# Climate Change Mitigation Business Plan - Opportunities

**Recommendation**

That the Standing Policy Committee on Environment, Utilities and Corporate Services recommend to City Council:

1. That the information pertaining to Climate Change Mitigation Business Plan be received; and
2. That the allocation of Corporate Performance Department Capital Funding of $20,000, in addition to $80,000 of Federation of Canadian Municipalities grant funding, be referred to the 2018 Business Plan and Budget deliberations to support development of the Business Plan.

## Topic and Purpose

The purpose of this report is to provide an update on the Climate Change Mitigation Business Plan (Business Plan) project, including a source funding update, description of the Business Plan deliverables and analysis, and a list of mitigation opportunities that will form the basis for engagement with the community.

## Report Highlights

1. A mitigation action plan is required to maintain compliance with the Global Covenant of Mayors for Climate and Energy Agreement, which will be delivered through the Climate Change Mitigation Business Plan.
2. Administration has applied to the Federation of Canadian Municipalities (FCM) Municipalities for Climate Innovation Program for funding to support Business Plan development, including community and stakeholder engagement, and communications.
3. Engagement and communications will begin in fall 2017, the results of which will inform the Business Plan.
4. The Business Plan will outline how the City of Saskatoon can facilitate community and corporate emissions reductions in order to meet established greenhouse gas reduction targets. Included in this report is a summary of background information gathered to inform the planning process and a description of the Business Plan development process.

## Strategic Goals

The Climate Change Mitigation Business Plan project supports the corporate performance targets of reducing greenhouse gas emissions as a corporation by 40% below 2014 levels by 2023, community emissions by 15% below 2014 levels by 2023, and all emissions by 80% below 2014 levels by 2050. The Business Plan also supports the strategic goal of Environmental Leadership by providing innovative options to reduce emissions, and the goal of Asset and Financial Sustainability by mitigating the effects of the carbon price mechanism that will be implemented in 2018 either by the provincial or federal government.

## Background

In November 2015, the City became a signatory to the Compact of Mayors, now known as the Global Covenant of Mayors for Climate and Energy, which commits the City of Saskatoon to address climate change by reducing greenhouse gas emissions. Within three years of becoming a signatory, Saskatoon is required to develop and submit an action plan for demonstrating how the City will deliver on its promise to mitigate emissions. Attachment 1 outlines the phased commitment to the Global Covenant of Mayors with timelines of the completed phases.

City Council, at its meeting held on June 26, 2017, considered the Saskatoon Greenhouse Gas Emissions Targets report; and resolved, in part:

> "1. That the greenhouse gas emissions reduction target for the City of Saskatoon (corporate) be adjusted to utilize 2014 as the base year, specifically, a reduction of 40% below 2014 levels by 2023; and a reduction of 80% below 2014 levels by 2050.
> 2. That the recommended reduction targets for the community proposed by the Saskatoon Environmental Advisory Committee be adopted."

## Report

Summary of the Climate Change Mitigation Business Plan

One of the Global Covenant of Mayors obligations is to create a mitigation action plan that will enable Saskatoon to meet its greenhouse gas reduction targets; the Climate Change Mitigation Business Plan will act as Saskatoon's action plan document. As such, it will directly outline how Saskatoon can meet its short and long-term emissions reductions targets and, to maximize the potential for funding support from FCM and the Federal Government, align with federal priorities (as outlined in Attachment 2).

Based on the results of the 2014 Saskatoon Greenhouse Gas Emissions Inventory, opportunities to reduce emissions within each sector will be analyzed on the basis of operational feasibility, implications to the local economy, financial viability (including investment and savings), and the overall effect on emissions. Sectors are based on the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories and include building energy consumption, transportation, waste management, agriculture and land use, and industrial processing.

The intent of the Business Plan is to identify a set of specific actions the City will take to facilitate emissions reductions, along with a long-term roadmap for achieving the targets through changes to policy, investments in projects and programs, milestone achievements that will signal progress, and timelines. The business planning process will integrate findings from public and stakeholder engagement, link emissions reduction initiatives with other City priorities, and begin examining the environmental, social, and financial benefits of mitigation activities.

Developing the Plan

Similar to the approach Administration is taking in the development of the Waste Diversion Plan, the Business Plan will identify opportunities in the form of new programs, policy tools, pilot projects, and education that will lead to positive emissions reduction results. Further, the Business Plan will provide scenario analyses on outcomes, including financial analysis, emissions analysis, operational analysis, and risk assessment. A thorough cost-benefit analysis for the identified set of actions will include a Business-as-Planned scenario to compare the implications of not engaging in mitigation activities in Saskatoon.

A variety of opportunities to reduce greenhouse gas emissions have already been identified by Administration and are listed in Attachment 3. Further study of these opportunities is required to better understand the potential for impact and positive and/or negative implications associated with each opportunity. In the Saskatoon Greenhouse Gas Emissions Targets report a list of environmental, social, and financial benefits were provided. Through the business planning process, attempts to quantify these benefits will be made, along with an identification of any short or long-term 'trade-offs', costs or consequences that may arise from engaging in mitigation activities. Once the opportunities have been analyzed, the Business Plan will provide recommendations for City Council to review and provide direction on. When a suite of options is adopted by City Council, the final phase of the Business Plan includes preparing an implementation plan to enable Saskatoon reach the targets.

Attachment 4 provides a graphic overview of the Business Plan strategy development process.

## Public and/or Stakeholder Involvement

Environmental Awareness Survey Results

Climate change remains one of the biggest issues facing Saskatoon and the Globe today. Saskatoon residents and businesses recognize the importance of the climate change issue, as evidenced in the recent Environmental Awareness Survey conducted by the City of Saskatoon in June 2017. Survey results are summarized in Attachment 5.

Engagement Approach

Many of the topics within the Climate Change Mitigation Business Plan will require significant community conversations and engagement. As a result, the Administration is developing an engagement plan to help guide implementation and to ensure interactions with the community are meaningful, consistent, relevant, and effective.

Administration is currently in the process of hiring an internal Engagement Specialist and external Engagement Consultant to help design and facilitate upcoming engagement activities.

Public engagement is expected to start in November 2017. The engagement approach may include activities such as a series of workshops and forums, surveying and on- and offline discussions. This will provide residents and the Industrial Commercial and

Institutional (ICI) sector with opportunities to join in the conversation. Key stakeholders will be invited to provide input into the Business Plan to ensure that the recommendations and opportunities have been thoroughly considered. Key stakeholders may include, but will not be limited to, local community organizations, environmental and economic professionals, Indigenous stakeholders and the business community.

A number of engagement activities are planned for the fall and Administration will provide a report on the engagement approach for the Climate Change Mitigation Business Plan and Waste Diversion Plan to identify how alignment will be addressed with other activities such as Growth Plan-related engagement and Green Infrastructure Strategy and Natural Capital Asset Valuation-related meetings.

Specific to the Climate Change Mitigation Business Plan, the goal of engagement is to help residents and businesses understand local climate change challenges and provide opportunities for input into prioritizing potential solutions. The output from climate change engagement will be a comprehensive report which outlines Saskatoon's climate change mitigation options for City Council's future consideration. Public outreach and education are expected to continue through the design phase of the plan (dependent upon a successful application for grant funding).

## Communication Plan

Administration is developing a Communications Strategy that will focus on building public awareness and participation in climate change mitigation. The City will rely on the participation and engagement of Saskatoon residents and businesses to help build and implement a plan for mitigating the impact of climate change. Rather than focus on individual action, the Strategy will focus on communicating collective responsibility, successes, and benefits; showcase collaboration; and highlight community actions and partnerships.

The tone of the campaign will remain upbeat, interesting, and meaningful. The core message will demonstrate that it's time for the community of Saskatoon to take action, and encourage stakeholders to get involved in engagement activities. Details about the Communications Strategy will be provided in the report to Committee outlining the Engagement Approach.

## Policy Implications

Policy review and analysis will be a key component of the Business Plan. Research will be conducted on: what current policies or bylaws may be affected by mitigation activities; innovative and best practices utilized by other municipalities; and future policy options that could be considered by the City of Saskatoon. The Business Plan will include a policy analysis section, which outlines the potential role of the City of Saskatoon to facilitate mitigation efforts using policy tools. Initial examples identified by the Administration are included in Attachment 3.

## Financial Implications

The Climate Change Mitigation Business Plan will provide a strategy to reduce emissions within the Saskatoon community. The strategy development costs and deliverables eligible for FCM grant funding include:

| Deliverables | Estimated Cost |
|---|---|
| Communications and public awareness, advertising and media | $ 40,000 |
| Public awareness and creative development | 30,000 |
| Creative services to support engagement | 10,000 |
| Research into attitudes and motivation of Saskatoon residents | 16,500 |
| Engagement plan development and facilitation | 85,000 |
| Community outreach and partnerships | 10,000 |
| Research, benchmarking, policy review – internal staff resources | 30,000 |
| Mapping, scenario analyses, report production | 38,500 |
| Total estimated cost eligible for FCM grant funding | $260,000 |

Through the business planning process, additional financial implications will be identified for the implementation of recommended opportunities.

Administration has applied to the Federation of Canadian Municipalities (FCM) Municipalities for Climate Innovation Program for funding support. FCM funding covers 80% of eligible costs of an approved capital project. Administration committed $32,000 in 2017 from to leverage for applying to FCM for funding of $128,000. An additional $20,000 the Corporate Performance Department Reserve is required to secure an additional $80,000 of FCM funding for a full budget of $260,000.

Early feedback from FCM has been encouraging, however if the application to FCM for funding is not successful, Administration will report back with an alternative strategy for completing the Business Plan.

## Environmental Implications

The Business Plan will directly outline how Saskatoon can meet its short- and long-term emissions reductions targets, which will require:

- Reducing emissions generated by the City of Saskatoon (corporate) by 42,500 tonnes of carbon dioxide equivalents by 2023, plus additional mitigation to offset new greenhouse gases generated by expanded operations;
- Reducing community emissions by 580,000 tonnes by 2023, plus additional mitigation to offset new greenhouse gases generated by growth; and
- Reducing overall emissions in Saskatoon from 3.85 million tonnes to 770,000 tonnes by 2050.

Additional environmental implications will also be estimated and reported through the planning process.

## Privacy Implications

Engagement with stakeholders within the community and large emissions producers will be addressed on a case-by-case basis. For example, where it may become possible to identify large emitters or energy consumers, the presentation of information will be adjusted to protect the confidentiality of the business or institution.

## Other Considerations/Implications

There are no options, CPTED implications or considerations.

## Due Date for Follow-up and/or Project Completion

To fulfill the next steps under the Global Covenant of Mayors for Climate and Energy, Administration is required to deliver the Climate Change Mitigation Business Plan no later than December, 2018. To meet this obligation, Administration is planning on delivering the following:

- Recommended Mitigation Actions report – March, 2018
- Preliminary Climate Change Mitigation Business Plan – June, 2018
- Final Business Plan – November, 2018

## Public Notice

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

## Attachments

1. Global Covenant of Mayors Commitments
2. Aligning the Saskatoon Climate Change Mitigation Business Plan with Federal Priorities
3. Mitigation Opportunities to be Explored in the Business Plan
4. Saskatoon Climate Change Mitigation Business Plan - Strategy Development Process
5. 2017 Environmental Awareness Survey Results

## Report Approval

| | |
|---|---|
| Written by: | Nasha Spence, Environmental Accounting Manager<br>Shannon Dyck, Environmental Coordinator<br>Katie Burns, Environmental Coordinator |
| Reviewed by: | Brenda Wallace, Director of Environmental and Corporate Initiatives |
| Approved by: | Jeff Jorgenson, Acting General Manager, Corporate Performance Department |

CP EUCS NS – Admin Report – Climate Change Mitigation Business Plan – Opportunities

# Global Covenant of Mayors Commitments


At each phase, the City is required to report the results to the Covenant of Mayors on Climate and Energy through an approved method in order to receive acknowledgement and verification of the phase. Once the Compliance phase has been reached, the City is required to report their inventories, targets, updates, and reductions on an annual basis in order to maintain the Compliance rating.

The Global Covenant of Mayors commitment addresses two streams at each phase: Climate Change Mitigation and Climate Change Adaptation. The requirements of each phase are summarized below. A report on Climate Change Adaptation will proceed in the fall of 2017.

| Phase | Climate Mitigation | Climate Adaptation |
|---|---|---|
| 1 – Commitment<br>• Due: November 2015<br>• Status: **Met** | Cities commit to:<br>• Reduce local greenhouse gas emissions<br>• Measure community emissions using globally-recognized standards<br>• Set targets for the future based on inventory data<br>• Develop climate action plan | Cities commit to:<br>• Address impacts of climate change<br>• Identify climate hazards<br>• Assess vulnerabilities<br>• Develop climate adaptation plan |
| 2 – Inventory<br>• Due: December 2016<br>• Status: **Met** | Complete a community-wide emissions inventory using the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories standard | Identify current and projected climate hazards specific to the region |
| 3 – Target<br>• Due: December 2017<br>• Status: **Mitigation – Met** **Adaptation – In Progress** | Continue to update emissions inventory data and set emissions reduction targets | Assess climate change vulnerability of infrastructure, services and municipal plans |
| 4 – Plan<br>• Due: December 2018<br>• Status: **In Progress** | Develop a Climate Action Plan demonstrating how the City will deliver on its | Develop a climate change adaptation plan demonstrating how the city |

| | | |
|---|---|---|
| | commitment to reduce greenhouse gas emissions | will adjust to actual or expected climate change impacts to achieve resilience |

# Aligning the Saskatoon Climate Change Mitigation Business Plan with Federal Priorities

The Government of Canada has established plans for sustainable development and climate change.[1] Administration will continue to monitor federal implementation to understand the impacts and opportunities for the City of Saskatoon's Climate Change Mitigation Business Plan, including federal plans to:

- Advance the use of carbon pricing to provide a market signal that encourages lower-emitting behaviors, products, and technologies:
    - All Canadian jurisdictions will have carbon pricing in place by 2018. A "backstop" pricing system has been provided for provinces and territories that do not meet the benchmark in 2018.
- Work with Canadians, provinces and territories, Indigenous Peoples, and municipalities to develop local and regional plans.
- Help Canadians shift to cleaner fuel sources.
- Increase Canada's low- or zero-emissions electricity supply:
    - Modernize the electricity systems through smart-grid technologies to expand, store, and make better use of renewables.
- Increase vehicle efficiency and move towards lower-emitting modes of transportation:
    - Set emission standards;
    - Put more zero-emission vehicles on the road
    - Invest in public-transit upgrades and expansions; and
    - Develop a clean fuel standard to reduce emissions from fuels used in transportation, buildings and industry.
- Accelerate the adoption of transformative technologies and energy efficiency:
    - Support early-stage technology development;
    - Focus research on clean technology and environmental performance issues; and
    - Increase support to advance and commercialize innovative technologies.
- Make buildings and equipment more efficient:
    - Work to develop a "net-zero energy ready" model building code by 2030;
    - Develop a model code for existing buildings by 2022 to guide energy efficiency improvements when renovating buildings; and
    - Set new standards for heating equipment and other key technologies to the highest level of efficiency that is economically and technically achievable.
- Enhance sinks and address emissions from forests, agriculture and waste:
    - Increase stored carbon;

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[1] *Achieving a Sustainable Future: A Federal Sustainable Development Strategy for Canada, 2016-2019* (including the *Spring 2017 Update*)
https://www.canada.ca/content/dam/themes/environment/documents/weather1/20170119-en.pdf

*Pan-Canadian Framework on Clean Growth and Climate Change: Canada's Plan to Address Climate Change and Grow the Economy*

    - Increase the use of wood for construction;
    - Generate bioenergy and bio products; and
    - Advance innovation.
- Create a low-carbon industrial sector:
    - Reduce methane and hydrofluorocarbon (HFC) emissions;
    - Improve industrial energy efficiency; and
    - Invest in technology.
- Lead by example through green and innovative government operations:
    - Be an early adopter of building standards to be established through the Pan-Canadian Framework on Clean Growth and Climate Change for all new government buildings and leases, where applicable;
    - Establish a complete and public inventory of federal GHG emissions and energy use;
    - Encourage departments to take action and innovate on sustainable workplace practices;
    - Review procurement practices to align with green objectives; and
    - Promote sustainable practices for employee travel— including business travel and commuting to work—such as teleconferencing, telecommuting, carpooling, and use of electric vehicles and public transportation. Where feasible, offer offsetting options to reduce the impact of government travel.
- Support businesses and Canadians to take action to reduce GHG emissions:
    - Provide energy efficiency programs and information;
    - Promote sustainable consumption and production;
    - Promote the use of lower-carbon-footprint materials in construction; and
    - Address GHG emissions from the rail sector.
- Conduct policy research and analysis to inform strategies to address climate change in different sectors, including agriculture, energy and health.
- Commit funds towards working and partnering with others to reduce GHG emissions. For example, the 2016 Federal Budget provided:
    - $2 billion over two years to establish a Low Carbon Economy Fund to support provincial and territorial actions that will significantly reduce GHG emissions;
    - $75 million in new funding for local governments to address climate change; and
    - $109.1 million over five years to advance domestic climate change objectives through science, data reporting, policy and regulations.

# Mitigation Opportunities to be Explored in the Business Plan

Outlined below are a number of greenhouse gas reduction opportunities that will be refined and examined in more detail in the Business Plan. Additional opportunities may be identified as engagement is conducted with City Divisions, residents, the Industrial, Commercial and Institutional (ICI) sector, and key stakeholders in our community.

This list represents program, policy, pilot and educational initiatives that have been implemented in other jurisdictions, as well as initiatives that are currently being explored by the City of Saskatoon. Further details will be provided in the Business Plan in order to support City Council's decision making process on the specific initiatives the City will implement. In particular, the Business Plan will identify which opportunities provide:

- significant impact on emissions;
- cost-effectiveness;
- operational efficiency;
- response to community 'readiness';
- maximize benefits; and
- minimize 'trade-offs' or other negative implications.

The Business Plan will directly outline how Saskatoon can meet its short- and long-term emissions reductions targets through a variety of initiatives, which will require:

- Reducing emissions generated by the City of Saskatoon (corporate) by 42,500 tonnes of carbon dioxide equivalents by 2023, plus additional mitigation to offset new greenhouse gases generated by expanded operations;
- Reducing community emissions by 580,000 tonnes by 2023, plus additional mitigation to offset new greenhouse gases generated by growth; and
- Reducing overall emissions in Saskatoon from 3.85 million tonnes to 770,000 tonnes by 2050.

## Programs

Programs have the potential to encourage the community to reduce emissions by providing information, service convenience, or incentives. The range of emissions impact varies, with a variety of factors affecting the outcome. For example, approximately 530 tonnes of greenhouse gases can be removed from the residential building sector annually if 15% of homes add a small-scale solar panel system to their rooftops. Adopting a city-wide organics program that diverts 78,000 tonnes of food and yard waste from landfills is estimated to reduce between 85,000 and 120,600 tonnes annually.

Current & In-Progress Initiatives:

- Continue to offer the Net Metering Program to Saskatoon Light and Power Customers*[1]

[1] An asterisks (*) indicates that the initiative responds to a Saskatchewan Environmental Society recommendation from report CK 375-4 and CP 7540-001 (SPC Environment, Utilities and Corporate Services. January 11, 2016).

- Expand the usage of City compost in public parks and new developments
- Storm Water Utility credits for ICI customers
    - Owners are credited for the equivalent amount of runoff that would be diverted during a storm event, due to the improvement.
- Rain barrel and compost bin rebates
    - The City offers $20 rebates to Saskatoon residents who purchase a rain barrel or compost bin from a Saskatoon retailer. Each household is eligible for one rebate per item per year.
- Environmental cash grant
    - The City of Saskatoon annually allocates $20,000 to local non-profit organizations implementing initiatives that relate to the protection of the environment; conservation of natural resources; protection of our water resources; and/or environmental communications, education or research.

<u>Future Opportunities:</u>

- Support solar opportunities*
    - Assistance for solar panels, passive solar design, and solar-ready buildings. Benefits include reductions in heating and cooling loads, water heating, and electricity use, as well as renewable energy generation.
- Encourage ultra-low and zero-emission vehicles*
- Encourage electric vehicle charge stations for residents and businesses
- Carpooling and car sharing programs
- Third-party building certification processes
    - Support local industry to certify local projects through third-party certification programs (e.g. LEED, Passive House, BOMA, Living Building Challenge, SITES).
- Incentivize innovative buildings and new forms of development
- Incentivize energy efficiency measures in residential buildings and ICI facilities
- Provide ICI sector audits and retrofit incentives for energy and water improvements
- Provide residential audits and retrofit incentives for energy and water improvements
- Incentivize indoor water efficient fixtures
- Incentivize outdoor water conservation methods
- Encourage ground source heat pumps (geothermal) and air source heat pumps in buildings
- Encourage replacement of once-through cooling equipment
- Improve storm water incentives for residential and ICI customers
    - A larger storm water credit can drive storm water improvements and there are also opportunities to provide tax reductions for residential customers.
- Expand waste diversion initiatives
    - Phase out the subscription Green Cart program and implement a more efficient city-wide organics program
    - Continue to offer city-wide residential recycling
    - Expand public space recycling

    - Continue to operate the compost depots
    - Expand household hazardous waste management
    - Continue to plan the Curbside Swap program
    - Continue to support the Home Composting program
    - Construct Recovery Park
- Increase the value of the Vacant Lot & Adaptive Re-Use Incentive to stimulate low-impact, dense development
- Provide additional support for community projects through the City of Saskatoon's environmental cash grant

## Policy Tools

Policy tools influence emissions by encouraging investment in carbon-friendly solutions (e.g. products, services, approaches) and setting standards and guidelines necessary to achieve emissions reductions goals. For example, an anti-idling bylaw has the potential to reduce emissions by 52,500 tonnes of carbon dioxide equivalents.

In addition to the full evaluation of each policy opportunity, further analysis of policy tools will be done to identify the legal implications and authority of the City in the context of Federal and Provincial Acts and Regulations.

Current & In-Progress Initiatives:

- Recognizing that 'you manage what you measure', consistently tracking emissions for the community and corporation
    - Produce annual GHG inventories in order to monitor emissions reduction progress.
    - Update the community on milestones achieved on reaching the reduction targets.
    - Develop energy intensity maps identifying where energy consumption is highest in the community.
- Complete the development of a Sustainable Building Policy for the City of Saskatoon
- Develop a Community-Wide Solar Strategy
    - A Solar Opportunities discussion paper is currently being prepared, which will include input from stakeholders from the renewable energy generation sector, in particular, the solar industry.
- Brownfield Renewal Strategy
    - Emissions reductions are possible from both the management of contaminated soils and the facilitation of low-impact, dense development.
- Adopt the North Downtown Masterplan, a sustainable infill neighbourhood design
- Incorporate more specific environmental and climate change provisions into the Official Community Plan
- Incorporate more specific environmental and climate change provisions into the City's Environmental Policy (C02-036)
- Design Sustainable Procurement Guidelines to correspond with the Corporate Purchasing Policy (A02-027)

    - The City of Saskatoon is developing new procurement policies, procedures and tools that will include a full range of sustainable purchasing activities and reflect best practices in Canada. Beginning with a new Supplier Code of Conduct and Supplier Leadership Questionnaire, the new policy will apply broadly across the corporation using tools such as Total Cost of Ownership and eco-labelled product specifications.
- Actively enforce the Civic Vehicles Policy (A07-020)
    - This policy includes a section that restricts civic vehicle and equipment idling after more than three consecutive minutes, between -5 and 27 degrees Celsius (°C).
- Create stronger development guidelines to correspond with the Wetland Policy (C09-041)
    - This policy provides guidance to landowners, developers and municipal staff on achieving responsible integration of wetlands into the urban environment.
- Continue to create new land use planning policies through the Growth Plan to decrease reliance on automobiles and maximize efficiency of public services
    - Adopt and implement development patterns that utilize existing infrastructure, enhance non-automobile transportation, and reduce the need for new roads, utilities, and other public works.
- Continue to create improvements to transit under the Growth Plan
    - Improvements could include more bus frequency, lower bus fares, better snow maintenance around bus shelters, a system that gets people to their destination more efficiently, new development standards that support the transit system and infrastructure, programs to increase safety and accessibility, expanded bus rapid transit (and/or light rail) systems, higher transit ridership targets*, and earlier bus rapid transit targets*.
- Implement traffic and roadway management strategies to improve mobility and efficiency, and reduce associated emissions
- Prioritize active transportation infrastructure and implementation of the Active Transportation Plan
    - Set higher targets for active transportation*, develop comprehensive bicycle and pedestrian networks, preserve neighbourhood characteristics that encourage active forms of transportation, and create educational programs to improve attitudes and perceptions towards active transportation (i.e. regarding sense of safety, convenience, road rules).
- Work with Regional Partners to identify environmental partnership opportunities
    - Develop integrated plans in the areas of transportation, green infrastructure, climate mitigation and adaptation, building and construction, amongst others.
- Study the environmental benefits that could result from the Employment Areas Study
    - The relationship between where people live and work can have significant impacts on land use and transportation patterns, including the number of automobile, pedestrian, cycling, and transit trips. This study includes a number of policy recommendations centered on achieving employment

areas that are well-designed, located closer to where people live, accessible by all transportation modes, and maintain a strong City Centre.

- Ensure the environmental recommendations identified in all current and future Local Area Plans (LAPs) are resourced and implemented
- Expand Community, Allotment, Vacant Lot, and Boulevard Gardening opportunities
- Continue to Develop the Green Infrastructure Strategy
    - The project will identify where natural ('green') infrastructure could be used as a replacement for built ('grey') infrastructure, resulting in emissions reductions. It also identifies where carbon sequestration potential exists and can be fostered.
- Promote the City's Low Impact Development (LID) Guidelines
- Continue to support the efforts of the Meewasin Valley Authority
    - Meewasin helps protect our watershed through conservation management, recreation, and education.
- Require quality control programs and environmental standards for contractors working on civic initiatives
- Continue to review the effectiveness of civic utility conservation pricing mechanisms
    - Change the City's business model for utilities to ensure conservation is supported. Avoid block rates.

<u>Future Opportunities:</u>

- Civic Plan Alignment
    - Ensure that the City of Saskatoon's climate, land use, housing, transportation, and other plans are aligned so that environmental and climate change objectives are met in an integrated way.
    - Enhance any regional plans that have been developed and work with regional partners to encourage consistency between jurisdictions and support emissions reporting and planning.
- Establish building energy efficiency policies for new construction*
    - Policies/codes could include mandatory performance measures, incentives for green building practices (e.g. in the form of training, technical assistance, guidelines, financial support, and expedited permit processing), and the removal of barriers that impede the construction of green buildings.
    - The City should anticipate the federal step code of net-zero energy buildings by 2030.
- Establish energy efficiency policies for existing buildings
- Require deconstruction and material-reuse from municipal, residential and ICI buildings
- Develop Community Energy Plans (CEPs)
    - Create CEPs for new growth areas and regional centres to detail energy use requirements, establish a plan to reduce energy demand, consider alternative forms of energy generation, and improve building efficiencies and siting.

- Utilize financial policy tools for green innovations and improvements
    - Reduce financial barriers to green improvements using, for example, Property Assessed Clean Energy (PACE) financing, grants, rebates, property tax abatements, utility incentives, subsidized loans, cost-sharing programs, capital investment offsets, and incremental payments on property taxes.
- Make improvements to the Zoning Bylaw to support sustainable development
    - Make amendments that advance green improvements, sustainable buildings, and renewable energy within the city by removing regulatory barriers and clarifying existing language that is currently ambiguous.
- Fast track green improvements and green buildings through the City's permitting process
- Waive building permit fees for green buildings and improvements
    - Waive fees for green construction, including energy-efficient buildings and retrofits, solar panel installations, greenhouses, and green roofs.
- Waive Offsite Levies for green buildings and infill
- Allow floor space exclusions from property taxes for exterior wall thickness
    - Currently, adding greater levels of insulation to buildings leads to higher property taxes (because property taxes are linked with a property's square footage and greater levels of insulation increase wall thickness). Providing wall thickness exemptions would remove the disincentive to improve building envelopes and building energy performance by adding insulation.
- Set higher densification and Infill Targets
    - Maximize land use efficiency by incentivizing infill, mixed-use, and higher density development.
- Develop Urban Design Guidelines to reduce heat island effect
    - Reduce heat gain from pavement and other hardscaping by shading streets and buildings, using paving and roofing materials with a high Solar Reflective Index, using covered parking, creating cool roofs and green roofs, utilizing permeable pavement, and installing natural/green infrastructure and landscaping.
- Create design standards for new neighbourhoods and guidelines for infill development in existing neighbourhoods to utilize solar energy*
- Develop a Solar-Ready Building Policy*
    - Require new construction to be designed and wired for future potential installation of solar photovoltaic systems.
- Create a Feed-In-Tariff Program*
    - A feed-in-tariff policy allows customers who install renewable power (i.e. solar) to receive a price for the electricity they produce that reflects actual installation costs plus a modest profit.
- Establish a Renewable Energy Target to reduce reliance on carbon intense power from the Provincial grid
- Offer a tax exemption for green power facilities
    - Provide property tax exemptions for green power facilities that are developed on vacant land.
- Develop Alternative Energy Siting Policies

    - Establish policies and programs that facilitate the siting of new renewable energy generation, such as site designation, removal of barriers, and zoning flexibility.
- Create a Green Energy Policy
    - Require renewable energy generation and co-generation projects in new developments and re-developments (where feasible and appropriate). This could include on-site renewable energy generation, co-generation projects, and green utilities.
- Implement Green Energy Procurement measures
    - Implement measures to support the purchase and use of renewable energy, including green electricity purchasing.
- Incorporate environmental metrics into the City's Business Licensing requirements
- Create restrictions to discourage the unnecessary use of electricity for outdoor lighting purposes
    - Bylaw to regulate illuminated signs*
    - Guidelines for compliance with principles of Dark Sky
- Adopt Idle-Free Bylaw*
- Develop industrial standards for space heating and electrical efficiency*
- Require scheduled energy efficiency improvements for industrial facilities*
- Expand naturalized parks
    - Naturalized parks sequester carbon, provide habitat, and have lower mowing, watering, fertilizer, and pesticide requirements than conventional parks.
    - Naturalized parks also act as 'green' infrastructure alternatives to 'grey' infrastructure networks, and can reduce emissions from avoiding the construction of built infrastructure.
- Expand Saskatoon's urban forest
    - The urban forest reduces heat island effect, provides shading, and sequesters carbon.
- Set Biodiversity and Green Space Targets
- Develop Sustainable Landscaping Policies and Guidelines
    - Create policies for municipal, residential, and ICI sectors that ensure landscaping is optimized for current and future climate scenarios, as well as provide climate benefits such as sequestration, shading, and water efficiency.
- Design a Green Roof Policy
- Develop a City of Saskatoon Food System Strategy that identifies the climate mitigation, climate adaptation, and co-benefit potential of municipally-supported food initiatives
- Create a Paperless Office Strategy for the City of Saskatoon
- Prohibit the use of personal electric heaters in civic buildings
- Develop a Green Fleet Policy
    - A green fleet policy would consider capital and maintenance costs, resale costs, fuels costs, and lifecycle emissions.

- Create Civic Employee Commuting and Travel Policies
    - Implement measures to reduce employee vehicle trips, including bicycle transportation facilities and support, discounted transit passes, municipal parking management, carbon offsetting, and transit/shuttle access between municipal facilities.
- Develop parking policies that reduce traffic
    - Increase parking rates for private vehicle use, develop strategies to ensure new and existing parking spaces are used efficiently, and provide reduced parking fees to green vehicles, carpoolers, and car-shares.
- Reduce parking requirements for developments if viable alternative transportation options are provided
    - Encourage new developments to provide car-sharing, transit incentives, and cycling facilities in lieu of parking.
- Conduct an Integrated Transportation Study
    - Examine the interaction between parking, active transportation, and public transport networks, policies, and infrastructure to find solutions that reduce automobile usage.
- Set Community and Corporate Water Conservation Targets
- Develop Corporate and Community Water Conservation Strategies
    - Identify water conservation and water recycling opportunities, including policies, programs and outreach.
- Research opportunities to incorporate “circular economy” policies into the City’s procurement processes and services
- Create a Civic Energy Efficiency Plan
    - Outline efficiency requirements for new and existing facilities, including training and support for staff.
- Develop a corporate-wide Environmental Management System (EMS)

**Projects and Pilots**

Projects, whether investments in infrastructure or pilot initiatives that lead to ongoing programs, have the potential to significantly reduce emissions through a phased implementation approach. Pilots are often used to assess financial viability, develop an understanding of the operational requirements of new programs, and evaluate emissions reductions potential. For example, the Weir Power Project is estimated to potentially reduce emissions by more than 21,000 tonnes.

Current & In-Progress Initiatives:

- LED street lighting for all neighbourhoods*
    - New areas in Saskatoon already install LED street lighting. Plans for actively converting existing neighbourhoods to LED lighting are still being developed.
- Implement the Weir Hydro Power Project
- Continue exploring efficiencies in Saskatoon’s Water System
    - Develop a water demand management strategy to address water losses in the distribution system, detect leaks, use metering and sub metering to

improve efficiency, implement energy management software, create performance/procurement standards for buildings and equipment, optimize use of available digester gas, utilize control systems to optimize pumping, and conduct energy audits of the water and wastewater treatment processes.

- Implement the Combined Heat and Power (CHP) System at St Paul's Hospital
- Continue to find alternative uses for existing buildings (e.g. Mendel Building Reuse as a Children's Discovery Museum) to avoid the emissions associated with building demolition
- Expand Landfill Gas Facility
    - The system collects methane gas from the landfill, improves air quality and reduces odours at the landfill. Expansion options are currently being explored.
- Continue to Operate the Solar Panels at the Landfill Gas Facility
    - The Saskatoon Solar Power Demonstration Site is a collaboration between Saskatoon Light & Power, the Saskatchewan Environmental Society Solar Co-operative, and Saskatchewan Polytechnic.
- Energy Performance Contracting
    - The City of Saskatoon is making green improvements in approx. 20 civic facilities. Energy Performance Contracting is a unique form of procurement, whereby an Energy Services Company performs energy and water audits, retrofits civic buildings, and guarantees savings. The loan for the capital costs is repaid from avoided utility expenditures, which are measured, verified and guaranteed.
- Continue to operate existing Combined Heat and Power (CHP) Units
    - The City of Saskatoon installed natural gas CHP units at two swimming pools in 2014 to provide supplemental heating of pool water, space heating, and domestic hot water. The City has also operated two CHP units at its Landfill Gas Collection & Power Generation facility since 2014.
- Continue to trial waste compaction systems for public waste and recycling receptacles (e.g. in parks)

<u>Future Opportunities:</u>

- Design and develop a model low carbon neighbourhood*
    - Develop a neighbourhood similar to Vauban (Freiburg, Germany) or West 5 (London, Ontario) that includes renewable energy generation, public and active transportation networks, mixed-use zoning, urban agriculture, green buildings, district energy, and green space. It could also provide a sufficient economy of scale for infrastructure investments and opportunities for integrated planning.
- Create a "Smart City" pilot on a neighbourhood level
    - Include the integration of a smart grid, smart metres, battery storage (including electric vehicles), and smart transport networks.
- Pilot a District Energy neighbourhood

    - Develop a District Energy system in a specific pilot neighbourhood that provides energy for space heating and hot water to a variety of building types (i.e. multi-family residences, commercial, institutional and industrial).
- Explore opportunities to generate power using wind*
    - Work with SaskPower to build a wind generation station outside Saskatoon's city limits (within 50 km).
    - Research micro-wind opportunities that could be applied in Saskatoon
- Develop energy storage systems for renewable energy
- Use native prairie species along roadways and right-of-ways
- Create commuting-efficient lanes for specific locations and times of day
- Develop 'no-car zones' in key areas of the city (i.e. Business Improvement Districts)
- Pilot the use of bike trailers for Parks Maintenance Crews
- Transition civic equipment and vehicles to electric
- Install waterless urinal equipment in civic facilities
- Expand Automated Irrigation Management System to ensure all new and existing public parks include moisture-sensors and timers
- Explore alternative fuel and/or electric fleet options for Transit
- Construct satellite buildings for Parks operations to reduce vehicle/equipment travel
- Provide more field offices for development initiatives to reduce vehicle/equipment travel
- Develop a Route Optimization Strategy for all civic equipment and vehicles
    - Design efficient transportation routes for municipal services to reduce fuel usage, mileage, and maintenance needs.
- Reduce "phantom" energy loads in civic buildings through education and smart plugs
- Pilot a corporate telework / flex-work program for civic staff to reduce travel
- Design Recovery Park to meet Third-Party Certification (e.g. Living Building Challenge, SITES, or LEED)

## Education

Education, training and outreach activities have the potential to reduce emissions by enabling residents of all ages to understand the affect their actions have on the climate and environment, build capacity for action, and encourage more informed decision-making. For example, the Student Action for a Sustainable Future program currently partners with students from 12 schools each year to undertake environmental action projects. Each year, the program reduces emissions by approx. 28 tonnes.

Current & In-Progress Initiatives:

- Expand public education campaign on climate change*
    - A public communications campaign will begin in fall 2017, with the hopes of continuation and expansion in the future.
- Continue to offer recycling education

    - The Rolling Education Unit engages residents of all ages using fun and interactive waste activities. It is free and bookable for festivals, events, and community groups. It builds awareness, generates enthusiasm, and ensures that residents receive the information they need to effectively manage their household waste.
    - The City of Saskatoon works with the Open Door Society to facilitate recycling workshops and educational opportunities for New Canadians.
- Continue the Saskatoon Light & Power (SL&P) Energy Education Programs
    - SL&P's In-Home Display Program allows customers to borrow an electricity monitor for a one-month period to learn when and how much electricity they use.
    - SL&P offers 20-30 school tours annually that align with Saskatchewan's science curriculum. Students learn how our electricity system can be safe, smart, and sustainable.
- Continue to offer the Student Action for a Sustainable Future (SASF) program
    - The SASF program engages teachers and students in learning, action, and inquiry in areas of energy, waste, water, food, biodiversity, and transportation. Projects lead to measureable greenhouse gas reductions, as well as other sustainability benefits in students' classrooms, schools, households, and the community.
- Continue to offer the Healthy Yards Program
    - The Healthy Yards partnership offers information and hands-on education on sustainable gardening practices for the prairies. It focuses on water conservation, home composting, pesticide reduction, biodiversity, local food, and storm water.

<u>Future Opportunities:</u>

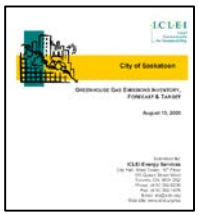
- Conduct How-To (and Why-To) Workshops for residents and businesses
    - Organize events and workshops to promote GHG-reducing activities.
- Develop recognition programs
    - Sponsor awards, recognition events, and friendly competitions to encourage GHG reductions and recognize success.
- Provide training for civic staff and industry on Net Zero Energy Buildings*
    - Sponsor training as soon as possible for architects, home builders, carpenters, electricians, plumbers and other relevant building trades to learn about energy-efficient construction techniques and design.
- Provide training for civic staff and industry on Third-Party Standards being used in Canada
    - Build capacity in the areas of, for example, LEED, Passive House, Net-Zero, BOMA, Living Building Challenge, and SITES.
- Develop a Home Owner and Home Builder Education Program
- Create an educational program that corresponds with the Advanced Metering Infrastructure (AMI) for electricity and water
    - Smart meters are electronic meters that measure and record actual power and water usage by time intervals throughout the day. That data will be used to quickly and easily communicate with customers about their energy

and water use, encourage conservation, and detect leaks and other high-usage variances. Most of the meters have now been installed and options to deliver an online customer platform are being explored.

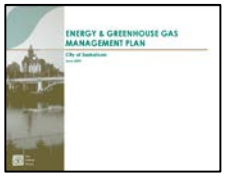
- Provide civic equipment and vehicle operators with "Smart Driver" training
    - Training will inform drivers of how to optimize the flow of people and goods around the city, reduce idling, ensure proper maintenance, and reduce mileage.
- Develop mandatory environmental awareness training for civic staff
- Develop mandatory environmental awareness training for contractors working on civic initiatives
- Provide training for civic staff and industry on carbon pricing implications
- Provide training for civic staff and industry on grey water recycling
- Develop and implement a civic Green Teams program for City staff

# Saskatoon Climate Change Mitigation Business Plan - Strategy Development Process

## Historical Information



**2005 Greenhouse Gas Inventory, Forecast and Target**




**2009 Energy and Greenhouse Gas Management Plan**
City of Saskatoon adopted Kyoto targets


**2013-2023 Strategic Plan**
Environmental Leadership Goal

**2013: Deadline - First Phase of Kyoto Targets**
City of Saskatoon did not meet community or corporate targets

**2014: Saskatoon's First Our Environment Report**

**2014 Saskatoon GHG Inventory**
Completed in 2016 and establishes new benchmark

**2015: City of Saskatoon signed onto the Compact of Mayors**

**2015 Corporate Target**
Reduce corporate GHGs by 30% below 2006 levels by 2023

## Phase 1 — Targets Setting & Research

**SEAC Target Setting Exercise** with Civic Administration and Stakeholders (2017)

**Saskatoon GHG Emissions Targets** City Council report (June 12, 2017) establishes new Corporate and Community Targets: 80% below 2014 levels by 2050

**Environmental Awareness Survey** (summer 2017) conducted to benchmark resident and ICI sector attitudes and behaviours

## Phase 2 — Communications & Engagement

**Pre-engagement communications:**
- Our targets
- Our emissions inventory
- What do these mean?
- Explain how residents and the ICI sector can participate in the climate change conversation and priority setting

**Public engagement:**
- Develop a vision for what's possible + identify opportunities
- Discuss survey and research results

**Output:** A "What we heard" report (early 2018)

## Phase 3 — Work with Stakeholders

Establish stakeholder-focused working groups to provide expert/professional input into the development of the Climate Change Mitigation Business Plan.

**Output:** Local professional advice and input from key sectors on viable options for Saskatoon

## Phase 4 — Business Plan & Options

A comprehensive Climate Change Mitigation Business Plan Options report prepared for consideration by City Council identifying:
- Emission Reductions
- Cost Analysis
- Feasibility & "Readiness"
- Resident & ICI Support
- Co-benefits
- Risk Mitigation

**Output:**
•Recommended Mitigation Actions report
•Preliminary Business Plan

## Phase 5 — Implementation Strategy

An implementation strategy report prepared for consideration by City Council identifying:
- Timelines
- Roles and Responsibilities
- Resource Implications
- Monitoring and Evaluation

**Output:**
•Complete Climate Change Mitigation Business Plan

| 2003-2016 | March thru August 2017 | October thru December 2017 | November 2017 and ongoing | 2018 |
|---|---|---|---|---|

# 2017 Environmental Awareness Survey Results

Environmental and Corporate Initiatives hired Environics to deliver an Environmental Awareness Survey in June 2017. Survey results are summarized below.

The survey was inclusive and representative of the population of Saskatoon. The focus was to gauge environmental awareness, knowledge, attitudes, and motivations of residents and the Industrial, Commercial, and Institutional (ICI) sector.

Results from the survey will be used to inform and direct communications and engagement activities undertaken by the Environmental and Corporate Initiatives division in support of new and existing environmental projects and programs.

Residential findings (817 respondents):

Views regarding whether Climate Change is happening, and whether it is human caused:

- 57% believe that climate change is happening and caused by human activity (slightly lower than the Canadian average (60%)).
- 32% believe that climate change is happening, but that it's not conclusively caused by human activity (slightly higher than the Canadian average (30%)).
- 10% believe that the science is not conclusive that climate change is happening (same as the Canadian average).

Perceived level of knowledge about climate change:

- 9% self-report that they are extremely well informed and 30% self-report that they are very well informed about climate change (higher than the Canadian average (27%)).
- 50% self-report that they are somewhat well informed about climate change.
- 10% self-report that they are not very well informed and 1% self-report that they are not at all informed about climate change.

Perception of how climate change will affect Saskatoon:

- 32% of residents feel that climate change is already negatively affecting Saskatoon today.
- 57% believe that climate change is not affecting Saskatoon right now, but will in the future.
- 11% do not believe that climate change is affecting Saskatoon today, nor will it in the future.

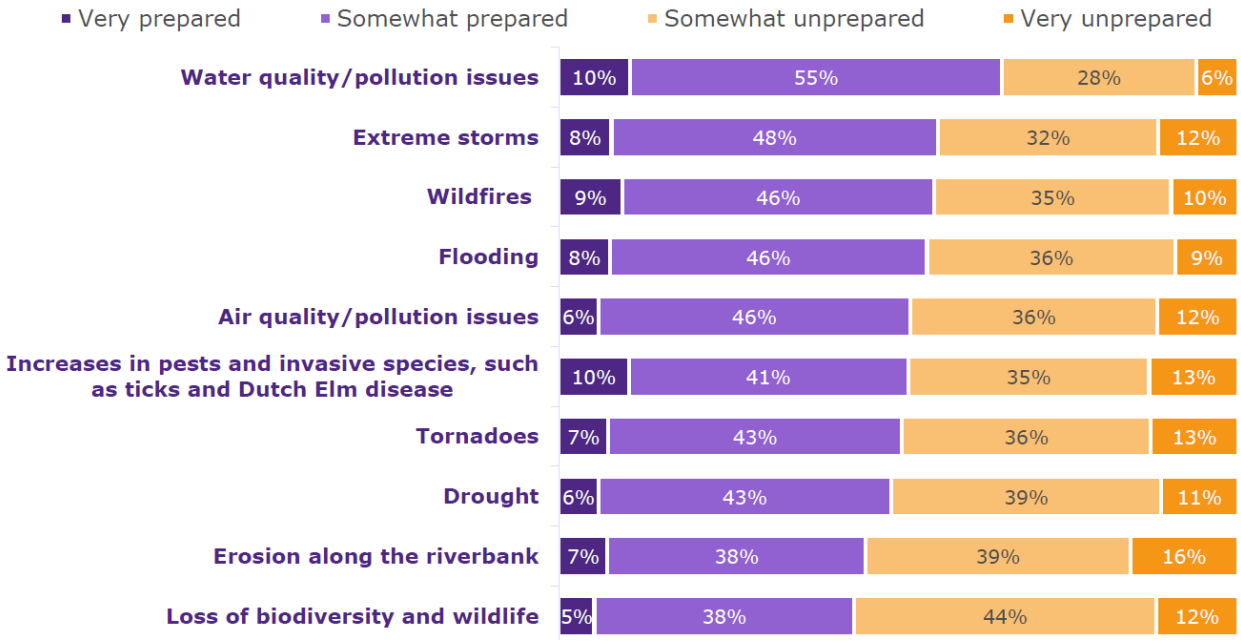
The public rates the efforts of the City of Saskatoon in addressing environmental issues: as follows:

- 7% (excellent), 53% (good), 34% (only fair), and 6% (poor).
- When broken down by environmental area:
    - Residents rated the City's environmental performance to be strongest on protecting the riverbank and other natural areas, offering waste

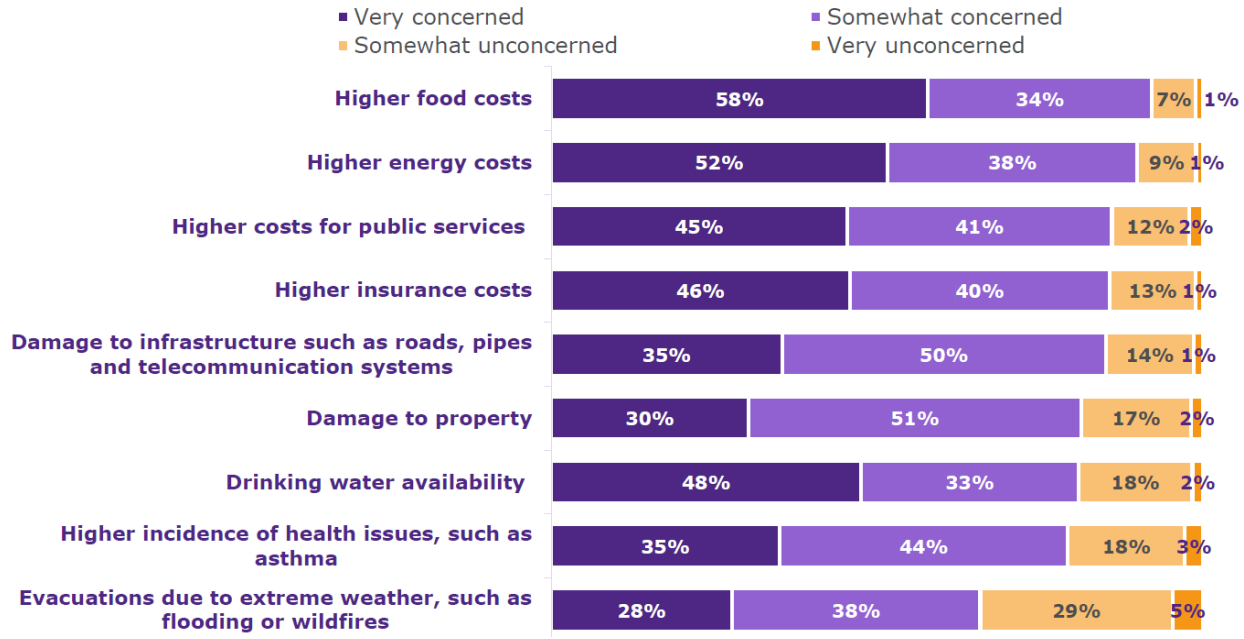
management programs, and developing active transportation routes for cyclists and pedestrians.

- Residents rated the City's environmental performance to be lowest on reducing pollution, reducing greenhouse gas emissions, and improving public transit.

When asked how well-prepared the City is to deal with threats pertaining to climate change, views were mixed:




Residents' concerns about the potential impacts of climate change were highly linked to how climate change could affect them financially:



When asked to identify the main environmental issues facing Saskatoon today, residents provided a variety of responses:

**Waste/Recycling Mentions – 55%**

28% Waste management/too much garbage sent to the landfill

14% Availability of recycling program/recycling program is inadequate

8% Litter/garbage/city cleanliness

2% Inadequate composting programs

3% Other waste/recycling mentions

**Sustainability Mentions – 53%**

12% Poor drinking water/water pollution

9% Water management/conservation

9% Pollution (general)

7% Urban sprawl

7% Traffic congestion/gridlock

6% Air quality

5% Poor transit system

**Climate Change Mentions – 30%**

10% Climate Change/Global Warming

6% Greenhouse/carbon emissions

5% Extreme weather

5% Lack of renewable energy sources

4% Emissions from vehicles

Q1. In your opinion, what is the most important environmental challenge facing Saskatoon today?

Other findings include:

- 25% are very likely and 59% are somewhat likely to purchase environmentally friendly goods and services.
- 57% totally agree and 37% somewhat agree that they have a responsibility to leave a better world for their children / future generations.
- 36% totally agree and 48% somewhat agree that more restrictions on industry are needed to stop pollution.
- 26% totally disagree and 40% somewhat disagree that growing the economy should take priority over protecting the environment.

<u>Industrial, Commercial, Institutional (ICI) Sector findings (151 respondents):</u>

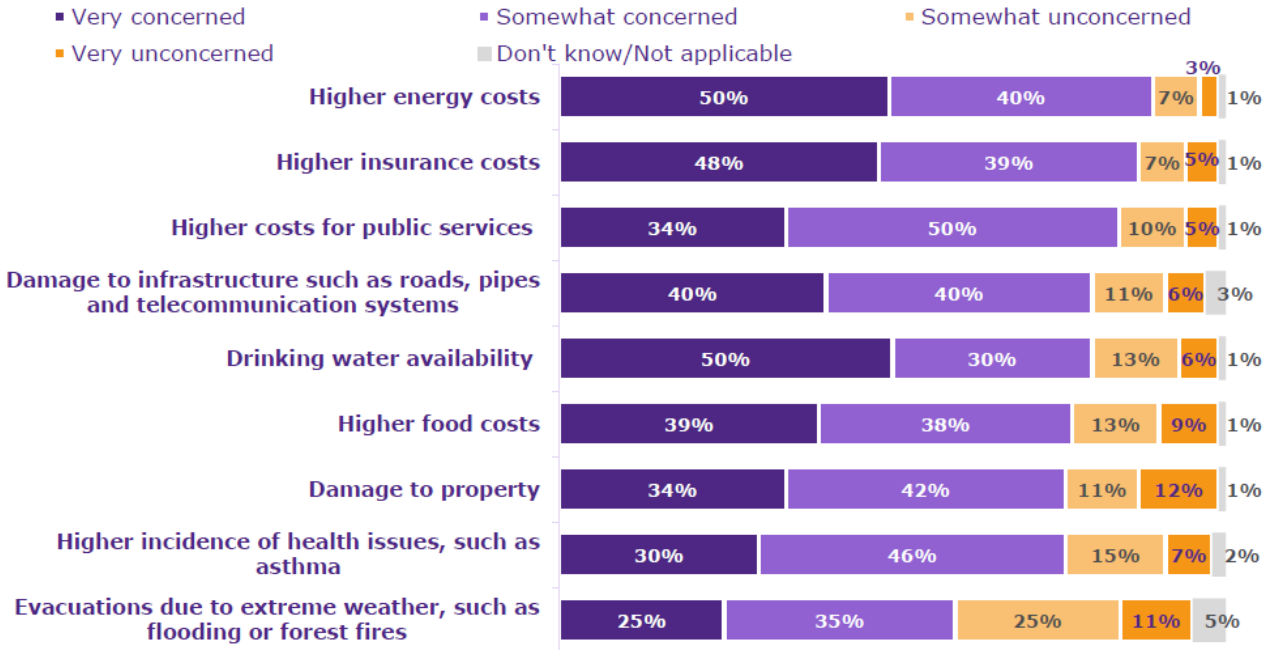
- 62% believe that protecting the environment is a “major issue” for their business/organization.
    - Protecting the environment was rated as more of a major issue than Corporate Social Responsibility (50%), utility rates (34%), and property tax rates (31%).
    - Protecting the environment was rated as less of a major issue than meeting industry best practices (73%) and following government regulations (72%).
- Not having control over a facility and the cost of environmental improvements are the two main barriers to installing environmental technology (i.e. insulation, better windows, high-efficiency equipment, solar panels).

- 31% currently have an environmental sustainability plan in place, with larger businesses/organizations more likely to have one.

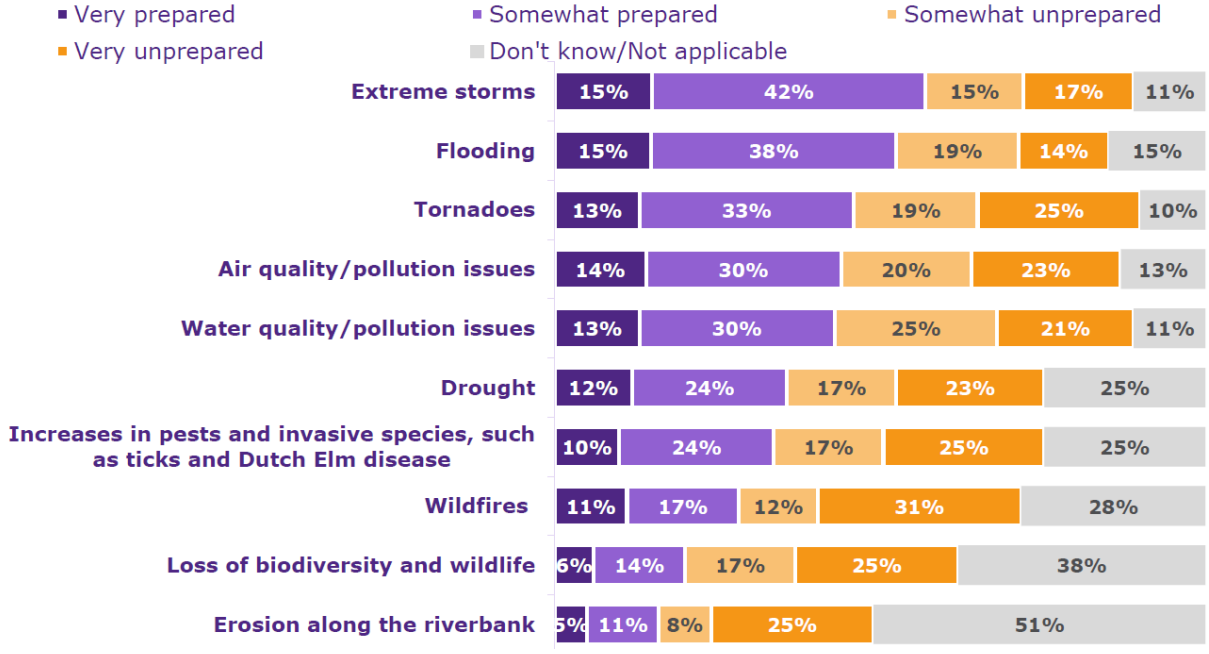
When asked how climate change will impact their business/organization:

- 28% feel that climate change will have a major impact in the next 10 years.
- 44% feel that climate change will have a minor impact in the next 10 years.
- 25% feel that climate change will have no impact in the next 10 years.

The ICI sectors' concerns about the potential impacts of climate change include:




Businesses/organizations feel most prepared to deal with extreme storms and flooding:



Saskatoon businesses/organizations would like the City of Saskatoon to provide more support to the ICI sector:

- The ICI sector rates the efforts by the City of Saskatoon to help businesses/organizations to reduce their environmental impacts as:
    - 3% (excellent), 25% (good), 48% (only fair), and 17% (poor).
- 42% of businesses/organizations are very interested and 42% of businesses/organizations are somewhat interested in having the City of Saskatoon support their efforts to reduce their environmental impacts.
- 27% strongly agree and 27% somewhat agree that their business/organization needs support to adapt to the government's decision to put a price on carbon emissions.

Other findings include:

- 48% strongly agree and 35% somewhat agree that their clients expect their business/organization to be environmentally responsible.
- 17% of businesses always purchase environmentally-friendly products and services (39% often; 33% sometimes; 8% rarely; 1% never).
- 37% strongly agree and 39% somewhat agree that more restrictions on industry are needed to stop pollution.
- 28% strongly disagree and 28% somewhat disagree that growing the economy should take priority over protecting the environment.