2023 CLIMATE ACTION PROGRESS REPORT

November 2024

Official Community Plan

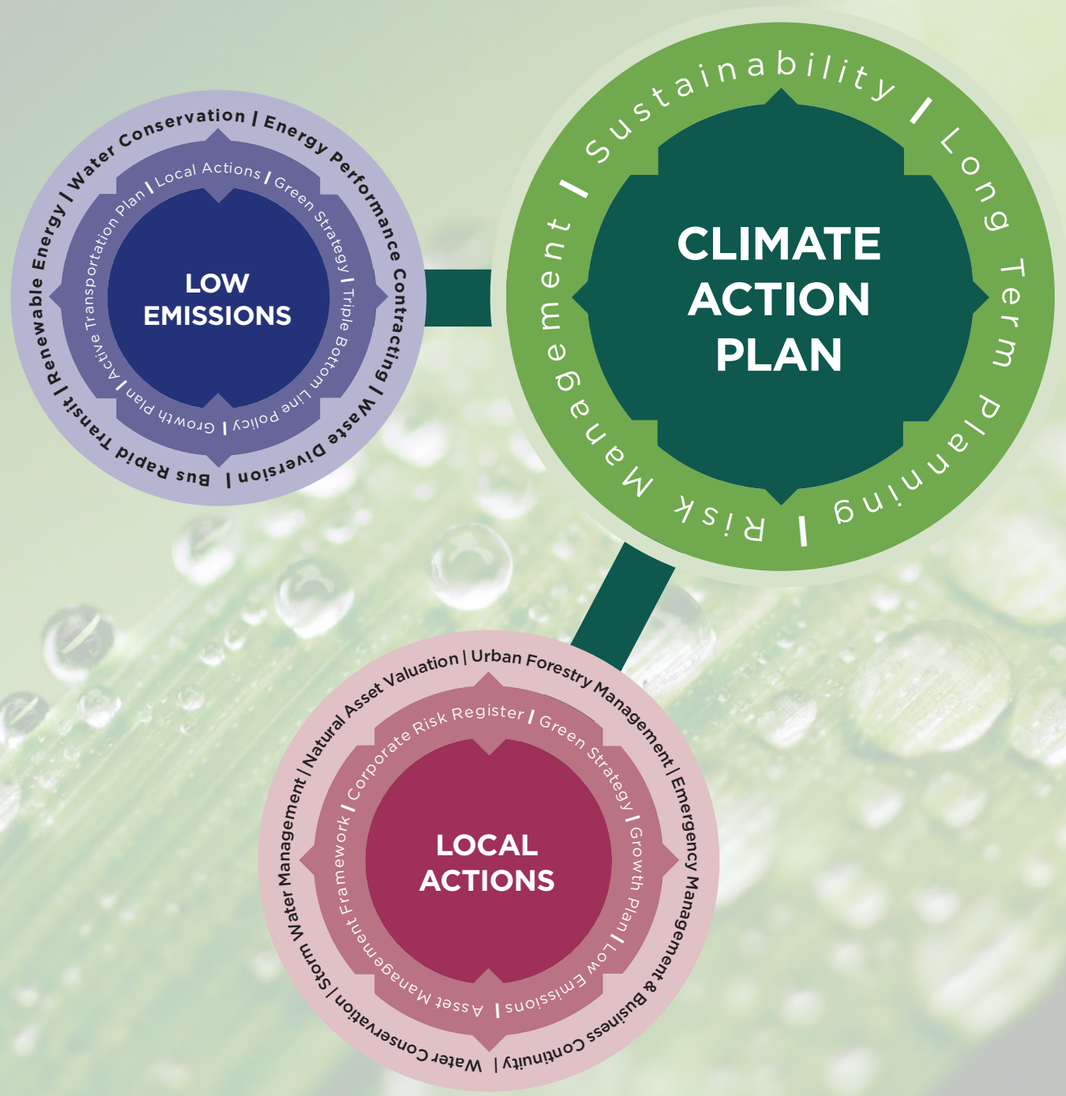
Climate Action Plan

City of Saskatoon

Climate ACTION

saskatoon.ca/climateaction

CONTENTS



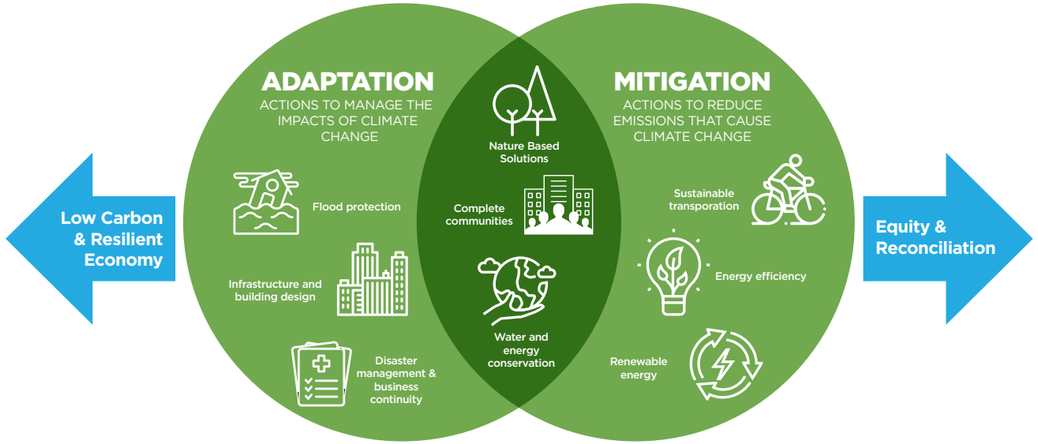
EXECUTIVE SUMMARY

The City of Saskatoon (City) is committed to climate action as a member of the Global Covenant of Mayors for Climate & Energy (GCoM). The City's current Climate Action Plan consists of two frameworks: *The Low Emissions Community Plan* (LEC Plan) and the *Corporate Climate Adaptation Strategy* (Adaptation Strategy). The *2023 Climate Action Progress Report* (Report) presents updated greenhouse gas (GHG) inventories and recent progress on the actions recommended in the LEC Plan and Adaptation Strategy.

For the first time, the Report includes information on the Green Network to recognize the importance of nature-based climate solutions in the City's climate action planning. The implementation and quantification of nature-based climate solutions will be key to achieving the net-zero emissions target of the new Climate Action Plan, as well as playing a critical role in preparing the community for a changing climate. This work is being guided by the City's *Green Infrastructure Strategy* (2020) and corresponding implementation plan, *Pathways for an Integrated Green Network* (2022).

The new Climate Action Plan – scheduled for completion in 2025 – will include updates on the City's climate mitigation and adaptation frameworks, expand on the existing plan to incorporate important content on nature-based solutions and the Green Network, and embed equity, reconciliation, and economic factors.

Figure 1. *The integration of climate adaptation and mitigation (Adapted from: ICLEI Canada, 2019)*



Progress Toward Greenhouse Gas Emissions Reduction Targets

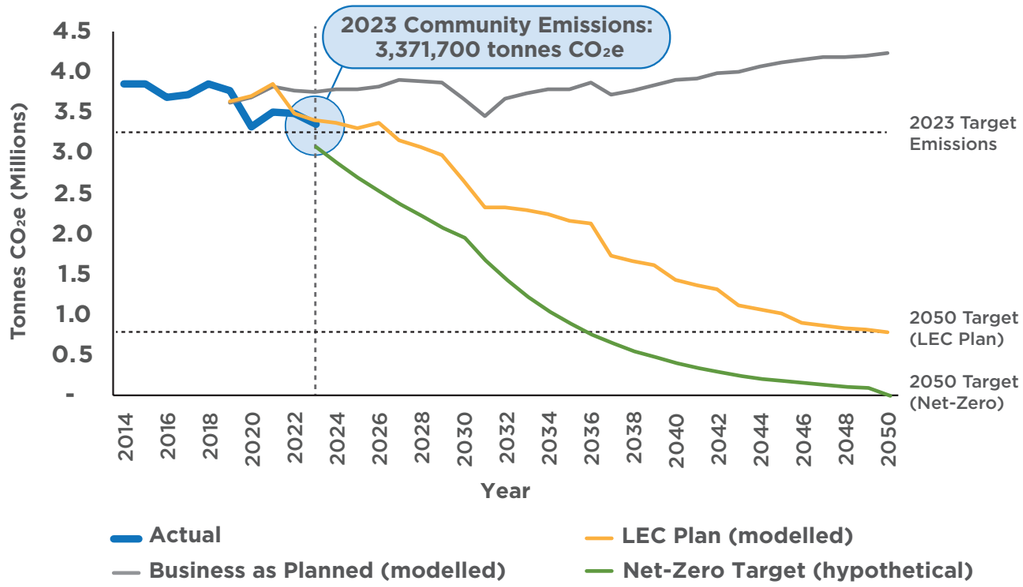
Greenhouse Gas Inventories and Status

In 2023, the community emitted 3,371,700 tonnes CO_2e, which is a 12% reduction from the 2014 baseline of 3,852,200 tonnes CO_2e. Per capita emissions are down by 27% since 2014 at 11.4 tonnes CO_2e per person (down from 15.6 tonnes CO_2e per person in 2014). Reductions were seen in all sectors except the Agriculture, Forestry and Other Land Use sector.

GHG emissions from the City's own operations decreased by 7% (from 222,200 tonnes CO_2e in 2014 to 207,400 tonnes CO_2e in 2023) with most reductions seen in the Buildings and Streetlighting sectors.

In a 2022 City Council Report, the City updated its long-term GHG reduction target to net-zero by 2050. In addition to tracking progress against the new net-zero target – and for comparability with previous climate action progress reports – this report references the original emissions reduction targets from the LEC Plan and the new targets.

Figure 2. *Actual and Modelled GHG 2023 emissions for Saskatoon*



The figure above shows the actual community-wide GHG emissions for 2014 through 2023 (blue line) compared to both the 80% target as modeled in the LEC Plan (yellow line) and a hypothetical net-zero target (green line). The projected business-as-planned (BAP) emissions in the absence of action are also shown (grey line). An update of modeled emissions – including an interim GHG reduction target(s) – based on the net-zero target will be communicated through the new Climate Action Plan.

See Section 3 for more information on progress related to actions in the LEC Plan.

Building Resilience to a Changing Climate

The Changing Climate

While taking action to lower emissions, the City is also proactively preparing for the impacts of climate change. As Saskatoon's climate continues to change, we can expect more severe storms, unpredictable rainfall, more sudden temperature changes, more very hot days in the summer, and more days with poor air quality as wildfires increase across Canada. Climate adaptation means building resilience to these ongoing and expected changes.

Corporate and Community Climate Adaptation Strategies

This work is guided by the Adaptation Strategy, which focuses on the municipality's services, staff, assets, and operations. Work is underway to expand this focus to consider climate change impacts to the entire community of Saskatoon. This community risk assessment will be captured in the new Climate Action Plan, expected in 2025.

See Section 3 for more information on progress related to actions in the Adaptation Strategy.

The Green Network in Climate Action

Nature-based climate solutions incorporate tools such as restoration, conservation, and management of wetlands, grasslands, and the urban forest to mitigate and adapt to the effects of climate change while supporting biodiversity. Local actions are defined in *Pathways for a Green Network* (Green Pathways) in support of Saskatoon's green network.

Broadly speaking, Saskatoon's green network provides people and wildlife with access to continuous, high-quality green spaces and natural areas in the city. It includes features such as parks, trees, gardens, wetlands, and naturalized areas, and supports cultural and community activities such as recreation, education, ceremonial use, and food production.

See Section 3 for more information on progress related to the Green Network.

Mitigation Highlights

Buildings and Energy Efficiency

- Lighting retrofits were completed in 21 municipal buildings in 2022 and 2023. Cumulative savings associated with the 32 buildings retrofitted through the Energy Performance Contract project are 11,895 MWh and 6,000 tonnes CO_2e.
- By the end of 2023, 100 energy efficiency retrofits were completed through the Home Energy Loan Program (HELP), including 6 deep energy retrofits achieving over 50% energy reduction and savings estimated at 200 tonnes CO_2e. The program has funding for approximately 127 more retrofits, with additional funding requests anticipated in 2024.
- Fire Hall #5 (commissioned in 2023) received LEED Certified certification and nine Optimize Energy Performance points.

Stationary Energy Emissions

13% DECREASE

Transportation

- The City's fleet includes 10 hybrid vehicles and 5 electric vehicles (EVs). To support the City's EV fleet, there are currently 15 charging ports installed at civic facilities. A zero-emission vehicle adoption roadmap will be presented to City Council in 2025, to guide the City's transition to zero-emission transportation.
- The City's Transit fleet is expected to add 2 battery electric or zero-emission buses (ZEB) to its inventory in 2024. A Transit fleet renewal strategy update is expected in 2025.
- The construction of a Bus Rapid Transit (BRT) Pilot Station was completed in 2023, and funding was approved to progress the BRT Green line. As reported in the 2023 Household Travel Survey, public transit (buses) represents 6% of all trips, doubling the % mode share reported in the 2021 Census.

Transportation Emissions

NEGLIGIBLE CHANGE

Waste

- The Curbside Organics Program launched in 2023, diverting an estimated 58% of organic materials from single-family homes. The Curbside Residential Recycling Program captured an estimated 18% of plastics and 55% of paper from the same sector.
- 39,000 tonnes of material were diverted through the City's recycling and organics programs in 2023, achieving a 33% waste diversion rate from the landfill.
- The Material Recovery Centre is now open to public and commercial customers, featuring a 'Sort & Go' area that accepts household recyclables, electronics, small appliances, metals, batteries, tires, bicycles, oil, and antifreeze - for free!

Waste Emissions

13% DECREASE

Water Conservation

- The *Water Conservation Strategy* (2022) outlines actions to reduce water use in the community and City operations.
- In 2022, SmartUTIL was launched for residential and commercial customers to track their water and electricity usage, promoting conservation through increased awareness.
- Since 2021, irrigation pilots have been conducted in 46 test sites in municipal parks and 7 sports fields, resulting in annual savings of 46 million litres of water, $163,000 and 25 tonnes CO_2e. A spray pad efficiency project was also conducted at 2 spray pads, resulting in annual savings of 6 million litres of water, $24,000 and 3 tonnes CO_2e.
- The Energy Assistance Program, Rain Barrel Rebate, and HELP projects saved approximately 591,000 litres of water in 2022 and 789,000 litres of water in 2023.

Water and Wastewater Emissions

12% DECREASE[1]

Land Use

- Work continued on the College Corridor Plan, along with the development of land use plans for five additional corridor plan areas. The goal of Corridor Planning is to transform major streets (corridors) into places for people, by creating a framework for future development near these corridors. This approach to planning has environmental co-benefits relating to more walkable neighbourhoods and improved access to public transit.
- Corridor Planning is also supportive of the Housing Accelerator Fund Action Plan, which was endorsed by City Council in May 2023. The plan commits the City to transformative regulatory changes to eliminate exclusionary zoning (permitting four-unit dwellings city-wide) and enable "missing middle" (up to four-story) housing focused on the Corridor Growth Area, enabling the fast-track of 940 affordable housing units over the next three years.

Energy Generation

- The Dundonald Avenue Solar Farm project is preparing for construction in 2025, with the hiring of a solar consultant in 2023 and planned procurement of landscaping and design-build contractors in 2024.
- In 2023, the Landfill Gas (LFG) system added a second blower to improve system reliability and increase uptime, and added a second smaller flare for increased LFG destruction. Planned work in 2024 includes 16 new wells to boost LFG collection capacity.
- City-run programs to encourage the community to install solar panels include net-metering, HELP, the MyHEAT Solar map, and educational programs.

1 The change in water and wastewater emissions reflects energy use associated with the City's water and wastewater treatment and distribution systems, as well as fugitive emissions resulting from wastewater treatment processes.

Adaptation Highlights

HIGHLIGHT: HEAT RESPONSE

Extreme heat is increasing in Saskatoon. Although we've always experienced hot weather in the summer, the number of days above 30°C are increasing with climate change, and with it the health risks of extreme heat. Poor air quality from wildfire smoke is also on the rise and has become a new, significant hazard in the last few years.

When hot weather becomes dangerous, Saskatoon Emergency Management Organization (EMO) leads an emergency response plan to help protect the health and safety of those vulnerable to extreme heat. The Saskatoon Extreme Heat & Air Quality Emergency Response Plan is a coordinated response that provides residents with access to cooling locations, outreach services, wellness checks, and water distribution during extreme heat.

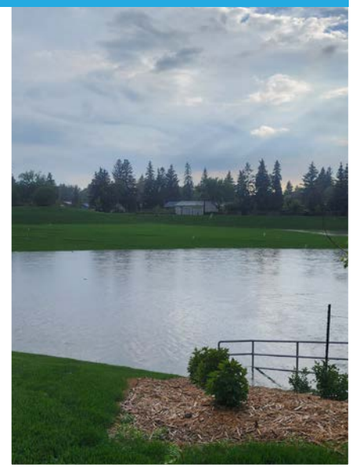
Saskatoon EMO has formal partnerships with over 30 community organizations to work together to respond to Extreme Heat and Extreme Cold.

HIGHLIGHT: FLOOD CONTROL

Though parts of Saskatoon have always been susceptible to flooding, and flood protection measures to date have helped, climate change is expected to bring more frequent and intense storms. To be better prepared, the City requested and received $21.6 million in Government of Canada funding to implement the nine-year $54 million Flood Control Strategy.

Work has begun to protect as many people and properties as possible with 9 projects to reduce flood risk in Saskatoon's most flood-prone areas between 2019 and 2027.

The first two projects, W.W. Ashley Park Dry Pond and Churchill Park Dry Pond, were completed in 2023, and are open to the public. The third project, Weaver Park Dry Pond, is nearing completion, with access to the public expected in Fall 2024. The fourth project, Brevoort Park Dry Pond, is under construction, with completion scheduled for Fall 2025. Two more projects are in planning stages with construction scheduled to start in 2025.



DECISION MAKING

The Climate Adaptation Program was established with approved funding for a full-time operating position in 2023, and is accelerating work on climate adaptation actions.

The Triple Bottom Line framework was updated to include additional climate adaptation considerations, and in 2022-23 was used to review 37 new projects.

A climate change resilience assessment was completed for the Downtown Event & Entertainment District conceptual design.

STAFF

Departments with outdoor staff have implemented heat, cold, and air quality procedures to help mitigate the risk of working in unfavourable conditions.

The City of Saskatoon follows the Extreme Cold Weather Emergency Response Plan and Saskatoon Extreme Heat and Air Quality Emergency Response Plan including temperature thresholds identified by the Emergency Management Organization.

SERVICES

The City of Saskatoon Crisis Communication Plan is complete and part of normal operations.

The Saskatoon Fire Department is completing a Community Risk Assessment.

Sanding and plow trucks are readied in preparation for early or late winter storm events, and the Roadways Emergency Response Plan is followed for extreme snow events.

ASSETS

A Corporate Asset Management Reporting Template was developed and includes consideration of climate change-related risks and resilience planning for future climate conditions. Work is ongoing to complete asset management plans using this template.

Green Network Highlights

Healthy & Thriving Natural Areas

Natural Area Policy and Process
A municipal scan of natural area policy tools and processes was conducted to determine which could be incorporated into a Natural Areas Policy Framework for the City of Saskatoon.

Natural Area Management Plans
City Council approved development of Natural Area Management Plans for the Small Swale and Richard St. Barbe Baker Afforestation Area (RSBBAA). Utilizing Natural Infrastructure Funding, a design was created for plantings and pathway improvements at RSBBAA.

Wetlands
A draft Wetland Mitigation Plan standard and procedure was developed.

Traditional Land Use
The City focused on relationship building with First Nations and Métis Elders, Knowledge Keepers, rightsholders, and organizations on topics such as access to natural areas and green spaces, traditional plants, cultural spaces, and knowledge and stories.

Natural Assets
City staff explored how to better integrate natural infrastructure into City planning, decision-making, and asset management.

Naturalized Parks
Several parks and green spaces were identified for naturalization improvements as part of Saskatoon's Natural Infrastructure Fund projects.

Connecting & Regenerating Green Spaces

Park Upgrades
The City's park upgrade program was reviewed for opportunities to incorporate additional green network considerations in its site prioritization process.

Storm Water Restoration
Preliminary work began to identify opportunities to naturalize storm ponds in Saskatoon.

Leading By Example for an Integrated Green Network

Urban Forest
Pathway to a Sustainable Urban Forest was approved in 2022. The actions in this implementation plan support improved planning processes, increased canopy cover, species diversity, community involvement, education, and enhanced maintenance and tree protection.

Tree Protection
Research and engagement took place to inform the development of a new Tree Protection Bylaw and updated Policy to provide enforcement mechanisms, prohibit injury and destruction of City trees, and regulate planting.

The bylaw and policy apply to all trees on City property (including natural stands and afforestation areas) and create a more consistent approach to tree protection.

Growing Community for a Liveable City

Green Network Campaign
A communications strategy and corresponding materials (illustrations, photos) were developed to support a future awareness campaign focused on key messages about the green network.

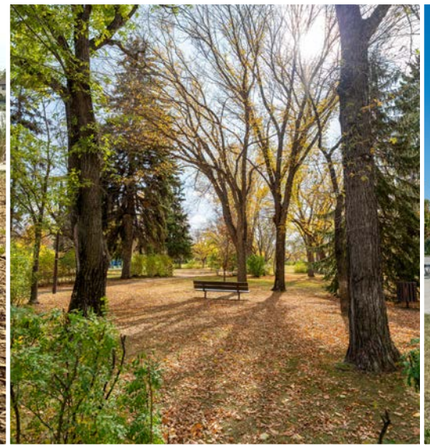
Environmental Cash Grant
Dedicated mill-rate funding of $10,000/year for community-led activities to support protection and enhancement of Saskatoon's green network was initiated.

Food Security from Seed to Table to Soil

Food Forest Pilot
Funding was secured to implement Food Forest Pilots in Leif Erickson and Boughton Parks, leveraging Natural Infrastructure Funding. In 2022-23, work focused on planning, design, and engagement in preparation for 2024-25 installations.

Food Waste Reduction
A food waste reduction pilot was approved for funding that will aim to redistribute edible food through donation, social enterprise, and best practices in reduction.

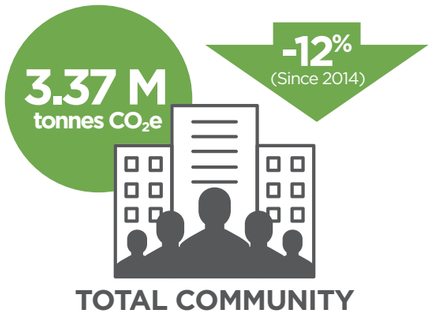


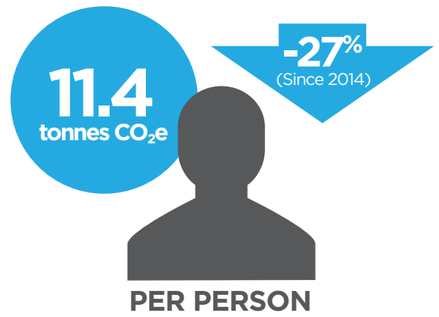


PART 1:
GREENHOUSE GAS INVENTORIES

1.1 Community Emissions

In 2023, Saskatoon's total greenhouse gas (GHG) emissions were 3,371,700 tonnes CO_2e. Between 2014 and 2023, the community's GHG emissions decreased by 12%, or approximately 480,500 tonnes CO_2e. Emissions from the Stationary Energy sector (i.e., energy used in buildings) continues to be the largest source of emissions, followed by the Transportation sector. Emissions decreased in all sectors except Agriculture, Forestry, and Other Land Use (AFOLU).





Emission Reductions: 480,500 tonnes CO_2e

How much is a tonne of GHG Emissions?

Cities typically include seven greenhouse gases in their inventories – reported in tonnes of Carbon Dioxide Equivalents, or CO_2e – with the majority of emissions resulting from activities that produce carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). To standardize reporting, these gases are converted to tonnes CO_2e based on their respective global warming potentials.

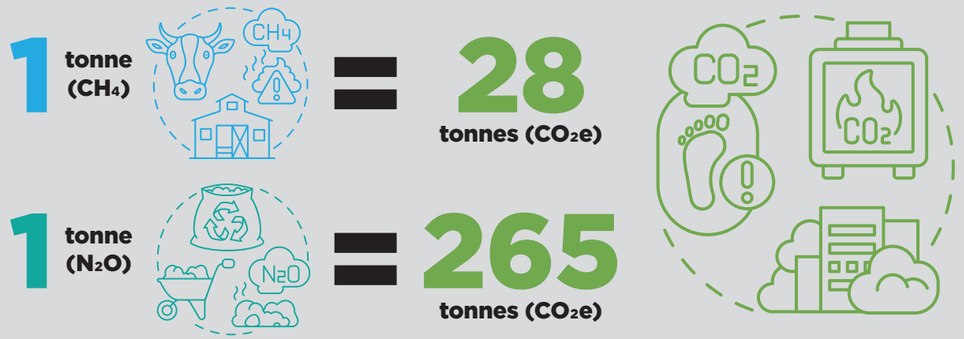
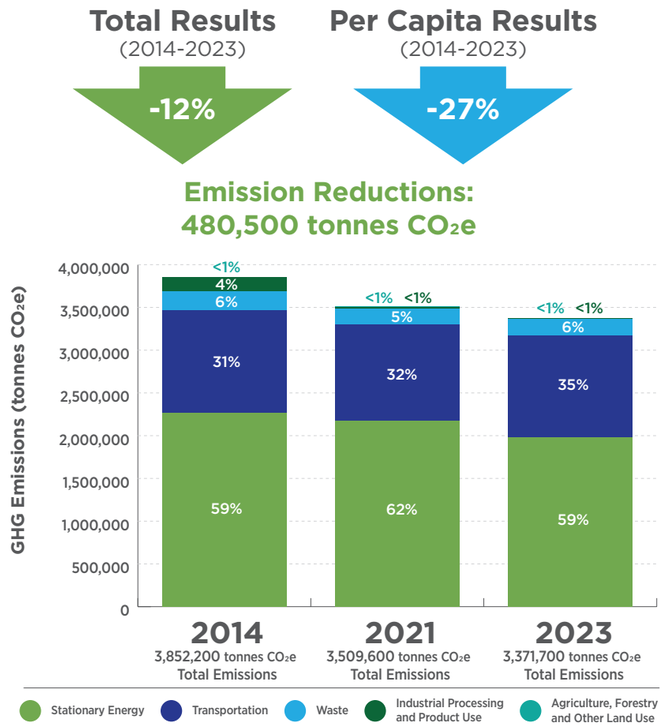


Figure 3. *Summary of Community GHG emissions for 2014, 2021 and 2023*



	2014	2021	2023	% Change from 2014
Stationary Energy	2,268,100	2,171,600	1,981,200	-13%
Transportation	1,194,000	1,127,600	1,190,900	Negligible
Waste	222,000	187,200	192,600	-13%
Industrial Processing and Product Use	167,600	13,000	<100	-100%[2]
Agriculture, Forestry and Other Land Use	500	10,200	7,000	+1,266%[3]
Total Emissions (tonnes CO_2e)	**3,852,200**	**3,509,600**	**3,371,700**	**-12%**

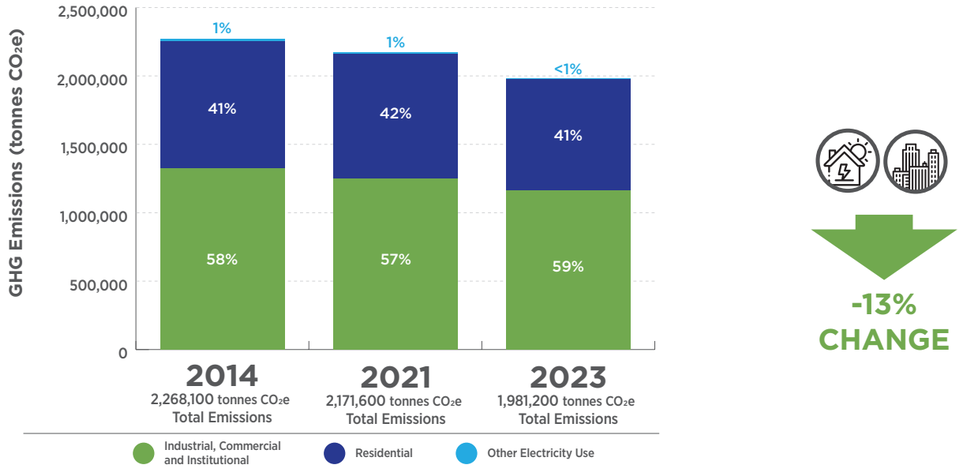
2 See Section 1.1.4.
3 See Section 1.1.5.

1.1.1 Stationary Energy

Stationary Energy emissions result from the use of energy (natural gas, propane, and electricity) to heat, cool, and power residential, industrial, commercial, and institutional buildings.

Stationary Energy emissions decreased by 13% or 286,900 tonnes CO_2e, from 2014 to 2023, with the majority of this reduction (216,500 tonnes CO_2e) associated with electricity use in the ICI and Residential sub-sectors.

Figure 4. *GHG emissions breakdown for the Community Stationary Energy sector for 2014, 2021 and 2023*



	2014	2021	2023	% Change from 2014
Industrial, Commercial, and Institutional	1,321,800	1,246,600	1,159,900	-12%
Electricity	737,400	675,300	590,500	-20%
Natural Gas	531,200	538,200	530,900	Negligible
Propane	18,600	7,400	5,100	-73%
Transmission & Distribution Losses	34,600	25,700	33,400	-3%
Residential	932,200	916,500	814,700	-13%
Electricity	474,900	481,900	406,500	-14%
Natural Gas	432,000	416,100	384,300	-11%
Propane	2,000	1,600	700	-64%
Transmission & Distribution Losses	23,300	16,900	23,200	Negligible
Other Electricity Use	14,100	8,500	6,600	-53%
Streetlighting[4]	13,100	7,600	5,800	-56%
Traffic Signals	400	500	400	+4%
Holiday Lighting	<100	<100	<100	+117%
Transmission & Distribution Losses	600	300	400	-41%
Total Emissions (tonnes CO_2e)	**2,268,100**	**2,171,600**	**1,981,200**	**-13%**

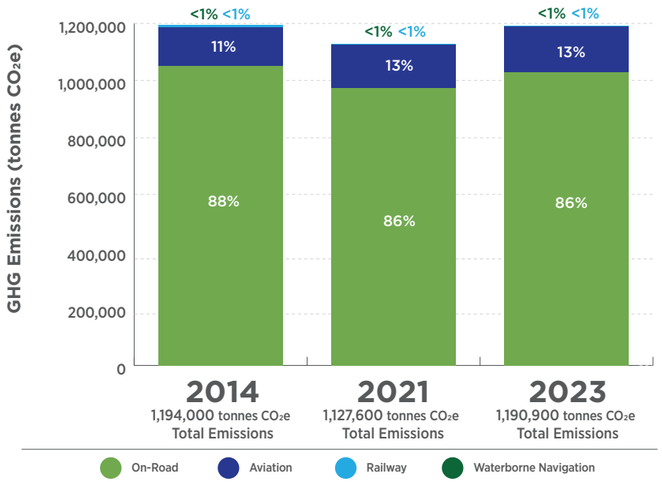
4 Emissions reductions in this sub-sector result primarily from the conversion of lighting to LED bulbs.

1.1.2 Transportation

Transportation emissions result from the combustion of gasoline and diesel to move people and products around the city. This sector includes emissions primarily from the on-road (including public transit) sub-sector, which saw a 2% decrease in emissions.

Overall, Transportation emissions decreased by <1% or 3,100 tonnes CO_2e, from 2014 to 2023.

Figure 5. *GHG emissions breakdown for the Community Transportation sector for 2014, 2021 and 2023*



Negligible CHANGE

	2014	2021	2023	% Change from 2014
On-Road	1,050,000	973,500	1,029,300	-2%
Retail	835,900	701,400	763,500	-9%
Cardlock	193,700	227,400	226,900	+17%
Other (e.g., bulk fuel)	9,400	34,300	27,600	+194%[5]
Public Transit	11,000	10,400	11,300	+3%
Aviation	135,100	150,500	158,000	+17%
Railway	9,000	3,600	3,600	-60%[6]
Waterborne Navigation	<100	<100	<100	-33%
Total Emissions (tonnes CO_2e)	**1,194,000**	**1,127,600**	**1,190,900**	**Negligible**

5 Emissions increases in this sub-sector are the result of improvements in the methodology used to identify fuel sources (i.e., bulk fuel providers).

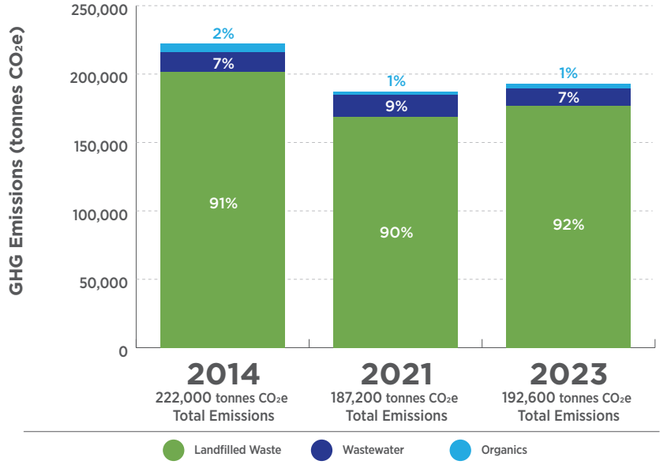
6 Emissions reductions in this sub-sector are the result of improvements in the methodology used to estimate emissions associated with switching yard-level operations within Saskatoon city limits.

1.1.3 Waste

Waste emissions result from the landfilling of solid waste, the composting of organic materials, and the management of wastewater at the City's wastewater treatment plant.

Waste emissions decreased by 13% or 29,400 tonnes CO_2e, from 2014 to 2023, reflecting the impact of the City's various waste reduction and diversion programs, including the capture of landfill gas at the City's landfill.

Figure 6. *GHG emissions breakdown for the Community Waste sector for 2014, 2021 and 2023*



-13% CHANGE

	2014	2021	2023	% Change from 2014
Landfilled Waste	201,400	168,900	176,900	-12%
Wastewater	14,500	16,100	12,500	-13%
Organics	6,100	2,200	3,200	-48%[7]
Total Emissions (tonnes CO_2e)	**222,000**	**187,200**	**192,600**	**-13%**

7 Emissions reductions in this sub-sector are the result of improvements in the methodology used to estimate emissions associated with composting activities.

1.1.4 Industrial Processes and Product Use

IPPU emissions come from a wide variety of non-energy related industrial activities and product uses. Emissions associated with this sector are challenging to identify and quantify as they rely on the availability of factory-specific production data. In the absence of factory-specific production data, emissions for this sector rely on compliance-based reporting by industrial processors to Environment and Climate Change Canada's Greenhouse Gas Reporting Program (GHGRP)[8]. Emissions reported to the 2022 GHGRP were only 12 tonnes CO_2e, which is 13,000 tonnes CO_2e lower than the 2021 total and 167,500 tonnes CO_2e lower than the 2014 total. The reason for the reporting discrepancy is unknown, but emissions for this sector are assumed to be higher than the emissions reported to the 2022 GHGRP.

1.1.5 Agriculture, Forestry, and Other Land Use (AFOLU)

AFOLU emissions come from a variety of pathways associated with how we use the land, and are amongst the most complex categories for GHG accounting. Emissions in this sector increased by 6,500 tonnes CO_2e compared to 2014, largely due to availability of data and improvements in quantification methodology. The Community inventory currently includes AFOLU emissions associated with livestock management at the Saskatoon Zoo, and livestock and nutrient management at the University of Saskatchewan. The City is exploring methodologies to best estimate emissions and emissions reductions (e.g., carbon sequestration) associated with land use and land use change.

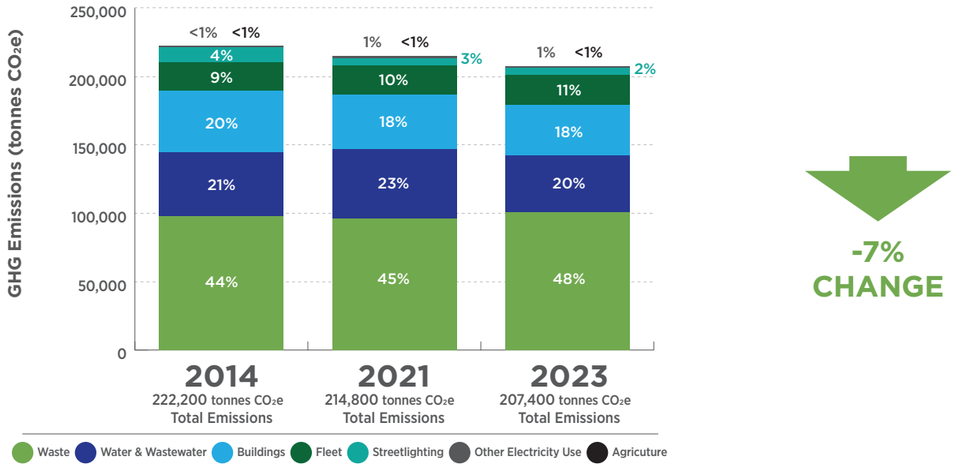
The GHG emissions inventory is completed using the *Global Protocol for Community-Scale Greenhouse Gas Emission Inventories: An Accounting and Reporting Standard for Cities (GPC)*[9]. The accuracy of the inventory relies on the availability, completeness, and accuracy of data from multiple external sources. While the City attempts to verify data and works with external partners on clarifications if errors are noted, data supplied by external sources cannot always be verified.

1.2 Corporate (Local Government) Emissions

The City's Corporate GHG emissions – sometimes referred to as Local Government or Municipal Government emissions – include those emissions the City has direct control or influence over, and that the City is accountable for as a corporate entity. Corporate emissions are a subset of the community inventory, representing 6% of the community total in 2023.

In 2023, the City emitted 207,400 tonnes of CO_2e, a decrease of 7% or 14,800 tonnes CO_2e since 2014. The decrease was driven by emissions reductions in the Buildings, Streetlighting, and Water & Wastewater sectors.

Figure 7. *Summary of Corporate GHG emissions for 2014, 2021 and 2023*



-7% CHANGE

	2014	2021	2023	% Change from 2014
Waste	97,600	96,300	100,500	+3%
Water & Wastewater	47,200	50,400	41,600	-12%
Buildings	45,000	39,700	36,800	-18%
Fleet	20,300	21,400	22,500	+10%
Streetlighting	11,400	5,400	4,700	-58%
Other Electricity Use	700	1,500	1,300	+98%
Agriculture	<100	<100	<100	+10%
Total Emissions (tonnes CO_2e)	**222,200**	**214,800**	**207,400**	**-7%**

8 Environment and Climate Change Canada, Greenhouse Gas Reporting Program. https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/facility-reporting.html

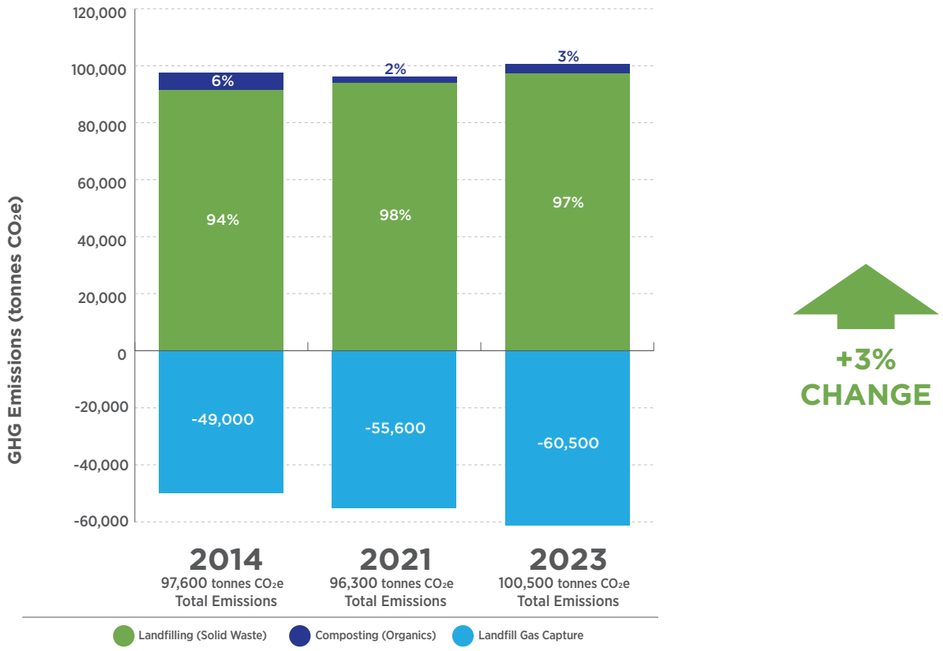
9 Greenhouse Gas Protocol. Global Protocol for Community-Scale Greenhouse Gas Inventories: An Accounting and Reporting Standard for Cities, Version 1.1. https://ghgprotocol.org/sites/default/files/standards/GPC_Full_MASTER_RW_v7.pdf

1.2.1 Waste

The Corporate Waste sector includes emissions resulting from landfilling of solid waste at the City's Regional Waste Management Centre and management of materials associated with the City's compost depots.

Emissions in the Corporate Waste sector increased by 3% or 2,900 tonnes CO_2e, from 2014 to 2023. This seems counterintuitive given the amount of landfilled (i.e., buried) waste at the City's landfill decreased by 37% from 124,300 tonnes in 2014 to 78,000 tonnes in 2023. It is important to note that waste buried under anaerobic conditions decomposes slowly over time. In other words, the reported emissions for 2023 primarily result from waste generated and buried in previous years. The overall increase of emissions in this sector was mitigated by the City's Landfill Gas Collection and Power Generation System, which was responsible for reducing emissions from the City's landfill by approximately 60,000 tonnes CO_2e.

Figure 8. *GHG emissions breakdown for the Corporate Waste sector for 2014, 2021 and 2023*



	2014	2021	2023	% Change from 2014
Landfilling (Solid Waste)	91,500	94,100	97,400	+6%
Composting (Organics)	6,100	2,200	3,100	-48%[10]
Landfill Gas Capture[11]	-49,000	-55,600	-60,500	+23%
Total Emissions (tonnes CO_2e)	**97,600**	**96,300**	**100,500**	**+3%**

10 Emissions reductions in this sub-sector are the result of improvements in the methodology used to estimate emissions associated with composting activities.

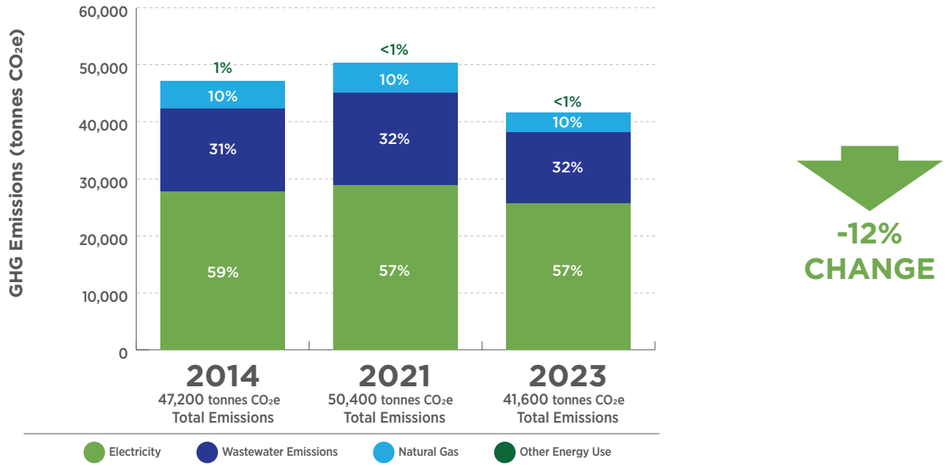
11 Emissions captured through the City's landfill gas collection and power generation system are not reported through the GHG emissions inventory process, but are included here to show the relative impact of the system on overall emissions in this sector. Landfill Gas Capture values have already been removed from the totals indicated in the Landfilling (Solid Waste) category above.

1.2.2 Water & Wastewater

The Water & Wastewater sector includes emissions resulting from the use of energy – natural gas, propane, and electricity – to heat/cool and power buildings associated with the City's water and wastewater treatment and distribution systems. This sector also includes fugitive emissions resulting from the wastewater treatment process (i.e., digester gas and flaring).

Emissions in the Water & Wastewater sector decreased by 12% or 5,600 tonnes CO_2e, from 2014 to 2023, reflecting efficiencies in water and wastewater related operations in 2023.

Figure 9. *GHG emissions breakdown for the Corporate Water & Wastewater sector for 2014, 2021 and 2023*



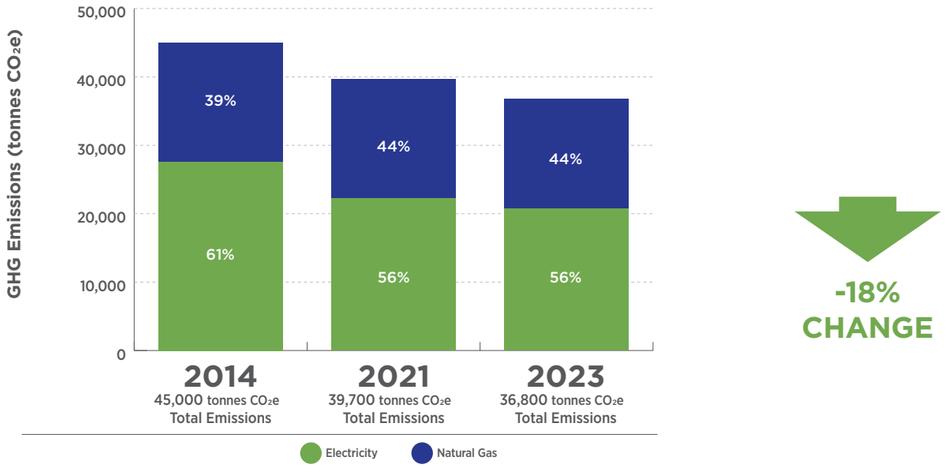
	2014	2021	2023	% Change from 2014
Electricity	27,800	28,900	25,700	-8%
Buildings	26,500	27,900	24,300	-16%
Transmission & Distribution Losses	1,300	1,000	1,400	+6%
Wastewater Emissions	14,500	16,100	12,500	-13%
Natural Gas	4,700	5,200	3,200	-33%
Other Energy Use	200	200	200	-7%
Total Emissions (tonnes CO_2e)	**47,200**	**50,400**	**41,600**	**-12%**

1.2.3 Buildings

The Buildings sector includes emissions resulting from the use of energy – natural gas, propane, and electricity – to heat/cool and power municipal buildings, apart from those associated with the Water & Wastewater sector.

Emissions in the Buildings sector decreased by 18% or 8,200 tonnes CO_2e, from 2014 to 2023.

Figure 10. *GHG emissions breakdown for the Corporate Buildings sector for 2014, 2021 and 2023*



-18% CHANGE

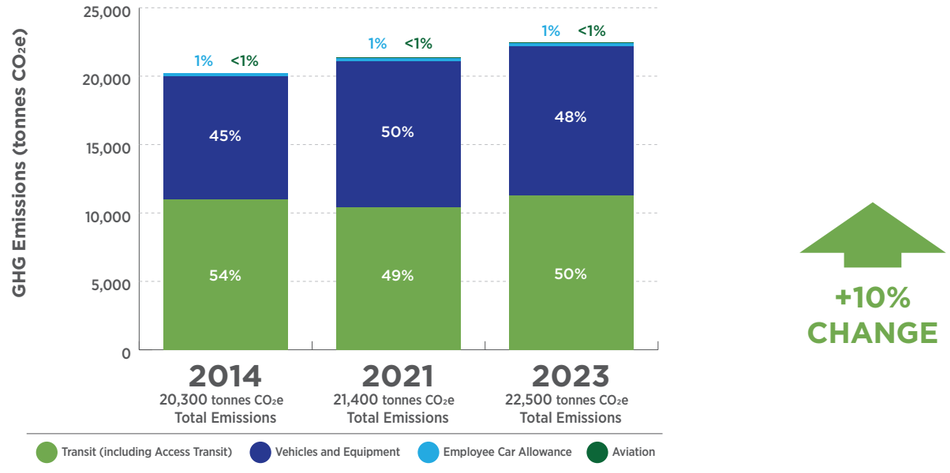
	2014	2021	2023	% Change from 2014
Electricity	27,600	22,200	20,700	-25%
Buildings	26,400	21,300	19,600	-26%
Transmission & Distribution Losses	1,200	900	1,100	-8%
Natural Gas	17,400	17,500	16,100	-7%
Total Emissions (tonnes CO_2e)	**45,000**	**39,700**	**36,800**	**-18%**

1.2.4 Fleet

The Fleet sector includes emissions resulting from the combustion of fossil fuels – gasoline and diesel – to power the City's fleet of buses, vehicles, and other equipment.

Emissions in the Fleet sector increased by 10% or 2,200 tonnes CO_2e, from 2014 to 2023, reflecting the increase in the volume of fuel used to provide various services across a growing city.

Figure 11. *GHG emissions breakdown for the Corporate Fleet sector for 2014, 2021 and 2023*



+10% CHANGE

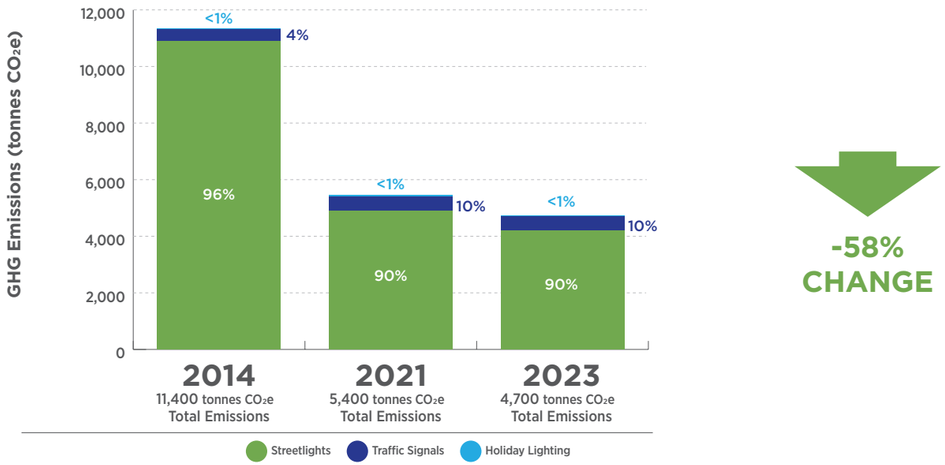
	2014	2021	2023	% Change from 2014
Transit (including Access Transit)	11,000	10,400	11,300	+3%
Diesel	11,000	10,100	10,700	-2%
Gasoline	N/A	300	600	N/A
Vehicles and Equipment	9,000	10,700	10,900	+20%
Diesel	5,200	5,700	5,800	+12%
Gasoline	3,800	4,900	5,000	+31%
Employee Car Allowance	200	200	200	-18%
Aviation	<100	100	<100	-2%
Total Emissions (tonnes CO_2e)	**20,300**	**21,400**	**22,500**	**+10%**

1.2.5 Streetlighting

The Streetlighting sector includes emissions resulting from the use of electricity for streetlights, traffic signals, and holiday lighting maintained by SL&P.

Emissions in the Streetlighting sector decreased by 58% from 2014 to 2023, from 11,400 to 4,700 tonnes CO_2e. The conversion of lighting to LED bulbs is the main driver of emissions reductions in this sector. Previous Corporate inventories incorrectly included emissions from streetlighting maintained exclusively by SaskPower. The 2014 and 2021 inventories have been recalculated based on this updated methodology.

Figure 12. *GHG emissions breakdown for the Corporate Streetlighting sector for 2014, 2021 and 2023*



	2014	2021	2023	% Change from 2014
Streetlights	10,900	4,900	4,200	-62%[12]
Traffic Signals	400	500	500	+4%
Holiday Lighting	<100	<100	<100	+108%
Total Emissions (tonnes CO_2e)	**11,400**	**5,400**	**4,700**	**-58%**

12 Emissions reductions in this sub-sector result primarily from an update in methodology combined with electricity savings from conversion of lighting to LED bulbs.

1.2.6 Other Electricity Use

The Other Electricity Use sector includes emissions resulting from the use of electricity for non-building and roadway related purposes such as parks, substations, and weigh scales.

Emissions in the Other Electricity Use sector increased by 98% or 600 tonnes CO_2e, from 2014 to 2023, resulting from expansion of City services to new neighbourhoods and improved identification of electricity accounts for this sector.

1.2.7 Agriculture

The Agriculture sector includes emissions exclusively associated with livestock management at the Saskatoon Zoo. The methodology used to estimate emissions for this sector is being reviewed, with the intent of incorporating emissions relating to nutrient management and land use change into future inventories.

Emissions in the Agriculture sector increased by 10% or 2 tonnes CO_2e, from 2014 to 2023.

The City's Corporate GHG emissions inventory is guided by Partners for Climate Protection's *PCP Protocol: Canadian Supplement to the International Emissions Analysis Protocol* [13]. This protocol is similar to the GPC framework used for the Community inventory but categorized to report emissions within sectors commonly used with local government operations: Waste, Water & Wastewater, Buildings, Fleet, Streetlighting, Other Electricity Use, and Land Use.

13 PCP Protocol: Canadian Supplement to the International Emissions Analysis Protocol. https://fcm.ca/sites/default/files/documents/resources/report/protocol-canadian-supplement-pcp.pdf

PART 2:
GREEN NETWORK INVENTORY

This section includes baseline data related to the quantity, quality, distribution, and use of the green network. The City is developing a more comprehensive series of Key Performance Indicators (KPIs) and proposed short- and long-term targets for the Green Network Program to be reported on in future status reports. Reporting on the status of Saskatoon's green network and the actions set out in Green Pathways will occur every two years. This will enable the City to monitor progress towards a healthy and sustainable Green Network, as well as connect monitoring to the principles of the Green Infrastructure Strategy.

2.1 Healthy and Thriving Natural Areas

The City's 2019 Natural Areas Inventory provides baseline information on the quantity and quality of natural areas in Saskatoon. While it is anticipated that there may be some loss of natural assets as the city grows, the City is identifying several initiatives to conserve, restore, and manage natural areas in the green network.

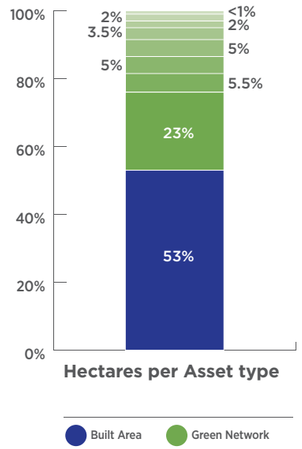
A target has not been set by the City regarding the preservation of natural assets, in terms of quantity, quality, or location. However, a target is desirable to help prevent the loss of natural assets. Natural assets provide many benefits including wildlife habitat, food production, and cultural and recreational opportunities. They also help mitigate climate change by sequestering carbon and providing climate adaptation benefits like improved air and water quality, flood mitigation, cooling/shade, and storm resiliency.

The Climate Action Plan, expected in 2025, will model the greenhouse gas emissions trajectory to net-zero. It is anticipated that negative emissions (i.e. sequestration) from natural assets will be necessary to meet net-zero. This means that meeting long-term targets will require the preservation, restoration, and management of existing natural assets, as well as the addition of new natural assets in future.

Natural Assets

Figure 13. *The Green Network as a proportion of the City of Saskatoon*[14]

Asset Type	Area (ha)
Built Area	**12,484**
Green Network	**11,150**
Agricultural Lands	**5,504**
Formal Green Space and Outdoor Recreation	**1,379**
Grassland	**1,285**
Wetlands	**1,207**
Informal Green Space	**806**
Forest and Shrubland	**577**
River	**388**
Naturally Non-vegetated	**4**
Total Area (hectares)	23,634



14 Source: Meewasin (2019). Natural Areas Inventory for the City of Saskatoon. https://meewasin.com/wp-content/uploads/2019/12/Natural-Areas-Inventory-for-the-City-of-Saskatoon-2019-Final-Report-November-25-2019.pdf

Quality of Natural Assets

The City's understanding of the quality of natural assets is still in the early stages. Field studies of individual natural assets are needed to gain a thorough understanding of the overall condition, but field data are not currently available for all sites across the city. In the absence of required data, we can look to proxy indicators to provide an estimate of condition.

The 2019 Natural Areas Inventory assessed the condition of natural assets by evaluating habitat quantity, connectivity, species documentation, and existing land protections. Further work in 2022 approximated condition by looking at the surface permeability, adjacent land uses, and road density for each asset. Over time, these results can be refined and built upon as we gain new data through Natural Area Screenings and field studies.

Learn more: saskatoon.ca/natural areas

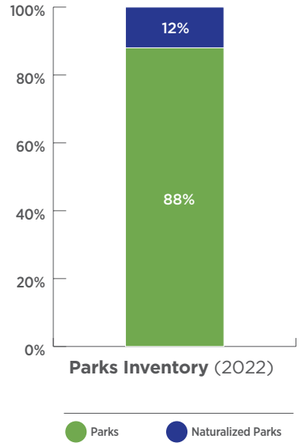
2.2 Connecting and Regenerating Green Spaces

Saskatoon's parks, green spaces, and storm water assets provide environmental and social benefits including recreational opportunities, habitat, flood mitigation, shade, and beauty.

Parks and Green Spaces

Figure 14. *Public-access parks managed by Parks Department*

	Number (Year: 2022)	Number (Year: 2023)	Percentage of Parks Inventory (Year: 2022)
Parks	**247**[15]	**258**[16]	**88%**
Naturalized Parks[17]	**10** City-managed **5** City/Meewasin-managed	**11** City-managed **5** City/Meewasin-managed	**12%**[18]



Total Hectares of Parks and Open Space Managed by the Parks Department: 2,304 ha (2022)[19]

Learn more: saskatoon.ca/greenspace

15 Source: Parks
16 Source: 2023 City of Saskatoon Annual Report: https://www.saskatoon.ca/sites/default/files/documents/asset-financial-management/finance-supply/COS_2023-AnnualReport-Aug29-FINAL-web.pdf
17 Source: Parks
18 Source: Parks 2022 Year-End Report: https://www.saskatoon.ca/sites/default/files/2022%20Year-End%20Report_0.pdf
19 Source: Parks 2022 Year-End Report: https://www.saskatoon.ca/sites/default/files/2022%20Year-End%20Report_0.pdf

Storm Water

- # of Wetlands: **1,171** (2019)
- # of Floating Wetland Sites: **1** (2023)[20]
- # of Storm Ponds (2023)[21]:
  - **11** dry ponds
  - **24** wet ponds
  - **9** naturalized ponds

Wetlands are sometimes called the "kidneys of the earth" because of their role in purifying water. The value that wetlands provide to improve water quality is approximately $16,000/ha/year. Several studies show that wetlands can reduce nitrogen and phosphorus loading in the water flowing through them on average by 58-67%. Urban wetlands also play a critical role in mitigating the effects of pollution, such as dust, heavy metals, debris and other pollutants.

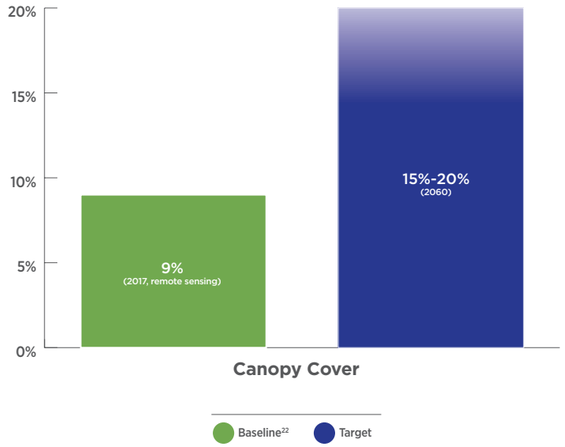
Sources:
City of Saskatoon (2020). Natural Capital Asset Valuation Pilot Project.
J. Fisher, M.C. Acreman (2004). Wetland nutrient removal: a review of the evidence. Hydrology and Earth System Sciences.

2.3 Leading by Example for an Integrated Green Network

Urban Forest

Saskatoon's urban forest is a defining part of our community. Not only do trees add beauty and character to our neighbourhoods, they also provide essential services such as improvements to air and water quality, cooling and shade, habitat for wildlife, stormwater management, and climate adaptation benefits. The *Urban Forest Management Plan* (2021) and corresponding *Pathway to a Sustainable Urban Forest: Implementation Plan* (2022) identify opportunities to lead initiatives that will contribute to the effective management, protection, enhancement, and growth of Saskatoon's urban forest.

Figure 15. *Saskatoon's baseline and target canopy covers*



20 Source: Sustainability
21 Source: Meewasin (2019). Natural Areas Inventory for the City of Saskatoon. https://meewasin.com/wp-content/uploads/2019/12/Natural-Areas-Inventory-for-the-City-of-Saskatoon-2019-Final-Report-November-25-2019.pdf
22 Source: Parks

Number of Trees Managed by Parks

The City's Parks Department is responsible for the care of approximately **110,000** trees on boulevards, center medians, in parks, and at civic facilities.[23]

Tree Planting and Removals

- # of trees planted as part of park and urban reforestation initiatives: **819** (2022)[24]
- # of trees removed: **728** (2022)[25]

Tree Diseases & Pests

In 2023, four samples returned as confirmed cases of Dutch Elm Disease (DED), the deadly fungal disease that affects all elm species in Saskatchewan. This was a record number of positive cases for Saskatoon. As part of the City's DED Surveillance and Sampling Program, Parks crews removed almost 7 tonnes of improperly stored elm wood from over 123 locations, and issued 58 elm storage infractions.[26]

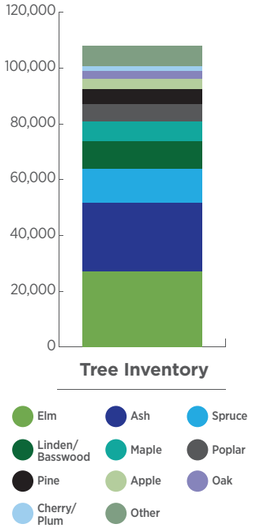
Storing elm wood can increase the spread of DED which threatens approximately 25% of the trees in Saskatoon. In October 2023, the City allowed residents to dispose of elm at the landfill at no cost, which resulted in a total of 430 tonnes of elm wood brought to the landfill for proper disposal.

Learn more: saskatoon.ca/dutchelmdisease

Public Tree Inventory by Genus

Figure 16. *Inventory of City trees (2023)*[27]

Genus	Number of Trees	% of Tree Inventory
Elm	**27,117**	**25.12%**
Ash	**24,581**	**22.77%**
Spruce	**12,184**	**11.29%**
Linden/Basswood	**9,861**	**9.14%**
Maple	**7,070**	**6.55%**
Poplar	**6,030**	**5.59%**
Pine	**5,454**	**5.05%**
Apple	**3,823**	**3.54%**
Oak	**2,689**	**2.49%**
Cherry/Plum	**1,865**	**1.73%**
Other	**7,265**	**6.72%**



Appraised Value of Public Tree Inventory

- Total Value (Baseline 2019): **$530 million**[28]

23 Source: 2023 City of Saskatoon Annual Report: https://www.saskatoon.ca/sites/default/files/documents/asset-financial-management/finance-supply/COS_2023-AnnualReport-Aug29-FINAL-web.pdf
24 Source: Parks 2022 Year-End Report: https://www.saskatoon.ca/sites/default/files/2022%20Year-End%20Report_0.pdf
25 Source: Parks 2022 Year-End Report: https://www.saskatoon.ca/sites/default/files/2022%20Year-End%20Report_0.pdf
26 Source: 2023 Community Services Year-End Report
27 Source: Parks
28 Source: City of Saskatoon (2021). Urban Forest Management Plan. https://www.saskatoon.ca/sites/default/files/urban_forest_management_plan_0.pdf

Estimated Sequestration of Urban Forest

- Total Value (Baseline 2017): **682,000 tonnes CO_2** stored by Saskatoon's urban forest[29]

Learn more: saskatoon.ca/urbanforest

2.4 Growing Community for a Liveable City

Creating opportunities for the community to get involved in activities that support Saskatoon's green network is integral to creating a vibrant, green, liveable city.

Park Usage

The Green Network facilitates placemaking, honours culture, and inspires community-led activities. For example, 208 park event permits[30] were approved in 2023 for activities such as:

- Special events
- Festivals
- Sports
- Cultural events
- Private functions (e.g., weddings, barbecues, gatherings)

Value of Green Network Activities Supported by the City's Environmental Cash Grant

- **$10,000/year** for community-led initiatives that support the green network

Industrial, Commercial, and Institutional (ICI) Adoption of Green Infrastructure

Total Storm Water Credit Recipients (2023): **4** ICI property recipients[31]

2.5 Food Security from Seed to Table to Soil

Working towards a sustainable, local food system supports food security while also creating beautiful, functional green spaces. It aligns with climate adaptation by supporting food access and resiliency, as well as mitigation strategies by reducing the carbon footprint of the food we eat, grow, and dispose of.

Public Space Gardening

Total Numbers in 2023:

- **36** Community Gardens[32]
- **95** Allotment Plots[33]
- **0** Vacant Lot Garden Incentive Sites[34]
- **0** Food Forests[35]

Learn more: saskatoon.ca/publicspacegardening

29 Source: City of Saskatoon (2021). Urban Forest Management Plan. https://www.saskatoon.ca/sites/default/files/urban_forest_management_plan_0.pdf
30 Source: Recreation and Community Development
31 Source: Saskatoon Water
32 Source: Recreation and Community Development
33 Source: Parks
34 Source: Planning and Development
35 Source: Sustainability

PART 3: **REPORT CARDS**

The Report Cards provide progress updates and scores for actions and targets associated with the City's LEC Plan, Adaptation Strategy, and Green Pathways. The reports cards present the following information:

Action: direct reference to the LEC Plan, Adaptation Strategy, or Green Pathways.

Initiative: sub-action or component that supports the Action; applies to Adaptation Strategy and Green Pathways.

Start Date (planned): intended start date of action or sub-action (LEC Plan and Adaptation Strategy), or Proposed Phase and Actual Phase (Green Pathways).

Responsible Department: civic department leading the work on the Action/Initiative; applies to LEC Plan and Adaptation Strategy.

Target Indicator: milestone target that progress is tracked against; applies to LEC Plan.

Performance: measured progress against the Target Indicator; applies to LEC Plan.

Progress Update: narrative update on progress made, including rationale and/or plan for the next reporting period (where applicable).

Budget: amounts shown in the Budget columns reflect estimates of capital and/or operating funds that contributed to progressing the action. Amounts for 2020-21 and 2022-23 indicate funds spent on related actions in those budget cycles. Amounts for 2024-25 indicate funds identified to be spent on related actions in that budget cycle. The stated amounts may not be comprehensive of all work associated with the action due to the broad nature of the action.

Progress Score 2023: assessment of overall progress on an Action/Initiative (see Legend below).

LEGEND

Phase/Timing Alignment	Description
Not started ○○○○○	Work has not started
Initiated ●○○○○	Scoping/business case work is underway to seek funding
Development ●●○○○	Capital funding is approved, research/study/feasibility/design/pilot work is underway to plan implementation
Implementation ●●●○○	Implementation work is underway
Operations ●●●●○	Sustained operating funding is approved for all activities required to meet the target/initiative, program/infrastructure/equipment is operating to meet the target/initiative
Complete ●●●●●	Target/initiative has been achieved
	Work is proceeding
	Work is proceeding but behind planned timeframe
	Work has not started and is behind planned timeframe
	Work has not started and is not scheduled to start until later phase

3.1 CLIMATE MITIGATION REPORT CARD

Buildings and Energy Efficiency

#	Action	Start Date (planned)	Responsible Department	Target Indicators (Targets are relative to 2016, unless otherwise noted.)	Performance	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Budget 2024-25 (000's)	Progress Score 2023
01	Apply energy efficiency standards (build to Passive House) to all new municipal buildings.	**2020**	Technical Services	100% of new municipal buildings meet the Passive House/Net-zero Energy-ready standard immediately (as of 2020).	0% municipal buildings built to Net-zero Energy-ready	Fire Hall #5 (commissioned in 2023) received LEED Certified certification and nine Optimize Energy Performance points. Harry Bailey Aquatic Centre Renovation (in progress) includes upgrades for energy efficiency.	$75	$9,279	$50,695	**Implementation** ●●●○○
02	Perform deep energy retrofits on municipal buildings.	**2022**	Facilities Management	60% of existing municipal buildings meet the Passive House/Net-zero Energy-ready standard by 2031, 100% by 2050.	0% municipal buildings completed deep energy retrofits (50%+ energy load reduction)	Funding of feasibility study project to inform phasing and design of a deep energy retrofits roadmap.	$0	$35	$190	**Development** ●●○○○
03	Upgrade plugged appliances and energy conservation behaviours in municipal buildings.	**2020**	Facilities Management	5% plug load energy savings from existing municipal buildings by 2023.	0% plug load savings	HVAC, lighting, and water efficiency building operator training completed in Fall 2023.	$0	$40	$1,013	**Implementation** ●●●○○
04	Update all municipal building lighting systems.	**2019**	Facilities Management	20% lighting energy savings in existing municipal office buildings by 2026 and in all existing municipal buildings by 2051.	11,895,800 kWh lighting energy savings	Lighting retrofits completed in 21 civic facilities in 2022 and 2023, bringing the total buildings retrofitted through the EPC Project to 32.	$1,800	$1,600	$0	**Operations** ●●●●○
05	Retrofit municipal heating and cooling systems with ground-source or air source heat pumps.	**2020**	Facilities Management	100% of existing municipal buildings are retrofitted with heat pumps by 2026.	0% municipal buildings retrofitted with heat pumps	In-kind support provided by City to support ongoing research on heat pumps in Saskatchewan (University of Saskatchewan study). Planned completion Q3 2024.	$0	$30	$0	**Initiated** ●○○○○
06	Create an electric and thermal energy consumption cap for new home construction by utilizing a municipal step code.	**2020**	Building Standards	Improve energy use intensity (EUI) and thermal energy demand intensity (TEDI) for new residential buildings, targeting net-zero ready by 2036. 2021-2025 (Step 1): 10% EUI improvement, TEDI <= 70 kWh/m2 2022-2030 (Step 2): 20% EUI improvement, TEDI <= 60 kWh/m2 2031-2035 (Step 3): 40% EUI improvement, TEDI <= 50 kWh/m2 2036 and later (Step 4): 80% EUI improvement, TEDI <= 15 kWh/m2	Undefined	The 2020 National Building Code of Canada (NBC) introduced a tiered approach for new home construction. The Province of Saskatchewan committed to enacting Tier 2 of the NBC starting on January 1, 2024. Tier 2 requires new homes to achieve an approximate 35% EUI improvement over the 2017 code and aligns with the LEC Plan targets for 2021-2025.	$0	$0	$0	**Implementation** ●●●○○
07	Require new homes to include roof solar Photovoltaic (PV) installations in the final year of a municipal step code.	**2036**	Building Standards	100% of new homes constructed in 2036-onward have roof solar PV.	Data Not Available	The NBC does not have any mention of solar requirements, and no progress on this action has occurred.	$0	$0	$0	**Not started** ○○○○○
08	Create an electric and thermal energy consumption cap for new Industrial, Commercial and Institutional (ICI) construction by utilizing a municipal step code.	**2020**	Building Standards	Improve energy use intensity (EUI) and thermal energy demand intensity (TEDI) for new ICI buildings, targeting net-zero ready by 2036. See Action #6 for Steps	Undefined	The 2020 National Energy Code of Canada for Buildings (NECB) introduced a tiered approach for new ICI building construction. The Province of Saskatchewan committed to enacting Tier 1 of NECB starting on January 1, 2024. Tier 1 requires new buildings to achieve an approximate 11% EUI improvement over the 2017 code and aligns with the LEC Plan targets for 2021-2025.	$0	$0	$0	**Implementation** ●●●○○

Buildings and Energy Efficiency (Continued)

#	Action	Start Date (planned)	Responsible Department	Target Indicators (Targets are relative to 2016, unless otherwise noted.)	Performance	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Budget 2024-25 (000's)	Progress Score 2023
09	Require new ICI buildings to include roof solar Photovoltaic (PV) installations in the final year of a municipal step code.	**2036**	Building Standards	100% of new ICI buildings constructed in 2036-onward have roof solar PV.	Data Not Available	The NECB does not have any mention of solar requirements, and no progress on this action has occurred.	$0	$0	$0	**Not started** ○○○○○
10	Incentivize and later mandate homeowners to perform deep energy retrofits.	**2020**	Sustainability	50% of existing homes are 50% more energy efficient by 2030, 90% by 2050.	<1%	By the end of 2023, 100 energy efficiency retrofits were completed through the Home Energy Loan Program (HELP), including 6 deep energy retrofits with >50% reduction. Cumulative savings through HELP are 200 tonnes CO_2e. HELP has funding for 127 more retrofits until the end of the current program; expansion with requests for additional funding are expected in 2024.	$172	$4,200	$15,100	**Implementation** ●●●○○
11	Incentivize and later mandate ICI owners and operators to perform deep energy retrofits.	**2020**	Sustainability	50% of existing ICI buildings are 50% more energy efficient by 2030, 90% by 2050.	Data Not Available	In 2023, a feasibility study (including research, analysis, and engagement) for an Energy Efficiency/Generation Project for the Industrial, Commercial and Institutional (ICI) sector was completed. A funding request for a Property Assessed Clean Energy (PACE) financing program for this sector will be submitted in 2024.	$0	$178	$16,598	**Development** ●●○○○
12	Require energy efficiency improvements in residential and ICI building lighting systems.	**2025**	Sustainability	90% of existing residential and ICI buildings have 5% greater lighting efficiency by 2030, 100% by 2050. All existing luminaires are replaced/ updated with energy efficient LED bulbs and systems.	Data Not Available	The Energy Assistance Program provides a free light bulb replacement program for income-qualified residential homeowners. Lighting efficiency programs are being explored through the Community Energy Loan Program. No bylaws or mandates are currently being explored.	$10	$12	$75	**Initiated** ●○○○○
13	Incentivize and later mandate homeowners to upgrade household appliances to energy and water efficient models.	**2040**	Sustainability	Appliances and water heaters in 50% of existing residential buildings are upgraded by 2050.	<1%	In 2023, 28 water heaters, 7 toilets, 5 fixtures, and 1 rain catchment were installed through HELP. The program incentivizes the replacement of low-flow water fixtures and water heaters; most other appliances are not eligible. Education is offered through the Energy Renovation Education Events Team and Energy Resources webpage to promote the use of efficient appliances in both homes and commercial buildings.	<see LEC Plan Action 10>	<see LEC Plan Action 10>	<see LEC Plan Action 10>	**Development** ●●○○○
14	Retrofit home heating and cooling systems with ground-source or air source heat pumps.	**2025**	Sustainability	30% of existing residential buildings are retrofitted with heat pumps by 2030, 80% by 2050.	<1% of existing residential buildings retrofitted with heat pumps	By the end of 2023, HELP assisted 8 homeowners install air source heat pumps (ASHPs), which have been growing in popularity as a cooling option. ASHPs are encouraged through educational programming and tools like the Realtor Training Program, Energy Renovation Education Events Team, and the Home Energy Map.	<see LEC Plan Action 10>	<see LEC Plan Action 10>	<see LEC Plan Action 10>	**Implementation** ●●●○○
15	Retrofit ICI heating and cooling systems with ground-source or air source heat pumps.	**2025**	Sustainability	30% of ICI building floorspace is retrofitted with heat pumps by 2030, 80% by 2050.	Data Not Available	The feasibility study for Energy Efficiency/ Generation Project for the ICI sector noted heat pumps as a likely eligible retrofit in a future PACE program for the ICI sector.	$0	<see LEC Plan Action 11>	<see LEC Plan Action 11>	**Development** ●●○○○
16	Increase the efficiency of industrial processes.	**2040**	Sustainability	50% energy savings from industrial processes by 2050.	Data Not Available	At this time, no programming has started for the industrial sector.	$0	$0	$0	**Not started** ○○○○○

Transportation

#	Action	Start Date (planned)	Responsible Department	Target Indicators (Targets are relative to 2016, unless otherwise noted.)	Performance	Progress Update	Budget 2020-21 ('000's)	Budget 2022-23 ('000's)	Budget 2024-25 ('000's)	Progress Score 2023
17	Electrify the municipal fleet over the near-term.	**2020**	Roadways, Fleet and Support	100% of the municipal fleet is electrified by 2030.	0.5% of municipal fleet is electrified	The City's fleet includes 10 hybrid vehicles and 5 electric vehicles (EVs). To support the City's EV fleet, there are currently 15 charging ports installed at civic facilities. A zero-emission vehicle adoption roadmap will be presented to City Council in 2025, to guide the City's transition to zero-emission transportation.	$200	$395	$150	**Implementation** ●●●○○
18	Electrify the municipal transit fleet.	**2020**	Saskatoon Transit	100% of the municipal transit fleet is electrified by 2030.	1% of municipal transit fleet is electrified	2 battery electric or zero-emission buses (ZEB) are expected to be operational in 2024. Funding for additional ZEBs is pending. A Transit fleet renewal strategy update is expected in Q1 2025.	$114	$0	$0	**Implementation** ●●●○○
19	Implement a vehicle pollution pricing program in high traffic areas.	**2024**	Sustainability	5% reduction in vehicle emissions from high traffic areas by 2026.	0	No progress.	$0	$0	$0	**Not started** ○○○○○
20	Increase transit routes and frequency through future updates to the Transit Plan.	**2019**	Saskatoon Transit	5% mode shift to transit by 2030, 10% by 2050.	6% transit mode share	In 2023, the construction of a BRT Pilot Station was completed and funding was approved to progress the BRT Green line. Transit mode share represents 6% of all trips, as reported in 2023 Household Travel Survey. For comparison, this mode share represented 3% in the 2021 Census.	$500	$0	$151,050	**Implementation** ●●●○○
21	Electrify personal vehicles through incentive programs, education, and automotive dealer partnerships.	**2020**	Sustainability	30% of new vehicle sales are electric by 2030, 90% by 2050.	0.4% of vehicle registrations in Saskatoon were EV or PHEV	For public use, 2 dual-port charging stations were installed at two civic centres (one at each) in 2023 as part of a two-year pilot. A zero-emission vehicle adoption roadmap will be presented to City Council in 2025, to guide the community's transition to zero-emission transportation.	$100	<see LEC Plan Action 17>	<see LEC Plan Action 17>	**Development** ●●○○○
22	Electrify commercial vehicles through incentive programs, education, and automotive dealer partnerships.	**2024**	Sustainability	50% of new heavy truck sales are zero-emissions by 2030, 100% by 2040.	Data Not Available	A zero-emission vehicle adoption roadmap will be presented to City Council in 2025, to guide the community's transition to zero-emission transportation (including commercial vehicles).	$0	<see LEC Plan Action 17>	<see LEC Plan Action 17>	**Initiated** ●○○○○
23	Fund and implement improved cycling and walking infrastructure to encourage active transportation.	**2019**	Transportation	20% mode shift to active transportation by 2030, 30% by 2050.	13% active transportation mode share	Projects in 2022 and 2023 included 5km of new sidewalk installation funded through ICIP, accessibility installations of 190 new curb ramps and texturing upgrades to 60 existing curb ramps, upgrades to 42 accessible pedestrian signals, installations of 27 pedestrian and 1 pedestrian/cyclist crossing devices, and installation of 1.5km of shared-use pathways and 1.5km of raised cycle tracks. 2023 mode shares of walking and cycling represent 10% and 3% of all trips, respectively, as reported in the 2023 Household Travel Survey. For comparison, these mode shares represented 4% and 1%, respectively, in the 2021 Census.	$1,105	$5,360	$4,705	**Development** ●●○○○

Waste

#	Action	Start Date (planned)	Responsible Department	Target Indicators (Targets are relative to 2016, unless otherwise noted.)	Performance	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Budget 2024-25 (000's)	Progress Score 2023
24	Improve and expand waste management programs and services to increase reduction and diversion.	**2020**	Water and Waste Operations	(1) 90% reduction and diversion of organics from the waste stream by 2050. (2) 95% reduction and diversion of plastic from the waste stream by 2050 (3) 90% reduction and diversion of paper from the waste stream by 2050.	58% curbside residential diversion of organics 18% curbside residential diversion of plastics 55% curbside residential diversion of paper	In 2021, The Waste Bylaw (Bylaw 9844) was updated to include a phased approach to regulation in the ICI sector for recycling and organics. In 2023, the City's Curbside Organics Program launched and the City's Material Recovery Centre opened. The waste diversion rate for materials collected through City programs was 33% in 2023. In 2024, a curbside variable rate garbage utility will be enacted. As of December 2023, 8 actions in the Solid Waste Reduction and Diversion Plan are complete/operational, 12 actions have been initiated, 8 actions are anticipated to be initiated by the end of 2025, and the remaining 4 actions are expected to be initiated after 2025.	$10,724	$2,118 (capital) $4,567 (operating)	$700	**Implementation** ●●●○○

Water Conservation

#	Action	Start Date (planned)	Responsible Department	Target Indicators (Targets are relative to 2016, unless otherwise noted.)	Performance	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Budget 2024-25 (000's)	Progress Score 2023
25	Decrease water use through efficiency, monitoring, and leak reduction.	**2020**	Saskatoon Water	5% reduction in water volume pumped by 2026.	5% more volume pumped	Deployment of AMI system is 98% complete. 2021-22: irrigation pilot conducted in 46 test sites in municipal parks, resulting in annual savings of 39 million litres of water, $98,000 and 17 tonnes CO_2e. 2023: irrigation pilot conducted in 7 sports fields, resulting in annual savings of 17 million litres of water, $65,000 and 8 tonnes CO_2e compared to control sports fields. A spray pad efficiency project conducted at 2 spray pads, resulting in annual savings of 6 million litres of water, $24,000 and 3 tonnes CO_2e.	$670	$380 (capital) $300 (operating)	$2,799	**Implementation** ●●●○○
26	Reduce residential and ICI water use through education programming and water efficiency incentive programs.	**2020**	Sustainability	20% reduction in outdoor water use and 30% reduction in indoor water use by 2050.	15% more water used outdoors 3% more water used indoors	Water Conservation Strategy approved in May 2022; SmarUTIL launched in June 2022. Estimated water savings relating to the Energy Assistance Program, Rain Barrel Rebate, and HELP were 591,000 L in 2022 and 789,000 L in 2023.	<see LEC Plan Action 25>	<see LEC Plan Action 25>	<see LEC Plan Action 25>	**Implementation** ●●●○○

Land Use

#	Action	Start Date (planned)	Responsible Department	Target Indicators (Targets are relative to 2016, unless otherwise noted.)	Performance	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Budget 2024-25 (000's)	Progress Score 2023
27	Build complete, compact communities through infill development, mixed-use buildings, and compact housing.	**2020**	Planning and Development	5% less energy use per floor area in residential buildings by 2035, 25% by 2050.	Data Not Available	Continued work on College Corridor Plan and developed a land use plan for five additional corridor plan areas. Received City Council approval for the Housing Action Plan as part of the City's application under the Housing Accelerator Fund (HAF) program. The City's HAF application was approved in December 2023, committing the City to transformative regulatory changes to eliminate exclusionary zoning (permitting four-unit dwellings city-wide) and enable "missing middle" (up to four-story) housing focused on the Corridor Growth Area.	$2,000	$1,622	$13,321	**Implementation** ●●●○○
28	Focus development on densification in previously developed areas, increasing the number of multi-family buildings.	**2020**	Planning and Development	25% increase in stock share of multi-family homes by 2050 for new builds.	Data Not Available	<see LEC Plan Action 27>	<see LEC Plan Action 27>	(see LEC Plan Action 27>	(see LEC Plan Action 27>	**Implementation** ●●●○○

Energy Generation

#	Action	Start Date (planned)	Responsible Department	Target Indicators (Targets are relative to 2016, unless otherwise noted.)	Performance	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Budget 2024-25 (000's)	Progress Score 2023
29	Install solar PV systems on municipal buildings.	**2020**	Facilities Management	24 MW of solar capacity on municipal buildings by 2026.	0.2 MW solar installed	20 kW solar PV installed on Fire Hall #5. Completion of feasibility study for rooftop solar on 9 municipal buildings. Pre-design for WWTP and ACT Arena to be completed in Q4 2024.	$40	$61	$142	**Development** ●●○○○
30	Install solar PV systems on municipal lands (Parcel M Project).	**2020**	Saskatoon Light and Power	1 MW capacity solar system on Parcel M or similar land area by 2022.	0 MW solar installed	Procurement of a Solar Consultant for Dundonald Avenue Solar Farm in 2023; a Landscaping Contractor and Solar Design-Build Contractor are expected to be procured in 2024.	$200	$4,390	$4,070	**Development** ●●○○○
31	Increase Landfill Gas Capture from the Saskatoon Landfill.	**2020**	Water and Waste Operations	50% methane capture from the landfill by 2026.	38% methane captured	LFG projects completed in 2023 include the addition of a second blower to improve system reliability and increase uptime, and the installation of a second smaller flare to allow for increased LFG destruction. Planned work in 2024 includes the drilling of 16 new LFG collection wells to increase LFG collection capacity.	$0	$8,600	$500	**Implementation** ●●●○○

Energy Generation (Continued)

#	Action	Start Date (planned)	Responsible Department	Target Indicators (Targets are relative to 2016, unless otherwise noted.)	Performance	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Budget 2024-25 (000's)	Progress Score 2023
32	Encourage existing residential building owners and mandate new buildings to install solar PV systems.	**2020**	Sustainability	10 MW of residential solar capacity installed by 2030, 50 MW by 2050.	5.3 MW solar installed	By the end of 2023, HELP assisted 19 homeowners install solar PV systems. Educational programming such as the Realtor Training Program, Energy Renovation Education Events Team, and the Residential Solar Potential Map self-use tool promote solar PV installations. No current plan to mandate the installation of residential solar PV installations.	<see LEC Plan Action 10>	<see LEC Plan Action 10>	<see LEC Plan Action 10>	**Implementation** ●●●○○
33	Encourage existing ICI building owners and mandate new buildings to install solar PV systems.	**2025**	Sustainability	20 MW of ICI solar capacity installed by 2030, 200 MW by 2050.	<see Action 32>	Solar PV systems will be incentivized through the new Community Energy Loan Program, expected to launch in 2026. At this time, programming is not expected to apply to new builds.	$0	<see LEC Plan Action 11>	<see LEC Plan Action 11>	**Development** ●●○○○
34	Install new solar PV utility-scale facilities within or adjacent to city boundaries.	**2023**	Saskatoon Light and Power	20 MW of utility-scale solar capacity by 2030, 300 MW by 2050.	0 MW solar installed	A pre-feasibility study was initiated in 2023 to explore the viability of developing renewable energy at the City's Material Recovery Centre and capped areas of the City's landfill. Glare, Environmental and Interconnection studies are planned in 2024 and 2025. A feasibility study was also initiated in 2023 to explore the viability of expanding power generation at the landfill; the study will be completed by end of year 2024.	$0	$10	$150	**Development** ●●○○○
35	Install a CHP facility at St. Paul's Hospital.	**2020**	N/A	Two 540 kW CHP units installed at St. Paul's Hospital by 2023.	Not Applicable	Project cancelled in 2020.	$0	$0	$0	**Cancelled** ●●●●●
36	Implement district energy systems in the downtown and north downtown areas.	**2025**	Sustainability	(1) One RNG boiler (37 MW) installed by 2026, and a second installed by 2034. (2) One CHP unit (9.6 MW thermal, 10.5 MW electricity output) installed by 2034. (3) One CHP unit (6.4 MW thermal, 7 MW electricity output) installed by 2042.	0 boilers/CHP units installed	District energy for the Downtown Event and Entertainment District will be further explored pending budget approval for the detailed design phase.	$0	$0	$0	**Not started** ○○○○○
37	Construct a hydropower plant at the weir.	**2020**	Saskatoon Light and Power	6 MW of hydropower capacity installed at the weir with an operational efficiency of 55% or greater by 2027.	0 MW hydropower installed	On hold unless adequate funding and/or partnerships become available. A reassessment of the project to determine its viability is tentatively planned for 2026.	$0	$0	$0	**Not started** ●●●●●
38	Install renewable energy storage over time.	**2023**	Saskatoon Light and Power	50 MW of grid-tied electricity storage added gradually between 2025 and 2050.	0 MW grid storage procured	No further action has been taken as the technology is not economically viable at this time. The Dundonald Avenue Solar Farm has been designed to allow for the future addition of a Battery Energy Storage System.	$10	$0	$0	**Not started** ●●●●●
39	Procure renewable electricity from third party producers.	**2040**	Saskatoon Light and Power	1600 MW of renewable electrical capacity procured by 2050.	0 MW procured	An expression of interest was submitted to SaskPower for participation in their new Renewable Partnership Offering, for purchase of 66 MW of solar power. Updates on the program and costing are anticipated in 2024 and 2025, following which decisions on participation and funding sources will be made.	$0	$10	$30	**Initiated** ●○○○○
40	Procure renewable natural gas from third party producers.	**2040**	Sustainability	50% of municipal natural gas demand displaced with RNG by 2050.	0% natural gas displaced	No progress. Options for the use of biogas at the wastewater treatment plant are being explored.	$0	$0	$0	**Not started** ○○○○○

3.2 CLIMATE ADAPTATION REPORT CARD

Decision Making

Action	Initiative	Start Date (planned)	Responsible Department	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Budget 2024-25 (000's)	Progress Score 2023
A. Document a process to support the consideration of adaptation for all new projects, programs, and assets in a reliable and consistent manner.	A01. Create administrative procedure and standard work documents to support the consideration of climate change projections, positive and negative risk to operations, and resiliency options creation as part of the implementation of the Triple Bottom Line Policy.	**2020-2021**	Sustainability - Climate	The TBL Project Improvement Tool was updated and included additional climate adaptation considerations. TBL was incorporated into the 10-year Capital Project Prioritization process. Operating funding for the TBL was not approved during the 2024/2025 budget deliberations.	$260	$160	$100	**Implementation** ●●●○○
	A02. Create internal training sessions that can be delivered on demand to support workgroups as they build climate change impact understanding and adaptation innovation capacity.	**2020-2021**	Sustainability - Climate	Work began to develop internal training modules on climate change impacts in 2023 and is expected to be completed in 2024.	$0	$0	$0	**Development** ●●○○○
	A03. Create internal processes and a dashboard for climate adaptation strategy key performance indicator tracking. Create a digital historical and future climate data hub to support reliable internal use and updating.	**2020-2021**	Sustainability - Climate	The City recently launched a new online platform to communicate progress on climate actions. The new Climate Dashboard is focused on climate mitigation actions; however, climate adaptation actions are expected to be added in a later phase.	$0	$0	$0	**Initiated** ●○○○○
B. Explore and document existing municipal, provincial, federal, and international mechanisms for financing resiliency building that look beyond mill-rate increases and capital expenditure.	B04. Create and maintain a list of existing programs that fund resiliency building projects (include application process and requirements).	**2020-2021**	Sustainability - Climate	Climate Action Program was established with approved operating funding in 2023. Monitoring and seeking funding opportunities for resilience projects is incorporated into this operating program.	$0	$0	$0	**Operations** ●●●●○
C. Look to partners across departments to support and integrate resilience planning into current and future work.	C05. Review major upcoming projects (such as Bus Rapid Transit, Saskatoon Forestry Farm Park & Zoo Master Plan, Winter City Strategy, the new central library, and downtown arena) that may be good candidates for piloting resiliency building options.	**2020-2021**	Technical Services	A climate change resilience assessment was completed for the Downtown Event & Entertainment District conceptual design in 2023. In 2022-23, the TBL Project Improvement tool was used to review 37 new projects. An additional 73 projects, underwent condensed TBL reviews as part of the Major Capital Project Prioritization process.	<see Adaptation Action A01>	$0	$0	**Implementation** ●●●○○
	C06. Continue to work with Planning and Development to review current land use, zoning, and urban/regional design practices to ensure current requirements provide adequate flexibility to support resiliency building.	**2020-2021**	Planning and Development	Zoning Bylaw Review continues. Final Repeal and Replace of the Zoning Bylaw is delayed and scheduled for September 2024. Further actions to support resiliency through land use and design will be identified in the 2025 Climate Action Plan.	$750	$0	$0	**Implementation** ●●●○○
D. Continue to develop relationships with external organizations that produce high quality historical and future climate data for use in data-driven decision-making.	D07. Work with external partners to define ways to visualize climate change projection data to improve corporate impact and risk assessment discussions, inform user-driven science, and aid in public education campaigns.	**2020-2021**	Sustainability - Climate	Work with external partners on using and communicating climate change projections is ongoing as part of the Climate Action Program. Work is planned in 2024-2025 to update climate projections, estimate the costs of climate change, and convey this information to City staff and the public.	$0	$0	$20	**Implementation** ●●●○○

Staff

Action	Initiative	Start Date (planned)	Responsible Department	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Budget 2024-25 (000's)	Progress Score 2023
E. Begin proactive discussions with outdoor staff, labour units, and leadership on climate change impacts, risk to current operations, and potential adaptive strategies.	E08. Review and inventory all job descriptions and collective bargaining agreements of workgroups with outdoor staff to identify existing language and requirements regarding work in hot/cold conditions.	**2022-2025**	Occupational Health and Safety	No progress.	$0	$0	$0	**Not started** ○○○○○
	E09. Conduct a staff safety and productivity assessment of outdoor activities under extreme heat and extreme cold in order to define potential thresholds where non-essential services are stopped until favourable climate conditions return.	**2026-2029**	Occupational Health and Safety	The City of Saskatoon follows the Extreme Cold Weather Emergency Response Plan and Saskatoon Extreme Heat and Air Quality Emergency Response Plan including the temperature thresholds identified by the EMO. Departments with outdoor staff have implemented various heat, cold, and air quality procedures to help mitigate the risk of working in unfavorable conditions.	$0	$0	$0	**Initiated** ●○○○○
	E10. Create a list of alternative tasks that could be completed by outdoor staff during extreme temperatures to increase employee safety and minimize negative salary impacts of non-essential work stoppages.	**2026-2029**	Occupational Health and Safety	No progress.	$0	$0	$0	**Not started** ○○○○○
	E11. Ensure pest preparedness and extreme heat/cold internal safety training and processes consider the diversity of the City's workforce.	**2026-2029**	Occupational Health and Safety	No progress.	$0	$0	$0	**Not started** ○○○○○
	E12. Explore and define alternative scheduling options to reduce the exposure of outdoor staff to the "hottest hours of the day" based on learnings and practices in other municipalities where extreme heat is prevalent.	**2026-2029**	Occupational Health and Safety	No progress.	$0	$0	$0	**Not started** ○○○○○
	E13. Discuss current seasonal hiring practices with outdoor staff to meet the needs of more variable seasonal transitions and a potentially longer summer season.	**2026-2029**	Occupational Health and Safety	No progress.	$0	$0	$0	**Not started** ○○○○○
F. Define pilot project opportunities for extreme heat/cold management and pest preparedness through new equipment procurement.	F14. Work with outdoor staff to explore potential pilot projects for extreme heat and cold management and pest preparedness equipment. Examples could include lawn mower canopies, pop-up shade tents, and mosquito netting.	**2026-2029**	Occupational Health and Safety	Efforts to identify engineering controls that can help improve working conditions for outdoor staff are ongoing.	$0	$0	$0	**Initiated** ●○○○○

Action	Initiative	Start Date (planned)	Responsible Department	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Budget 2024-25 (000's)	Progress Score 2023
G. Continue discussions to define points that trigger a change in service level and/or require public communication.	G15. Define worst-case climate change scenarios and graduated administrative responses with core service providers, including water, electricity, waste management, transit, parks management, recreation, and mobility management.	**2022-2025**	Saskatoon Fire - Emergency Management Organization	The Saskatoon Fire Department is currently in the process of completing a Community Risk Assessment. This information will be used to support the completion of a Disaster Risk Assessment in 2025-2026.	$0	$0	$0	**Initiated** ●○○○○
	G16. Proactively define communication tools, key messaging, and delivery mechanisms to rapidly inform residents, businesses, and organizations of service level changes required due to administrative responses to extreme heat/cold/wind, intense summer/winter storms, prolonged drought, increasing pest populations, and intense precipitation events.	**2022-2025**	Saskatoon Fire - Emergency Management Organization	The City of Saskatoon Crisis Communication plan is completed and is now part of normal operations.	$25	$0	$0	**Operations** ●●●●○
	G17. Define options to increase flexibility in seasonal equipment turnover practices to improve readiness for highly variable weather and emergencies.	**2026-2029**	Roadways, Fleet and Support	Sanding and plow trucks are readied in preparation for early or late winter storm events.	$0	$0	$0	**Implementation** ●●●○○
	G18. Explore opportunities to use cross-training and/or temporary staff reassignments, mutual aid agreements and/or private-sector contractors, when appropriate, to add capacity to post-weather event administrative responses as part of emergency management and service continuity.	**2022-2025**	Saskatoon Fire - Emergency Management Organization	Saskatoon EMO has formal partnerships with over 30 community organizations to work together to respond to Extreme Heat and Extreme Cold. This is now an ongoing part of normal operations.	<see Adaptation Action G15>	$0	$0	**Operations** ●●●●○
	G19. Engage with the Water Security Agency to better understand Gardiner Dam operating procedures in order to clearly define resiliency needs. Identify and analyze other water security risks.	**2022-2025**	Saskatoon Water	Discussions with Water Security Agency on river water allocation, resiliency, and water security risks are ongoing and will continue.	$0	$0	$0	**Operations** ●●●●○

Services (Continued)

Action	Initiative	Start Date (planned)	Responsible Department	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Budget 2024-25 (000's)	Progress Score 2023
H. Continue work with internal staff and external partners to improve evacuation processes.	H20. Continue to work with the Provincial Emergency Social Services Committee, City stakeholders, external partners, and at-risk communities to define efficient, culturally appropriate evacuation processes and suitable temporary housing locations that balance the needs of those in unsafe situations with the needs of Saskatoon residents.	**2020-2021**	Saskatoon Fire - Emergency Management Organization	The Saskatoon Emergency Social Services plan for Evacuations to Saskatoon is an ongoing part of normal operations. Adjustments have been made to align with new Provincial and Federal processes.	<see Adaptation Action G15>	$0	$0	**Operations** ●●●●○
I. Engage with internal staff to better understand how community needs may be impacted by climate change.	I21. Analyze the affordability of corporate utilities from a social-equity lens and define options to improve affordability.	**2026-2029**	Saskatoon Water, Saskatoon Light and Power, Water and Waste Operations	A review of a low-income affordability program was directed in 2023. The Water Conservation Strategy was received by Council in 2022 and includes affordability actions. In 2023, The Environmental Cash Grant supported 15 local projects, with 5 specifically focusing on water conservation.	<see LEC Plan Action 25>	$0	$0	**Development** ●●○○○
I. Engage with internal staff to better understand how community needs may be impacted by climate change.	I22. Identify potential new services or changing service levels required due to exacerbated social inequities.	**2026-2029**	Saskatoon Transit, Recreation and Community Development - Community Development	Work is underway on a transit fare review. In 2023, as part of the budget process, Council passed a motion to implement free child transit fares in 2024. The Home Energy Loan Program launched in 2021. To date, 30% of participants have been approved as income qualified and will benefit from additional rebates and waived administration fees. The Energy Assistance Program and Healthy Yards continue to operate.	<see LEC Plan Action 10 and Action 26>	$0	$0	**Development** ●●○○○
	I23. Analyze the impacts of "climate refugee" migration to Saskatoon on population growth and service demand.	**2022-2025**	Planning and Development	No progress.	$0	$0	$0	**Not started** ○○○○○

Action	Initiative	Start Date (planned)	Responsible Department	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Budget 2024-25 (000's)	Progress Score 2023
K. Integrate climate risk consideration and resiliency building options in the development of the Corporate Asset Management Program.	K24. Develop and document processes that allow future climate projections to be considered in the design of new and upgraded corporate assets.	**2020-2021**	Organizational Strategy Execution	A Corporate Asset Management Reporting Template has been developed and includes consideration of climate change-related risks and resilience planning for future climate conditions. Organizational Strategy Execution is working with business units to complete asset management plans using this template.	$0	$0	$0	**Implementation** ●●●○○
	K25. Review all corporate design/ construction standards and building code requirements against projected climate change in order to identify and inventory areas where future conditions could surpass current thresholds.	**2022-2025**	Construction and Design, Facilities Management, Parks	Condition Assessments have been completed and capital renewal projects are being identified to improve building performance. Upgraded building controls, through the Energy Performance Contract Project, are allowing for better troubleshooting and conservation of energy and water, while creating the opportunity to test building sub-metering to further. Specification for Heating, Ventilation, and Air Conditioning (HVAC) System studies to be completed in 2025.	$0	$150	$150	**Development** ●●○○○
	K26. Network and share information with other municipalities that will likely experience Saskatoon's projected climate conditions.	**2020-2021**	Sustainability - Climate	Climate Action Program was established with approved operating funding in 2023. Networking and information sharing with other municipalities and organizations is incorporated into this operating program.	$0	$0	$0	**Operations** ●●●●○
	K27. Continue to participate in Saskatoon Water's design curve update project to inform climate projection and risk management through asset design.	**2020-2021**	Saskatoon Water	Action complete. The City's 2023 design standards were updated to incorporate climate change impacts on Intensity Duration Frequency (IDF) curves for the design of new assets.	$0	$0	$0	**Complete** ●●●●●
	K27. Consider flood risk on City assets.[36]	**N/A**	Saskatoon Water	In December 2018, City Council approved the implementation of the nine-year million Flood Control Strategy (FCS) to mitigate flooding in ten priority areas that have historically experienced frequent flooding. The first two projects – W.W. Ashley Park Dry Pond and Churchill Park Dry Pond – were completed in 2023, and are open to the public. The third project – Weaver Park Dry Pond – is nearing completion, with access to the public expected in Fall 2024. The fourth project – Brevoort Park Dry Pond – is under construction, with completion scheduled for Fall 2025.	N/A	$11,989	$15,372	**Implementation** ●●●○○

36 This initiative was not included in the 2019 Corporate Climate Adaptation Strategy.

Assets (Continued)

Action	Initiative	Start Date (planned)	Responsible Department	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Budget 2024-25 (000's)	Progress Score 2023
L. Support increased integration of green infrastructure into all available aspects of urban development and through implementation of the Green Infrastructure Strategy and Urban Forestry Management Plan.	L28. Support increased use of drought- and pest-resistant and native plant species to reduce watering requirements, pest impact and improve biodiversity.	**2022-2025**	Parks	Council approved Pathway to a Sustainable Urban Forest: Implementation of the Urban Forest Management Plan. The implementation plan prioritizes diverse tree planting making the urban forest more resilient to pests and drought (Action 2.2). Council enacted The Tree Protection Bylaw, 2024 that provides mechanisms to protect existing trees. Existing trees and specifically mature trees are more resistant to drought. Young trees are susceptible to drought and have significant watering requirements. Park Development Standards are under development and expected to be considered by Council in 2025. See Green Pathways Report Card for more projects.	$0	$0	$0	**Development** ●●○○○
	L29. Support increased soil and mulch/ compost cover in planted areas to improve storm water retention and enhance plant viability.	**2022-2025**	Parks	Increased cover on sportsfields has been implemented through the neighbourhood topdressing program. The public Dig-Your-Own compost and mulch program from the City's compost depot continued. See Green Pathways Report Card for more projects.	$0	$0	$0	**Implementation** ●●●○○
	L30. Define opportunities to expand and diversify local food production to improve biodiversity and reduce reliance on distant food producing areas also facing significant climate risk.	**2022-2025**	Recreation and Community Development - Community Development, Sustainability - Community Leadership	Two Food Forest Demonstration Sites are being planned for installation in 2024-25 in Leif Erickson Park and Boughton Park. This work is being supported by the federal Natural Infrastructure Fund. The Victoria Park Recreation Facility was largely completed in 2023 and is expected to open in early 2024. The building and adjacent garden parcel supports CHEP Programming and their Askiy Project. Building is fully electric and is equipped with solar panels.	$0	$138	$333	**Development** ●●○○○

3.3 GREEN PATHWAYS REPORT CARD

The 2022-23 Green Pathways Report Card is the first status report since Green Pathways was adopted in principle by City Council. Reporting on the status of Saskatoon's green network and the actions set out in Green Pathways will occur every two years.

Pathway 1: Healthy and Thriving Natural Areas

Action	Initiative	Proposed Phase from Green Pathways for 2022-2023	Actual Phase in 2022-2023	Progress Update	Progress Score 2023
1.1 Protect prioritized natural areas through policies and processes	1.1.1 Natural Area Policy and Process	P2	P2	A municipal scan of natural area policy tools and processes was conducted and the current state of natural areas policy in Saskatoon was identified.	Development ●●○○○
1.2 Manage and restore natural areas through Natural Area Management Plans	1.2.1 Natural Area Management Plans	P2	P2	Two sites from the City's natural areas inventory were selected as pilots for Natural Area Management Plans (NAMPs): The Small Swale and Richard St. Barbe Baker Afforestation Area.	Development ●●○○○
	1.2.2 Natural area restoration processes	P2	P2	A draft wetland mitigation plan standard and procedure was developed to help define wetland compensation processes.	Development ●●○○○
	1.2.3 Tree protection in natural and naturalized areas	P2	P2	Work was initiated to draft a new Tree Protection Bylaw and update the City's existing Trees on City Property Policy (C09-011), which apply to all trees on City property including natural stands and afforestation areas.	Development ●●○○○
1.3 Create partnerships to support Indigenous land management	1.3.1 Traditional Land Use and Knowledge Assessment (TLUKA)	P2	P1	Engagement and relationship building with Indigenous communities was carried out as a preliminary step to the Traditional Land Use and Knowledge Assessment project, followed by the formalization of the work scope and plan.	Initiated ●○○○○
1.4 Integrate natural assets into the City's asset management system	1.4.1 Natural asset framework	P2	P2	The Natural Assets Initiative led a workshop series for City staff focused on the preparation of a natural asset framework, with a focus on identifying key ecosystem services of interest to the City, as well as draft Level of Service objectives.	Development ●●○○○
1.5 Expand the Naturalized Park Program	1.5.1 Naturalized Parks Program expansion	P2	P1	Several parks and green spaces were identified for naturalization improvements as part of Saskatoon's Natural Infrastructure Fund projects. However, a process and policy framework to expand the City's naturalized park program was not developed.	Initiated ●○○○○

Pathway 2: Connecting and Regenerating Green Spaces

Action	Initiative	Proposed Phase from Green Pathways for 2022-2023	Actual Phase in 2022-2023	Progress Update	Progress Score 2023
2.1 Upgrade and restore parks for enhanced green infrastructure	2.1.1 Green network park upgrades	P2	P2	New Park Development Standards were drafted and are still under review. The City's park upgrade program is being reviewed for opportunities to incorporate additional green network considerations in the site prioritization process.	Development ●●○○○
2.2 Enhance ecosystem services of underutilized urban sites	2.2.1 Underutilized space enhancement	Phase 1 proposed to start in 2026-2027	Not Started	Phase 1 proposed to start in 2026-27	Not started ○○○○○
2.3 Naturalize and restore non-park green spaces	2.3.1 Naturalization of rights-of-way and green spaces	Phase 1 proposed to start in 2026-2027	Not Started	Phase 1 proposed to start in 2026-27	Not started ○○○○○
	2.3.2 Storm Water Management Facility restoration	P2	P2	Preliminary work began to identify opportunities to naturalize stormponds in Saskatoon.	Development ●●○○○
2.4 Identify and address gaps in the green network	2.4.1 Green network continuity analysis and remediation	Phase 1 proposed to start in 2028-2029	Not Started	Phase 1 proposed to start in 2028-29	Not started ○○○○○

LEGEND: P1 = Initiated | P2 = Development | P3 = Implementation | P4 = Operations

3.3 GREEN PATHWAYS REPORT CARD (CONTINUED)

Pathway 3: Leading by Example for an Integrated Green Network

Action	Initiative	Proposed Phase from Green Pathways for 2022-2023	Actual Phase in 2022-2023	Progress Update	Progress Score 2023
3.1 Establish green network policies and work procedures for City of Saskatoon Departments	3.1.1 Green network policies	**P1**	**P1**	Work in 2022-23 focused on the Natural Area Policy and Process project, Wetland Policy and Process Improvement project, and development of a Tree Protection Bylaw for Trees on City Property. Additional green network policy improvements will be explored in future.	**Initiated** ●○○○○
	3.1.2 Corporate education and training	**P1**	**Not Started**	Content and materials for a public-facing green network awareness campaign are in development, which could be included in future education and training for City staff.	**Not started** ○○○○○
	3.1.3 Green network asset integration	**Phase 1 proposed to start in 2024-2025**	**Not Started**	Phase 1 proposed to start in 2024-25	**Not started** ○○○○○
3.2 Integrate Low Impact Development principles into City projects	3.2.1 Low impact development projects	**P1**	**Not Started**	A Business Plan Option (BPO) to support this action was submitted to the 2024-25 Multi-Year Budget for consideration but was not funded.	**Not started** ○○○○○
	3.2.2 Low impact development program	**Phase 1 proposed to start in 2026-2027**	**Not Started**	Phase 1 proposed to start in 2026-27	**Not started** ○○○○○
3.3 Complete nature-friendly building policy, design, and retrofits	3.3.1 Bird-friendly civic guidelines or standards	**P1**	**Not Started**	A BPO to explore Bird Friendly and Dark Sky guidelines and standards was submitted to the 2024-25 Multi-Year Budget for consideration but was not funded.	**Not started** ○○○○○
	3.3.2 Nature- friendly building projects	**Phase 1 proposed to start in 2028-2029**	**Not Started**	Phase 1 proposed to start in 2028-29	**Not started** ○○○○○
3.4 Implement the Urban Forestry Management Plan	3.4.1 Urban Forest Management Plan implementation	***Timelines are defined in the Urban Forest Implementation Plan***		*Pathway to a Sustainable Urban Forest: Implementation of the Urban Forest Management Plan* was approved in principle by Council. Research and engagement took place to inform the development of a new Tree Protection Bylaw. Progress on Urban Forestry is reported through Parks' Year-End Report.	**Implementation** ●●●○○
3.5 Integrate the active transportation network and green network	3.5.1 Active transportation and green network integration	***Timelines are defined in the Active Transportation Plan***		There were no projects completed during this period that integrated active transportation and green network objectives. However, Active Transportation regularly works with Urban Forestry to reduce impacts to City trees, where possible. The Active Transportation Network, including the Meewasin Trail System, also supports access throughout the green network.	**Implementation** ●●●○○

LEGEND: P1 = Initiated | P2 = Development | P3 = Implementation | P4 = Operations

3.3 GREEN PATHWAYS REPORT CARD (CONTINUED)

Pathway 4: Growing Community for a Liveable City

Action	Initiative	Proposed Phase from Green Pathways for 2022-2023	Actual Phase in 2022-2023	Progress Update	Progress Score 2023
4.1 Implement green network education and awareness programs	4.1.1 Green network awareness campaign	**P3/P4**	**P2**	A communications strategy and corresponding materials (illustrations, photos) were developed to support a future awareness campaign focused on key messages about the green network.	**Development** ●●○○○
	4.1.2 Natural Areas education	**P2**	**Not Started**	A BPO to support this action was submitted to the 2022-23 Multi-Year Budget for consideration but was not funded.	**Not started** ○○○○○
	4.1.3 Green infrastructure school program	**Phase 1 proposed to start in 2024-2025**	**Not Started**	Phase 1 proposed to start in 2024-25	**Not started** ○○○○○
4.2 Implement residential and community grants and incentives program	4.2.1 Environmental Cash Grant	**P4**	**Complete**	The Environmental Cash Grant has dedicated mill-rate funding of $10,000/year for protection and enhancement of Saskatoon's green network.	**Complete** ●●●●●
	4.2.2 Residential grants and incentives program	**Phase 1 proposed to start in 2024-2025**	**Not Started**	Phase 1 proposed to start in 2024-25	**Not started** ○○○○○
4.3 Support community stewardship of the green network	4.3.1 Street Garden Program	**P3**	**P3**	A pilot program for centre median gardens launched and an enhanced communication campaign was carried out for both the boulevard garden program and the centre median garden pilot.	**Implementation** ●●●○○
	4.3.2 Community stewardship program	**P1**	**Not Started**	A community stewardship approach will be explored after completion of the Food Forest Pilot.	**Not started** ○○○○○
	4.3.3 Social enterprise models	**Phase 1 proposed to start in 2028-2029**	**Not Started**	Phase 1 proposed to start in 2028-29	**Not started** ○○○○○
4.4 Support green infrastructure in the Industrial ,Commercial, and Institutional (ICI) sector	4.4.1 Green infrastructure ICI adoption	**Phase 1 proposed to start in 2024-2025**	**Not Started**	Phase 1 proposed to start in 2024-25	**Not started** ○○○○○

Pathway 5: Food Security from Seed to Table to Soil

Action	Initiative	Proposed Phase from Green Pathways for 2022-2023	Actual Phase in 2022-2023	Progress Update	Progress Score 2023
5.1 Implement sustainable food projects in the green network	5.1.1 Green Network food program	**P2**	**P2**	Funding was secured to implement a Food Forest Pilot, which further leveraged Natural Infrastructure Funding. Planning began for two pilot sites: Leif Erickson Park and Boughton Park.	**Development** ●●○○○
	5.1.2 Food waste projects	**Timelines are defined in the Solid Waste Reduction and Diversion Plan and ICI Waste Diversion Strategy.**		Funding was secured for a food waste reduction pilot program focused on redistribution of edible food by the ICI sector prior to it becoming waste through donation, social enterprise, and best practices in reduction. Outcomes will be reported in the Integrated Waste Management Report.	**Development** ●●○○○
5.2 Develop and implement a Sustainable Food Action Plan	5.2.1 Sustainable Food Action Plan	**P1**	**Not Started**	A BPO was submitted to the 2024-25 Multi-Year Budget for consideration but was not funded at that time.	**Not started** ○○○○○

LEGEND: P1 = Initiated | P2 = Development | P3 = Implementation | P4 = Operations

PART 4: **LOOKING AHEAD**

4.1 Global Commitments

The IPCC released its 6th Assessment Report in February 2022, reinforcing the message that near-term actions that limit global warming to close to 1.5°C would substantially reduce projected losses and damages related to climate change in human systems and ecosystems, compared to higher warming levels, but cannot eliminate them all. They emphasize that minor, marginal, reactive, or incremental changes will not be sufficient. In addition to technological and economic changes, shifts in most aspects of society are required to overcome limits to adaptation, build resilience, reduce climate risk to tolerable levels, guarantee inclusive, equitable and just development and achieve societal goals without leaving anyone behind.

The 2022 IPCC Report assesses a detailed list of observed and projected climate impacts and risks and found that the extent and magnitude of climate change impacts are larger than estimated in previous assessments and that climate change is causing severe and widespread disruption in nature and in society; it is reducing the ability to grow nutritious food or provide enough clean drinking water, and therefore affects people's health, well-being and livelihood; and that these impacts are expected to intensify with additional warming.

According to the IPCC's 2018 report, Global Warming of 1.5°C, all available 1.5°C mitigation pathways from 2020 onwards require that global GHG emissions peak before 2030 and that emissions be reduced below 2010 levels by 2030.[37] In response, governments across the globe have declared climate emergencies by passing binding motions by their councils and committing to net-zero GHG emissions targets, joining campaigns such as the Race to Zero or One Planet City Challenge.

The Government of Canada enacted legislation on June 29th, 2021 through the *Canadian Net-Zero Emissions Accountability Act* committing Canada to achieving net-zero emissions by 2050.[38] In 2023, the City of Saskatoon adopted a net-zero by 2050 target.

In 2022, Canada, along with 195 other countries, adopted the *Kunming-Montréal Global Biodiversity Framework* (KMGBF) at the 15th Conference of the Parties (COP15) to the United Nations Convention on Biological Diversity (CBD). This historic framework lays out a set of global goals and targets to halt and reverse biodiversity loss by 2030 and put nature on a path to recovery by 2050. Canada's 2030 Nature Strategy: Halting and Reversing Biodiversity Loss in Canada charts a path for how Canada will implement the KMGBF domestically. On a municipal level, cities are well positioned to further the 30×30 target to ensure at least 30% of land and water – especially those crucial for biodiversity – are effectively, equitably managed and conserved by 2030.

Several cities in Canada are adopting strategies and targets to support green space, low impact development, biodiversity, and natural areas. Saskatoon is making meaningful progress in these areas and will continue to implement actions identified in Green Pathways while also staying apprised of work being led by other municipalities and emerging trends that could be a good fit for Saskatoon in the future.

37 IPCC (2018). Summary for Policymakers. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. https://www.ipcc.ch/sr15/chapter/spm/

38 Net-Zero Emissions by 2050. https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/net-zero-emissions-2050.html

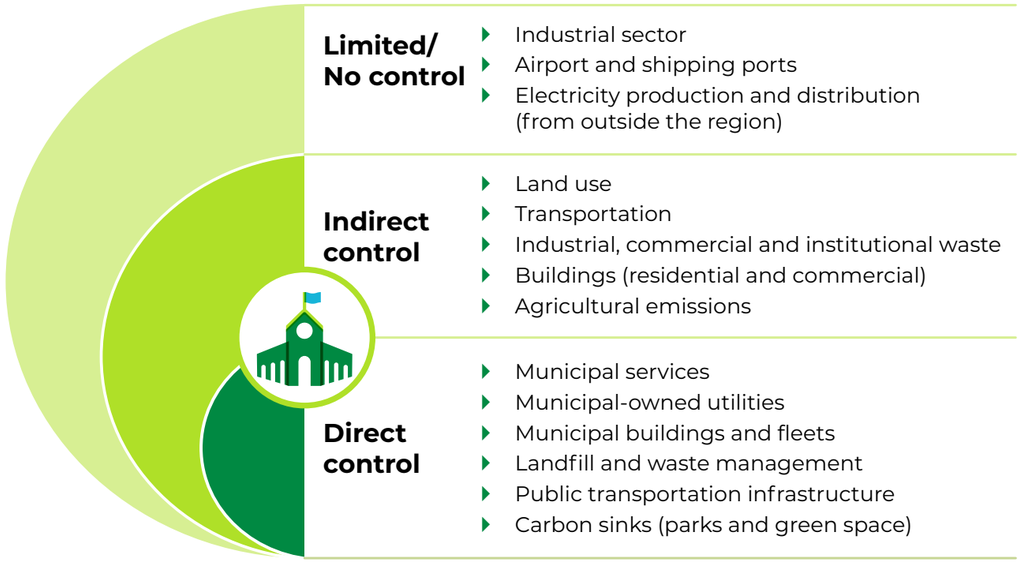
4.2 What We Are Doing

4.2.1 Climate Action Plan

The City's Climate Action framework consists of two plans, both completed in 2019: the LEC Plan and the Adaptation Strategy. The City set a net-zero by 2050 GHG emissions target for both the community and the corporation. An updated Climate Action Plan (CAP), expected in 2025, will be an integrated plan with both climate mitigation and adaptation covered within it.

The updated CAP will recognize that while municipalities are a key influencer in climate action, the level of control differs depending on the source of emissions. Recognizing this can help inform climate planning. A sample sphere of influence is shown in Figure 17.

Figure 17. *Municipal Spheres of Influence over Saskatoon's GHG emission sources*[39]



An updated low emissions chapter will identify the instruments and measures needed to achieve the City's net-zero target. Additionally, updates will:

- Model a trajectory to net-zero by 2050 using updated and improved actions;
- Establish interim (2030) targets for community and corporate emissions;
- Incorporate sequestration actions including both green infrastructure and technology-based opportunities;
- Revise the business-as-planned scenario based on new developments;
- Renew financial reference material (Marginal Abatement Cost (MAC) Curve, return-on-investment (ROI), and energy and cost graphs); and
- Define strategic directions, action plan, and implementation plans.

The climate adaptation chapter will outline climate projections, risks and actions that support community and corporate resilience in the face of challenges that will arise with future climate change. Updates will:

- Expand the scope to include community adaptation;
- Update climate projection and impact information;
- Update the corporate climate risk assessment;
- Assess community climate risk for Saskatoon;
- Engage stakeholders in a community vulnerability assessment;
- Evaluate the costs of inaction on climate adaptation; and
- Define strategic directions, action plan, and implementation plan.

4.2.2 Green Network

The City's *Green Infrastructure Strategy* lays out the vision for a green network that provides sustainable habitat for people and nature. The corresponding implementation plan, Green Pathways, outlines actions to increase the quantity and quality of natural infrastructure in Saskatoon, enhance the urban environment, and improve quality of life.

The City is progressing priorities such as:

- Establishing a monitoring approach to track the status of Saskatoon's green network, including its overall quality, quantity, connectivity, and equitable access throughout the city. Future reporting on the green network will include data on Key Performance Indicators, as well as proposed targets for City Council's consideration. As an evolving field, the City continues to learn how to best align with global, national, and municipal trends, tracking, and targets related to nature-based climate solutions in urban settings.
- Developing a Natural Asset Framework for the City to ensure natural infrastructure is considered as part of the City's asset management system. Complimentary to this work, the City continues to build on its Natural Capital Asset Valuation Pilot Project by exploring the economic value of ecosystem services (e.g. storm water management; flood protection; sequestration; biodiversity; land, water, air quality; heat mitigation; erosion protection), as well as the sociocultural co-benefits of natural assets (e.g. recreation; tourism; public health).
- Exploring policies, strategies, and management practices to support Saskatoon's natural areas and green spaces. Work includes the preparation of a Natural Area Policy Framework to define the City's processes for identifying, prioritizing, conserving, and managing natural areas; and preparing natural area management plans for priority sites.

39 MacDonald, Zhou, Telfer, Clarke, Meaney, Giordano, Linton, Tanguay, Tozer, ElAlfy, Ordonez-Ponce & Talbot (2024). The State of Climate Action in Canadian Municipalities: A Report from the Municipal Net-Zero Action Research Partnership (N-ZAP). Federation of Canadian Municipalities, ICLEI Canada & University of Waterloo. https://www.pcp-ppc.ca/n-zap

- Implementing several on-the-ground projects to enhance Saskatoon's green network supported by the federal government's Natural Infrastructure Fund. Saskatoon was one of six major cities to receive funding of up to $20 million from Housing, Infrastructure and Communities Canada (HICC) to:
    - Improve access to nature for the community
    - Enhance green space and habitat restoration
    - Support climate action through the installation of natural infrastructure
    - Advance equity and reconciliation
- Coordinating work with partners such as Meewasin. Since the formation of the Meewasin Valley Authority Act (1979), Meewasin has provided leadership in the management of key natural sites in the river valley. As Saskatoon grows and as discussions progress around a potential National Urban Park in the Saskatoon region, it has highlighted the need to develop an integrated approach to support conservation and management of natural areas.

4.2.3 Climate Budget

The City completed its first Climate Budget in 2023, as part of the 2024-25 Multi-Year Business Plan and Budget process. The *2024-25 Climate Budget* identified measures – funded and unfunded – required in the short-term to continue progress toward the LEC Plan's actions and the City's new net-zero target.

Projects included in the *2024-25 Climate Budget* are projected to reduce emissions by 20,000 tonnes CO_2e per year once fully constructed. Projects with funding (75% of the total) provide civic benefits such as operational efficiencies, enhanced resiliency, and sound asset management while also contributing to GHG reductions and other environmental benefits. Funding for these projects comes from capital reserves, external funding, and loans.

After considering the impacts of GHG reduction projects funded from 2020-2023 (i.e., the time between completion of the LEC Plan and development of the *2024-25 Climate Budget*), a GHG gap of 136,500 tonnes CO_2e exists representing a 77.7% deficiency from the 2025 target as modelled in the LEC Plan.

By integrating the Climate Budget into financial budget decision-making processes, climate and environmental impacts are better understood before they occur. It creates a coordinated approach with other budgeting considerations, such as societal impacts, asset management, safety, and economics.

4.2.4 Environmental Management System

An Environmental Management System (EMS) is a systematic method of establishing environmental policies and objectives, along with processes to achieve those objectives. The City is in the process of examining options for a corporate approach to an EMS. Work completed to date has included:

- A corporate-wide environmental review and gap analysis to gain a better understanding of the corporation's activities, products, and services along with current environmental risks and impacts.
- Research and interviews of other municipalities to better understand how an EMS can be applied in a municipal context.
- Pilots with various work groups to evaluate state of readiness for an EMS and lay the groundwork for eventual implementation.

Through the course of development, the key focus has been on environmental risks. Identifying, tracking, and trending risks is the basis for moving forward to create actions and goals to continuously improve. Climate changes can impact City activities, products or services. By identifying these risks or interactions, strategies and mitigation plans can be developed so that the City can develop future climate actions through targets and policies, and respond more quickly and in a more informed manner when a threat occurs.

4.2.5 Smart City Strategy

During the refresh of the City's Strategic Plan for 2022-2025, City Council highlighted Smart City as a priority area, assigning a Key Action to 'develop and initiate the implementation of a smart city strategy'. As a direct response to this strategic direction, the Smart City Strategy project was started in June of 2022 as part of a multi-phased initiative to begin delivering on the requirement for a smart city strategy. Since that time, a Smart City Program has been established within the Strategy and Transformation Division to help progress this important work.

Becoming a Smart City is about improving decision-making using technology to improve the way we make decisions and provide programs and services to meet the changing needs of residents through the application of technology and data.

Climate change planning and implementation are key areas where the City of Saskatoon is already using a Smart City approach, and where there will continue to be more opportunities. Examples include online tools like the MyHEAT Solar map, SmartUTIL, and the Home Energy Map. New opportunities will continue to be explored around electrification and grid modernization, virtual energy audits, and additional tools for use by residents and the City to gather and analyze data.

4.3 Emerging Trends

4.3.1 Credibility, Accountability, and Transparency Toward a Just Transition to Net-Zero

Integrity Matters for Cities, States, and Regions is a guide "for subnational governments as they pursue net zero commitments, offering core recommendations focused on credibility, accountability, and transparency."[40] It includes 10 recommendations that cities should follow as they pursue a just transition to net-zero emissions:

- Announcing a Net Zero Pledge
- Setting Net Zero Targets
- Using Voluntary Credits
- Creating a Transition Plan
- Phasing out of Fossil fuels and Scaling up Renewable Energy
- Aligning Lobbying and Advocacy
- People and Nature in the Just Transition
- Increasing Transparency and Accountability
- Investing in Just Transitions
- Accelerating the Road to Regulation

40 Global Covenant of Mayors for Climate & Energy and WRI Ross Center for Sustainable Cities (2023). Integrity Matters for Cities, States, and Regions. https://www.globalcovenantofmayors.org/wp-content/uploads/2023/12/Integrity-Matters-Report-Final3.pdf

4.3.2 Adaptive Planning Approach

Climate adaptation planning worldwide is moving from static risk assessments to include adaptive and threshold planning. Adaptive planning recognizes that we can't perfectly predict future conditions decades from now. We know extreme weather is on the rise, but not which events will occur in Saskatoon, how severe they'll be, and when they'll happen. However, some of the possible events, or climate hazards, have significant impacts and require advanced planning to adequately prepare now and respond when they do occur.

Through adaptive planning, preliminary plans for multiple pathways are established, with defined decision points or thresholds. This multiple pathways approach allows for pre-planning to take place even with significant uncertainty.

For example, adaptive planning for water security may set thresholds of waterflow at which point pre-planned actions are implemented. Examples of adaptive planning for water security include Sydney, Australia's regional master plans.[41]

4.3.3 Task Force on Climate-related Disclosure (TCFD)

The Task Force on Climate-related Financial Disclosures (TCFD) identifies climate change as a significant risk that will impact revenues, expenditures, assets, liabilities, capital, and financing. Placing a price on risk can help decision makers efficiently allocate capital during budgeting decisions.

Climate-related disclosure and reporting for municipalities is currently voluntary in Canada. Canadian cities including Toronto, Vancouver, Edmonton, and Montreal have implemented TCFD recommendations by including a climate risk and opportunities lens into their annual financial reports[42]. The City of Saskatoon could consider adding a similar lens into the financial reporting, in a similar way as the Climate Budget was implemented into the municipal budget.

Chartered Professional Accountants (CPA) Canada has provided a guide for cities to adopt the TCFD recommendations and framework, *Enhancing Climate-related Disclosure by Cities: A Guide to Adopting the Recommendations of the Task Force on Climate-related Financial Disclosures*[43], and states several benefits such as enhancing data collection and sharing, improving decision-making, using cross-functional teams to increase collaboration and manage risks, quantifying climate-related information in financial terms, integrating climate-related risks and opportunities into budgeting to ensure it's allocated where needed, enhancing access to external funding, and increasing public awareness.

41 https://www.sydneywater.com.au/content/dam/sydneywater/documents/western-sydney-regional-master-plan.pdf
42 A listing of 2020 Municipal Financial Reports that include TFCD reporting or discussion can be found at: https://cuspnetwork.ca/initiative-2/
43 Chartered Professional Accountants of Canada (2019). Enhancing Climate-related Disclosure by Cities: A Guide to Adopting the Recommendations of the Task Force on Climate-related financial Disclosures. https://www.cpacanada.ca/-/media/site/operational/rg-research-guidance-and-support/docs/02337-rg-tcfd-guidance-for-cities-feb-2020.pdf?rev=89816f9cf6e34baab3d11824d658136a

4.3.4 Indigenous Lens for Climate Planning

For our Future: Indigenous Resilience Report[44] states that "First Nations, Inuit and Métis have responded to the impacts of environmental and climate change before, are actively responding today, and will continue to do so in the future. Our communities have unique strengths to address the climate crisis, despite facing disproportionate impacts from climate change and challenges related to the ongoing legacy of colonization…Today, we continue to respond and are increasingly taking leadership in climate research, policy and solutions."

Climate plans in Saskatoon will be strengthened by incorporating Indigenous world views and approaches. This requires close collaboration with Indigenous partners, communities, Knowledge Keepers, Ceremonialists, and Elders.

To bring an Indigenous perspective to Saskatoon's climate action planning, a representative from the Indigenous Technical Advisory Committee has been identified to participate in the stakeholder workshop and assist in reviewing Indigenous content. As well, the City is seeking guidance from Elders, Ceremonialists, and Knowledge Keepers on outdoor cultural and ceremonial spaces, traditional plants and medicines, natural areas and green spaces, and knowledge and stories about the green network.

Some recent examples of Indigenous led reports and projects to learn from include:

- The Assembly of First Nations (AFN) published the *Declaring of First Nations Climate Emergency*[45] resolution in July 2019, and in March 2020 at the AFN Climate Gathering, a discussion paper on a First Nation's Climate Lens was presented along with discussions and sessions on its practical expression[46].
- *For Our Future: Indigenous Resilience Report* considers Indigenous knowledge, perspectives, and experiences to explore the intersection of climate change impacts and adaptations.
- Indigenous Healthy Energy Homes[47] is an ongoing project that suggests a new approach to housing in Indigenous Communities that will aim to provide multiple benefits through improved housing such as improved health outcomes.
- *National Indigenous Electrification Strategy*[48] explores how Indigenous nations can play a leadership and ownership role in the decarbonization of Canada's electricity systems.

44 Reed, G., Fox, S., Littlechild, D., McGregor, D., Lewis, D., Popp, J., Wray, K., Kassi, N., Ruben, R., Morales, S. and Lonsdale, S. (2024). For Our Future: Indigenous Resilience Report. Ottawa, Ontario. https://changingclimate.ca/site/assets/uploads/sites/7/2024/03/Indigenous-Resilience-Report_Final_EN.pdf
45 Assembly of First Nations Annual General Assembly (2019). Declaring a First Nations Climate Emergency. https://afn.bynder.com/m/5a3de3c7f6cf08b5/original/05-2019-Declaring-a-First-Nations-Climate-Emergency.pdf
46 Assembly of First Nations (2020). National Climate Gathering Report: Driving Change, Leading Solutions. https://www.afn.ca/wp-content/uploads/2021/04/Climate_Gathering_Report_ENG.pdf
47 Wale, Janna, Maria Shallard, Ian Scholten, and Chad Bonnetrouge. 2024. Beyond sustainability: The power of Indigenous healthy energy homes. Canadian Climate Institute. Ottawa, ON. https://climateinstitute.ca/wp-content/uploads/2024/06/Beyond-sustainability-power-Indigenous-Healthy-Energy-Homes.pdf
48 First Nations Major Projects Coalition (2024). National Indigenous Electrification Strategy: Strategy to Accelerate Indigenous Ownership of Net Zero Infrastructure in Canada. https://fnmpc.ca/wp-content/uploads/FNMPC_National_Electrification_digital_final_04222024.pdf

4.3.5 Sustainable Development Goals

The Sustainable Development Goals (SDGs) were adopted through the 2030 Agenda for Sustainable Development by all United Nations Member States in 2015. The SDGs are an urgent call to action to reduce poverty and other deprivations while improving education & health outcomes, reducing inequality, spurring economic growth, tackling climate change, and protecting the environment[49].

The City of Saskatoon has not officially adopted the SDGs but considers them in its sustainability work. Most notably, the Triple Bottom Line Improvement Tool has embedded concepts and indicators from the SDGs, along with other frameworks such as International Standardization Organization (ISO) Indicators for Sustainable Cities and Communities, and TBL frameworks used in other jurisdictions.

4.3.6 Affordable/Sustainable Housing

Affordable housing and climate change are co-crises that need to be tackled together. Housing is already in short supply in Canada and the impacts of climate change threaten to damage existing homes, making the housing challenge even more pressing. Climate change will also make life without adequate housing harder, as storms, smoke, and extreme heat become more frequent. The impacts of extreme weather will be felt most severely by those who are under- or un-housed and exposed to these hazards every day.

As we build new homes, we must make those homes resilient to extreme weather we'll experience throughout the life of those homes. Without building in resilience now, we're setting those homes up to need costly repairs over decades to come. Affordability requires thinking now about the costs required to have safe, adequate, affordable housing for all the decades the building stands.

49 United Nations Department of Economic and Social Affairs. https://sdgs.un.org/goals. The content of this publication has not been approved by the United Nations and does not reflect the views of the United Nations or its officials or Member States.

4.3.7 Net-Zero and Climate Resilient Growth Planning

The City of Saskatoon's *Official Community Plan* (OCP) lays out a vision for development and population growth to half a million people over the long-term. With a community GHG emissions target of net-zero by 2050, additional efforts are needed to ensure Saskatoon's plan for growth is net-zero.

Sustainable growth is already a core principle of the OCP. And in the context of more recent climate commitments, it's now clear that sustainable growth must incorporate design to be resilient to the impacts of a changing climate and support low-carbon lifestyles that will achieve net-zero development by 2050.

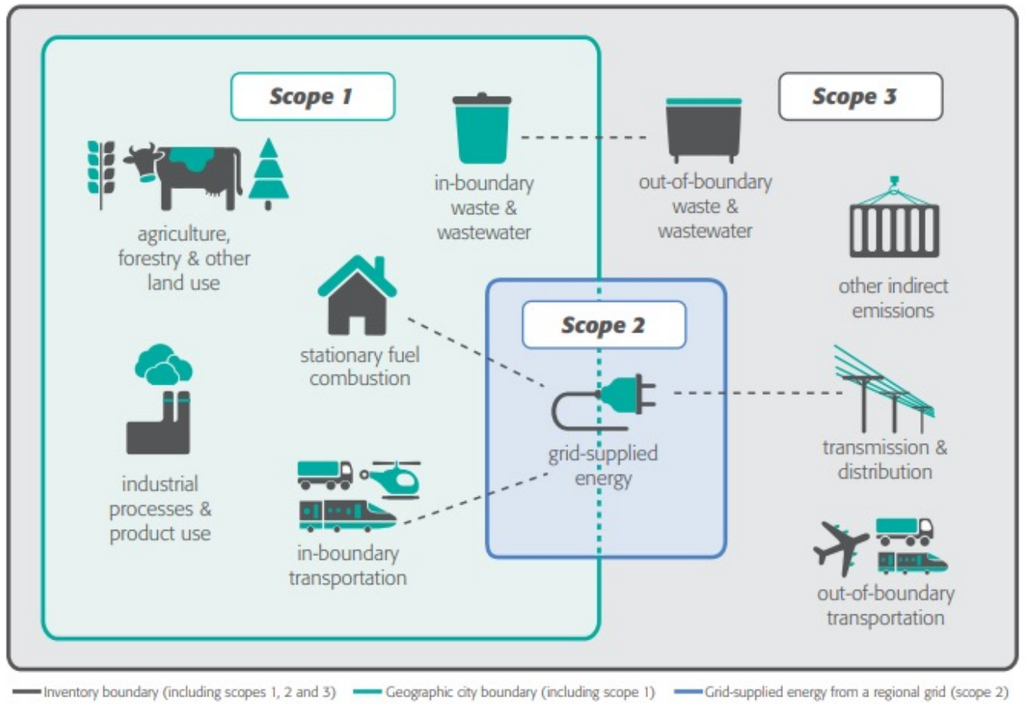
These changes require a shift in the way communities are built and function and are driven by alignment policy tools and intended outcomes. Net-zero and climate resilience community planning could include:

- Continued development or amendments of policy tools (such as bylaw amendments and incentives) to further support density, corridor growth, and transit-oriented neighborhood design.
- Explicit integration of carbon reporting and projections in sector and concept planning activities, working towards approval dependent of net-zero growth by 2050.
- Review of the OCP, secondary plans, and the *Transportation Master Plan* with a climate lens to identify gaps and opportunities for alignment of guiding climate and growth strategies.

4.3.8 Embodied Carbon

Embodied carbon includes the greenhouse gas emissions generated during the production and transportation of a product, also called Scope 3 emissions (see figure below). In Saskatoon, we do not account for most Scope 3 emissions. However, embodied carbon emissions are a significant portion of the global carbon footprint, and many jurisdictions and companies are starting to account for them. The City could consider doing this through the procurement policy. The federal government's *Policy on Green Procurement* and the *Standard on Embodied Carbon in Construction*[50] requires companies to disclose and reduced the embodied carbon from construction projects. The Standard currently applies to concrete for projects or programs at or above $10M as of December 31, 2022. This threshold will change to $5M as of December 31, 2024.

Figure 18. *Sources and boundaries of city GHG emissions*



50 City of Saskatoon (2021). Equity Toolkit for Projects. https://www.tbs-sct.canada.ca/pol/doc-eng.aspx?id=32742

4.3.9 Energy Poverty

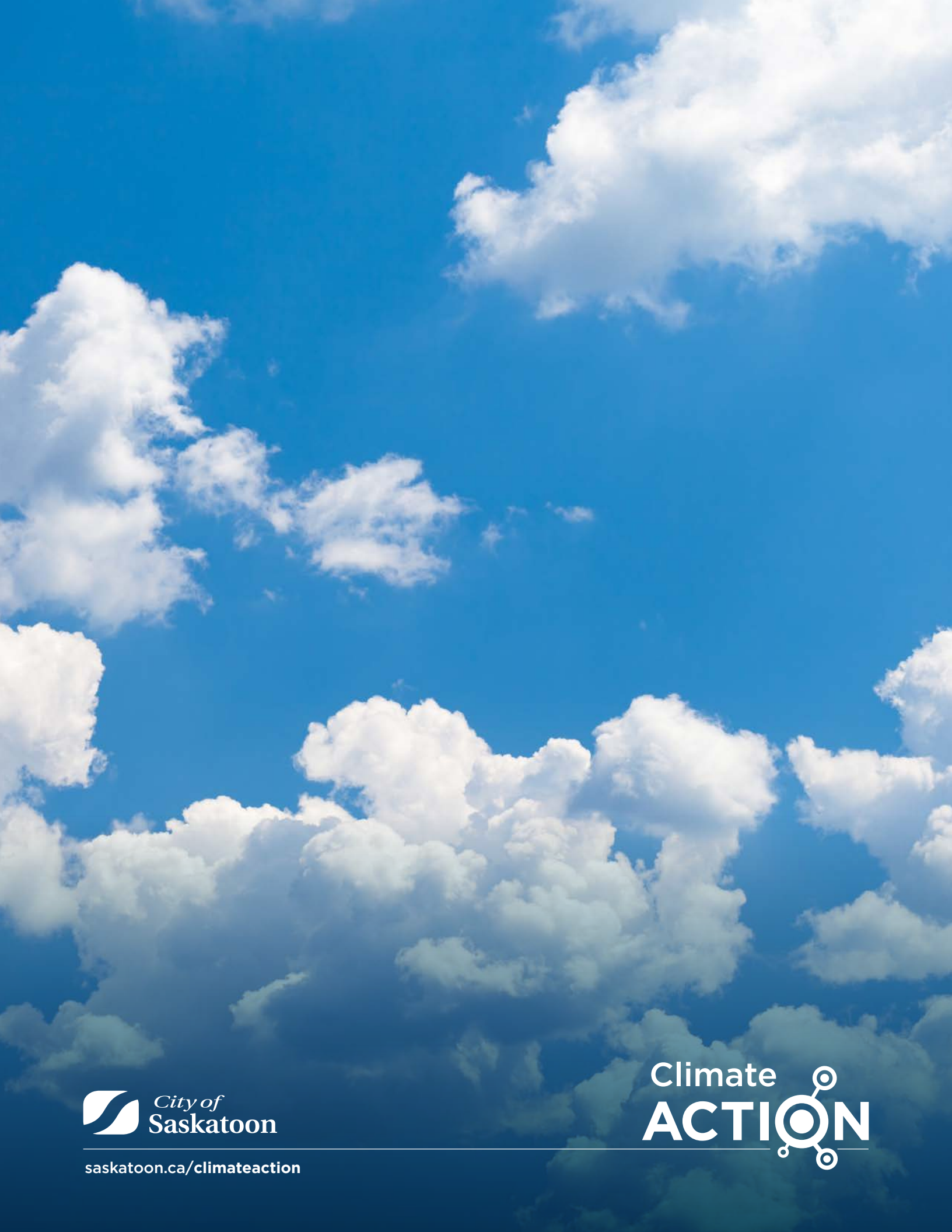
While there is no universally accepted definition of energy poverty, the City of Saskatoon has used the threshold identified by the Canadian Urban Sustainability Practitioners[51] in the development of the Equity Toolkit in 2021: "A household is defined as experiencing energy poverty (or "high energy burden") if they spend a disproportionate amount of their income on household energy needs; this is most often considered to be households that spend 6% or more (approx. twice the national median) of their after-tax income on energy bills".

Also reported through the Equity Toolkit, 20% of Canadians live in energy poverty while 25% of Saskatchewan households experience it. Not surprisingly, renters and lower income households have higher rates, but both low- and moderate-income households experience it. In Saskatoon, 16% of households are experiencing energy poverty. At lower income levels, much higher energy burdens (proportion of income used for energy costs).

The LEAP Energy Poverty Explorer[52] developed by CUSP showed, based on 2016 census data, that energy poverty is experienced by households in nearly all neighbourhoods in Saskatoon with the most prevalence of households spending at least 6% of their income on energy was found in the following areas: 36% of households in King George, West Industrial, and Riversdale. 32% of households in Caswell Hill, Mayfair, and the Airport Business Area; 31% of households in Pleasant Hill, Westmount, and Mount Royal; 30% of households in Hudson Bay Park, Westmount, and Mount Royal. Extreme rates of energy poverty (spending at least 15% of income on energy) was being experienced in Pleasant Hill, Westmount, and Mount Royal; and Greystone Heights.

Programs like Canada Greener Homes, Saskatoon's Home Energy Loan Program, and SaskPower's Energy Assistance Program are aimed at helping households reduce the costs of energy through energy efficiency retrofits, while also reducing GHGs. Continuing to develop accessible incentives and financing to help both homeowners and renters have more efficient homes can alleviate energy poverty, this includes the forthcoming community energy loan program in Saskatoon that will target multi-unit buildings.

51 Canadian Urban Sustainability Practitioners (2019). Energy Poverty in Canada: a CUSP Backgrounder. https://energypoverty.ca/backgrounder.pdf
52 Canadian Urban Sustainability Practitioners. https://energypoverty.ca/


City of Saskatoon
Climate ACTION
saskatoon.ca/climateaction