

CITY OF FREDERICTON

COMMUNITY ENERGY AND EMISSIONS PLAN

CITIZEN SYNOPSIS



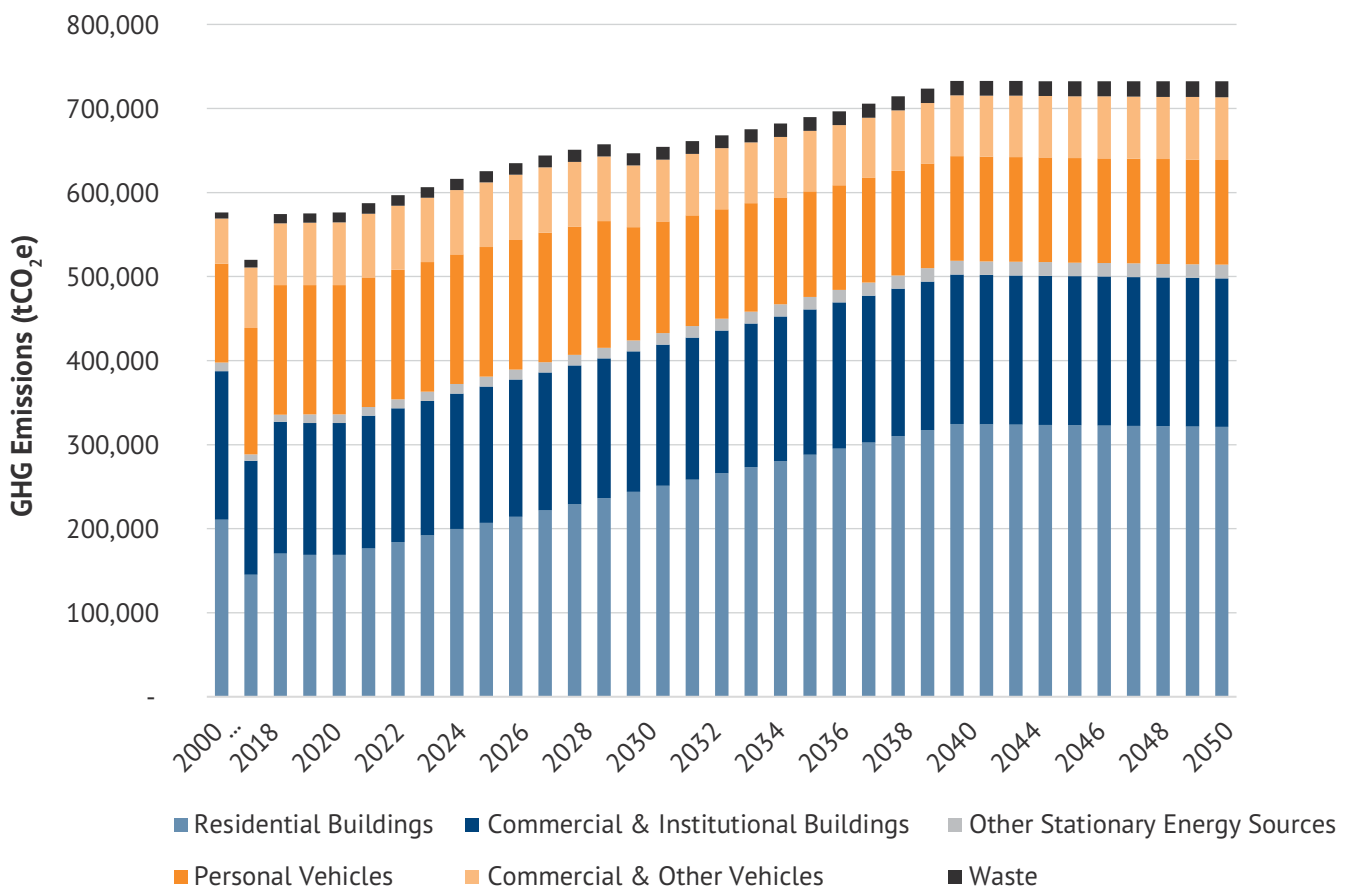
In 2018, scientists and policy makers globally came to the agreement that to substantially reduce the risks and effects of climate change, global greenhouse gas (GHG) emissions must be significantly reduced to limit global temperatures from rising beyond 1.5°C. Across the globe, communities, towns and cities have responded by declaring a climate emergency, acknowledging the need to prioritize climate action and striving to reduce GHG emissions by at least 80% per capita by 2050.

The City of Fredericton has already seen the impacts of climate change—there has been an increase in the number heat waves, extreme weather events and changes in precipitation patterns over the last number of years. Climate projections for the next 50 to 80 years indicate that Fredericton can expect even greater increases in seasonal temperatures, changes in precipitation patterns and an increase in the number and severity of extreme weather events. On the ground, these changes mean a greater

likelihood of wildfire, flooding, and wind events which can result in service disruptions, damage to private and public property, and public emergencies and evacuations.

Recognizing the responsibility to respond to the causes and impacts of climate change, the City of Fredericton has developed a Community Energy and Emissions Plan (CEEP) to increase the City's resilience to climate change and transition Fredericton towards an energy efficient and low carbon future. The CEEP provides a plan to slow the effects of climate change by reducing GHG emissions, with a per capita GHG emissions reduction target of 80% per capita by 2050 (from 2000 levels). Based on forecasted population growth, the CEEP identified that without action from the City and community, Fredericton's GHG emissions are projected to increase to 741,000 tonnes by 2050—an increase of 16% over 2000 levels.

Business As Usual GHG Emissions Forecast



The development of the CEEP evolved over the course of the 2020 calendar year and involved a combination of research on policy and best practices, completion of Fredericton's GHG inventory and forecast of GHGs out to 2050, and input from staff, stakeholders and the public on what actions the City could take to reduce GHG emissions. Numerous stakeholders were invited to participate in two workshops in the fall of 2020 to provide input into the goals and help identify key actions and partners. An online survey hosted in the fall of 2020 was used to assess public support for various high-level strategies in the areas of transportation and land use, buildings and energy, and solid waste. The conversations that took place, and the input received through this engagement program informed the development of the CEEP. The CEEP was drafted in December 2020 and reviewed by City staff in January 2021.

While the City has prioritized the reduction of GHG emissions over the last 20 years, the CEEP represents a renewed focus on GHG reductions for the City. The CEEP is both an action plan and a strategic plan. As an action plan it defines a number of actions that can be initiated by City staff, residents and partners over the next 10 years to achieve the targeted GHG reductions. As a strategic plan, the CEEP's vision, mission, GHG reduction target and goals provide overarching direction for future decision making about which initiatives to pursue. The goals focus on neighbourhood planning, mobility, economy, efficient buildings, low carbon energy supply, waste management and leadership from within the City and the Fredericton community.

CEEP VISION



CEEP MISSION

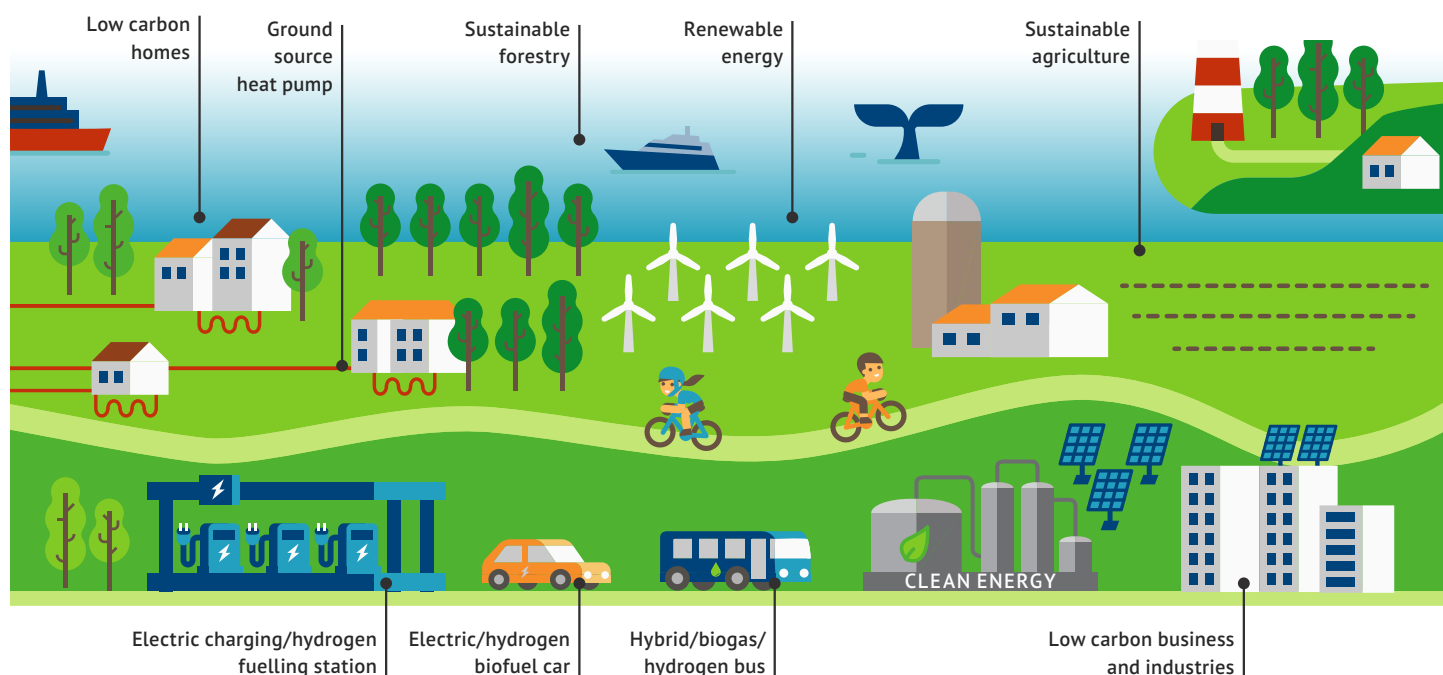


CEEP TARGET

Fredericton is a community leading in the transition toward an energy efficient and low carbon future.

The City's role in realizing this vision is to catalyze community action using local government tools to promote and support action on energy efficiency and conservation, and thereby increase the City's resilience to climate change.

To this end, the City has established a per capita GHG emissions reduction target of 80% per capita by 2050 (from 2000).



COMMUNITY ENERGY AND EMISSIONS PLAN AT A GLANCE



BUILDINGS

- All newly constructed commercial, institutional and residential buildings are highly energy efficient and operate on low/no carbon fuel sources. Developers take advantage of streamlined incentive programs and are building with energy efficiency standards that go beyond the latest National Energy Code of Canada for Buildings and National Building Code.
- Existing buildings in the City are highly energy efficient. By 2030, the City's current annual energy retrofit rate at least doubles and energy and GHG improvements become a central part of every building renewal.



LAND USE

- Future City planning direction and council decisions about land are aligned with the intended direction and commitment for GHG reductions and energy efficiency. The City plans and develops neighbourhoods that are accessible, use low/no carbon fuels, and manage energy consumption through design.



TRANSPORTATION

- Through smart land use planning and the adoption of affordable, convenient and safe active transportation methods,
 - All new community plans prioritize pedestrians and cyclists and existing plans are retrofitted to do so.
 - The City reduces the number of single occupancy trips and there is a significant increase in residents who are choosing to use public transit, walking and cycling (over 2016 levels). The City has established personal vehicle average trip length reduction, active transportation, and transit utilization targets by 2025.
 - The City reduces vehicular travel and associated transportation GHG emissions. The City has a comprehensive network of pedestrian and bicycle routes linking residents to commercial and activity areas.



SOLID WASTE

- The City implements a strategic plan to reduce the amount of solid waste being generated by residents and businesses in the City. The community reduces the generation of waste through the promotion of the 6 r's of waste management (rethink, reduce, reuse, recycle, recover, and residual management).



ALTERNATIVE ENERGY

- The community reduces the carbon intensity of its energy portfolio through the adoption of local renewable energy systems. The City completes an alternative energy assessment to identify neighbourhoods or hotspots where solar PV, microgrids, waste heat recovery and district energy (DE) systems could be used.



LOCAL ECONOMY

- Support and engage local businesses, universities, colleges and not-for-profit organizations in the community in the transition towards a low carbon economy. A green economy strategy is included in the new Economic Development Strategy.



COMMUNITY OUTREACH & FUNDING

- The community has taken ownership of its personal carbon footprints. There is stable funding for initiatives that reduce energy use and greenhouse gas emissions in the community.



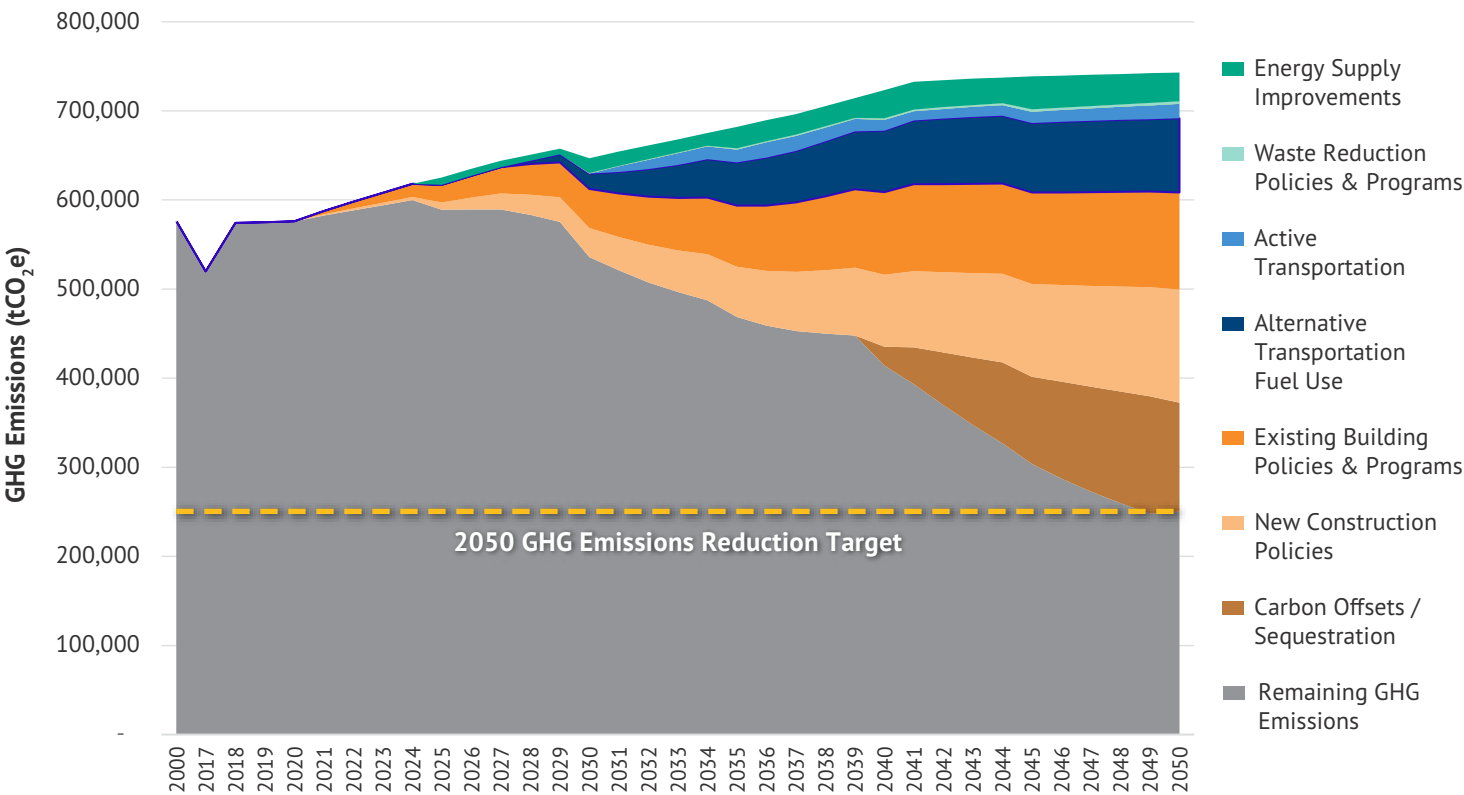
MUNICIPAL LEADERSHIP

- The City is a leader in taking action on climate change.



While many factors will influence the behaviour and actions of the Fredericton community over the next 30 years—and ultimately the trajectory of the community’s GHG emissions, the achievement of the 80% per capita target will require more stringent building energy codes, the continued greening of New Brunswick’s energy system, and the rapid adoption of less GHG intense forms of transportation. Carbon removal from the atmosphere through the use of renewable energy credits (RECs) or the purchase of carbon offsets are likely to be part of the CEEP reduction portfolio in years to come with the specifics of those reduction tools to be defined as needed beyond 2030. The key message is that realizing deep reductions in GHG emissions will require strong leadership and collaborative action by the City, senior levels of government and local businesses and organizations, as well as lifestyle changes by all residents of Fredericton.













The proposed CEEP strategies and actions for the next 10 years encompass a wide range of approaches, from educational campaigns, to increases in regulations and standards over time, to new and existing sources of potential funding. These actions and strategies will complement existing initiatives and put Fredericton on a path towards its 2050 GHG reduction target. It is anticipated that these strategies and actions will be prioritized and implemented opportunistically (e.g., certain circumstances may accelerate a particular action, like new funding becoming available) and will be regularly reviewed and updated. Any actions with financial implications will be reviewed and approved by senior staff and Council.

GHG Emissions Forecast











The CEEP complements and supports key City plans including the Municipal Plan, the Climate Change Adaptation Plan (CCAP) and the Corporate Energy and Emissions Plan. Synchronizing the implementation of these plans will allow the City to decrease GHG emissions, while creating a more livable community that is resilient to climate change impacts. The preparation of the CEEP is Fredericton's first step towards reducing community GHG emissions by 80% per capita by 2050. It is a forward-looking vision for GHG emission reductions in Fredericton and will be treated as a living document with the intent to be updated and revised as resources, new science and technologies emerge.








ACTION	GOAL AREA	DEPARTMENT LEAD
ONGOING: 2020–Onwards		
Embed the City's Street Design Guidelines in transportation planning, infrastructure planning, and urban design plans and processes.		Planning & Development
Continue to implement sidewalk, pedestrian, transit, roadway, and bikeway investment projects that encourage the shift to active transportation modes as identified in the <u>Active Transportation Connection Plan</u> .		Engineering & Operations
Launch community-based social marketing (CBSM) campaigns focused on waste reduction (e.g., no junk mail, smart purchasing, Metro Vancouver's Love Food Hate Waste campaign, reducing contamination in recycling).		Engineering & Operations
Continue promoting home composting programs.		Engineering & Operations
Use the Engage Fredericton Platform and the launch of the City's Environmental Dashboard to provide up to date information on the plans progress, and continue to engage residents and allow them to provide input.		Corporate Services
Develop a comprehensive communication strategy that highlights the benefits of implementing the CEEP, like economic and community resilience benefits.		Corporate Services
Pilot new technologies in City-owned assets to assess suitability for broad community application.		Engineering & Operations
Review and update the CEEP every 3–5 years.		Corporate Services
Review CEEP GHG target in 2030.		Corporate Services
PHASE ONE: 2021–2022		
Advocate for the Province to adopt the National Energy Code of Canada for Buildings and National Building Code.		Corporate Services
Ensure that new building policy and code requirements are supported with investment in the development of compliance processes, tools, and training for both staff and applicants prior to the National Energy Code of Canada for Buildings and National Building Code requirements taking effect.		Planning & Development

ACTION	GOAL AREA	DEPARTMENT LEAD
Establish a green buildings committee with staff, developers, and the construction industry association to help advance and support green buildings policy and program development. This could also include providing workshops that examine net-zero construction methods and best practice approaches, green building products and opportunities to retrofit and develop more sustainable and energy efficient buildings.		Corporate Services
Support the training of City staff to gain skills unique to net-zero emission buildings, and renewable energy systems.		Corporate Services
Work with NB Power and NRCan to encourage commercial building owners to adopt the use of a Portfolio Manager to track energy consumption and demand charges. Encourage building owners to access benchmarking, auditing and retrofit funding through NB Power, and investigate additional funding that could be accessed by the City through NRCan and other sources to further subsidize commercial efficiency projects.		Corporate Services
Advocate to the Province to provide City-specific vehicle registration data to improve GHG estimates and inform the development of related policies to encourage fuel switching and driver behaviour.		Engineering & Operations
Work with the local developer community, and organizations like Google, to improve in-City and transboundary trip distance estimates and to inform the development of personal vehicle average trip length and active transportation targets.		Corporate Services
Establish and embed transportation-related targets—i.e., personal vehicle average trip length and active transportation—in the City's transportation and land use planning documents.		Engineering & Operations
Begin regional discussions on the development of transit express routes and incentive programs between city centers to reduce single occupant vehicle use.		Engineering & Operations
Implement a program to collect information from City staff to identify and assess the barriers that City employees face (or perceive they face) in their efforts to implement sustainable transport programs and policies.		Corporate Services
Encourage the province and utility to complete an electric vehicle (EV) market adoption study to better understand the: anticipated local market demand for electric vehicles; the needs of users; barriers; the cost to the City and other stakeholders in implementing such a program; most beneficial incentives; and enabling by-law changes		Corporate Services
Increase the number of secure and protected bike parking and maintenance facilities available to the public across the City. As applicable, enhance off-street bicycle parking standards and requirements for new developments.		Engineering & Operations
Work with the local business community to develop / adopt intermodal or mixed-modal commuting technology platforms (e.g., apps) that allow users to plan trips that use multiple modes (public transit, car sharing, bike sharing, car- and vanpooling, on-demand ride services, and shuttle services) and promote existing programs (e.g., Trailtowns).		Corporate Services
Work with local partners to develop and/or provide a bicycle safety education program to teach drivers and riders the laws, riding protocols, routes, safety tips and emergency manoeuvres.		Corporate Services

ACTION	GOAL AREA	DEPARTMENT LEAD
Work with local partners to develop and support workplace-and school-based initiatives that encourage more sustainable and efficient commuting patterns.		Corporate Services
Explore and support micro mobility initiatives (e.g., bike share).		Engineering & Operations
Encourage telecommuting and alternative work schedule programs.		Corporate Services
Explore the option of closing down specific streets to vehicle traffic at certain times or days of the week (6 am to noon) to support active transportation programs.		Corporate Services
Package and promote information on existing programs that support energy efficiency improvements in commercial buildings.		Planning & Development
Hire a Corporate / Community Energy Manager to assist in moving the City from vision to implementation of the CEEP by addressing various barriers identified. Leverage grants available to support this position.		Corporate Services
Dedicate annual on-going operating funding to enable CEEP implementation.		Corporate Services
Incorporate climate action performance measures into the City's annual budgeting process.		Corporate Services
Build an education program to improve staff's capacity for energy and GHG management in their day-to-day decision making.		Corporate Services
Update the Municipal Plan to align with the corporate and community CEEP.		Planning & Development
PHASE TWO: 2023–2024		
Package and communicate information on existing programs and opportunities around alternative and renewable energy. Distribute via the building permit process.		Planning & Development
Work with NB Power, Realtors Association and other partners to explore a pilot residential energy labeling program (at the time of sale) for residential homes and explore options for multifamily buildings. Based on the pilot study, develop recommendations to better support the local market, whilst supporting the retention of older homes.		Corporate Services
Advocate for the Province to modify the Community Planning Act and Municipalities Act to allow NB cities to address energy and water conservation, efficiency and GHG reduction requirements in Development Permit Area (DPA) guidelines.		Corporate Services

ACTION	GOAL AREA	DEPARTMENT LEAD
Update the Official Plan to reflect the recommendations made in this plan.		Planning & Development
Develop “soft” policies for rezoning and development that encourage the planning, design, and development of near-net zero buildings and neighbourhoods (e.g., establishment of Integrated Energy / Net Zero Master Plans). While typically non-binding they are intended to provide guidance to developers of what would be viewed most favorably in a development application.		Planning & Development
Develop a mechanism to value green infrastructure assets and the benefits of these assets to the community.		Planning & Development
Review Development Permit Plans and, where applicable, update them to ensure that neighbourhoods establish cycling and pedestrian networks to complement the Active Transportation Master Plan, and include strong connectivity, an appropriate variety of route types, separated bike paths, and end-of-trip facilities.		Planning & Development
Explore the benefit of completing a study to assess the feasibility of district energy in key development areas.		Engineering & Operations
Implement network improvements and undertake planning to increase transit service, transit utilization (e.g., new routes, transit priority measures, on-demand technology, etc.) and traffic flow.		Engineering & Operations
Work with car share providers to explore the piloting of a car share program.		Corporate Services
Provide recycling infrastructure at public spaces and events.		Recreation, Tourism & Community Engagement
Work with community partners to promote product exchange / resale networks.		Engineering & Operations
Work with stakeholders to undertake an alternative energy pre-feasibility study in an effort to: understand where potential opportunities exist and identify specific zones / buildings and, investigate partnerships, financing, and governance models to advance potential DE, microgrids, waste heat recovery and solar PV system(s).		Planning & Development
Work with local businesses / organizations to promote or implement commute trip reduction programs (parking cash out, transit allowances, rideshare, end-of-trip facilities, compressed or flexible work weeks, telecommuting, etc.).		Corporate Services
PHASE THREE: 2025–2027		
Explore the opportunity to establish an incentive / fast-track program for development applications that undertake and implement Integrated Energy Master Plans (see Land Use). Incentives could include building permit rebates, reduced DCC rates.		Planning & Development

ACTION	GOAL AREA	DEPARTMENT LEAD
Review current zoning and DCC bylaws to identify low carbon fuel switching, energy conservation and efficiency strategies, and other barriers to densification (e.g., increasing height standards, remove barriers to the use of garden suits/carriage houses, etc.) and adjust the DCCs and bylaws accordingly. Implement the changes incrementally or as a comprehensive review.		Planning & Development
Investigate offering incentives to encourage the use of green roofs and white roofs on large buildings, and the use of alternative energy systems.		Planning & Development
Explore the feasibility of a Revitalization Tax Exemption Bylaw and other tools and incentives to help property owners and managers undertake deep energy and GHG emissions retrofits of existing buildings.		Planning & Development
Establish a local food policy and supporting programs that supports a local, sustainable food system. This is likely to include: Working with partners to identify land for urban farms and community gardens (and zoning accordingly); Exploring opportunities for residents to grow edible plants on boulevards in front of homes and along bike paths.; Developing an educational / communication program to encourage growing food locally and the benefits that accrue (e.g., reduced emissions, increased food security, etc.); Work with neighboring municipalities, local business, farmers/ producers, chamber of commerce, etc. to implement a “buy local” campaign in the region. Promote the benefits of buying local via websites, in local stores, etc.		Planning & Development
Seek out funding to support the development of separate residential, high-density residential buildings, and institutional / commercial building deep building energy retrofit strategies. It is recommended that these programs consider: Sponsoring / financing energy audits; Simplifying incentive process (e.g., discounts for building permits, streamlining permit process, etc.); Prioritizing the funding / implementation of low income weatherization opportunities; Recognizing energy efficiency barriers in heritage buildings; Incentivizing fuel switching from fuel oil to low / no carbon fuels in buildings; Establish energy labeling requirements (e.g., point-of-sale); Partnering with property owners and managers to identify the most compelling financing tools for energy efficiency upgrades in commercial buildings.		Corporate Services
Consider incorporating criteria related to the management of wastes from demolition, land clearing and construction activities into its Sustainable Development Checklist. These activities could be further incented by assigning a scoring system to the Checklist and rewarding developers and contractors with Development Cost Charge (DCC) reductions.		Engineering & Operations
Examine the opportunity around developing financial incentives that can support DE, microgrids, waste heat recovery and solar PV, such as financing to assist in undertaking feasibility studies or low interest loans to help support upfront capital costs. For example, removing property taxes for renewable technology or infrastructure.		Planning & Development
Work with the Chamber of Commerce to identify, catalogue and profile local green businesses and businesses undertaking greening activities in the City and develop a recognition program.		Corporate Services

ACTION	GOAL AREA	DEPARTMENT LEAD
Work with partners, including the Chamber of Commerce, to develop communications presenting the City's strengths as a location to grow the green economy (e.g., investment-ready land, willingness to find supporting infrastructure district heating or smart grid space), along with the incentives and programs.		Corporate Services
Study the costs and benefits of setting up a community fund or not-for-profit entity that could fund energy efficiency retrofits and new building features in the community—e.g., grants for community groups to implement education and outreach campaigns and also secure funds to retrofit and upgrade buildings and facilities.		Corporate Services
Provide sponsorship to local youth to participate in programs that develop leadership in sustainability.		Corporate Services
PHASE FOUR: 2028–2030		
Consider implementing a preferential parking permit program for car-sharing/EV programs through supportive parking regulations, zoning requirements, and by-laws (e.g., increasing parking costs for fossil fuel powered single occupant vehicles).		Planning & Development
Implement policies for new construction that reduce parking requirements in exchange for increased car share, EV and bicycle parking and associated demand management initiatives.		Planning & Development
Investigate options to reduce waste generated within the City (e.g., pay as you throw systems and collection frequency).		Engineering & Operations
Require the evaluation of waste heat recovery from large refrigeration systems (such as arenas, grocery stores) in new large developments.		Planning & Development

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