Saskatoon Greenhouse Gas Inventory and Update on Compact of Mayors

Recommendation
That a report be submitted to the Standing Policy Committee on Environment, Utilities and Corporate Services recommending:

1. That the Saskatoon Environmental Advisory Committee be asked to assist in developing a Community Greenhouse Gas Reduction Target;
3. That the Administration bring forward a report on an inclusive strategy for reducing greenhouse gas emissions in the community; and
2. That the City of Saskatoon apply for membership in the International Council for Local Environmental Initiatives, including appointing a Sponsor from City Council.

Topic and Purpose

The purpose of this report is to table and summarize the 2014 Greenhouse Gas Emissions for the City of Saskatoon (City), and to demonstrate completion of the first requirement under the Compact of Mayors. The implications of the federal government's announcement regarding implementing a price for carbon in 2018 is also described.

Report Highlights

1. Overall emissions in Saskatoon are on the rise. Emissions in the community increased approximately 12% between 2003 and 2014 while the City's corporate emissions rose 39%.
2. Now that the Inventory is complete, Saskatoon's next commitments under the Compact of Mayors includes setting emissions targets and developing a plan for reducing emissions in both the community and for the corporation.
3. The federal government has announced that carbon will be subject to a pricing model in 2018.

Strategic Goals

The recommendation in this report supports the priority to implement the Energy and Greenhouse Gas Reduction Plan under the Strategic Goal of Environmental Leadership.

Background

An Emissions inventory was last completed for the City for the 2003 year. This provided a platform for an Energy and Greenhouse Gas Management plan completed in 2009, which outlined six Energy and Emissions Management goals.

In 2015, the Saskatoon Environmental Advisory Committee recommended that the City complete a greenhouse gas emissions inventory. The Saskatchewan Environmental

Society also submitted a letter to City Council that listed 21 recommendations for reducing emissions in Saskatoon with the first step being the completion of a community emissions inventory. In November 2015, the City became a signatory to the Compact of Mayors, committing to address climate change by reducing greenhouse gas emissions. The 2014 Saskatoon Greenhouse Gas Emissions Inventory is the first step in complying with the Compact of Mayors.

Report

Results of Emissions Inventory

Based on availability of data from external sources, the Administration completed the 2014 inventory of gas emissions. Due to the amount of data involved in this inventory, a report is only completed periodically. As highlighted in the complete Inventory report (available on the City's web-site), the overall measure of greenhouse gas emissions in Saskatoon for 2014 from all sectors was 3,852 kilotons of carbon dioxide equivalents (CO_2e). This is an increase of 12.6% from the prior inventory completed in 2003. Additional sectors were analyzed to complete the 2014 inventory, accounting for 5% of emissions. The population increase from 2003 to 2014 was 26%. The acres of land developed in suburban areas reached 883.12 acres in 2014, an increase of 27% since 2010. Growth in housing units was 18%.

Within the community, the largest emissions produced are from energy consumed in residential dwellings and business buildings, which constitutes 24% and 34% respectively. Transportation is the second highest emissions sector in the city at 31% overall. This sector includes vehicle emissions from personal vehicles and business use, public transportation, air travel, rail travel and marine. Attachment 1 summarizes the total emissions for each sector analyzed for the 2014 community emissions inventory.

The City of Saskatoon as a corporation realized an increase of emissions since the 2003 inventory of 39% at 106 kilotons of CO_2e. Buildings are the largest emitters at 44% of the total corporate emissions. The 2014 emissions inventory analyzed additional sources than those reported in the 2003 inventory. If the additional sectors are eliminated, the emissions per sector are very similar between 2003 and 2014. Attachment 2 summarizes the emissions produced by the corporation.

Next Steps Under the Compact of Mayors

To be environmentally sustainable, a corporation must operate in a manner that mitigates or reduces emissions and adapts to climate change, such as creating infrastructure that could withstand a flash flood. The City demonstrated a commitment to environmental sustainability by signing the Compact of Mayors, a joint voluntary agreement launched at the 2014 United Nations Summit on Climate Action and initiated by C40 and ICLEI – Local Governments for Sustainability. Under the Compact, the City is required to report on climate change mitigation and adaptation. The 2014 Saskatoon Greenhouse Gas Emissions Inventory is the first of four phases the City is required to deliver. Prior to 2018, compliance requires the City to set and report on targets to reduce emissions and to create a model to reach these targets. The Compact of Mayors requires adaptation milestones to be met simultaneously, which is currently

being delivered and reported. An update on adaptation will be provided in the first quarter of 2017. Detail on the timelines and reporting requirements are summarized in Attachment 3.

The Saskatoon Environmental Advisory Committee (SEAC) has demonstrated interest and expertise in the area of greenhouse gas emissions. The Administration recommends that SEAC be asked to assist in developing a Community Greenhouse Gas Reduction Target and that this target form the basis for engaging stakeholders and the community on strategies for reducing emissions.

Developing a Strategy to Reduce Emissions

A 30% reduction target for the corporation was set by the City in 2013, to be realized by 2023 from 2006 levels. The 2014 inventory shows a 12% increase from the 2006 estimate meaning there is much work still to be done.

In September 2016, the federal government announced a plan to implement a price for carbon effective in 2018. The price will be set at an estimated $10 per tonne of CO_2e on corporate emissions. No announcement has been made on whether the price plan would be a corporate tax or a cap and trade system. The tax has the potential to affect emissions, exports, and the corporation's tax obligations. A detailed discussion is provided in Attachment 4.

As a reporting requirement to the Compact of Mayors and in an effort to aid local business as Canada transitions to a low carbon economy, the Administration will develop a strategy and business plan that identifies tactics for reducing community and corporate emissions and includes stakeholder and community engagement to determine the role each sector can play to achieve emissions targets.

International Council for Local Environmental Initiatives (ICLEI) Membership

ICLEI – Local Governments for Sustainability is a network of local governments working together to advance sustainability. Membership in ICLEI will connect the City with the most ambitious and committed local governments across Canada and around the world, enabling the City to share best practices and access resources to help achieve sustainability goals. To become a member of ICLEI, the City must name a Sponsor from City Council. There are no specific requirements of a Sponsor; however, through the named Councillor, the City of Saskatoon will have access to a network of other communities (both through elected officials and administration) having similar issues and initiatives. Attachment 5 summarizes some of the benefits of joining ICLEI.

Options to the Recommendation

City Council may choose to forgo joining ICLEI at this time.

Financial Implications

The next steps in meeting the City's commitments under the Compact of Mayors, target setting, and developing a reduction strategy will be completed utilizing internal resources. A community engagement strategy will be developed utilizing funds remaining in the Greenhouse Gas Reduction Capital Project #2183.

The cost of ICLEI membership is approximately $3,000. These funds are available in the existing operating budget.

Environmental Implications

A positive impact on greenhouse gas emissions is anticipated as a result of implementation of recommendations provided by an emissions reduction business plan. Additional reductions are expected as a result of energy efficiency projects underway such as the Energy Performance Contracts and route optimization with the garbage collection system.

Communications Implications

The 2014 GHG Inventory will be posted on the City website, and a media event will be coordinated to share reasons for completing the inventory, key findings and implications, and how the inventory will be used. A Communications and Engagement Plan would be developed to support a strategy for reducing greenhouse gas emissions in our community and in the City of Saskatoon.

Other Considerations/Implications

There are no policy, privacy or CPTED implications or considerations.

Due Date for Follow-up and/or Project Completion

Specific to next steps under the Compact of Mayors, the Standing Policy Committee on Environment, Utilities and Corporate Services will receive the following reports in 2017:

1. Update on the City of Saskatoon Adaptation Strategy (March 2017)
2. Update on the City of Saskatoon Emissions Reduction Targets (timing dependent on the Saskatoon Environmental Advisory Committee to prepare a recommendation)

In early 2017, the data from the Inventory report will be included in a higher level document representing the four pillars of an Environmental Sustainability Plan. The data and related analysis will provide the context for discussions on issues and options facing our community and will also be submitted to the Standing Policy Committee on Environment, Utilities and Corporate Services.

Public Notice

Public Notice, pursuant to Section 3 of Public Notice Policy No. C01-021, is not required.

Attachments

1. Saskatoon Community Emissions
2. Saskatoon Corporate Emissions
3. Compact of Mayors Commitments
4. Canada and Carbon Tax
5. ICLEI Membership
6. GHG Inventory Report Executive Summary (full report online)

Report Approval

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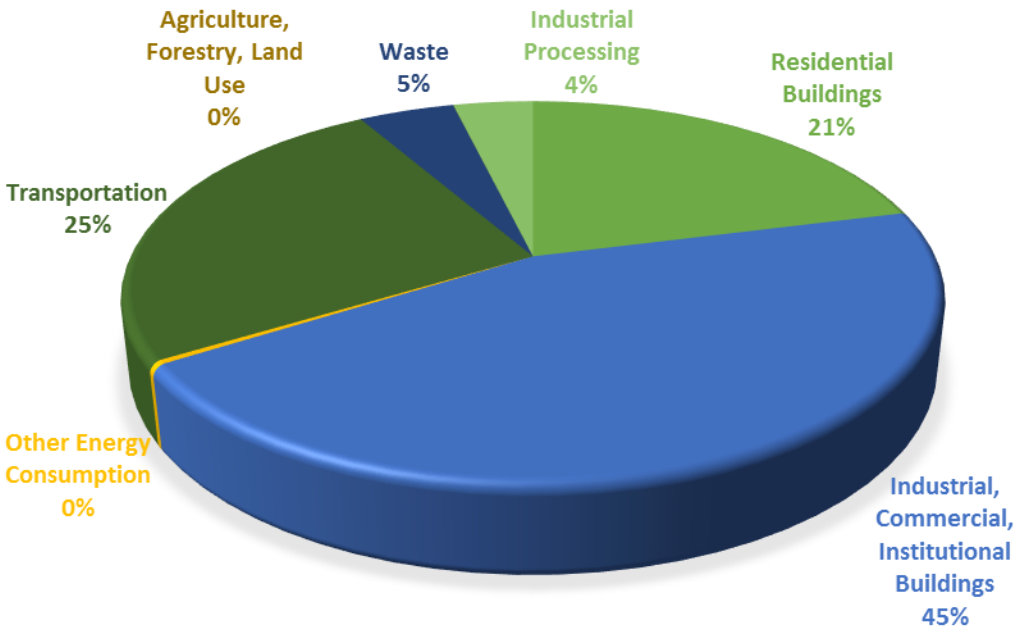
Approved by:	Catherine Gryba, General Manager, Corporate Performance Department

GHG Inventory.docx

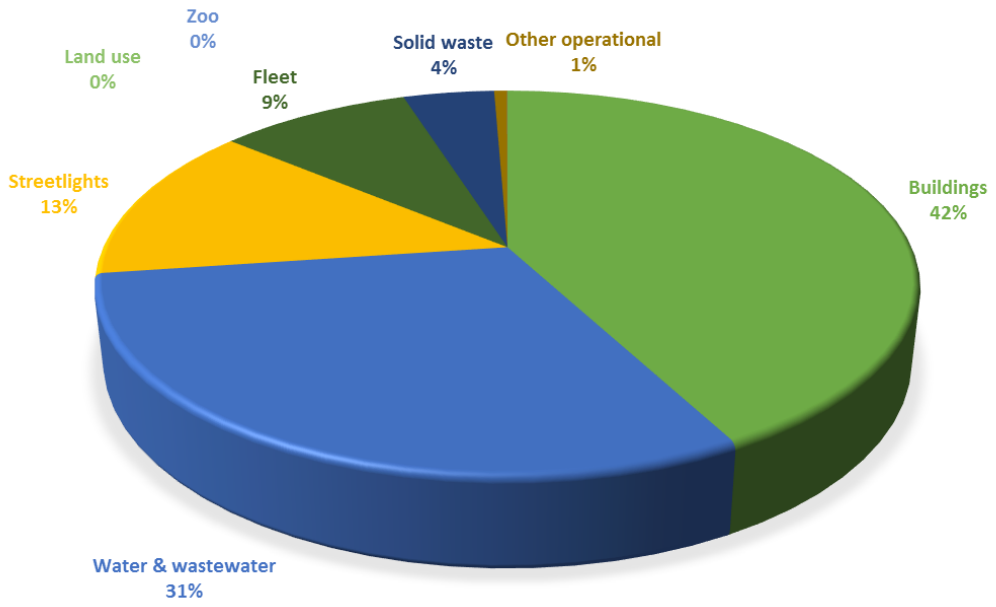
Community Emissions

Sector	GHG (tonnes of CO2e) 2003 new standards	2014	% Increase 2014
Residential Buildings	604,686	932,215	54.2%
Industrial, Commercial, Institutional Buildings	2,135,152	1,992,404	-6.7%
Other Energy Consumption	NR	14,129	
Transportation	632,414	1,121,430	77.3%
Waste	49,057	201,357	310.5%
Agriculture, Forestry, Land Use	NR	290	
Industrial Processing	NR	167,550	
Total	**3,421,309**	**4,429,375**	**29.5%**



Saskatoon Corporate Emissions

Sector	GHG (t of CO2e)			
	2003	2003 new standards	2014	% Increase 2014
Buildings	36,270	31,246	45,022	44.1%
Water & wastewater	30,437	24,608	32,702	32.9%
Streetlights	16,925	13,311	14,129	6.1%
Fleet	6,047	6,022	9,640	60.1%
Solid waste	1,619	4,576	4,576	0.0%
Other operational	NR	NR	656	NA
Land use	NR	NR	NR	NA
Zoo	NR	NR	13	NA
TOTAL	**91,298**	**79,763**	**106,738**	**33.82%**



Compact of Mayors Commitments

At each phase, the committed city is required to report the results to the Compact of Mayors through an approved method in order to receive acknowledgement and verification of the phase.

Phase	Mitigation	Adaptation
1 – Commitment November 2015	Cities commit to: • Reduce local GHG's • Measure community emissions using GPC • Set data-based targets for the future • Develop climate action plan	Cities commit to: • Address impacts of climate change • Identify climate hazards • Assess vulnerabilities • Develop climate adaptation plan
2 – Inventory December 2016	Complete a community-wide emissions inventory using the GPC standard	Identify climate hazards
3 – Target December 2017	Update emissions inventory & set emissions reduction target	Assess climate change vulnerability
4 – Plan December 2018	Develop climate action plan demonstrating how the city will deliver on its commitment to reduce greenhouse gas emissions	Develop a climate change adaptation plan demonstrating how the city will adjust to actual or expected climate change impacts

Once the Compliance phase has been reached, the city is required to report their inventories, targets, updates, reductions on an annual basis in order to maintain the Compliance rating.

Carbon Pricing Policies in Canada

ISSUE:

- On October 2, 2016, the Prime Minister of Canada announced that the Federal Government will implement a pan-Canada approach to pricing carbon pollution in order to help Canada meet its greenhouse gas emission targets.
- Under this approach, all Canadian jurisdictions—meaning provinces—will be required to have carbon pricing in place by 2018.
- The price floor will be set at $10 per tonne of Carbon Dioxide (CO_2) emissions 2018 and rising by $10 each year to $50 a tonne by 2022.
- The Government of Canada will allow the provinces to choose from two options to implement carbon pricing: (1) a direct price (e.g., carbon tax) and (2) cap-and-trade-system.
- In Canada, the provinces of British Columbia (BC) and Alberta (AB) price carbon by using carbon taxes, while Ontario and Quebec are using a cap-and-trade system. All other provinces are considering various approaches.
- However, the Government of Saskatchewan is vociferously opposed to carbon pricing. Saskatchewan's approach to date is to use technology (i.e., Carbon Capture and Sequestration) to reduce emissions.
- According to Environment Canada data, Saskatchewan has the highest greenhouse gas emissions per capita in the country.
- It is too early to say what impact the Government of Canada's announcement may have on the City of Saskatoon. This will depend on the pricing option that Saskatchewan will choose, the implementation of it, and any potential offsets that the policy will include.

BACKGROUND

- In 2008, the Government of British Columbia implemented a revenue neutral carbon tax, meaning the government's total tax revenues did not change because of the carbon tax as it reduced other taxes, like personal incomes taxes.
- The BC government phased-in the carbon tax over a period of four years, being fully implemented in 2012 at $30 per tonne of CO_2 equivalent emissions.
- In 2013, the Government of Quebec introduced a cap-and-trade system which covers business emitting 25,000 metric tonnes or more of CO_2e per year and fuel distributors selling more than 200 litres of fuel. The system covers about 85 per cent of Quebec's GHG emissions.
- Since January 1, 2014, Quebec's cap-and-trade system has been linked to California through the Western Climate Initiative (WCI).
- In 2016, the Ontario government introduced legislation to adopt a cap-and-trade system, which takes effect on January 1, 2017. Ontario's approach is very similar to Quebec's and it will link with Quebec and California in the WCI.
- In May 2016, the Government of Alberta announced that it will be implementing a new carbon tax on transportation and heating fuels, including diesel, gasoline, natural gas and propane. The levy will apply as of January 1, 2017 at a rate of $20 per tonne, and will increase to $30 per tonne on January 1, 2018

- In March 2016, Canada's First Ministers committed to putting Canada on a credible path to meet or exceed a national target of reducing greenhouse gas (GHG) emissions by 30 percent below 2005 levels by 2030.
- The First Ministers agreed that this will require transitioning to a low-carbon economy by adopting a range of measures, including carbon pricing, adapted to the specific circumstances of each province and territory.
- In October 2016, in response to the Prime Minister's announcement, the Government of Saskatchewan released a "White Paper" on its approach to reducing emissions, which rejects broad based carbon pricing and places the focus on technology and innovation.

ANALYSIS/DISUCSSION/NEXT STEPS

- Carbon pricing is essentially a financial instrument that national and subnational governments around the world are using to help reduce carbon emissions.
- They are intended to place a price on carbon pollution so as to induce behavioural changes by individuals and firms.
- As indicated by the Prime Minister's announcement, there are two common methods of carbon pricing: (1) cap-and-trade system and (2) carbon taxation.
- In a Cap-and-Trade System:
    - governments cap total carbon emissions and then give or sell companies carbon permits that add up to the cap.
    - Companies can then trade permits with each other.
    - Those who can reduce emissions cheaply and easily sell permits to those who cannot.
    - The price of the permits is variable, depending on the market, but generally, the lower the cap, the higher the price.
- In a Carbon Taxation regime:
    - governments impose a fee on carbon:
    - the more a company emits, the more they pay.
    - The price determines how effective the policy will be at lowering emissions—the higher the price, the greater the reductions.
- The table below illustrates the advantages and disadvantages of each carbon pricing mechanism at a very high level.

Table 1: The Advantages and Disadvantages of Carbon Pricing Mechanisms

Mechanism	Potential Advantages	Potential Disadvantages
Cap-and-Trade	• Drives cost effective emissions reductions • Emissions are capped: amount of carbon emitted is set by policy • Creates opportunities to link with other systems, broadening scope and harmonizing systems	• More administratively complex to implement & manage • Allows for price volatility because the price fluctuates • Reduces scope for revenue recycling
Carbon Taxation	• Drives cost effective emissions reductions • Provides price certainty • Simple, transparent, easy to administer as it functions within existing tax regime	• Typically has large public opposition • Does not provide certainty as to the quantity of emissions reductions to be achieved • Emissions reductions depend on consumer sensitivity to prices

- In terms of a carbon tax, the British Columbia experience suggest that GHG emissions were initially reduced following the implementation of the carbon tax, but then started to increase, albeit at a slower annual pace than it had previous to the implementation of the carbon tax.
- This suggests that the carbon price was not set high enough to elicit more significant behavioral changes.
- The cap-and-trade systems have to be fully implemented in Canada so there are no measureable results to its efficacy in reducing emissions in Canada.
- So what are the implications to municipalities in jurisdictions with carbon pricing?
- In BC, the government incented local governments to better manage their emissions by allowing those that commit to carbon neutrality by 2012 to access the Climate Action Revenue Incentive, a grant that offsets 100 percent of the carbon tax local government's pay.
- The Government of Saskatchewan's recently released Climate Change "White Paper" provides 13 recommendations that outlines the province's plan to address climate change and reduce emissions.
- However, in terms of carbon pricing the Governments positon is: "*Saskatchewan calls on the federal government to abandon plans for a national carbon tax," and "Saskatchewan calls on Canada to reject a national cap and trade system as an option."*

ICLEI Membership

ICLEI – Local Governments for Sustainability (International Council for Local Environmental Initiatives) is a network of local governments working together to advance sustainability. Membership in ICLEI will connect the City with the most ambitious and committed local governments across Canada and around the world, enabling us to share best practices and access resources to help us reach our sustainability goals.

The following table outlines the primary benefits associated with being an ICLEI member:

Benefit	**Overview**
Exclusive Access to ICLEI Resources	Access to resources on local sustainable development, including climate change response, biodiversity, water management, sustainability management and sustainable procurement.
Priority Access to New ICLEI Campaigns and Projects	Opportunity to pilot new campaigns, initiatives and projects; discount to participate in ICLEI programs, including Adaptation Initiative.
Access to Events and International Networking Opportunities	Opportunity to participate in national and international conferences, events, delegations and study tours that provide important opportunities to learn and exchange ideas, best practices and other innovations with the global sustainability community.
National and International Profiling	Initiatives and programs of ICLEI members are regularly featured in a variety of publications, including ICLEI's international newsletter and website.

Source:
http://www.icleicanada.org/images/icleicanada/pdfs/Benefits_of_Membership.pdf

2014 Saskatoon Greenhouse Gas Emissions Inventory - Executive Summary

The 2014 Saskatoon Greenhouse Gas Emissions Inventory supports federal and international reporting standards. The inventory is meant to provide a representation of Saskatoon's total emissions as well as emissions by sector to support the exploration of emissions abatement strategies in the community, and efficiencies within City of Saskatoon operations.

Saskatoon joined the Compact of Mayors in 2015 to demonstrate a commitment to respond to climate change and acknowledge that local action can have significant global impact. As a result, the City is required to engage in mitigation and adaptation reporting, target setting and implementation of a climate change plan, to be completed and maintained in 2018. This coincides with the timing of the federal government announcement to implement a price on carbon in 2018. The carbon price comes as a result of the Canadian government commitment by way of the Paris Climate Agreement to reduce emissions and engage in activities to keep global temperatures within 2 degrees Celsius above pre-industrial levels.

Saskatoon conducted an emissions inventory in 2003, and has produced estimates for 2006 and 2013. During this time, an emissions reductions target for the City of Saskatoon Corporation was set to 30% below 2006 levels by 2023.

Overall, the Saskatoon community emissions have increased 12% since the 2003 inventory. Additional sectors were analyzed for the 2014 inventory to report a more comprehensive emissions inventory. Eliminating these additional sectors continues to produce an 8% increase since the 2003 emissions inventory. Industrial, commercial and institutional energy consumption in buildings is the highest emitter, but has realized a 38% decline in emissions since the 2003 inventory, whereas emissions associated with residential buildings increased by 54%.

The City of Saskatoon corporate emissions increased 39% since the 2003 inventory. The highest emitting sector is realized in building energy, with administrative and operational buildings consuming a greater share than recreational facilities and emergency services.

The full report is available on-line.