



**City of Kingston
Report to Council
Report Number 19-261**

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|-------------------------|---|
| To: | Mayor and Members of Council |
| From: | Peter Huigenbos, Acting Commissioner, Community Services |
| Resource Staff: | Julie Salter-Keane, Community Projects Manager |
| Date of Meeting: | October 15, 2019 |
| Subject: | Working Group on Climate Action Report |

Executive Summary:

On June 18, 2019, Council passed a motion to create the Working Group on Climate Action (WGCA). The Working Group on Climate Action was provided a Mandate “to promote, engage, inform, and challenge community organizations, institutions, and businesses to reduce Greenhouse Gas (GHG) emissions in the IC&I Sector as soon as possible at no to little cost”.

Council directed the Working Group to “report to Council no later than October 31, 2019 with a list of actions for potential implementation by community partners/businesses and the Corporation to reduce GHG emissions in an immediate and inexpensive manner”.

Over the last three months, the Working Group on Climate Action with input from the Kingston Environmental Advisory Forum (KEAF) and the public developed the list of actions. The final Report contains eleven (11) actions to be implemented in partnership by various organizations, institutions and businesses within the community. The opportunities for actions are under the following themes: buildings, transportation, green space, waste, food and agriculture, water and other. As per the mandate of Council, the actions are considered immediate and low cost.

Sustainable Kingston will have a leadership role in coordinating and implementing a number of actions as described in the Working Group on Climate Action Report (Exhibit A). Collectively, working group members, including the City of Kingston, are already actively engaged in many of the areas being put forward as recommendations. The recommendations will serve as a means to continue to engage the industrial, commercial and institutional (ICI) sector, share best practices and enable wider adoption of emissions reduction strategies.

City staff will implement the applicable immediate and low cost action items within the City’s corporate operations and report back to Council in Q2 2020 with an information report on the progress of the action items implemented. As noted above, the Corporation is already actively

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involved in the implementation of many of the recommended actions and these will be reported out as well in the report to Council.

Sustainable Kingston, under its Service Level Agreement with the City, will take a leadership role in facilitating the implementation of the Working Group on Climate Action Report and include a summary of the implementation of the action items in the ICI sector in its Annual Report to Council.

Recommendation:

That Council receives the Working Group on Climate Action Report dated October 2, 2019 to encourage the community's industrial, commercial and institutional sector to adopt its recommendations for immediate, low cost GHG reduction action items; and

That Council directs staff to implement applicable immediate and low cost action items within the City's corporate operations and report back to Council in Q2 2020 with an information report on the progress of action items implemented; and

That Sustainable Kingston, under its Service Level Agreement with the City, take a leadership role in facilitating the implementation of the Working Group on Climate Action Report and include a summary of the implementation of the action items in the industrial, commercial and institutional sector in its Annual Report to Council; and

That the Working Group on Climate Action, having fulfilled its mandate, be, and is hereby, dissolved, and that sincere thanks from Council be extended to all working group members and their organizations for their valued contributions.

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Authorizing Signatures:

ORIGINAL SIGNED BY COMMISSIONER

**Peter Huigenbos, Acting
Commissioner, Community
Services**

ORIGINAL SIGNED BY CHIEF ADMINISTRATIVE OFFICER

**Lanie Hurdle, Interim Chief
Administrative Officer**

Consultation with the following Members of the Corporate Management Team:

| | |
|---|---|
| Jim Keech, President & CEO, Utilities Kingston | Not required |
| Desirée Kennedy, Chief Financial Officer & City Treasurer | Not required |
| Sheila Kidd, Commissioner, Transportation & Public Works | Not required |
| Deanne Roberge, Acting Commissioner, Corporate Services |  |

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Options/Discussion:

On June 18, 2019, Council passed a motion to create the Working Group on Climate Action (WGCA). The WGCA was provided a Mandate “to promote, engage, inform, and challenge community organizations, institutions, and businesses to reduce Greenhouse Gas (GHG) emissions in the ICI Sector as soon as possible at no to little cost”.

The WGCA was established as an opportunity to bring together corporate and community partners to find immediate and inexpensive GHG emission reduction strategies in the ICI sector, while the Climate Change Management Strategy is being developed.

As part of the WGCA public and expert consultation, KEAF was consulted on August 19, 2019 ([Report Number KEAF-19-004](#)).

The Working Group provided opportunities for the public to present and submit ideas aimed at reducing GHG emissions in the ICI sector at no to little cost that could be implemented as soon as possible.

The City of Kingston’s [Get Involved](#) page allowed for members of the public to submit ideas for consideration, as long as they met the Working Group’s Mandate, from July 31, 2019 until August 30, 2019.

A public consultation session was held Tuesday August 27th at City Hall. The purpose of the consultation session was to allow for individuals to present their ideas aimed at reducing GHG emissions in Kingston’s ICI sectors as soon as possible at no to little cost. The consultation saw eight unique presentations with many different approaches to addressing GHG reductions in the ICI sector.

All input received from the working group members, KEAF, the public consultation session on August 27th and the ideas posted on the Get Involved Page have been captured in the “What We Heard” report (Exhibit B).

“What We Heard” is a report that summarizes the ideas shared by the Working Group members, community members and KEAF throughout the WGCA’s process. All ideas are captured in the What We Heard Report, although many actions do not meet the mandate of the Working Group – “as soon as possible at no to little cost”. The Working Group thought it was important to record all that was heard, as it will provide valuable input in the development of the Climate Change Management Strategy. From this public involvement, the WGCA identified that the proposed actions could be placed under specific themes: buildings, transportation, green space, waste, food and agriculture, water and other.

Collectively, working group members are already actively engaged in many of the areas being put forward as recommendations. The recommendations will serve as a means to continue to engage the ICI sector, share best practices and enable wider adoption of emissions reduction strategies.

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Several additional action items selected by the Working Group are initiatives already identified by Council as a strategic priority. These items include a description from the strategic priority update presented to Council on September 17, 2019.

City staff will implement the applicable immediate and low cost action items within the City's corporate operations and report back to Council in Q2 2020 with an information report on the progress of the action items implemented. As noted above, the Corporation is already actively involved in the implementation of many of the recommended actions and these will be reported out as well in the report to Council.

Sustainable Kingston, under its Service Level Agreement with the City, will take a leadership role in facilitating the implementation of the WGCA Report and include a summary of the implementation of the action items in the ICI sector in its Annual Report to Council.

Recommendations for Immediate and Low Cost Actions:

Buildings

1. Sustainable Kingston working with ICI members to develop an outreach campaign/challenge (similar to the Plastic Free Summer Challenge) to:
 - turn-down the heat in the winter break period if the building is closed;
 - adjust standard heating and cooling temperatures by 1 degree; and
 - optimize the use of existing Building Automation Systems (BAS) to reduce natural gas and electricity consumption and costs.

Food and Agriculture

2. Sustainable Kingston, in partnership with KFL&A Public Health, support and engage with ICI sector organizations to promote sustainable diets. Short-term, low cost options for consideration may include public and workplace education and marketing campaigns, incentives in the private sector to support the provision of more plant-based foods, and business partnership development to facilitate new food purchasing/procurement opportunities.
3. Sustainable Kingston is encouraged to promote and support existing community partnerships and projects focused on food waste diversion and food rescue practices that reduce food waste in the ICI sector.

Green Space

4. Sustainable Kingston, in partnership with Utilities Kingston, will encourage the ICI sector to implement similar sustainable landscaping into their property and project designs. Through Sustainable Kingston, the City will share lessons learned from the 2020 pilot project for potential implementation on ICI properties.

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Transportation

5. Sustainable Kingston in partnership with the ICI members will continue to raise awareness and encourage active and sustainable transportation in the ICI sector through workplace campaigns and challenges; such as carpool programs, group parking passes, Commuter Challenge, Employer Transpass Program and Kingston Transit Orientation.
6. The ICI sector should pursue and implement best practices aimed at reducing work-related travel through teleconferencing/telecommuting and carpooling when possible.

Waste

7. Sustainable Kingston, in partnership with the ICI sector, will continue to raise awareness and promote waste diversion and reduction efforts through education, campaigns, challenges, waste diversion projects and incentives such as the plastic-free summer challenge, workplace waste reduction initiatives, and the Ontario EcoSchools program.
8. Sustainable Kingston, in partnership with the Kingston Construction Association, should organize collaborative stakeholders into a leadership team under this action item to investigate and report best practices and/or processes regarding construction waste reduction, re-use and recycling, so that ICI sector organizations have access to locally applicable information and can reduce GHG emissions accordingly.

Water

9. The City of Kingston and Sustainable Kingston should continue to promote programs and education through Utilities Kingston, including rain barrels, toilet rebates and wise water use landscaping demonstration such as the Water Conservation Garden located at the 1211 John Counter Boulevard Municipal Campus, so that the ICI sector has access to education and examples of measures that are immediate and low.

Other

10. City staff can assist the developers with the testing of the smart device app, Netzero, during the market validation stage by providing existing data on City facilities to the app developers.
11. Sustainable Kingston, in partnership with St. Lawrence College, should organize collaborative stakeholders into leadership teams under the action themes to advance solutions, bringing partners together to solve problems and seize opportunities that are beyond their reach when acting alone, so that ICI sector organizations have access to information that they would otherwise not know about. City of Kingston staff can support the teams where needed, when specific experience can be shared under any of the themes.

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Existing Policy/By-Law:

Not applicable

Notice Provisions:

Not applicable

Accessibility Considerations:

Not applicable

Financial Considerations:

Not applicable

Contacts:

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Julie Salter-Keane, Community Projects Manager 613-546-4291 extension 1163

Other City of Kingston Staff Consulted:

Paige Agnew, Director, Planning, Building & Licensing Services

Jeremy DaCosta, Director, Transit Services

Luke Follwell, Director, Engineering Services

Speros Kanellos, Director, Facilities Management & Construction Services

JC Kenny, Director, Communication & Customer Experience

Bill Linnen, Director, Public Works Services

Allen Lucas, Manager, Research & Projects Office, Utilities Kingston

Paul MacLatchy, Environment Director, Real Estate & Environment Initiatives

Heather Roberts, Director, Solid Waste Services

Ian Semple, Director, Transportation Services

Lacricia Turner, Director, Recreation & Leisure Services

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Exhibits Attached:

Exhibit A Working Group on Climate Action Report

Exhibit B “What We Heard” Report

Working Group on Climate Action

Report to Council – October 15, 2019



The Working Group on
**Climate
Action**

Working Group on Climate Action Report – October 2, 2019

Working Group on Climate Action

On June 18, 2019 Council passed a motion to create the Working Group on Climate Action (WGCA). The Working Group on Climate Action was provided a **Mandate** “to promote, engage, inform, and challenge community organizations, institutions, and businesses to reduce Greenhouse Gas (GHG) emissions in the IC&I Sector as soon as possible at no to little cost”.

Council directed the Working Group to “report to council no later than October 31, 2019 with a list of actions for potential implementation by community partners/businesses and the corporation to reduce GHG emissions in an immediate and inexpensive manner”.

This report outlines a list of actions as per its mandate.

Led by co-chairs Councillor Bridget Doherty and Dan Hendry, the working group brought together representatives from many organizations and institutions across Kingston as directed by Council, including:

- St. Lawrence College;
- Royal Military College;
- Queen’s University;
- Kingston Environmental Advisory Forum;
- Cataraqui Region Conservation Authority;
- Greater Kingston Chamber of Commerce;
- SWITCH Ontario;
- Kingston, Frontenac and Lennox & Addington Public Health;
- Sustainable Kingston;
- Kingston Climate Hub;
- 350 Kingston;
- Limestone District School Board;
- Algonquin-Lakeshore Catholic School Board;
- Conseil des ecoles publiques de l’Est de l’Ontario;
- Conseil des ecoles catholiques du Centre-Est;
- Kingston Construction Association; and
- Utilities Kingston.

Following the first meeting on July 9, 2019, working group members were given a template designed to capture both new ideas and ongoing initiatives that their own organizations have put in place to reduce GHG emissions.

As part of the Working Group on Climate Action public and expert consultation, the Kingston Environmental Advisory Forum (KEAF) was consulted on August 19, 2019 ([Report Number KEAF-19-004](#)).

Working Group on Climate Action Report – October 2, 2019

The Working Group provided opportunities for the public to present and submit ideas aimed at reducing GHG emissions in the Industrial, Commercial and Institutional (ICI) sector at no to little cost that could be implemented as soon as possible.

The City of Kingston's [Get Involved](#) page allowed for members of the public to submit ideas for consideration so long as they met the Working Group's Mandate, from July 31, 2019 until August 30, 2019.

A public consultation session was held Tuesday August 27th at City Hall. The purpose of the consultation session was to allow for individuals to present their ideas aimed at reducing GHG emissions in Kingston's Industrial, Commercial and Institutional sectors (ICI) as soon as possible at no to little cost. The consultation saw 8 unique presentations with many different approaches to addressing GHG reductions in the ICI sector.

All input received from the working group members, KEAF, the public consultation session on August 27th and the ideas posted on the Get Involved Page have been captured in the "What We Heard" report, attached as Exhibit B to this report.

"What We Heard" is a report that summarizes the ideas shared by the Working Group members, community members and KEAF throughout the Working Group on Climate Action's process. All ideas are captured in the What We Heard Report, although many actions do not meet the mandate of the Working Group – "as soon as possible at no to little cost". The Working Group thought it was important to record all that was heard, as it will provide valuable input in the development of the Climate Change Management Strategy. From this public involvement the Working Group on Climate Action identified that the proposed actions could be placed under specific themes: Buildings, Transportation, Food and Agriculture, Greenspace, Waste, Water and Other.

Overview of Total Community and the ICI Component of Energy Consumption, GHG Emissions and Energy Expenditures

Based on the most recent Kingston Community Greenhouse Gas (GHG) Inventory (*Sustainability Solutions Group, December 2018*), in 2017 the Kingston Community emitted 1.1 million tonnes of GHG emissions, spent \$420 million on energy and consumed 18.8 million GJ of energy. Energy consumption is reported in Giga Joule (GJ), which is a measure of energy and allows all of the energy sources (electricity, natural gas, gasoline, diesel, heating oil, propane) to be reported as a common unit so that they can be compared and added together.

The table and graphs below, cited from the 2017 Community GHG Inventory report, shows the distribution of total community energy consumption, expenditures and GHG emissions by sector: residential, industrial/commercial/institutional (ICI), transportation, solid waste, and agriculture and forest.

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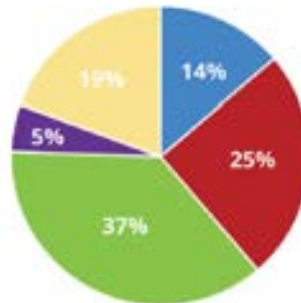
| Sector | GJ (millions) | tCO ₂ e (thousands) | Expenditures (\$ millions) |
|-----------------------|------------------|-----------------------------------|-------------------------------|
| Residential | 4.77 | 158 | 87 |
| ICI | 8.04 | 288 | 149 |
| Transportation | 5.96 | 422 | 184 |
| Solid Waste | n/a | 58 | n/a |
| Agriculture & Forests | n/a | 221 | n/a |
| Total | 18.76 | 1,149 | 420 |

I

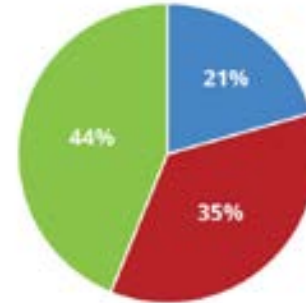
2017 Energy Consumption
18.76 million GJ



2017 Emissions
1.1 million tCO₂e



2017 Energy Expenditures
\$420 million



The category identified as the ICI sector only captures the energy to heat, cool and power buildings and processes. It does not include the energy consumption, cost and GHG emissions associated with the transportation, solid waste, agriculture and forests associated with the ICI sector.

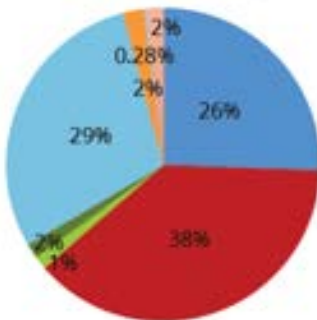
On this basis, we understand that the buildings and processes associated with the ICI sector account for approximately 43% of the total community energy consumption, 25% of total community GHG emissions and 35% of total community energy expenditures.

Provided below is a breakdown of the energy source distribution provided in the 2017 Kingston Community GHG Inventory. Only electricity and natural gas is reported for the ICI sector. With the 2014 closure of the coal plants to produce electricity, the electricity emission factor in Ontario is very low and as a result contributes marginally to the total GHG emissions. Therefore, the dominant GHG emission source for the ICI sector is natural gas.

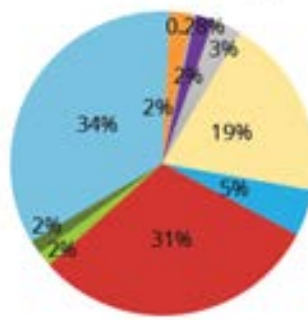
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| Fuel Type | GJ (millions) | tCO ₂ e (thousands) | Expenditures (\$ millions) |
|-----------------------|------------------|-----------------------------------|-------------------------------|
| Electricity | 4.80 | 57 | 174 |
| Natural Gas | 7.13 | 352 | 48 |
| Fuel Oil | 0.25 | 18 | 11 |
| Propane | 0.30 | 18 | 4 |
| Gasoline | 5.57 | 394 | 173 |
| Diesel | 0.39 | 28 | 11 |
| Aviation Fuel | 0.52 | 3.2 | 0.1 |
| Wood | 0.32 | 0 | 0 |
| Solid Waste | n/a | 22 | n/a |
| Wastewater | n/a | 36 | n/a |
| Agriculture & Forests | n/a | 221 | n/a |
| Total | 18.76 | 1,149 | 420 |

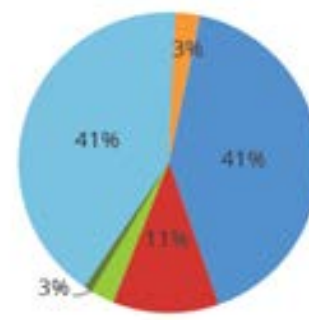
2017 Energy Consumption
18.76 million GJ



2017 Emissions
1.15 million tCO₂e



2017 Energy Expenditures
\$420 million



Council Considerations & Opportunities

City Council's 2019-2022 strategic priorities include the priority to Demonstrate Leadership on Climate Action.

Given the economic, social and environmental threats of GHG emissions and Kingston's 2019 declaration of a climate emergency, the City is committed to stewarding the environment for future generations. As an internationally connected city, Kingston will address this global issue as a local climate action leader and inspire Kingston residents to become part of the solution.

The City is leading by example with measurable, effective emission reductions, building retrofits and other energy efficiencies, to become carbon neutral as soon as possible and no later than 2040. This will result in a 15% reduction from the 2018 baseline in GHG emissions across the City's operations by 2022.

Council's strategic priorities for "Demonstrate Leadership on Climate Action" include:

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1. Reduce greenhouse gas emissions by 15% across the City's operations by 2022.
2. Enhance and expand green spaces, protect wetlands and increase the tree canopy through greening initiatives.
3. Incrementally electrify the City's fleet of vehicles including public transit.
4. Target recycling and waste reduction strategies for businesses, institutions and multi-residential buildings.
5. Develop and promote incentives for residents to reduce their energy use and become part of city-wide solutions to meet Kingston's carbon neutral target.

Beginning in late 2019, the City will begin the process to update and combine the corporate climate action plan (2015), the Community Climate Action Plan (2014) and the Municipal Energy Study (2018) into a Climate Change Management Strategy that will serve as a modern roadmap for local action toward climate mitigation and adaptation during the 2020 to 2040 period.

The Working Group on Climate Action was established as an opportunity to bring together corporate and community partners to find immediate and inexpensive GHG emission reduction strategies in the ICI sector, while the Climate Change Management Strategy is being developed.

Drawing together all of the information gathered through the input from the members of the Working Group on Climate Action, the presentations at the consultation session on August 27th, and the ideas posted on the Get Involved page, seven opportunities for action and recommendations have been developed. Keeping in mind the mandate of the Working Group, "to report to Council with a list of actions for potential implementation by community partners/businesses and the corporation to reduce GHG emissions in an immediate and inexpensive manner", only those action items that are immediate and low cost are included in the list of actions.

Collectively, working group members and the ICI sector more generally, are already actively engaged in many of the areas being put forward as recommendations. The recommendations will serve as a means to continue to engage the ICI sector, share best practices, and enable wider adoption of emissions reduction strategies.

Several additional action items selected by the Working Group are initiatives already identified by Council as a strategic priority. These items include a description from the strategic priority update presented to Council on September 17, 2019.

The opportunities for actions are grouped under the following themes selected by the Working Group on Climate Action: Buildings, Transportation, Green space, Waste, Food and Agriculture, Water and Other.

Actions: Buildings Theme

ICI sector buildings consume energy to heat and cool their spaces and to power their processes. The dominant energy source contributing to GHG emissions is natural gas. Therefore, to mitigate GHG emissions in the ICI building sector it is important to target natural gas emissions within both the existing building stock and in new construction.

Priority Action #1 – Immediate and Low Cost

Existing ICI Buildings:

Natural gas is the dominant GHG emission source in ICI buildings and most facilities are heated using natural gas. While electricity has a small GHG emission contribution it is costly. Cost savings from reduced electricity use could be directed to overall GHG emission reduction.

Recommendation

Sustainable Kingston, working with ICI members, developed an outreach campaign/challenge (similar to the Plastic Free Summer Challenge) to:

- turn-down the heat in the winter break period if the building is closed;
- adjust standard heating and cooling temperatures by 1 degree;
- optimize the use of existing Building Automation Systems (BAS) to reduce natural gas and electricity consumption and costs.

Actions: Food and Agriculture Theme

To reduce GHG emissions through food and agriculture in the ICI sector, sustainable diets and reduction of food waste are key strategies. “Sustainable diets are those diets with low environmental impact (i.e. carbon emissions, land use and water use) which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable, and nutritionally adequate, safe and healthy while optimizing natural and human resources” ([FAO, 2012](#)).

The new Canada’s Food Guide contains [Canada’s Dietary Guidelines for Health Professionals and Policy Makers](#) which state “...there is evidence supporting a lesser environmental impact of patterns of eating higher in plant-based foods and lower in animal-based foods. The potential benefits include helping to conserve soil, water and air.” In addition, food waste and food loss have environmental implications and food waste is a major contributor to greenhouse gas emissions in Canada.

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Priority Action #2- Immediate and Low Cost

Promote Sustainable Diets

The ICI sector has the potential and capacity to reduce GHG emissions by promoting sustainable diets through impact on food choices, food purchasing and how food is produced, packaged, processed and transported. From commercial restaurants to office and industrial gatherings, the ICI sector has the power to make sustainable diets more accessible and achievable for Kingston residents.

Recommendation:

Sustainable Kingston in partnership with KFL&A Public Health support and engage with ICI sector organizations to promote sustainable diets. Short-term, low cost options for consideration may include public and workplace education and marketing campaigns, incentives in the private sector to support the provision of more plant-based foods, and business partnership development to facilitate new food purchasing/procurement opportunities.

Priority Action #3 - Immediate and Low Cost

Reduce Food Waste

Food waste that ends up in landfills is a contributor to GHG emissions in the form of methane. Food waste occurs within the ICI sector at various levels of the food supply chain. Thus, reducing food waste in the ICI sector provides an opportunity for positive climate impact.

The City of Kingston continues to support community partnerships on food waste diversion and food rescue through community organizations such as Loving Spoonful.

Recommendation:

Sustainable Kingston is encouraged to promote and support existing community partnerships and projects focused on food waste diversion and food rescue practices that reduce food waste in the ICI sector.

Actions: Green Space Theme

Green space in the forms of regional conservation areas, municipal forests, parks, gardens, local farms and private property provides great value to City of Kingston residents for recreation and enjoyment. Green space also provides ecological benefits such as air purification and carbon sequestration. Additionally, new data suggests a link between physical and mental health and spending time in nature. Green space is good for people and the planet. This sentiment was expressed during the WGCA meetings and public engagement sessions as was the importance of urban tree canopy cover, again, both for public health and carbon dioxide reduction. The group heard from many

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Kingstonians, including area farmers and horticulturalists, and ICI sector partners who expressed their appreciation for trees and natural landscapes.

Priority Action #4 – Immediate and Low Cost

Sustainable Landscaping

Sustainable landscaping practices include the use of natural, native and low-maintenance (i.e. minimal water or no cutting required) vegetation to enhance public right-of-ways, promote natural water infiltration, and reduce the cost and environmental impacts of maintenance, such as fossil fuel powered lawn mowing. The City will continue to lead by example through the promotion of past projects such as the water conservation garden at John Counter Boulevard Municipal Campus and the forthcoming 2020 pilot project of replacing boulevards and roadside grass plantings with “wildflower verges.

Recommendation:

Sustainable Kingston, in partnership with Utilities Kingston, will encourage the ICI sector to implement similar sustainable landscaping into their property and project designs. Through Sustainable Kingston, the City will share lessons learned from the 2020 pilot project for potential implementation on ICI properties.

Actions: Transportation Theme

Transportation emissions are generated in the combustion of fossil fuels to power vehicles. In Kingston, nearly all vehicles use gasoline or diesel fuel. To reduce GHG emissions through transportation in the ICI sector, active and sustainable travel options must be prioritized, enhanced and supported. Strategies that improve acceptability and convenience of active and sustainable travel such as walking, cycling, public transit, carpooling, telecommuting/teleconferencing and car sharing can result in significant GHG emission reductions as well as have other environmental, social, health and economic benefits.

Priority Action #5: Immediate and Low Cost

Promote Active and Sustainable Transportation Engagement

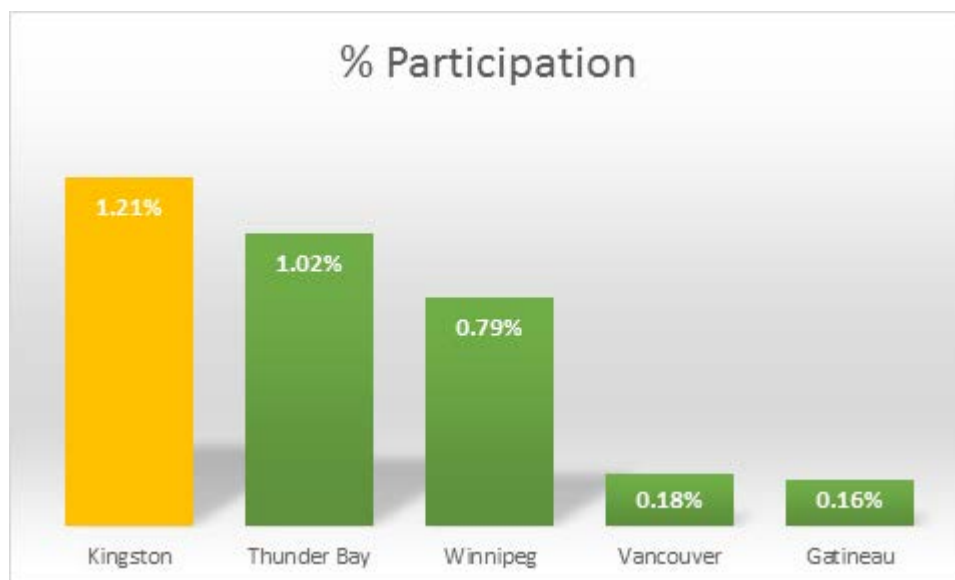
Transportation of people and goods in the ICI sector contribute significantly to GHG emissions. Transportation-related GHG emissions can be reduced through strategic engagement and infrastructure strategies that support active and sustainable transportation.

The Commuter Challenge in 2019 saw the Kingston community reverse a 3-year downward trend in registration and participation and more than doubled our participation numbers from 2018.

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The Kingston community had the highest % participation in the whole country.



Recommendation:

Sustainable Kingston in partnership with the ICI members will continue to raise awareness and encourage active and sustainable transportation in the ICI sector through workplace campaigns and challenges; such as carpool programs, group parking passes, Commuter Challenge, Employer Transpass Program and Kingston Transit Orientation.

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Priority Action #6: Immediate and Low Cost

Encourage Teleconferencing and Telecommuting Practices

Many ICI sector practices and operations include travel to meetings and events resulting in GHG emissions. The ICI sector can reduce GHG emissions by decreasing land and air travel when possible. Telecommuting/teleconferencing can also replace unnecessary travel and research has shown significant increases in productivity where telecommuting is accepted. Policies and office infrastructure should be in place to ensure accessible and reliable telecommuting/ teleconferencing. When travel is required, replacing single-passenger vehicle trips with carpooling whenever possible can reduce transportation-related GHG emissions.

Recommendation:

The ICI sector should pursue and implement best practices aimed at reducing work-related travel through teleconferencing/telecommuting and carpooling when possible.

Actions: Waste Theme

Based on the 2017 Kingston Community GHG Inventory (SSG, December 2018), the total waste sector accounts for approximately 5% of GHG emissions. While data for waste related emissions are captured only for the residential sector, it is assumed that the ICI sector contributes significantly to the generation of waste through its operations. While it is mainly the organics portion of waste that contributes to GHG emissions, it is recognized that if we can more effectively implement the 4 Rs (reduce, re-use, refuse and recycle) that the embodied energy of products can be better managed. In the short term, low cost options include engaging with the ICI sector to collect and compost organic food waste, divert quality unused food to the local food rescue program, develop green teams to maximize waste diversion from operations and processes.

Priority Action #7: Immediate and Low Cost

Promote Workplace Green Teams

ICI members are encouraged to develop, implement, facilitate and promote strategies, programming, incentives, partnerships and marketing campaigns to engage with their employees to reduce GHG emissions associated with organic waste going to landfill.

Recommendation:

Sustainable Kingston, in partnership with the ICI sector, will continue to raise awareness and promote waste diversion and reduction efforts through education, campaigns, challenges, waste diversion projects and incentives such as the plastic-free summer challenge, workplace waste reduction initiatives and the Ontario EcoSchools program.

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Priority Action #8- Immediate and Low Cost

Expand Construction Site Waste Management with Material Diversion Goals from Landfill

Construction waste contributes to GHGs and land pollution when buried. However, by reusing and recycling construction waste materials, we are making better use of the embodied energy of these products. Material reuse and recycling aligns with corporate sustainability mandates and creates new revenue streams.

Recommendation:

Sustainable Kingston, in partnership with the Kingston Construction Association, should organize collaborative stakeholders into a leadership team under this action item to investigate and report best practices and/or processes regarding construction waste reduction, re-use and recycling, so that ICI sector organizations have access to locally applicable information and can reduce GHG emissions accordingly.

Actions: Water Theme

Water, in its many forms, is significant with respect to its impact on communities. As surface or groundwater is treated for health protection through the multi-barrier systems at water treatment plants then distributed to users, there is embedded energy, which in its many forms contributes to GHG emissions.

Similarly, the collection and treatment of sanitary sewage includes greater energy inputs than for potable water, in particular within the treatment plants. Some of the energy required may be offset by the solids treatment process at both of Kingston's main waste water treatment plants where biogas is generated and currently used for heating and some combined heat and power generation.

Storm water, with exception of that collected within the combined sewage areas, has minimal energy inputs. However, GHG emissions result from maintenance of catch basins and ponds to ensure runoff impact on receiving waters is minimal, but also from deleterious materials that decompose in our waterways.

Priority Action #9 - Immediate and Low Cost

Promote Responsible Water Use and Conservation of Potable Water and Wastewater Generated

GHG emissions through the treatment, supply, waste water collection and treatment have been determined to average 0.5 tonnes per 1,000 cubic metres or 0.5 kg per m³. Wise water use and conservation through leak reduction, selecting efficient appliances or fixtures when replacing older units, water efficient landscaping, alternate water for irrigation (i.e. rain barrels) and rain water harvesting for non-potable use are immediate and low cost measures that will result in reduction of GHGs.

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Recommendation:

The City of Kingston and Sustainable Kingston should continue to promote programs and education through Utilities Kingston, including rain barrels, toilet rebates and wise water use landscaping demonstration such as the Water Conservation Garden located at the 1211 John Counter Boulevard Municipal Campus, so that the ICI sector has access to education and examples of measures that are immediate and low cost.

Other Actions

Proposed actions were placed under specific categories in this report because distinct themes clearly emerged early on in the process. Yet, there are some actions that have the ability to cross themes, sectors and stakeholders. This section is reserved for two such recommendations:

Priority Action #10 – Immediate and Low Cost

Technological Innovation

Two local innovators are developing a smart device app, **Netzero**, aimed at empowering people and businesses to reduce GHG emissions. The app helps individuals and employees make greener choices and participate in addressing the climate change crisis.

Recommendation:

City staff can assist the developers with the testing of the smart device app, **Netzero**, during the market validation stage by providing existing data on City facilities to the app developers.

Priority Action #11 – Immediate and Low Cost

Build on Connections Made

The WGCA brought various, but not all, members of the ICI sector together. The benefit of sharing information regarding actions to reduce GHG emissions, funding options/incentives, and best practices was recognized and members of the group identified a need of a portal that serves as a conduit for the ICI sector to connect and share information.

Recommendation:

Sustainable Kingston, in partnership with St. Lawrence College, should organize collaborative stakeholders into leadership teams under the action themes to advance solutions, bringing partners together to solve problems and seize opportunities that are beyond their reach when acting alone, so that ICI sector organizations have access to information that they would otherwise not be aware of. City of Kingston staff can support

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the teams where needed, when specific experience can be shared under any of the themes.

Additional Action Items Not within the Working Group Mandate

The following action items do not meet the mandate of “in the ICI Sector as soon as possible at no to little cost”. However, Council has already committed to undertake a number of actions related to potential GHG emission reduction via their strategic priorities for 2019-2022 as follows:

Included in Council Strategic Plan 2019-2022

Additional Action #1

New ICI Construction:

If we are to make the GHG emissions reductions required to adequately respond to the Climate Emergency, we need to ensure that new construction does not further contribute to the problem. Therefore, carbon neutrality in new ICI construction is targeted. In addition to carbon neutrality, it is also noted that sustainable building verification rating systems (i.e. LEED) are also desired.

Council Strategic Priority Update

- **Develop an energy retrofit program that targets specific appliances with high capital cost and high carbon reduction impact (i.e. geothermal systems, solar hot water, etc.) for property owners.**

The City continues to research progress with similar programs in other jurisdictions, opportunities for program funding, and specific carbon reducing candidate technologies as staff work towards providing a recommended program to City Council in 2020.

- **Develop new build net-zero policy and incentive program through a CIP model.**

The City of Kingston has collaborated with Kitchener, Waterloo and London on a preliminary study funded by the Federation of Canadian Municipalities and led by S2E Inc. on opportunities for municipal policy support for net zero construction using a CIP model. Work in 2019 and 2020 will focus on providing Council with a recommended program for incenting new net zero construction in 2020.

- **Review development policy to identify barriers to, and opportunities for, energy and carbon reduction.**

The City uses numerous policies and guidelines to guide the location and style of development that takes place within our urban and rural areas. In 2020, staff will examine key policies to identify where changes might be recommended in order to

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remove barriers to lower carbon development and add requirements that support increased energy efficiencies and carbon reduction technologies. Potential policies and guidelines include Subdivision Design Guidelines, Site Plan Control Guidelines and Zoning By-laws.

WGCA Recommendation

That Council and staff continue the implementation plan of the priorities above.

Additional Action #2:

Tree Planting:

“Trees are our most powerful weapon in the fight against climate change” according to Dr. Thomas Crowther, professor of Global Ecosystem Ecology and scientific advisor to the United Nations. Trees are a relatively immediate, inexpensive and highly effective means of climate change mitigation and adaptation. There is much research available to educate residents about the benefits of trees in the urban environment and many organizations have shown keen interest in participating in planting trees to offset their carbon usage. The City of Kingston is encouraged to continue to engage residents on the importance of trees. These efforts will help to reduce GHGs, maintain inner-City temperatures, and improve public spaces, especially since local partners are facing provincial funding cuts for current tree planting programs.

Council Strategic Priority Update

The following initiatives specifically address the priority action as well as the implementation plan as follows:

- **Increase the tree canopy including a program for adding trees to private property.**

Between 2016 and 2019, 37,391 trees have been planted, which includes 1,000 trees that are planned for the fall of 2019. An additional 3,250 trees are scheduled to be planted between 2020 and 2022.

A new tree planting program will commence in 2020 to encourage tree planting on private property, with up to 3,600 new trees between 2020 and 2022.

WGCA Recommendation

That Council and staff continue the implementation plan of the priorities above.

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Exhibit A – Summary of Action Item Recommendations

Recommendation #1

Sustainable Kingston, working with ICI members, develop an outreach campaign/challenge (similar to the Plastic Free Summer Challenge) to:

- turn-down the heat in the winter break period if the building is closed;
- adjust standard heating and cooling temperatures by 1 degree;
- optimize the use of existing Building Automation Systems (BAS) to reduce natural gas and electricity consumption and costs.

Recommendation #2

Sustainable Kingston, in partnership with KFL&A Public Health, support and engage with ICI sector organizations to promote sustainable diets. Short-term, low cost options for consideration may include public and workplace education and marketing campaigns, incentives in the private sector to support the provision of more plant-based foods, and business partnership development to facilitate new food purchasing/procurement opportunities.

Recommendation #3

Sustainable Kingston is encouraged to promote and support existing community partnerships and projects focused on food waste diversion and food rescue practices that reduce food waste in the ICI sector.

Recommendation #4

Sustainable Kingston, in partnership with Utilities Kingston, will encourage the ICI sector to implement similar sustainable landscaping into their property and project designs. Through Sustainable Kingston, the City will share lessons learned from the 2020 pilot project for potential implementation on ICI properties.

Recommendation #5

Sustainable Kingston, in partnership with the ICI members, will continue to raise awareness and encourage active and sustainable transportation in the ICI sector through workplace campaigns and challenges; such as carpool programs, group parking passes, Commuter Challenge, Employer Transpass Program and Kingston Transit Orientation.

Recommendation #6

The ICI sector should pursue and implement best practices aimed at reducing work-related travel through teleconferencing/telecommuting and carpooling when possible.

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Recommendation #7

Sustainable Kingston, in partnership with the ICI sector, will continue to raise awareness and promote waste diversion and reduction efforts through education, campaigns, challenges, waste diversion projects and incentives such as the plastic-free summer challenge, workplace waste reduction initiatives and the Ontario EcoSchools program.

Recommendation #8

Sustainable Kingston, in partnership with Kingston Construction Association, should organize collaborative stakeholders into a leadership team under this action item to investigate and report best practices and/or processes regarding construction waste reduction, re-use and recycling, so that ICI sector organizations have access to locally applicable information and can reduce GHG emissions accordingly.

Recommendation #9

The City of Kingston and Sustainable Kingston should continue to promote programs and education through Utilities Kingston, including rain barrels, toilet rebates and wise water use landscaping demonstration such as the Water Conservation Garden located at the 1211 John Counter Boulevard Municipal Campus, so that the ICI sector has access to education and examples of measures that are immediate and low.

Recommendation #10

City staff can assist the developers with the testing of the smart device app, **Netzero**, during the market validation stage by providing existing data on City facilities to the app developers.

Recommendation #11

Sustainable Kingston, in partnership with St. Lawrence College, should organize collaborative stakeholders into leadership teams under the seven action themes to advance solutions, bringing partners together to solve problems and seize opportunities that are beyond their reach when acting alone, so that ICI sector organizations have access to information that they would otherwise not be aware of. City of Kingston staff can support the teams where needed, when specific experience can be shared under any of the seven themes.

What We Heard

September, 2019



The Working Group on
**Climate
Action**

Introduction

Working Group on Climate Action

On June 18, 2019 Council passed a motion to create the Working Group on Climate Action (WGCA). The WGCA was provided a Mandate “to promote, engage, inform, and challenge community organizations, institutions, and businesses to reduce Greenhouse Gas (GHG) emissions in the IC&I Sector as soon as possible at no to little cost”.

Council directed the Working Group to “report to Council no later than October 31, 2019 with a list of actions for potential implementation by community partners/businesses and the corporation to reduce GHG emissions in an immediate and inexpensive manner”.

This report outlines a list of actions as per its mandate.

Led by co-chairs Councillor Bridget Doherty and Dan Hendry, the Working Group brought together representatives from many organizations and institutions across Kingston as directed by Council, including:

- St. Lawrence College (SLC);
- Royal Military College;
- Queen’s University;
- Kingston Environmental Advisory Forum;
- Cataraqui Region Conservation Authority;
- Greater Kingston Chamber of Commerce;
- SWITCH Ontario;
- Kingston, Frontenac and Lennox & Addington Public Health;
- Sustainable Kingston;
- Kingston Climate Hub;
- 350 Kingston;
- Limestone District School Board;
- Algonquin-Lakeshore Catholic School Board;
- Conseil des ecoles publiques de l’Est de l’Ontario;
- Conseil des ecoles catholiques du Centre-Est;
- Kingston Construction Association; and
- Utilities Kingston.

The Working Group provided opportunities for the public to present and submit ideas aimed at reducing GHG emissions in the industrial, commercial, and institutional (ICI) sector at no to little cost that could be implemented as soon as possible.

The City of Kingston’s [Get Involved](#) page allowed for members of the public to submit ideas for consideration so long as they met the Working Group’s Mandate, from July 31, 2019 until August 30, 2019.

A public consultation session was held Tuesday August 27th at City Hall. The purpose of the consultation session was to allow for individuals to present their ideas aimed at reducing GHG emissions in Kingston's ICI sectors as soon as possible at no to little cost. The consultation saw 8 unique presentations with many different approaches to addressing GHG reductions in the ICI sector.

All input received from the Working Group members, KEAF, the public consultation session on August 27th and the ideas posted on the Get Involved Page have been captured in the "What We Heard" report.

"What We Heard" is a report that summarizes the ideas shared by the Working Group members, community members and KEAF throughout the WGCA's process. All ideas are captured in the What We Heard Report, although many actions do not meet the mandate of the Working Group – "as soon as possible at no to little cost". The Working Group thought it was important to record all that was heard, as it will provide valuable input in the development of the Climate Change Management Strategy. From this public involvement, the WGCA identified that the proposed actions could be placed under specific themes: Buildings, Transportation, Food and Agriculture, Greenspace, Waste, Water and Other.

Get Involved IDEAS Submissions:

Buildings

- No more natural gas service connections allowed at individual lot level.
- Pass a resolution that prevents the over cooling of ICI buildings. Many ICI indoor temperatures are so cold that staff are forced to use space heaters and multiple layers of clothing to stay comfortable.
- Focus on the high GHG emitters based on the City's Energy Consumption and GHG Emissions Reporting - 2017 numbers: Invista, K-Rock, Memorial Centre, Cataraqui ice rinks, Rideaucrest, Police offices and Transit maintenance were the heavy emitters. Look at them first to get the most value for money from changes.
- Install solar panels on all flat roofs.
- Fine businesses for having the doors open when air conditioning is on and put funds into green initiatives.
- Set a new building standard for new construction that require recycled, sustainable building materials along with renewable energy (geothermal, district heating for new subdivisions, etc.). In addition, offer incentives for retrofits to utilize what is mentioned above (we did have a Province-based program...) aiming to achieve Net Zero.

- **Tax Credit for White Roofs:** White roofs reflect sunlight back into space (as does snow) and it makes homes cooler in the summer, thus requiring less air conditioning and electricity demand. The two-century fashion is to have black roofs. But that fashion could change if there was awareness and an incentive.
- **Incentives for Green Roofs:** Provide businesses incentives for converting to Green Roofs. In addition to the benefits listed, Kingston would look like a more environmentally-conscious city! A visual reminder of our commitment to climate action!
- **Green-Roof By-Law:** Dependent on requirements, species, footprint of buildings etc. Under optimal conditions, one scientific paper estimates as much as 1.22 kg CO₂ m²/year can be offset per year, per green roof (George, 1996 - The Potential Carbon Offset Represented by a Green Roof). This helps with natural heating and cooling as well and carbon sequestration.



- Implement a by-law that large facilities, such as grocery stores, reduce lighting in the heat of summer. Uses less power, cooler ambiance.

- Utilities Kingston should offer Fibre-to-the-Premises broadband for all homes/businesses. According to their website, they already have 1,000 km of fibre in the City. Fibre is faster, more secure, future-proof (much more easily upgradable), and far more energy efficient than wireless transmission. Do not allow Bell to have a monopoly on our services and take away local control from such an important climate issue, especially when Kingston is so well-positioned to do it wisely.
- Earth Day/Earth Hour: Yearly campaign – Turn off non-essential electrical implements for one hour worldwide and demonstrate support for environmental protection.
- Turn-Down Challenge for Heating/Cooling Energy, Holiday Turn-Down: Adjust A/C and furnace (at least 1 degree) up/down in summer and winter. Challenge students to do this during Holiday breaks.
- Home Efficiency/Energy Efficiency Audit: This type of planning could improve lighting, temperature and air quality. SLC students have expertise for this.
- Energy House/Manage your Energy - Education Opportunities: Seven modules that can be integrated in trades training to inform students to go about the work in a way that incorporates sustainability and energy efficiency. Community Outreach Student initiative to educate peers on energy conversation (SLC).
- SERC – Sustainable Energy Research Centre: Education, Research and Community Engagement - Partner with industry to advance energy conservation technology by providing low cost, student run projects (SLC).
- Energy Management Plan: An Energy Management Plan is a written plan in which you describe the steps and approaches you will take to increase energy efficiency and conserve energy in all areas of your building. It typically covers a three to five year period.
- Computer Script to Turn off Computers or Similar Protocol: Similar to BAS systems, this saves energy, and could be applied to various electronic devices/appliances connected by IoT (Internet of Things).
- Build to LEED Certification/Endorse LEED Principals for New Buildings: This minimizes the significant cost of actual LEED certification while providing efficiency benefits. The following initiatives may fall under LEED Principals:
 - LED lights activated by motion sensors and controlled by timers.
 - LED lights in parking lot.
 - Solar Panels on roof (not taking up green space).
 - Green roof by-law for all future commercial and industrial developments.
 - Consider utilizing a “white roof” membrane as opposed to black on flat roof construction and replacement.

- Consider incorporating more use of triple pane windows in large glass section “curtain walls”, Low E-coatings and double pane E-glass.
- SLC and the Kingston Construction Association Insulation Training Collaboration: SLC and KCA work together to develop training courses on how to properly insulate your homes and install upgraded windows for home owners that want to improve their home’s energy efficiency but can’t afford to hire tradespeople to do the work.
- City of Kingston - Energy efficient retrofits and upgrades for homes, businesses and the public sector.
- City of Kingston - Promote housing development with greater density to promote public transit and reduce the requirement for non-active transport.
- [Climate Action Plan](#): In February 2010, Queen's signed the University and College Presidents' Climate Change Statement of Action for Canada. In March 2016, Queen’s published a comprehensive Climate Action Plan (CAP), including emissions reduction goals.
- Green Cleaning: Green cleaning is practiced by Queen’s residence and facilities staff, including EcoLogo certified cleaning products, the use of paper products made from 100% recycled fiber, and cleaning tools that are reusable and have a long expected life, such as microfiber mops and cloths.
- Conversion of all ICI Natural Gas Heating Systems to Zero Emissions Heating Systems: As electricity production is clean and has very low emissions in Ontario, if a transition is made in ICI sector facilities, which currently use Natural Gas for heating (highest emissions of any heating source), significant reductions (near 100%) can be realized.
- Local Improvement Charge Program for Community Retrofits: Community members, groups and organizations can purchase retrofit technology at cost, with a loan tied to the mortgage(s) of the properties. Municipalities may be able to recover all or part of the cost of these projects through local improvement charges on properties that benefit from the work.
- LED Lighting Retrofits: LED lights can be used for various applications. They can reduce energy consumption by 200%-300%, while having a longer lifespan.
- Educate the public on reducing their beef consumption.
- Encourage restaurants and ICI members to implement meatless Mondays.
- High-efficiency Appliance Retrofits (freezer’s, fridges, boilers, etc.) - Using high-efficiency appliances to reduce energy use. As well as working to capture and

distribute waste heat from the refrigeration units during winter months where available.

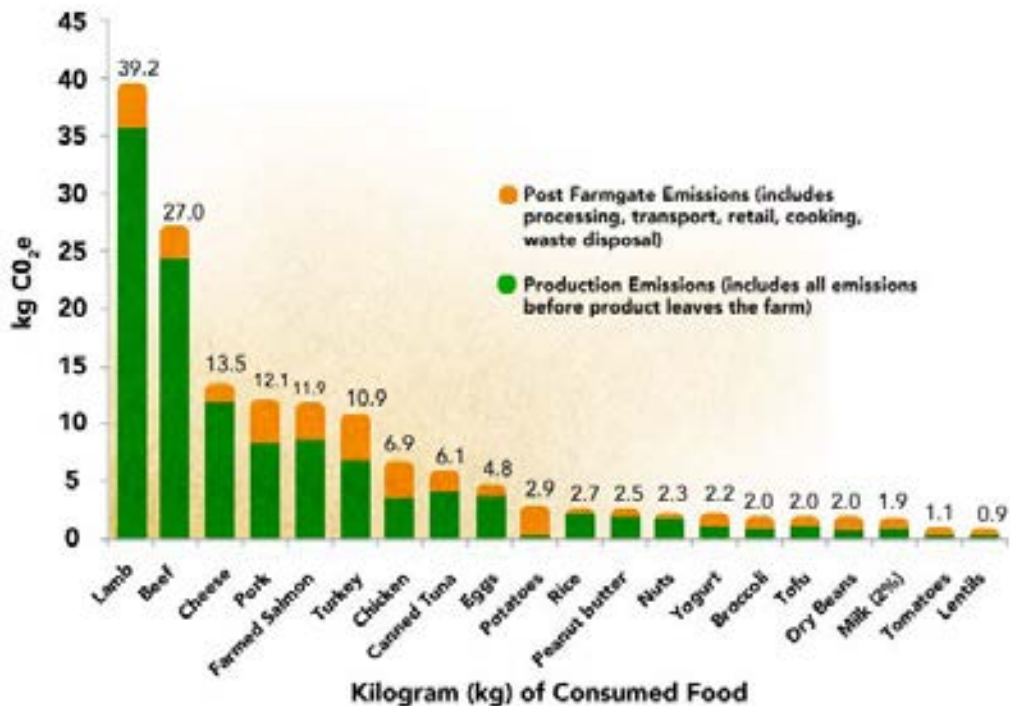
- Purchase Offsets: Purchased offsets to mitigate GHG emissions produced through operations of facilities.
- Solar Wall: Brings fresh, preheated air into our student residences and plumbing shop buildings.
- Wind Turbine Technician Program: Education Opportunity – Community Outreach to train student to maintain large scale wind farms. Partners with TransAlta to train students.
- Use of Power Live Monitoring System and Gas Live Monitoring System: Gives opportunities to optimize efficiency and save energy and costs associated with heating and running facilities.
- Solar Panel Installation: Various solar panel system installations including FIT, Rooftop Solar, ground-mount solar, etc.
- Energy Efficient HVAC Upgrades: Reduces energy used and cost expenditures.
- Building Automation System (BAS) Utilization and Upgrades: BAS systems allow for automatic centralized control of a building's heating, ventilation and air conditioning, lighting and other systems. These systems increase efficiency and decrease energy used and expenditures in the operation of buildings and facilities.
- Building Envelope - Upgrade Roof Insulation: Reduces energy consumption in buildings by preventing heat gain/loss through the building envelope. This can be a best practice for all new buildings, as well as a retrofit for existing buildings.
- Install Variable Frequency Drives (VFDs) on Pumps: VFD's match the speed of the pump to the desired output, which can reduce energy consumption and save on costs and resources.
- Installed a New Steam Boiler at the Central Heating Plant: 2.4 per cent increase in efficiency when converting energy from fuel source to steam.
- Enrollment in Ontario Demand Management Program for large-scale electric consumers.

Food & Agriculture

- Offer incentives to businesses for being eco-friendly.
- Build in Robust Climate Change Requirements into City Vendor Agreements: Make the City's vendors address their own greenhouse gas emissions and other

environmental footprints by building robust requirements for it into the City's master service agreements, contracts or bidding/tendering with these vendors. Make a vendor's climate change score a key piece of the assessment of bids or contracts.

- Food Waste Reduction/Rescue Programs: Ongoing programs, members rescue food ingredients and deliver meals to people in need. Where there are applicable business models, food rescue programs can be used to reduce food waste, while enhancing the prosperity and social inclusion of the community.
- If we want an exciting change, we need to look at what we offer on the menu. From commercial restaurants to office/industrial gatherings, people in Kingston should be prioritizing and incentivize the number of vegetarian and vegan options they are providing. Eating plant-based meals can cut your food carbon footprint in half, and companies especially have the power make eating plant based meals easier and more accessible.



- Promote Plant-Based Eating: Members of this Working Group promote plant based eating within their own workplaces. See Vegan Leader's Playbook for ideas: <http://veganleaders.com/>. Members could promote Veganuary or Meatless Mondays. Study underway to promote plant based eating using control and treatment groups, and testing influences of "nudges" to promote plant based eating choices in cafeteria.
- Promote Shopping Local (food, furniture, etc.): Reduces GHGs and can reduce food waste.

- Engage Students in the Loving Spoonful GROW Gardens Project: Increased the number of schools involved in the Loving Spoonful GROW Gardens project and increase educator capacity regarding curriculum links (3-year partnership project ongoing - 16 Limestone District School Board schools participating and 3 more coming online next year).
- Community Garden: The garden, located at West Campus, provides a gardening opportunity to Queen's community members and creates a space where people can come together and share experiences and learn new skills.
- Local Food Guide: Local food guide to assist students and other members of the Queen's community in eating local and getting involved in the local food community.

Greenspace

- Require all large parking lots to have shade trees.
- Consider increasing naturalized areas and tree planting in green spaces, along roads and on lawns.
- Offer incentives for planting trees; perhaps a tax rebate for people to plant and care for trees. Educate people about the benefits of more trees in the city. Hold a community wide tree planting drive could be a great way to kick off city-wide climate initiatives. A (much) smaller scale event of something similar to what took place in Ethiopia recently could instill pride and ownership over doing something to combat the climate crisis locally.
- Consider pesticide use: do we really need to spray so much? For example, why spray along the sidewalk on Montreal Street by Megaffin Park?
- Don't over trim in parks and along trails: Leave the wildflowers and weeds for the bees. We don't need 20th century suburban tidiness. Birds and bees are more important.
- Use electric or high efficient appliances when doing Greenspace maintenance.
- We need to educate the ICI sector to help them understand what's under their lawns and the importance of their soil: They have good soil and they can have better soil!
- Replant native grasses, wild flowers or other zero maintenance plant species in park areas/along sides of road. Reduces the amount of gas required to cut and maintain those areas, supports bee populations and saves money.
- Provide a tax incentive for companies that reduce their lawn space and allow for re-greening and re-wilding of their property. Possibly to even using the area for

small trails for employees. I'm thinking companies like Invista who have lawns right next to the shore line, and could reduce run off by encouraging local plants to grow there again. <https://www.cbc.ca/news/technology/rewilding-projects-aim-to-turn-back-clock-on-environment-1.2834241>.

- Created a Schoolyard Naturalization Guide: Ongoing – based on the guide and Evergreen's expertise, schools are supported on schoolyard naturalization efforts.
- Tree Planting/Tree Planting Program: Possible collaboration with school boards to create a tree planting program as part of their climate change curriculum.
- Create a Program like TreeMe in the City of London: Not-for-profits organizations, businesses and small groups of neighbours can access grants to plant trees on their own property to help increase the tree canopy of our urban forest.
- City of Kingston - Continue to show leadership on preservation of natural areas and to plant and preserve trees as a mitigation strategy for climate change.

Transportation

- Ban drive-throughs; anti-drive-thru signage; 27 Canadian municipalities have already implemented drive-thru bans, creating a level playing field for smaller local restaurants to compete with the fast-food chains! (and promoting a healthier, more sustainable food environment all around).
- Use business licensing of drive through and gasoline retailers to require EV charging infrastructure. Businesses wanting to provide drive through or sell petroleum fuels should provide an EV charger.
- Frequent Rider Program Incentive: Fidelity program to encourage more people to use Kingston Transit. Number of rides and/or bus mileage offers a credit/rebate at the purchase of following monthly bus pass renewal. The more someone rides, the more they save!
- Free bus passes for new residents or new employees for 2 months so they can get comfortable with transit.
- Reduce CFB Kingston traffic by offering free transit to uniformed military personnel & veterans.
- Increase cost of parking to incentivize transit use.
- Implement photo radar on major arteries and channel fine proceeds toward improving public transit. Consider implementing road tolls on major arteries while

providing park and ride opportunities to encourage people to reduce driving or consider living closer to where they work.

- Enforce the City By-Law Against Idling: All over the downtown, I see vehicles idling. Often the reason is that the occupant is using their phone. We have a by-law against idling.
- Ticket cars parked in the bike lane. Bikes and walkers need to be encouraged in any way possible, and having clear bike lanes would be a help.
- Declare some residential streets (i.e. Earl Street) to be "bicycle boulevards" with very low speed limits, many speed bumps, and yield signs at most intersections. The current Johnson Street and Brock Street bike lanes are dangerous because 1) before the lane starts and end, bikes are forced into traffic; and 2) it is dangerous to make a left turn crossing 2 lanes of traffic. Earl Street would be better as a bike boulevard.
- White roads would make the city less hot in the summer, and would help reflect sunlight back into space.
- Separated Bike Route to Western Suburbs: At the moment, it is very risky for suburban people to bike into Kingston on Front, Bath, or Princess Streets. Front Street or Bath Road should have a separated bike route (NOT a painted line on the busy road).
- Make all road decisions with pedestrian safety as the top consideration. It's fantastic that the on-demand pedestrian traffic lights have been added along King Street. Now add more lights or crosswalks throughout the city. Some streets are not particularly safe to cross now.
- Look at better pricing on parking lot paving that is porous.
- Place solar panels in parking lots at a height that cars and trucks can easily park under. It will double as a car park protecting cars and spaces from various weather elements (sun, snow, rain - especially nice when loading groceries), and lights can be installed on the undersides for visibility.
- Eliminate traffic lights to reduce carbon emissions, power consumption and travel time. Instead, put up 4 way stop signs or traffic circles. Minimize traffic lights while considering road and pedestrian safety.
- Signal Timing Study: Unlike cities like Toronto, driving a straight stretch in Kingston will result in being stopped at every light along the route. By doing a timing study we could reduce idling traffic, leading to reduced emissions.
- Justification of Additional Street Lights: The city should only add new traffic lights if ALL 5 conditions of the following are met. Justification 1 – Minimum Vehicle

Volumes · Justification 2 - Delay to Cross Traffic · Justification 3 - Collision Experience · Justification 4 – Combination Experience · Justification 5 – Pedestrian Experience.

- Reducing Air Travel: Incentivize companies who avoid plane travel and use video conferencing instead. Could provide VCT at the library without a fee for smaller businesses.
- Leave Your Car at Home Campaign for Queen's and SLC: Communications to students before they return from summer break on what to bring and what not to bring: "leave their cars at home" and to utilize the public transportation system.
- Carpool Programs (Carpool World, Group Parking Passes, etc.): Employees should not be allowed to drive to work and park their cars for free on property owned by the employer (or the City).
- Require all Institutions to Charge all Employees for Parking: Organizations can promote carpooling programs to encourage their employees and members to increase carpooling (staff and student program - Tri-Campus).
- Commuter Challenge/Campus Commuter Challenge: In 2019 there were 1,388 participants in Kingston with 19 TCO□e avoided.
- Reduce Speed Limits on all City Streets: Reduce speed limits for all streets south of highway 401 to 40 kilometres/hour (km/hr) and all arterials (i.e. Taylor-Kidd Boulevard, John Counter Boulevard, Sir John A McDonald Boulevard) to 50 km/hr.
- Hamilton has come up with a plan to reduce to 40 km/hr for all neighborhoods and 50 km/hr for arterials.
- Employer Transpass Program: Discounted regular monthly adult bus pass offered through employers to their staff. The monthly savings depends on the number of employees subscribed to the program from your workplace.
- Student Transpass Program (post-secondary institutions): Bus pass fee is included with tuition – students ride for free with student card.
- Kingston Transit Orientation & Free Bus Passes for City High Schools: Since 2012, the Limestone District School Board has been working on the transit orientation program with grade 9s. The average person may not know how to use transit, and this program teaches and shows people to make them feel comfortable.
- Kingston Transit Field Trip Pass: Approximately 600 field trips in 2018 and 900 field trips in 2019 took place on Kingston Transit.

- Car Sharing: A car sharing program offered by VRTUCAR is available to the Queen's community.
- Increased use of Telemedicine Resources such as OTN to Conduct Clinical Work: Ongoing - uses two-way videoconferencing to provide access to care for patients in every hospital and hundreds of other health care locations across the province.
- Increase teleconferencing and telecommuting practices for regular commuters or instances of one-time travel, and encourage employee car-pooling when travel is required.
- Reduction in fleet vehicles/transition in fleet vehicles to plug-in hybrid or electric.
- Public transportation availability to conservation areas. In particular to Little Cataraqui Creek: An average passenger vehicle emits about 4.6 metric tons of CO₂ per year. If multiple people take public transit or carpool instead of cars to Little Cataraqui Creek Conservation Area, GHG reductions to promote outdoor activities within the city would be greatly reduced.
- Transportation Policy and Supportive Infrastructure: Encourage employees to walk, cycle and use transit for work-related local travel. Provide bus passes for individual transit rides and employees can claim mileage for cycling work trips. Provide employees with secure bike shed storage and on-site showers.
- By-law that would restrict delivery times to off-peak traffic times: No need to have delivery vehicles adding to congestion at peak travel times (8-9 am and 4-6 pm).
- Look for opportunities to consider "Warm Mix " Asphalt as opposed to "Hot Mix" in Road Construction/Rehabilitation: Reduced energy and fuel use with this material and process.
- Trenchless Technologies for Infrastructure Replacement: Trenchless construction techniques reduce the areas of disruption, decrease the rerouting/traffic delays and do not require as much asphalt or other materials to restore.
- EV Charging Stations: For electric cars, bicycles, etc.
- Replace many 3 & 4 way traffic light systems with roundabouts. The entire length of Sir John A. Boulevard might be used as a test location. The main problem would be educating the public in the use of these roundabouts: Some of the studies in Europe, especially Norway, in the mid-90s showed that critical air contaminants and GHGs could be reduced significantly (as much as 25% in the latter case) by reducing emissions during the stop-start cycle with cars and trucks, especially during the winter.

- Look into massive improvements in parking automation that makes enforcement and fee collection easy (see Calgary ParkPlus System at <https://www.calgaryparking.com/parkplus>).
- Bolster Electric Bus Transition: Celebrate Transit success and consider adding money to accelerate acquisition of electric Buses for Kingston Transit.
- Active Transportation Plan Implementation: Consider accelerating the Active Transportation Implementation Plan to complete its proposed 5-year plan in 4 years.
- NRCAN EV Charger Installation: Organizations that do not need 20 chargers (minimum for program) could split them.
- LED Streetlights, Traffic Signals: Utilities Kingston undertook the replacement of all streetlights in the City to reduce electricity consumption and in turn reduced GHG from power generation.
- Consider where and when new roads are constructed as well as widening roads: This will not cost anything but will save considerable amounts of money.
- We must provide incentives for commuters to not drive single-occupancy vehicles (SOV).
- City of Kingston - Enhance active and sustainable travel options, such as electric vehicles and buses, pedestrian and cycling infrastructure.
- City of Kingston - Invest in public transit access for all new city development and where current service gaps exist.

Waste

- Can we consolidate our recycling for less trucks? Every other municipality does all recycling types on the same day, picked up by the same truck. We would have less trucks idling around town picking up 2 weeks of recycling each and people would recycle more not having to store it for so long.
- The large garbage trucks burn enormous amounts of fuel, at maximum inefficiency, by doing too much stop-and-go in 6 metre intervals. On low traffic residential streets, like Oakridge and Gibson Avenues, we would have one-side garbage pickup.
- The City of Kingston should examine the alternative use of bio-fuels and pyrolytic fuels from the processing its wastes? Whitby has done it.
<https://www.cbc.ca/news/canada/toronto/from-dumpster-to-diesel-1.5242407>

- Require supermarkets to have large bins labeled for glass, metal, plastic and paper. People are going to supermarkets several times per week, and could carry their recycling with them to those locations. Supermarkets tend to have the space for such bins. This would 1) reduce stop-and-go by the big recycling trucks, which is very wasteful and very polluting, and 2) make people aware of the packaging that they are getting from supermarkets.
- Make recycling more accessible by creating more recycling nodes around the city - not just on Lappans Lane.
- No plastic bottles in vending machines (i.e. Artillery Park, public libraries or Invista Centre).
- Full Ban of Single Use Plastics: Stores should not be allowed to sell single use plastics. This could come in multiple stages – i.e. begin with straws, plastic water bottles and plastic bags/plastic produce bags. Phase two could be plastic cups (stores like Tim Hortons and Starbucks would be large offenders) and bottles for other beverages, like Pepsi or juice. Then move to the other big offenders like food packaging. With lots of warning, stores will be able to come up with a plan for food packaging long before it gets enforced.
- I have heard that unsorted recycling that gets dropped off ends up in the landfill, as does anything that is not rinsed, etc. We could offer high school students volunteers hours (or just anyone who wants to volunteer) to sort these.
- Ban Sale of Plastic Water Bottles: Instead, promote walk in business with Tap Stations: Leverage already existing but seemingly abandoned campaigns like 'Tap Into Kingston' and the KFLA Health Unit uses the Blue W Campaign. Businesses can register to be a 'Tap' location which may encourage other sales as well. This is a great way to promote walk in business for stores and promote the norm of refusing bottled water and using tap water.
- We need to start recycling large furniture items such as sofas, mattresses, recliners, etc. as well as textiles: I have worked for 8 years on a social model of recycling these items by hand, large furniture items generate a huge amount of textiles, which are the #5 worst GHG producer to manufacture and upon landfill emit huge amounts back into the environment. Foam in mattresses sells for up 5 times more than PET plastics and is recyclable. 4,000 recycled mattresses equals the equivalent of removing 71 vehicles for 1 year off the roads.
- City Building Recycling: All city buildings must have a recycling and compost program. All city operations should require this to be a budget priority. For example, there is no recycling or compost at the Memorial Centre.
- Ban Junk Mail and Flyers: Most of the junk mail and flyers that we receive go straight into the recycling bin. This is a big waste of time, energy and resources

to manufacture the paper, print and deliver the junk mail and flyers and then to recycle them all.

- Restaurants to Reduce Plastics! Mandate restaurants to reduce plastic take out containers to biodegradable or at least recycle!
- The general public no longer believes in recycling! Show the proof, is Kingston recycling or are we really wasting our time?
- Provide composting and recycling services to the ICI sector: Standardize compost and recycling and waste streams within the city and have the city provide curb side services to ensure consistency and to reduce the potential for GHG production.
- Create a "Green Team" to be sent along with OSKAR to each festival/event to work with the public to capture all waste and provide education. OSKAR + GREEN TEAM = LESS WASTE AND MORE PARTICIPATION!!
- Instead of assuming households want the free weekly newspaper and flyers, make a by-law that says households must sign up to receive them! Make people OPT IN instead of having to OPT OUT!!!
- Reduce waste by subsidizing the purchase of Zero Waste Boxes from TerraCycle for use in residential homes. Eliminating the Idea of Waste® by recycling the "non-recyclable."
- Promote use of reusable shopping bags. Tourism Kingston or the DBIA could take advantage of a large bulk buy of reusable shopping bags promoting our beautiful city which would then be made available at cost (or close) to businesses to buy and sell/provide to their clients to use instead of plastic or paper bags. Promote the city, tourism and the use of longer lived reusable bags.
- Create bottle deposit system, creating jobs and reducing waste.
- Use patio licensing to require restaurants to collect and divert food waste and eliminate single use plastic products. High demand for profit-generating patios on public right-of-ways could be made conditional on diverting food waste, eliminating single use plastics and not using fossil fuels to heat outdoor spaces.
- Plastics Free Summer Challenge: Annual challenge, join and choose re-usable containers, bags, mugs, cutlery, straws, napkins, etc., as well as compostable and recyclable items to help to reduce waste and plastic pollution in our community.
- Reduce Paper Use: Undertake a number of initiatives to reduce or eliminate paper reducing the transport of material and also the reduction in waste and recycling.

- Pitch-In Kingston: Community cleanup effort, with over 35 tonnes of waste collected to date.
- Inter-Office Competition at Large Organizations: Pin offices and departments against each other to see how they can reduce emissions, and assign a score out of 100 with prizes for the winners.
- Establish Internal Environmental Committee: A few examples of key initiatives a committee could start include installation of water fountains, installation of solar panels, creating an online paperless staff directory, purchase of compost and recycling bins with signage.
- Ontario EcoSchools Program: EcoSchools Canada offers a certification program for K-12 schools that nurtures environmental learning and climate action.
- City of Kingston - Enhance waste diversion requirements and streamline organic waste facility approvals.
- General Waste Reduction Efforts at KFL&A Public Health: Replacing paper-based processes with electronic processes (i.e. paperless meetings, electronic internal service requests, electronic finance and payroll, inspection results are emailed to operators, etc.).
- SLC Data Analytics Waste & Energy Dashboards: Completed data dashboard on waste and working on one for electricity and natural gas.
- Expand Construction Site Waste Management, Recycling Material: Additional sorting with material diversion goals (i.e. direct 50-70% from landfill - cardboard, metal, brick, concrete, plastic, clean wood, wallboard, insulation, etc.). Opportunities may also exist to recycle/reuse materials on site without transporting to landfill or another site.
- Recycling Program: Maximize waste diversion rate through consistent recycling program across facilities.
- Furniture and Supplies Reuse: Freecycle@Work is an item exchange network implemented by the Sustainability Office at Queen's that helps to promote the reuse of surplus items on campus. This application provides a vehicle for the campus community to advertise items they no longer need for others to use with no cost attached.

Water

- Program Implementation/Environmental Educational Certification: Staff is trained and an environmental committee conducts awareness-raising activities each year in resource and energy conservation. Staff is trained and an environmental

committee conducts awareness-raising activities each year in resource and energy conservation.

- **Stormwater Collection System:** Stormwater collection systems can be placed on facility roofs and collected stormwater can be used for such things as flushing toilets.
- **Water Filling Stations:** Reduces waste from plastic bottles and make water accessible to all.
- **Water Live Monitoring System:** Monitors and manages water consumption in order to increase efficiency and reduce water use.
- **Non-Revenue Water Loss Reduction Program:** Utilities Kingston has implemented a program to identify and track down water loss in an effort to reduce lost water, energy and GHG emissions.
- **Water Conservation Program(s):** Through a number of incentives and actions including toilet and laundry retrofits, significant GHG reductions can be found.
- **Sewer Cleaning and Lining:** Main trunk sewers along Harbourfront and North End which reduced excess water inflow requiring treatment.
- **Pump Replacement:** Due to reduced flows from main sewer rehabilitation, replacement of larger pumps with smaller pumps with VFDs save energy and reduce GHG.
- **Replacing Steam Heating by Hot Water (Queen's):** 1,500 MT of CO₂e annually.
- **River Street and Dalton Avenue Sewage Pumping Station Bi-Fuel Back-Up Power Generators Installed:** Installed and operational. Generators use injected natural gas to reduce the amount of diesel fuel used.

Other

- **Kingston should twin with other cities that are comparable in size and economy (i.e. Canton (NY), Ithaca (NY), Peterborough and Sherbrooke).** This should be done to share ideas and to encourage one another.
- **Science Fair Prize for environment/climate studies:** The schools have science fair projects every year. It would be good if students would be encouraged to study climate issues and climate action research. This might be helped by the City giving an annual prize or two, with some monetary reward for winners of such science fair projects.

- Stop All Support for Energy-Intensive Events/Activities: For example, the Poker Run. Closely examine the deep dock idea for cruise ships. Is supporting cruise ships--even small ones--acceptable in light of the climate emergency?
- Do annual reporting of GHG emissions and do it better.
- Establish a message board for businesses in similar industries to share ideas and strategies for emissions reduction. This could also have a live report of Utilities Kingston usage for comparable industry (i.e. Invista and Novelis or school to school). This format is identified as being effective in behaviour change because it combines comparison and actions that can be made: <http://theconversation.com/5-ways-to-shift-consumers-towards-sustainable-behaviour-120883>. Research based on residential areas but could also be useful for ICI's.
- Mandate that all staff employed in the ICI sector in Kingston are required to undertake a training session on Climate Action, Kingston's GHG reduction strategies, the role their company plays and specific actions as an employee that can prevent, reduce, mitigate and adapt to climate change.
- Fix Leaking City-Owned Gas Pipes: The City's natural gas pipelines have small leaks underground. Natural gas is mostly methane which is a much worse greenhouse gas than CO2. Have the City crews prioritize gas line repairs to ensure there are no leaks around Kingston.
- Curtailing methane emissions is a prerequisite and priority. North American natural gas supplies, primarily produced by fracking, accounts for most of recent global methane rate increases. Phase-out of natural gas demand, primarily buildings, electricity and industrial processes, is by far the most important objective.
- Legacy Fund – Reinvest Incentives and Savings: The money that comes back from incentives goes into an energy conservation fund, so we create some money by reducing GHG emissions.
- Program and Policy Support for GHG Reductions with Direct Health Links: KFL&A Public Health provides public programming to support initiatives and policies that affect GHG and have direct health co-benefits (i.e. school active travel planning; no idling guideline; active transportation promotion; natural shade to reduce heat and provide ultraviolet radiation protection; breastfeeding for health with an impact on formula production, transportation and waste; work with regional Food Policy Council for KFL&A Public Health to promote a healthy and self-reliant food system, etc.).
- City-Run Camp: Youth camp that visits Kingston Utilities, City Public Works, public transit, KARC, waste diversion, etc.

- **Project Piles:** Projects of Local Initiatives of Schools and Environmental Headquarters) - financing of ecological initiatives directly requested by the school.
- **Future Emissions Planning:** The impact of becoming a Smart City on 5g has not only health impacts but energy demands. The more we use tech, smart phones, devices, etc. we need to start paying attention to that; not only current emissions, but future emissions.
- **Sustainable Procurement Guide:** The Sustainable Procurement Guide seeks to provide suggestions and assistance to help offices at Queen's with sustainable procurement, including finding products and services that have a lower environmental impact.
- The City of Kingston is encouraged to monitor and report progress to the public on climate change initiatives.

Public Consultations Presentations:

Buildings

| | | |
|---|--|---------------------|
| Conversion of all ICI Natural Gas Heating Systems to Zero Emissions Heating Systems | As electricity production is clean and has very low emissions in Ontario, if a transition is made in ICI sector facilities, which currently use Natural Gas for heating (highest emissions of any heating source), significant reductions (near 100%) can be realized. | Steve Lapp |
| Local Improvement Charge Program for Community Retrofits | Community members, groups and organizations can purchase retrofit technology at cost, with a loan tied to the mortgage(s) of the properties. Municipalities may be able to recover all or part of the cost of these projects through local improvement charges on properties that benefit from the work. | Councilor Jim Neill |

Food and Agriculture

| | | |
|---|---|-----------------|
| Local Agriculture | <ol style="list-style-type: none"> 1. Encourage resilient, climate-friendly farming via procurement policy. 2. Develop the local farm economy by raising awareness of local, climate-friendly food sources. 3. Build soil carbon on local farms (combined with strengthening of hedgerows and reforestation of marginal land). 4. Increase local and regional abattoir capacity (to encourage climate-friendly livestock). 5. Support practices that maintain and increase biodiversity (i.e. agroforestry, widening hedgerows, and increasing set-backs from water sources). | Aric McBay |
| Improve Efforts to Address Food Waste and Food Insecurity in the Kingston Community | <ul style="list-style-type: none"> • Reducing food waste & increasing food security by distributing surplus food (A-OB4). • Food production using best practices to sequester soil (a science unidentified at the time of the writing of the Climate Action Plan). • Engaging students, families & adults in growing & cooking with local food (A-OB5). <p>Further Information:</p> <ol style="list-style-type: none"> 1. Reducing food waste <ol style="list-style-type: none"> a. Facilitate the reclamation of surplus food, reducing food waste from the ICI Sector. b. Expand compost pickup to include schools and institutions. 2. Enhancing local commercial food production. 3. Improving the sustainability of commercial food production. 4. Increasing local food production: <ol style="list-style-type: none"> a. Develop educational spaces around the city. b. Facilitate and incentivize food production on private property. <p>Soil is the world's largest terrestrial carbon storage, holding from 2-5 times as much carbon as all of the trees, terrestrial plant life and animal life (biomass) on earth. Our local commercial food producers can sequester carbon while simultaneously producing good food.</p> | Loving Spoonful |

| | | |
|-------------------------|---|----------------|
| Evolve our Prison Farms | Evolve Our Prison Farms advocates an innovative and environmentally responsible approach to the prison farms at Collins Bay and Joyceville Institutions. Prison farms can contribute to local food security and agricultural innovation through labour-intensive organic permaculture and agroforestry, fruit and nut tree plantations, and production of nutrient-dense vegetables, legumes, grains and seeds. | Calvin Neufeld |
|-------------------------|---|----------------|

Greenspace

| | | |
|---|--|---------------------|
| Use Tested Land Maintenance Strategies to Reduce GHGs on ICI Land | <ul style="list-style-type: none"> • Use electric or high efficient appliances when doing Greenspace maintenance. • Plant flowering plants beside highways/roadways and inside medians instead of maintaining this Greenspace with GHG fueled outdoor power equipment. | Cate Henderson |
| Create a Program Like TreeMe in the City of London | <ul style="list-style-type: none"> • Not-for-profits organizations, businesses and small groups of neighbours can access grants to plant trees on their own property to help increase the tree canopy of our urban forest. | Councilor Jim Neill |

Other

| | | |
|---|---|-----------------------------|
| netzerø the app | The net zero app will allow users to track their carbon emissions reductions at work and at home, set goals, take on challenges, join teams and receive points that can be redeemed with local businesses. | Jenny Bunning and Nora Lobb |
| Reducing Greenhouse Gas Emissions Through Efficiencies in Data Transmission and Storage | <p>Energy Consumption and 5G</p> <ul style="list-style-type: none"> • Strategies to Reduce Energy Consumption and Greenhouse Gas Emissions • Fiber-to-the-home/premises • Specific recommendations • Fiber-to-the-Home/Premises • Internal wired solutions as much as possible • Locally owned broadband • Public awareness campaign | Andrea Loken |

Appendix A: GHG Emissions Reductions Inventory: Kingston Environmental Advisory Forum (KEAF)

| Representative name/title: Kathryn McCleary Date: July 24, 2019 | | | | |
|---|---|-----------------|-----------------|---|
| Year | Initiative/Action | Emission Sector | Emission Source | Emission Reductions (including baseline) |
| 2017 | LED lights activated by motion sensors and controlled by timers | | | |
| 2017 | LED lights in parking lot | | | |
| Home GHG audit - could be sent home through schools <ul style="list-style-type: none">Used as part of lessonIncorporate youth | | | | |
| City-run camp for youth that visits Kingston Utilities, City Public Works, public transit, KARC, waste diversion, etc. | | | | |
| Home efficiency audit - could be sent home through school <ul style="list-style-type: none">Used as part of lessonsIncorporate youth | | | | |
| Challenge to adjust A/C and furnace (at least 1 degree) up/down in summer and winter | | | | |
| Promote shopping local (food, furniture, etc.) | | | | |
| Replace many 3 & 4 way traffic light systems with roundabouts. The entire length of Sir John A. Boulevard might be used as a test location. The main problem would be educating the public in the use of these roundabouts. | | Transportation | Gas | Some of the studies in Europe, especially Norway, in the mid-90s showed that critical air contaminants and GHGs could be reduced significantly (as much as 25% in the latter case) by reducing emissions during the stop-start cycle with cars and trucks especially during the winter. |

1. Stop building new roads and stop widening roads. This will not cost anything but will save considerable amounts of money. Provide incentives for commuters to not drive single-occupancy vehicles.

2. Reduce speeds on all City streets south of 401 to 40 km/hr and all arterials (i.e. Taylor-Kidd Boulevard, John Counter Boulevard, Sir John A) to 50 km/hr. Hamilton, ON is doing it, why can't we.

3. Ask ALL institutions to charge ALL employees for parking.
- employees should not be allowed to drive to work and park their cars for free on property owned by the employer (or the City).
- Shoup, Donald. [*The High Cost of Free Parking*](#). (2005) APA Planners Press. [ISBN 978-1884829987](#) (Revised 2011. [ISBN 978-1932364965](#))
- Shoup, Donald (editor). *Parking and the City*. (2018) Routledge. [ISBN 978-113849703-0](#).

4. Look into massive improvements in parking automation that makes enforcement and fee collection easy (see Calgary).

5. Look into by-law that would restrict delivery times to off-peak traffic times.
- no need to have delivery vehicles adding to congestion at peak travel times (8 - 9 am and 4 – 6 pm).

6. Celebrate Transit success and consider adding money to accelerate acquisition of e-Buses.

7. Consider accelerating Active Transportation Implementation Plan to complete its proposed 5-year plan in 4 years.