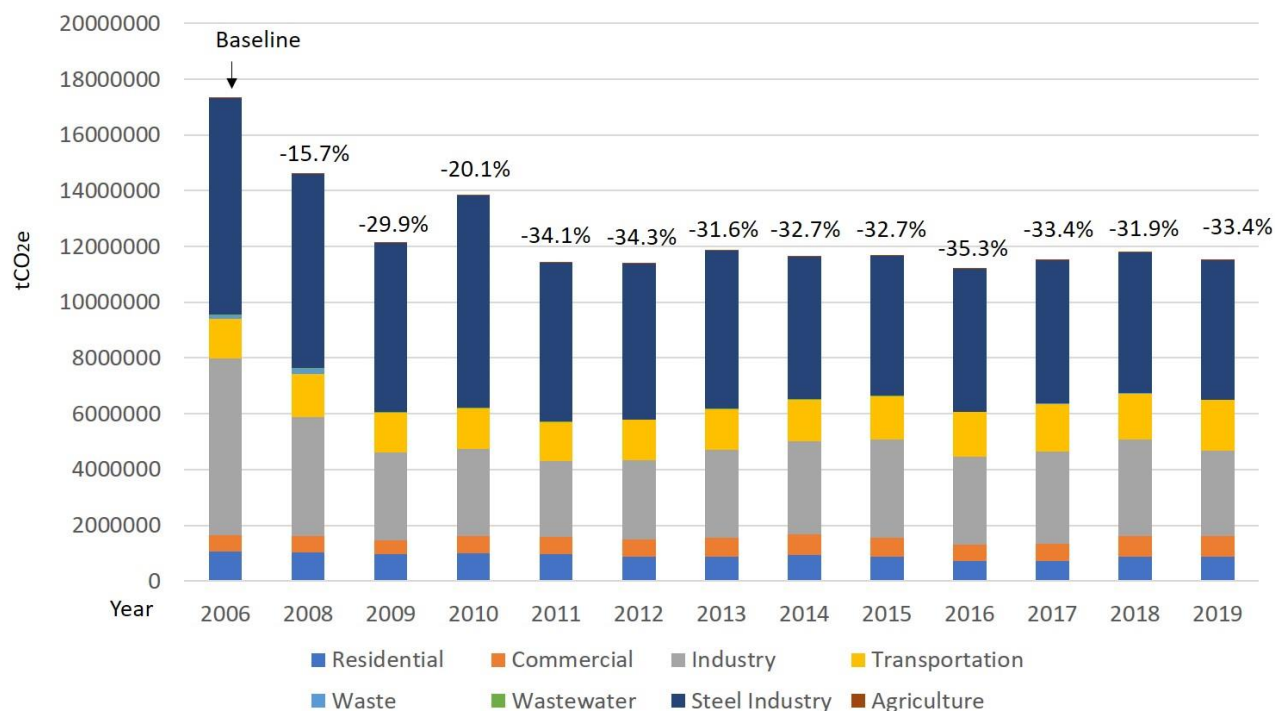
These five main pillars align with the Bay Area Climate Change Council's (BACCC) three focus areas which include 1) Retrofitting homes and buildings, 2) Zero carbon vehicles and complete streets, and 3) Sustainable manufacturing. The BACCC's (2018) Regional GHG Inventory highlights that buildings, transportation and industry accounts for 95% of direct emissions from Hamilton and Burlington (Bay Area)³.

The CEEP's main pillars and the BACCC's focus areas are also aligned with the community-wide GHG emissions inventory. City staff track, analyse and report on community-wide GHG emissions on an annual basis. Data is collected from a variety of utility, government and consulting services. Figure 1.0 shows a breakdown of community-wide GHG emissions and its sources.

² Insurance Bureau of Canada. (2021). The Cost of Climate Adaptation. Retrieved from: <http://www.ibc.ca/mb/disaster/water/flooding-in-canada/the-cost-of-climate-adaptation>

³ Bay Area Climate Change Council (2021). Focus Area. Retrieved from: <https://bayareaclimate.ca/focus-areas/#buildings>

Figure 1.0 Hamilton's Community-Wide GHG Inventory 2006 – 2019



As with all previous years, in 2019 Hamilton's Steel Sector remains the single largest source of GHG emissions. Highlighted in Figure 1.0 above in dark blue the Steel Sector represents approximately 43.4%, or ~5,012,071 tonnes of Carbon Dioxide equivalent (tCO₂e) of Hamilton's total GHG emissions. Buildings, combined to include residential, commercial and industrial space heating (from natural gas) represents approximately 7.5% (residential), 6.3% (commercial) and 26.6% (industry) for a combined total of 40.4% of Hamilton's total GHG emission sources. The third largest source of Hamilton's emissions is from Transportation. Highlighted in yellow in Figure 1.0 above the Transportation Sector represents approximately 15.9%, ~1,833,529 tCO₂e.

The Task Force is a City of Hamilton internal working group with objectives to collect and distribute climate change related information, reviewing and providing recommendations on climate change related matters and to centralize climate change information and reporting across the Corporation. Appendix "B" to Report CMO19008(b)/HSC19073(b) identifies the members of the Task Force and contact information.

The Task Force is committed to transparency and disclosure of pertinent information concerning its climate actions and work. Should any external stakeholders or members of the public wish to contact the Task Force and receive additional information on previous reports completed and/or ongoing status updates on climate change work they

are encouraged to view the City's Climate Action website by visiting
<https://www.hamilton.ca/city-initiatives/strategies-actions/climate-change-action>.

Climate change evaluations, frameworks and lenses have been completed for several initiatives across the Corporation. Climate action is increasingly being embedded within the City's daily work in a methodical manner with examples including but not limited to:

- Public Works (PW) commitment to updating the Corporate Energy and Sustainability Policy, implementing the Green Fleet Strategy and their Resilient Works program development, as well as divisions across PW ensuring low carbon material and recycled content are used in their projects, avoiding embodied carbon;
- Healthy and Safe Communities (HSC) commitment to working with all departments on completing Hamilton's Climate Impact Adaptation Plan, reducing employee travel thereby reducing GHG emissions and piloting innovative emergency vehicles and equipment such as Hamilton Fire's all electric fire apparatus and Paramedic's Hybrid Ambulances;
- Planning and Economic Development's (PED) commitment to incentivizing and encouraging high performance buildings through updating eligibility in Hamilton's Tax Increment Grant (RHTIG), and finalizing Hamilton's Urban Forest Strategy and Community Energy and Emissions Plan, along with other guidelines and policies encouraging more sustainable private development; and
- Corporate Services (CS) commitment to establishing the Climate Change Reserve and updating the City's Roster document to include Request for Proposal (RFP) criteria to address sustainable procurement and climate change sending a message to all the City's vendors that climate change is a major priority for City decision making and should also be for those vendors.

The science has never been clearer, the world collectively needs to take accelerated action on climate change to avoid the most catastrophic consequences. According to the IPCC (2018) Special Report this requires global emissions to be reduced by 50% by 2030 and 100% by 2050. While the goals and areas of focus was a good start, the Community Energy and Emissions Plan combined with the Climate Adaptation Plan, will provide a more integrated plan with measurable goals, targets and metrics to measure progress. The City's Senior Leadership Team (SLT) is committed to taking these actions, recommendations, targets, and indicators and integrating them into the department's multi-year budgets and business plans including the necessary resources to execute the immediate, mid-term and long-term climate change actions.

The City cannot address climate change on its own, in isolation. It will take the collective collaboration and buy-in from all external stakeholders including businesses, industry, non-government organizations, academia and individual citizens. A collective commitment to working collaboratively, in implementation, and in annual progress

reporting will be essential to ensure the City of Hamilton and the broader community achieves the identified climate change objectives and targets.

ALTERNATIVES FOR CONSIDERATION

Option 1

Not approving or amending the Climate Change Reserve Policy.

This is not recommended as the Climate Change Policy has been reviewed by all Departments and supported by Senior Leadership Team. The way the Climate Change Reserve Policy is currently written provides clear guidance for City staff on eligibility under this reserve. The intent of this reserve is to provide funding for one-time innovative climate actions and actions that can leverage other sources of funding. Modifying the wording may result in confusion or uncertainty.

Option 2

Direct staff to release meeting agendas and minutes of the internal Corporate Climate Change Task Force (CCCTF) working group.

The City of Hamilton has numerous internal working groups, with the Corporate Climate Change Task Force being just one. Individual meeting minutes and agendas reflect individual meeting discussions and not the City of Hamilton's final position on any given matter. The City of Hamilton is committed to transparent and open reporting of final information through reports to Council and updating the website. The positions of the Task Force members have been provided and members of the public can view the City's Climate Action website to learn more about the work of the Task Force and/or making any requests to the Task Force.

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Community Engagement and Participation

Hamilton has an open, transparent and accessible approach to City government that engages with and empowers all citizens to be involved in their community

Economic Prosperity and Growth

Hamilton has a prosperous and diverse local economy where people have opportunities to grow and develop.

Healthy and Safe Communities

Hamilton is a safe and supportive City where people are active, healthy, and have a high quality of life.

Clean and Green

Hamilton is environmentally sustainable with a healthy balance of natural and urban spaces.

Built Environment and Infrastructure

Hamilton is supported by state-of-the-art infrastructure, transportation options, buildings and public spaces that create a dynamic City.

Culture and Diversity

Hamilton is a thriving, vibrant place for arts, culture, and heritage where diversity and inclusivity are embraced and celebrated.

Our People and Performance

Hamiltonians have a high level of trust and confidence in their City government.

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" to Report CMO19008(b)HSC/19073(b): Climate Change Reserve Policy

Appendix "B" to Report CMO19008(b)HSC/19073(b): Hamilton's Corporate Climate
Change Task Force Semi-Annual
Update

Appendix "C" to Report CMO19008(b)HSC/19073(b): Climate Science Report for the
City of Hamilton 2021

Appendix "D" to Report CMO19008(b)HSC/19073(b): Climate Impact Adaptation Plan
Engagement Log