

# CLIMATE ACTION PLAN

Progress Report 2021

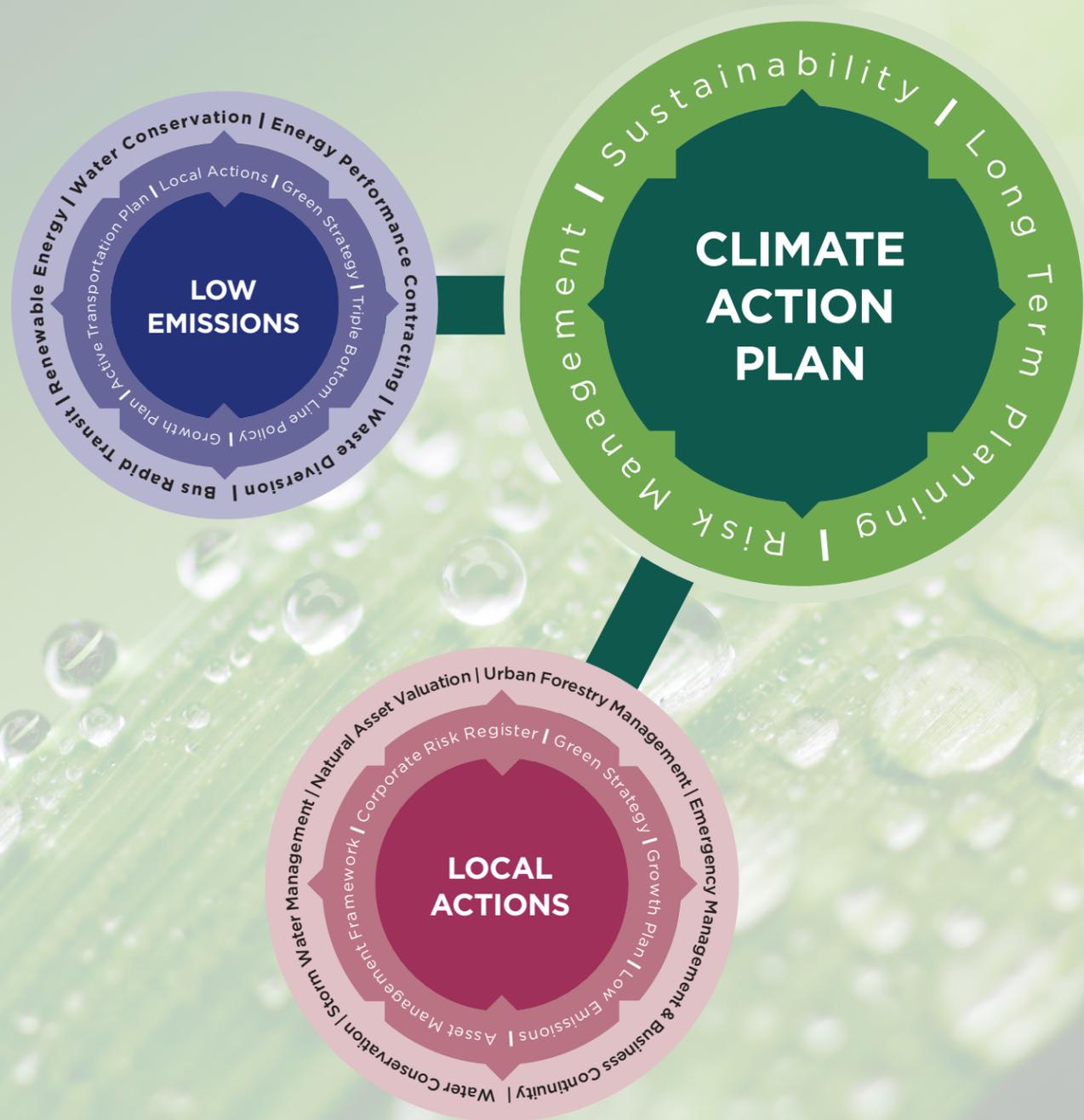
November 2022

-  Official Community Plan
-  Climate Action Plan



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The City of Saskatoon (City) is committed to climate action through the Global Covenant of Mayors for Climate & Energy. The City's Climate Action Plan consists of two frameworks: *The Low Emissions Community Plan (LEC Plan)* and the *Corporate Climate Adaptation Strategy*.

The *Climate Action Plan: Progress Report 2021* presents progress on the Climate Action Plan including an updated greenhouse gas inventory and Report Cards showing progress on the actions in the *LEC Plan* and *Corporate Climate Adaptation Strategy*.

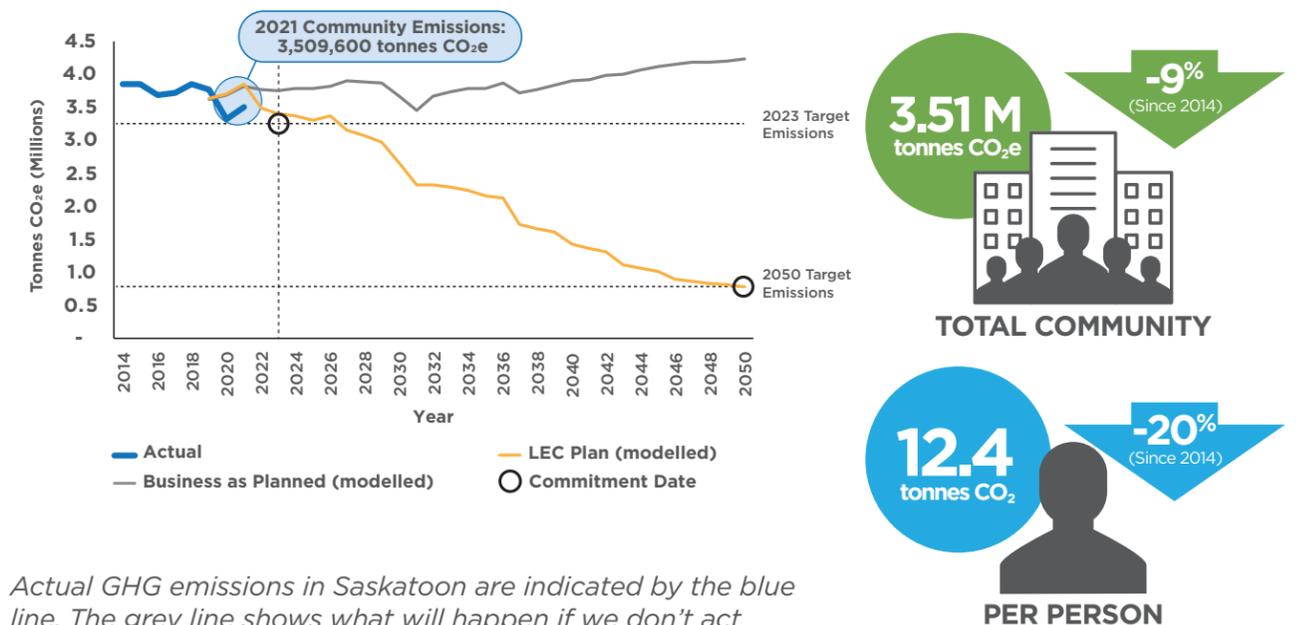
## Meeting Greenhouse Gas Emission Reduction Targets

The City has committed to reducing emissions by 80% below the 2014 baseline by 2050 for both the community and the City's own operations; and has set an interim target of 15% reduction for the community and 40% reduction for the City by 2023.

In 2021, Saskatoon emitted 3,509,600 tonnes of CO<sub>2</sub>e, which is a 9% reduction from the 2014 baseline of 3,852,200. Our per capita emissions decreased by 20% since 2014 at 12.4 tonnes of CO<sub>2</sub>e per person (down from 15.6 per person in 2014). Reductions were seen in all sectors except Agriculture.

The City's own operations decreased by 3% (from 225,000 in 2014 to 217,800 in 2021) with most reductions seen in the Buildings and Streetlighting sectors.

**Figure 1. Actual and Modelled GHG 2021 emissions for Saskatoon**



Actual GHG emissions in Saskatoon are indicated by the blue line. The grey line shows what will happen if we don't act (Business as Planned) and the orange line shows how we need to reduce emissions to meet our 2023 and 2050 targets. The merging of the blue and orange lines indicates we are on track to meeting targets if we continue to deliver the actions in the LEC Plan.

# 1.0 Mitigation Progress



## Buildings and Energy Efficiency



Energy efficiency of civic and community buildings includes improving insulation, changing windows, improving heating and cooling systems, and replacing lights and appliances.

**11/16 actions are on track**  
Stationary Energy Emissions



As of September 2022, the Home Energy Loan Program has approved **242 applicants**; **64** projects are underway and **19** are completed with an estimated GHG reduction of **71 tonnes each year!**

Lights have been replaced in most civic buildings resulting in energy and cost savings.

The High Performance Civic Building Policy was passed in 2022 requiring all future civic buildings to be built to LEED Silver.



## Transportation



GHG reductions will come from encouraging everyone to drive less and walk, cycle, or bus more as well as electrifying municipal and community vehicles.

**7/7 actions are on track**  
12% active transportation mode share.



The EV bus pilot showed that electric buses can save money and GHGs. The City will buy **2 new buses** and has applied for federal funding for more.

Charging stations are scheduled to be installed at Leisure Centres in 2022 and an EV Roadmap will be developed in 2023.

Construction of a pilot BRT station commenced and planning for full implementation in progress.



## Waste



The City is targeting 70% waste diversion which will require recycling, organics diversion and reduction by the City, residents, and businesses.

**1/1 action is on track**  
25% Waste Diverted from the City Landfill



Residential organics program will launch in 2023.

Businesses and organizations will be required to divert their waste in 2023.

Recovery Park – a **one-stop recycling and diversion center** – is currently being constructed.



## Water Conservation



Water takes energy to treat and pump, so reducing potable water use (especially at peak times) helps reduce GHGs.

**2/2 actions on track**  
2.5% overall water reduction



The Water Conservation Strategy was developed in 2022. It lays out the implementation plan to reduce water from the City and to encourage residents to save water.

**Smart meters have been deployed in 85% of houses.**



## Land Use



A compact municipality has lower transportation emissions and energy demand as people have more opportunity to walk and cycle. Actions include increasing density of our neighbourhoods and increasing the share of multi-unit housing.

**2/2 actions on track**

**University Sector Plan approved, and work began on the College Corridor Plan** spring 2021.



## Energy Generation



Switching from fossil-fuel sourced energy to renewable and low-emissions energy is critical to meeting GHG reduction targets.

**10/12 actions on track**  
3.8 MW of residential/commercial solar

**7.5 MW of biogas used for heating and power generation at the Waste Water Treatment Plant and Landfill Gas Facility**

The Dundonald Solar Farm will be built in 2023 to provide electricity to Saskatoon.  
**Enough to power 330 homes!**

<sup>1</sup> The Water & Wastewater sector of the corporate inventory includes emissions resulting from energy use at the Water and Waste Water Treatment Plants, as well as emissions from non-energy related activities such as digester gas and flaring.

# 1.1 Adaptation Progress

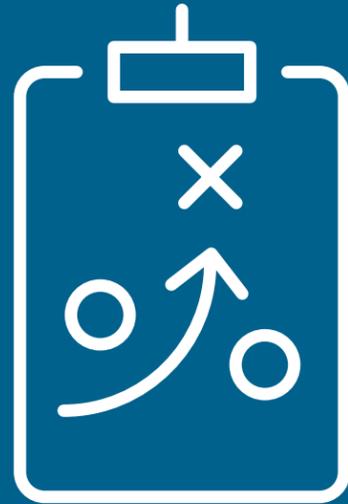
## DECISION MAKING

Embedding climate risk into decision-making helps ensure the City is preparing for a changing climate.

Actions include building capacity in the City on using the Triple Bottom Line (TBL) tool in project development, improving data management and sharing, accessing funding, and building internal and external relationships.

**5/7 Actions on track.**

**An Equity Toolkit, new TBL Improvement Tool, and website resource were created as how-to guides for City staff applying the TBL Policy.**



## SERVICES

The City provides many services like water, power, waste, transportation, recreation, and parks many of which are at risk as the climate changes. **Delivering climate-ready, resilient services under changing climate conditions requires proactive planning and cross-departmental collaboration.**

Actions include proactive preparation for emergencies as well as reviewing future service levels.

**9/9 Actions on track.**

**A roadways emergency response plan was developed for extreme snow events.**

**A support process was developed for individuals living in unsafe outdoor conditions.**



## STAFF

Changing climate conditions impact outdoor staff, residents, the environment, and ecosystems in Saskatoon.

Actions include identifying climate impacts to staff and piloting initiatives to reduce those impacts.

**7/7 Actions on track (not scheduled to start until 2022).**

**A full-time operating position was approved for 2023 to begin accelerating these and all of the corporate climate adaptation actions.**



## ASSETS

The cost of continuing to design and build using only historical or current climate information is likely to result in, at best, a faster deterioration rate and higher insurance premiums and, at worst, asset failure and destruction of lives, property, and the environment.

Actions in this category include incorporating climate risk and impacts into asset management plans, reviewing and updating corporate standards, and increasing integration of green infrastructure to improve resilience.

**5/7 Actions on track.**

**1200 m<sup>3</sup> of compost was used in city parks and sports fields.**

**Urban Forestry Management Plan was received by Council.**



# 1.2 Reporting Timeline Update

Moving to bi-annual reporting on the Climate Action Plan will allow the City to continue to monitor progress, complete updates to the Plan every 5-7 years, align with City's 2-year budget cycles (and potential climate budget), and optimize staff resources. In 2024, Green Pathways reporting will also be integrated into the Climate Action Progress Report. The timeline below shows the planned progress reports, updates, and targets.

	2022	2023	2024	2025	2026	2027	2028	2029	2030
2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
2041	2042	2043	2044	2045	2046	2047	2048	2049	2050

**LEGEND**



**City Financial Budget Preparations**

The City follows a 2-year budgeting cycle, with the *Budget and Business Plan* prepared, published, and approved in the year prior.



**Climate Action Plan Progress Report**

This Report Card will be published every second year to provide a progress on the actions and milestone targets outlined in the *LEC Plan, Adaptation Strategy, and Green Pathways* (starting 2024).



**Climate Action Plan Refresh**

A refresh of the *LEC Plan and Adaptation Strategy* every 5-7 years will use updated projections, modelling, goals, and risks with new information to refresh the Actions.



**Greenhouse Gas Reduction Target Years**

The City has committed to GHG reduction targets in 2023 and 2050.

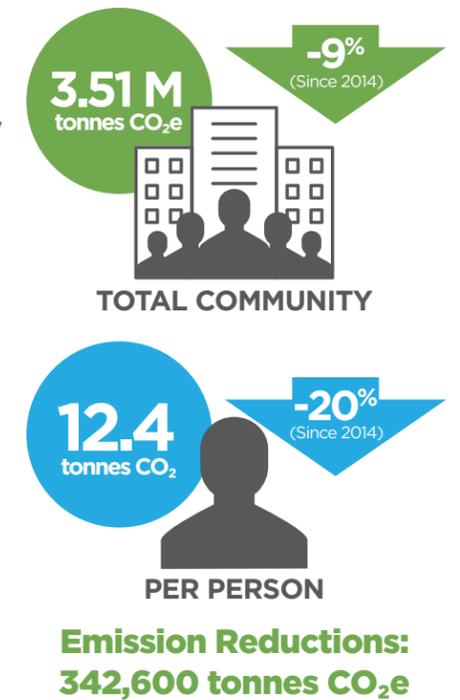


# PART 1: GREENHOUSE GAS INVENTORY

## 1.1 Community

In 2021, Saskatoon's total greenhouse gas (GHG) emissions were 3,509,600 tonnes CO<sub>2</sub>e. Between 2014 and 2021, the community's GHG emissions decreased by 9%, or approximately 342,600 tonnes CO<sub>2</sub>e. Emissions decreased across all sectors except the Agriculture sector.

The GHG emission inventory is completed using the *Global Protocol for Community-Scale Greenhouse Gas Emission Inventories: An Accounting and Reporting Standard for Cities (GPC)*<sup>2</sup>. 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.



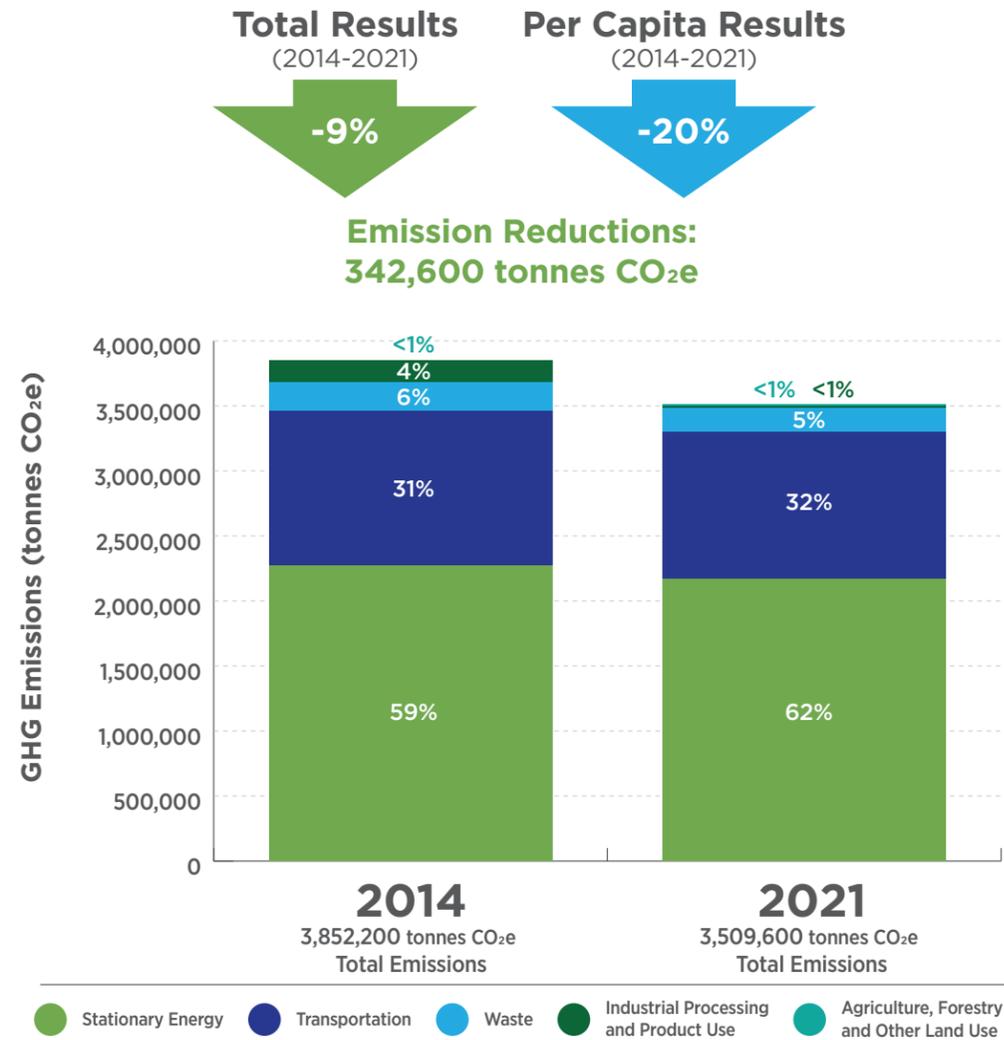
### How much is a tonne of GHG Emissions?

A tonne of greenhouse gas emissions is measured in Carbon Dioxide Equivalents, or CO<sub>2</sub>e. There are seven green house gases that are used to estimate climate impact, and they all have different global warming potentials. For instance, 1 tonne of Methane (CH<sub>4</sub>) has the same impact as 25 tonnes of CO<sub>2</sub>e.



<sup>2</sup> Greenhouse Gas Protocol. Global Protocol for Community-Scale Greenhouse Gas Emission Inventories: An Accounting and Reporting Standard for Cities, Version 1.1.

Figure 2. Summary of Community GHG emissions for 2014 and 2021



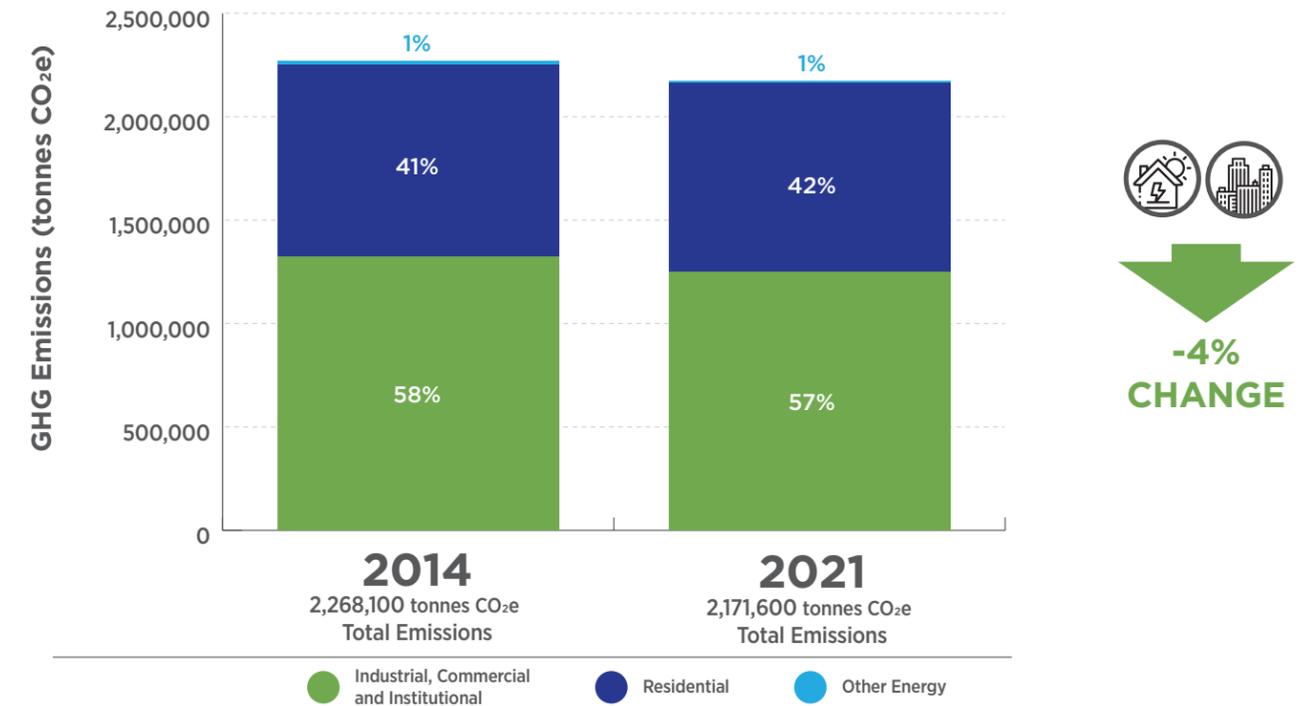
	2014	2021
Agriculture, Forestry and Other Land Use	500	10,200
Industrial Processing and Product Use	167,600	13,000
Waste	222,000	187,200
Transportation	1,194,000	1,127,600
Stationary Energy	2,268,100	2,171,600
<b>Total Emissions (tonnes CO<sub>2</sub>e)</b>	<b>3,852,200</b>	<b>3,509,600</b>
<b>Per Capita Emissions (tonnes CO<sub>2</sub>e per person)</b>	<b>15.6</b>	<b>12.4</b>

### 1.1.1 Stationary Energy

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

Stationary Energy emissions decreased by 4% from 2014 to 2021, from 2,268,100 to 2,171,600 tonnes CO<sub>2</sub>e, with the change driven mainly by decreased energy use in the Industrial, Commercial, and Institutional, and Other Energy Use (e.g., streetlighting) sub-sectors.

Figure 3. GHG emission breakdown for the Community Stationary Energy sector



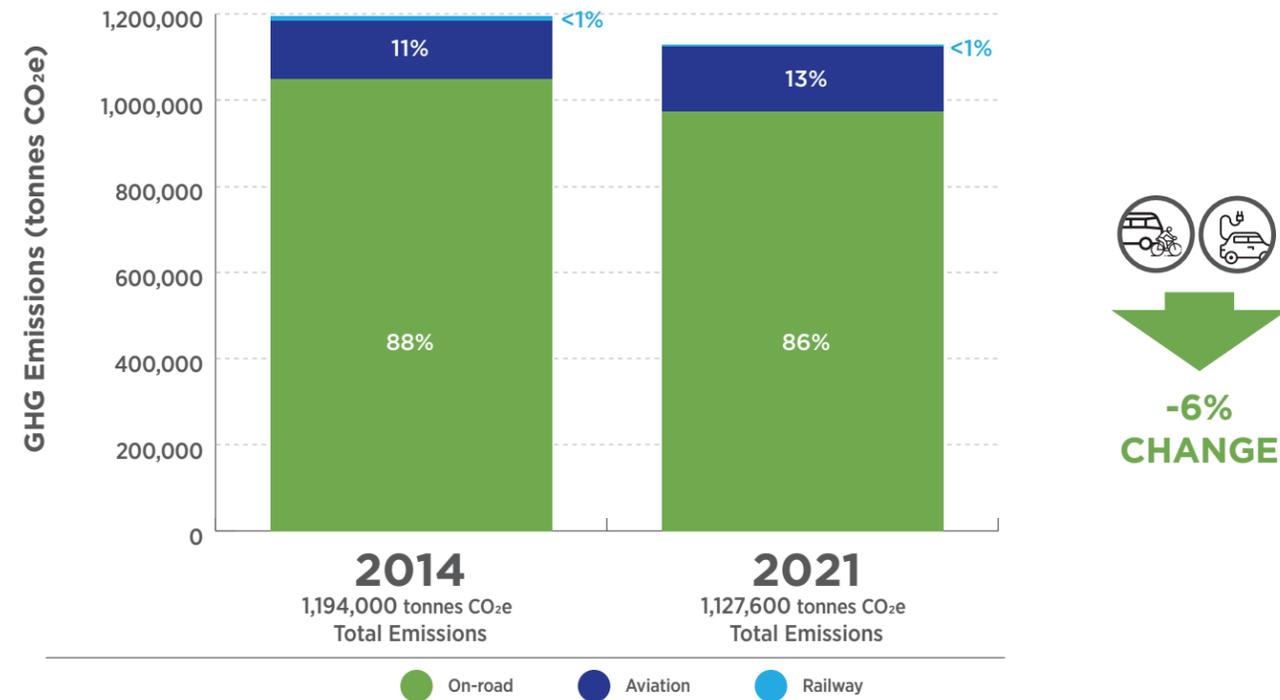
	2014	2021
Other Energy	14,100	8,500
Residential	932,200	916,500
Industrial, Commercial, and Institutional	1,321,800	1,246,600
<b>Total Emissions (tonnes CO<sub>2</sub>e)</b>	<b>2,268,100</b>	<b>2,171,600</b>

### 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), aviation, and rail sub-sectors.

Transportation emissions decreased by 6% from 2014 to 2021, from 1,194,000 to 1,127,600 tonnes CO<sub>2</sub>e, with the majority of the decrease from on-road vehicles.

Figure 4. GHG emission breakdown for the Community Transportation sector



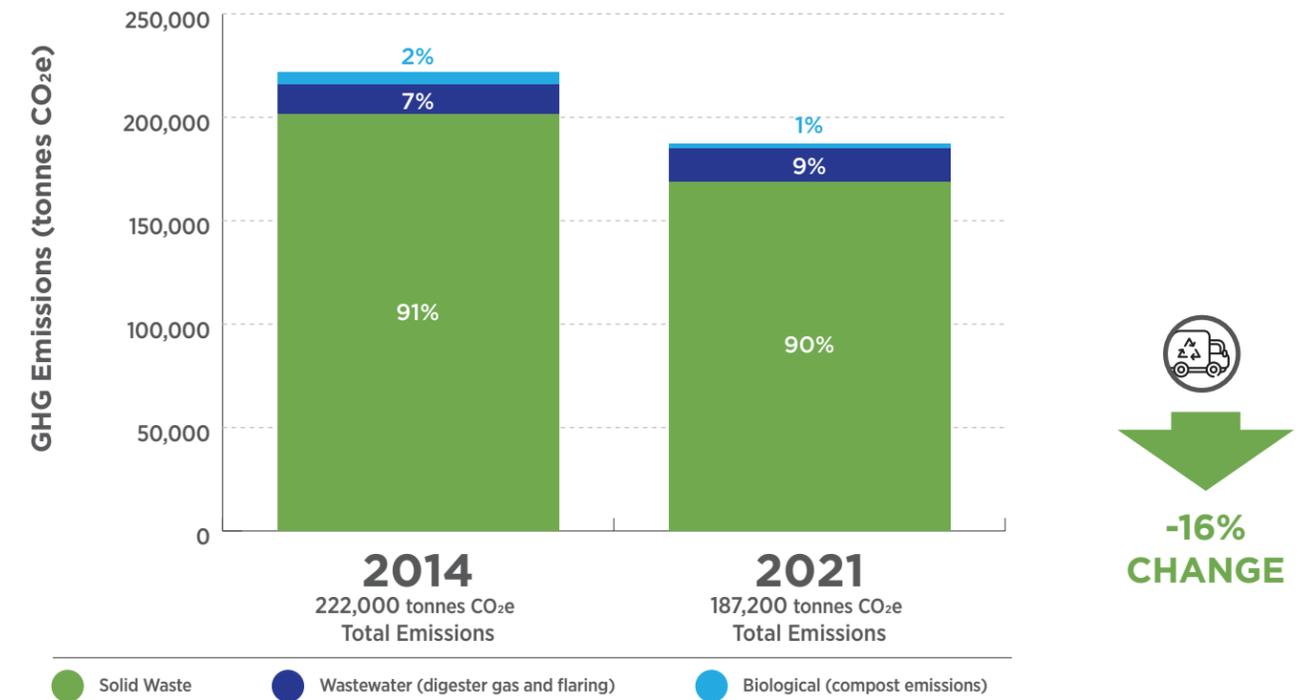
	2014	2021
Railway	9,000	3,600
Aviation	135,100	150,500
On-road	1,050,000	973,500
<b>Total Emissions (tonnes CO<sub>2</sub>e)</b>	<b>1,194,000</b>	<b>1,127,600</b>

### 1.1.3 Waste

Waste emissions result from solid waste disposal (landfills), biological treatment of waste (compost depots), and wastewater treatment (digester gas and flaring).

Waste emissions decreased by 16% from 2014 to 2021, from 222,000 to 187,200 tonnes CO<sub>2</sub>e, 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 5. GHG emission breakdown for the Community Waste sector



	2014	2021
Biological (compost emissions)	6,100	2,200
Wastewater (digester gas and flaring)	14,500	16,100
Solid Waste	201,400	168,900
<b>Total Emissions (tonnes CO<sub>2</sub>e)</b>	<b>222,000</b>	<b>187,200</b>

### 1.1.4 Industrial Processing and Product Use (IPPU)

IPPU emissions come from a wide variety of non-energy related industrial activities and product uses. Emissions associated with this sector are challenging to estimate and 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<sup>3</sup>. The contribution of emissions from this sector to the Community total is expected to increase as reporting compliance improves.

### 1.1.5 Agriculture, Forestry and Other Land Uses (AFOLU)

AFOLU emissions come from a variety of pathways associated with how we use our land and are amongst the most complex categories for GHG accounting. The Community inventory currently includes AFOLU emissions associated with livestock management at the Saskatoon Zoo, and emissions associated with livestock management and fertilizer use at the University of Saskatchewan. The City is exploring methodologies to best estimate emissions associated with land use changes over time.

## 1.2 Municipal Government (Corporate Emissions)

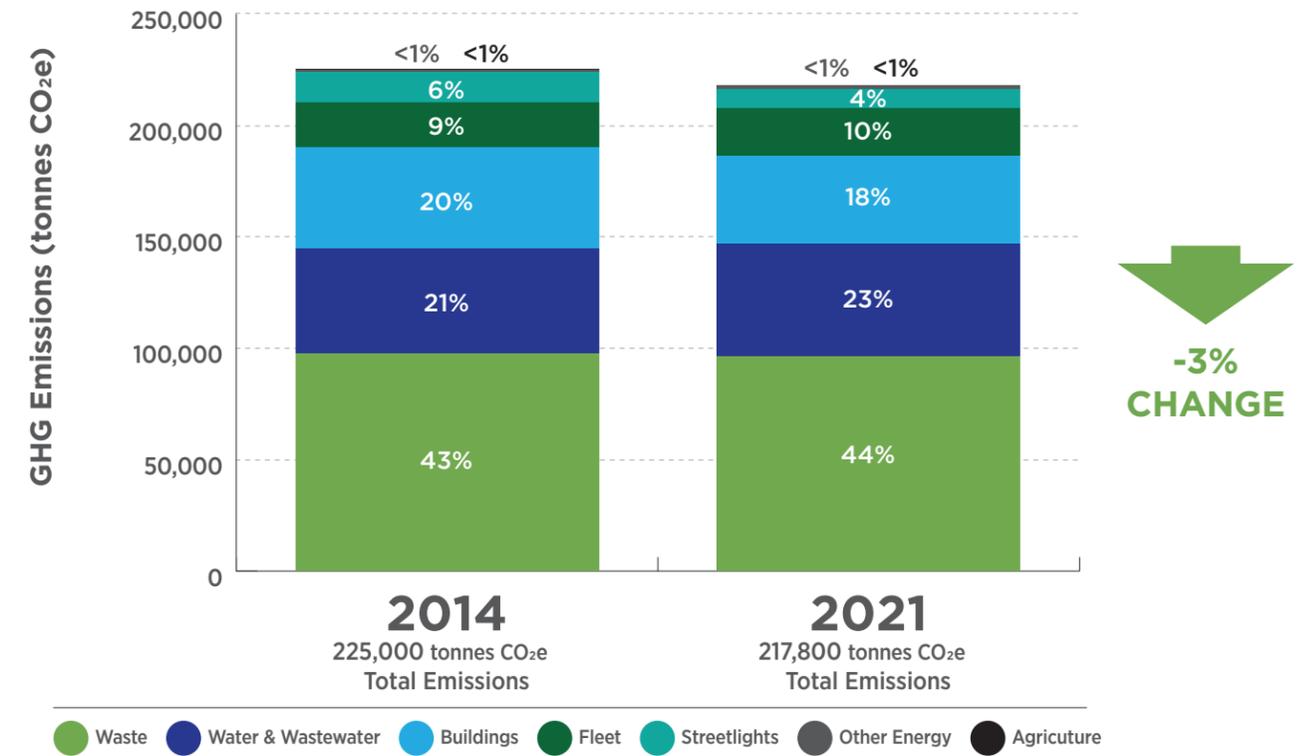
Emissions resulting from City operations decreased by 3% or 7,200 tonnes CO<sub>2</sub>e between 2014 and 2021. The decrease was driven by emission reductions in the Buildings and Streetlighting sectors.

The Corporate GHG emission inventory measures the emissions of the City's own operations and is guided by Partners for Climate Protection (PCP) Protocol: Canadian Supplement to the International Emissions Analysis Protocol.

#### UPDATES TO CORPORATE INVENTORY

*Based on updated guidance from Partners for Climate Protection, the parameters of the Corporate inventory have been expanded to include all emissions within the City's direct control or influence and that the City is accountable for as a corporate entity. This resulted in additional emissions being included in the waste, water and wastewater, and transportation sectors. Specifically, the additions include emissions associated with the City's landfill, compost depots, wastewater treatment plant, and public transit. Because Corporate emissions are a subset of Community emissions, the Community inventory does not change. The emission inventories for previous years, including the 2014 baseline, have been recalculated to allow comparison against the baseline.*

Figure 6. Summary of Corporate GHG emissions for 2014 and 2021.



	2014	2021
Agriculture	<100	<100
Other Energy Use	700	1,500
Streetlighting	14,100	8,500
Fleet	20,300	21,400
Buildings	45,000	39,700
Water & Wastewater	47,200	50,400
Waste	97,600	96,300
<b>Total Emissions (tonnes CO<sub>2</sub>e)</b>	<b>225,000</b>	<b>217,800</b>

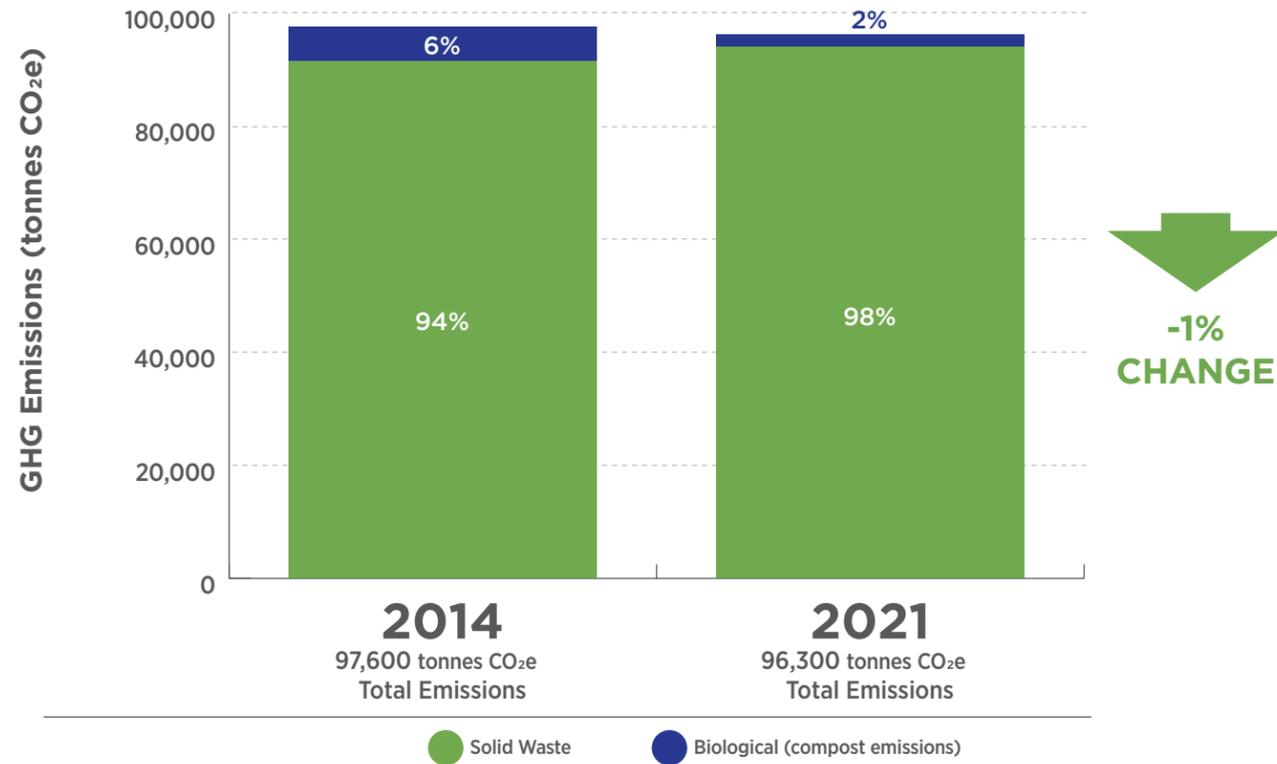
<sup>3</sup> Environment and Climate Change Canada, Greenhouse Gas Reporting Program. <https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/facility-reporting.html>

### 1.2.1 Waste

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

Emissions in the Waste sector decreased by 1% from 2014 to 2021, from 97,600 to 96,300 tonnes CO<sub>2</sub>e, reflecting the impact of the City's various waste reduction and diversion programs, including the capture of landfill gas at the Regional Waste Management Centre.

Figure 7. GHG emission breakdown for the Corporate Waste sector



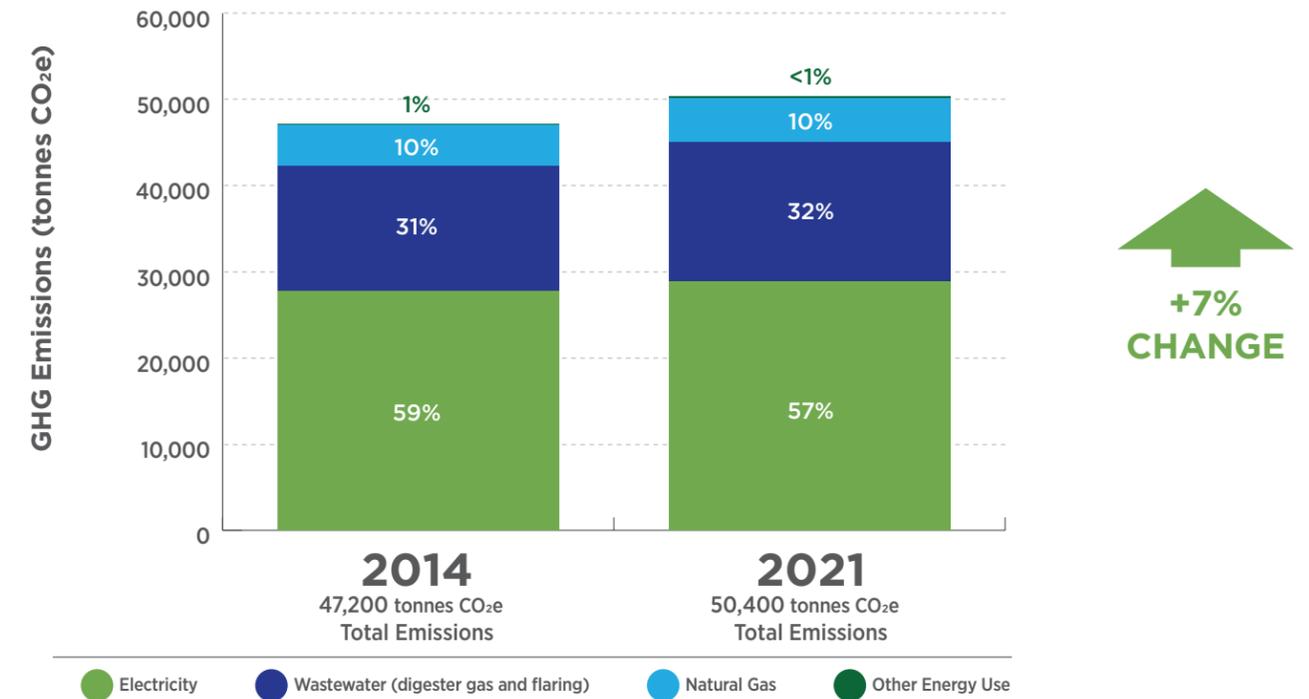
	2014	2021
Biological (compost emissions)	6,100	2,200
Solid Waste	97,600	94,100
<b>Total Emissions (tonnes CO<sub>2</sub>e)</b>	<b>97,600</b>	<b>96,300</b>

### 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 increased by 7% from 2014 to 2021, from 47,200 to 50,400 tonnes CO<sub>2</sub>e, reflecting the expansion of water and wastewater related operations to accommodate a growing city.

Figure 8. GHG emission breakdown for the Corporate Water & Wastewater sector



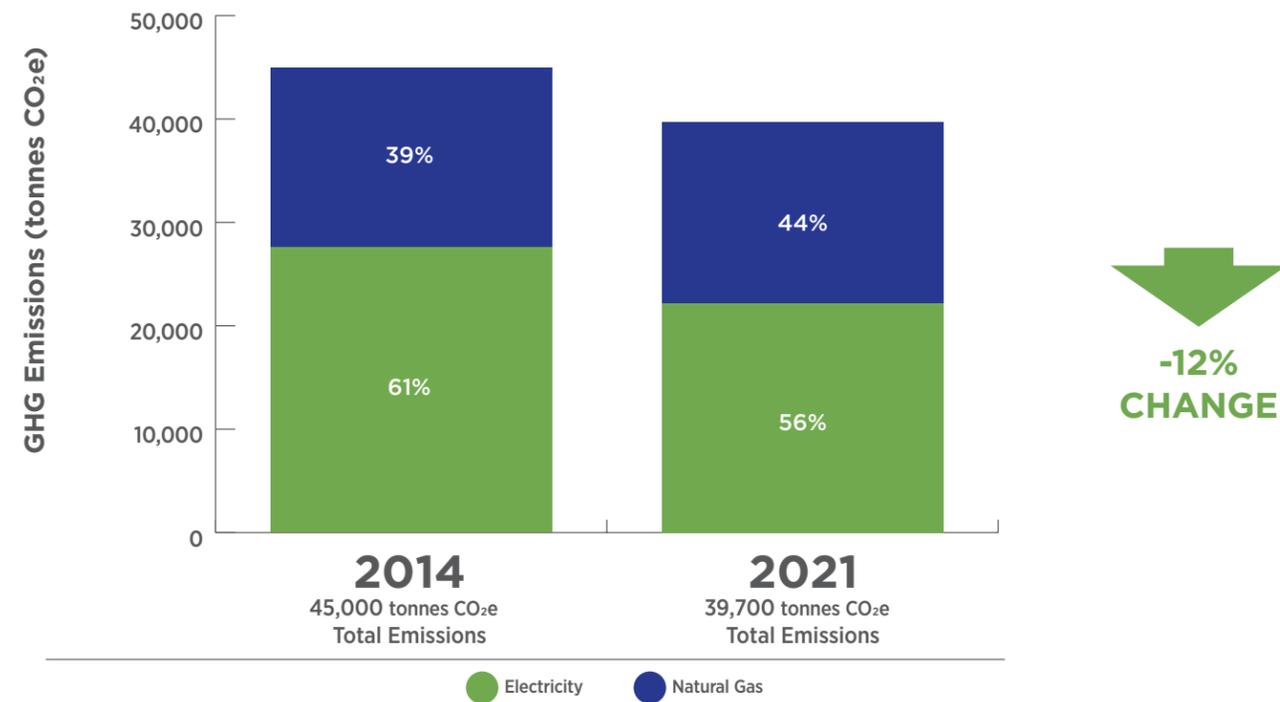
	2014	2021
Other (Diesel, Propane)	200	200
Natural Gas	4,700	5,200
Wastewater (digester gas and flaring)	14,500	16,100
Electricity	27,800	28,900
<b>Total Emissions (tonnes CO<sub>2</sub>e)</b>	<b>47,200</b>	<b>50,400</b>

### 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 12% from 2014 to 2021, from 45,000 to 39,700 tonnes CO<sub>2</sub>e, with a slight increase in natural gas consumption offset by decreases in electricity consumption.

Figure 9. GHG emission breakdown for the Corporate Buildings sector



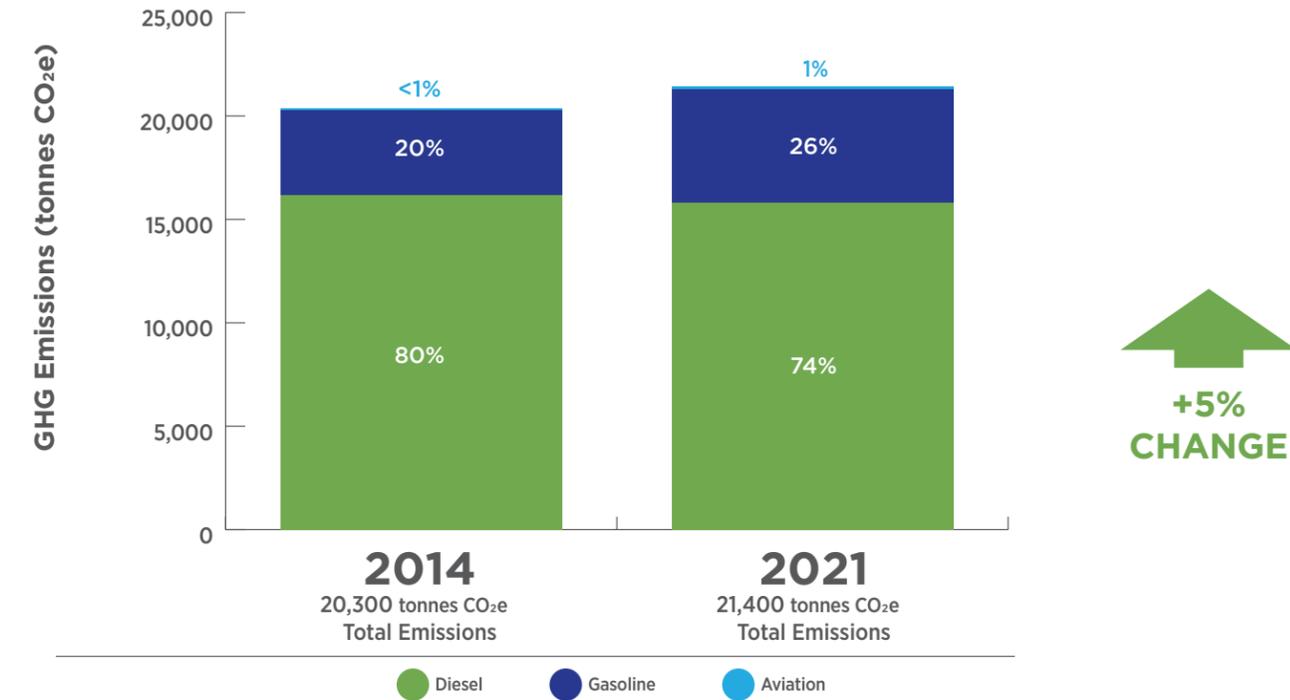
	2014	2021
Natural Gas	17,400	17,500
Electricity	27,600	22,200
<b>Total Emissions (tonnes CO<sub>2</sub>e)</b>	<b>45,000</b>	<b>39,700</b>

### 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 mobile equipment.

Emissions in the Fleet sector increased by 5% from 2014 to 2021, from 20,300 to 21,400 tonnes CO<sub>2</sub>e, reflecting the increase in the volume of fuel used to provide various services across a growing city.

Figure 10. GHG emission breakdown for the Corporate Fleet sector



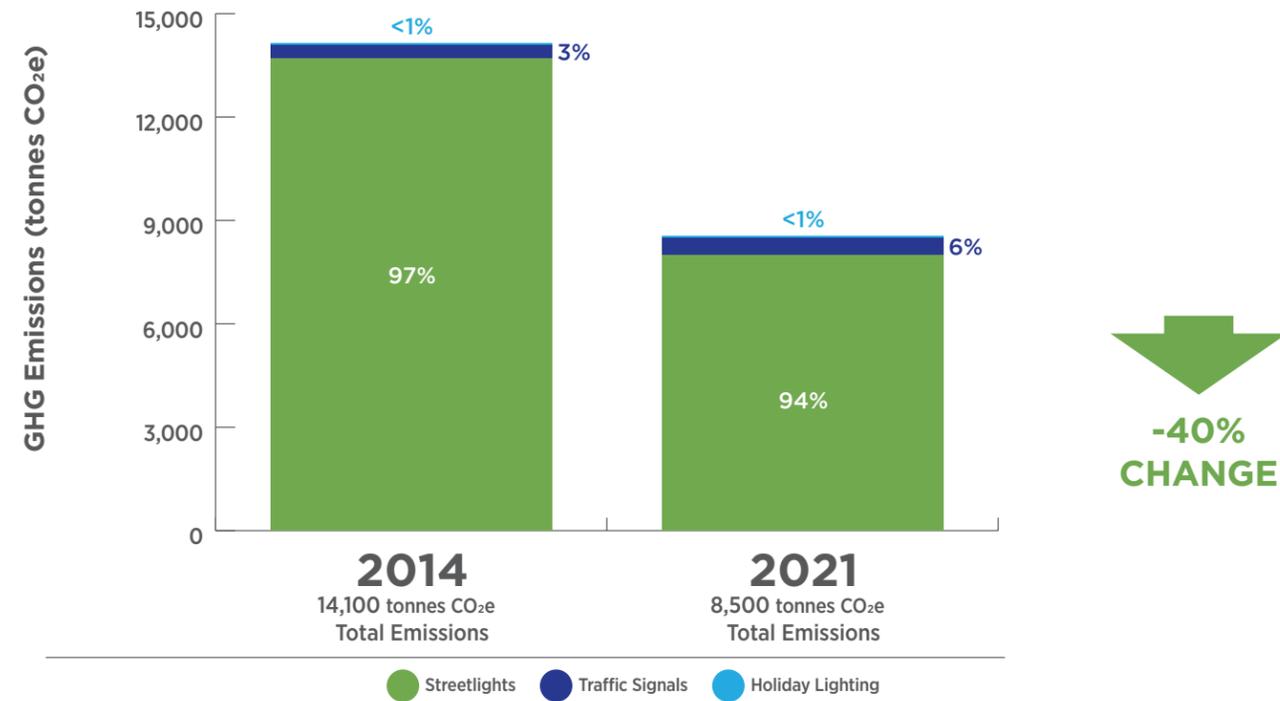
	2014	2021
Aviation	<100	100
Gasoline	4,100	5,500
Diesel	16,200	15,800
<b>Total Emissions (tonnes CO<sub>2</sub>e)</b>	<b>20,300</b>	<b>21,400</b>

### 1.2.5 Streetlighting

The Streetlighting sector includes emissions resulting from the use of electricity for streetlights, traffic signals, and holiday lighting in the SaskPower and SL&P distribution areas.

Emissions in the Streetlighting sector decreased by 40% from 2014 to 2021, from 14,100 to 8,500 tonnes CO<sub>2</sub>e, driven by the conversion of lighting to LED bulbs in the SL&P distribution area.

Figure 11. GHG emission breakdown for the Corporate Streetlighting sector



	2014	2020
Holiday Lighting	<100	<100
Traffic Signals	400	500
Streetlights	13,700	8,000
<b>Total Emissions (tonnes CO<sub>2</sub>e)</b>	<b>14,100</b>	<b>8,500</b>

### 1.2.6 Other Energy Use

The Other Energy 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 Energy Use sector increased by 123% from 2014 to 2021, from 700 to 1,500 tonnes CO<sub>2</sub>e, 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.

Emissions in the Agriculture sector increased by 14% from 2014 to 2021, from 21 to 24 tonnes CO<sub>2</sub>e, mainly resulting from improvements to the methodology used to calculate emissions for this sector.



## PART 2: REPORT CARDS

The Report Cards provide progress updates and scores for actions and targets in the *LEC Plan* and *Corporate Climate Adaptation Strategy*. The following information is provided:

**Action # and Action:** direct reference to either the *LEC Plan* or Adaptation Strategy.

**Start Date:** indicates when the action needs to start by (as reported in the *LEC Plan* and Adaptation Strategy).

**Responsible Department:** Department leading work on the Action or Initiative.

**Target Indicator:** from the *LEC Plan* Milestone Targets that were established for each Action. Many of these are measurable and timebound. No target indicators exist in the Adaptation Strategy.

**Other Indicators Being Considered:** additional indicators to better assess the progress (or lack of progress) on the action/targets in the *LEC Plan* that are either being measured now or could be measured (not in the Adaptation Report Card).

**Performance (against target):** measurable performance towards the Target Indicators. TBD means data is not currently available. Undefined means the target is not defined in measurable terms.

**Progress Update:** a narrative update on what progress is being made, including rationale and plans for the next period.

**Budget:** indicates the capital and operating funds assigned to work on this action in the specified budget cycle. Some projects that began before 2020 may still be ongoing, but no new budget is shown. In other cases, the work was included within another project and not shown. The budget also includes any external funding that the City received.

**Progress Score:** Actions follow four phases before being completed. Progress scores for the *LEC Plan* and Adaptation Strategy are based on what phase the action is in and the colour indicates whether the action is on-track or behind-schedule.

### LEGEND

Phase/Timing Alignment	Description
<b>Not started</b> ○○○○	Work has not started
<b>Initiated</b> ●○○○	Scoping/business case work is underway to seek funding
<b>Development</b> ●●○○	Capital funding is approved, research/study/feasibility/design/pilot work is underway to plan implementation
<b>Implementation</b> ●●●○	Implementation work is underway
<b>Operations</b> ●●●●	Sustained operating funding is approved for all activities required to meet the target/initiative, program/infrastructure/equipment is operating to meet the target/initiative
<b>Complete</b> ●●●●	Target/initiative has been achieved
	Work is proceeding, or ahead of the LEC/Adaptation timeframe
	Work is behind the LEC/Adaptation timeframe
	Work is not scheduled to begin in the LEC/Adaptation timeframe



## 2.1 CLIMATE MITIGATION REPORT CARD

### Buildings and Energy Efficiency

#	Action	Start Date (planned)	Responsible Department	Target Indicators
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 <sup>3</sup> standard immediately (2020).
02	Perform deep energy retrofits on municipal buildings.	2022	Facilities Management	60% of existing municipal buildings in 2016 meet the Passive House/Net-zero Energy-ready standard by 2031, 100% by 2050.
03	Upgrade plugged appliances and energy conservation behaviours in municipal buildings.	2020	Facilities Management	5% plug load energy savings from existing municipal buildings in 2016 by 2023.
04	Update all municipal building lighting systems.	2019	Facilities Management	20% lighting energy savings from existing municipal office buildings in 2016 by 2026 and from all existing municipal buildings by 2051.
05	Retrofit municipal heating and cooling systems with ground-source or air source heat pumps.	2020	Facilities Management	100% of existing municipal buildings in 2016 are retrofitted with heat pumps by 2026.
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.
07	Require new homes to include roof solar Photovoltaic (PV) installations in the final year of a municipal step code.	2036	Building Standards	New homes constructed in 2036-onward have roof solar PV.

Other Indicators Being Considered	Performance (against target)	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Progress Score 2021
# buildings that are not built to Net-zero Energy-ready	0% Buildings built to Net-zero Energy-ready.	High Performance Civic Building Policy enacted 2022 and requires new buildings be Net-zero Energy-ready. Fire Hall Five is LEED Certified (not Passive House / Net-zero Energy-ready) <sup>4</sup> . No buildings have started the design phase since January 2022 (when policy passed).	\$75	\$0	<b>Implementation</b> ●●●●○
TBD	0% buildings completed deep energy retrofit (50%+ energy load reduction)	Funding was approved for a feasibility study in 2023 to inform phasing and design.	\$0	\$225	<b>Development</b> ●●●●○
% appliances purchased not meeting minimum energy efficiency requirements (since 2016)	0% plug load savings	No progress. An appliance inventory is planned to inform a business case for requesting funding for upgrades for the 2024-25 budget.	\$0	\$473	<b>Not started</b> ○●●●○
Total GHG reductions from lighting improvement	TBD	Lighting retrofits completed in four more buildings and started in a fifth. Twelve buildings have been retrofitted to date under the current Energy Performance Contract Project.	\$0 <sup>5</sup>	\$0	<b>Implementation</b> ●●●●○
# of municipal heating systems replaced without heat pumps (since 2016)	0% of buildings with heat pumps of all heated buildings	Secured funding for a two-year heat pump feasibility study with the University of Saskatchewan <sup>6</sup> .	\$0	\$30	<b>Development</b> ●●●●○
% or # new buildings built to each tier of 2020 National Building code (once approved)	Undefined	Not approved to proceed. Provincial code consultation to begin in 2022.	\$0	\$0	<b>Not started</b> ○●●●○
TBD	TBD	No progress.	\$0	\$0	<b>Not started</b> ○●●●○

<sup>3</sup> LEC Plan required Passive House, the High Performance Civic Building clarified that Net-zero Energy-ready with an air-tightness target is aligned with Passive House. Net-zero is in alignment with the Federal Government strategy.

<sup>4</sup> Fire Station Five was in the design stage before the High Performance Civic Building Policy was enacted in January 2022, and therefore it was not required to be fully compliant with the Policy.

<sup>5</sup> The Environmental Performance Contract (EPC) has a \$31M budget (\$20M loan plus \$11M from existing funding sources) for energy efficiency measures in civic buildings including lighting upgrades. It is expected to use approximately \$21M of this budget.

<sup>6</sup> Additionally, work to consider and implement heat-pumps would be included in Action 01 – Deep Energy Retrofits for Civic Buildings.



## Buildings and Energy Efficiency (Continued)

#	Action	Start Date (planned)	Responsible Department	Target Indicators
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.
09	Require new ICI buildings to include roof solar Photovoltaic (PV) installations in the final year of a municipal step code.	2036	Building Standards	New ICI buildings constructed in 2036-onward have roof solar PV.
10	Incentivize and later mandate homeowners to perform deep energy retrofits.	2020	Sustainability	50% of existing homes in 2016 are 50% more energy efficient by 2030, 90% by 2050.
11	Incentivize and later mandate ICI owners and operators to perform deep energy retrofits.	2020	Sustainability	50% of existing ICI buildings in 2016 are 50% more energy efficient by 2030, 90% by 2050.
12	Require energy efficiency improvements in residential and ICI building lighting systems.	2025	TBD	90% of existing residential and ICI buildings in 2016 have 5% greater lighting efficiency by 2030, 100% by 2050. All existing luminaires are replaced with energy efficient LED bulbs and systems.
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 in 2016 are upgraded by 2050.
14	Retrofit home heating and cooling systems with ground source or air source heat pumps.	2025	Sustainability	30% of existing residential buildings in 2016 are retrofitted with heat pumps by 2030, 80% by 2050.
15	Retrofit ICI heating and cooling systems with ground source or air source heat pumps.	2025	Sustainability	Commercial building floorspace in 2016 is retrofitted with heat pumps by 2030, 80% by 2050.
16	Increase the efficiency of industrial processes.	2040	Sustainability	50% energy savings from industrial processes by 2050 over 2016 levels.

Other Indicators Being Considered	Performance (against target)	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Progress Score 2021
% or # new buildings built to higher tiers of National Building code (once approved)	Undefined	Not approved to proceed. Provincial code consultation to begin in 2022.	\$0	\$0	<b>Not started</b> ●●●●●
TBD	TBD	No progress.	\$0	\$0	<b>Not started</b> ●●●●●
TBD	TBD	HELP launched Sept 2021 with up to four years of funding. External funding and program enhancements were approved in 2022 <sup>7</sup> .	\$145	\$13,750	<b>Implementation</b> ●●●●●
TBD	TBD	Funding approved to research and design a program to incentivize energy retrofits in ICI buildings. Program to launch in 2023/2024 (behind schedule).	\$0	\$375	<b>Development</b> ●●●●●
TBD	TBD	No plans for mandating lighting improvements yet. Current programs are focused on incentives.	\$0	\$0	<b>Not started</b> ●●●●●
TBD	TBD	Funding approved for design of education/incentive programming of home energy efficiency (includes appliances).	\$0	\$250	<b>Development</b> ●●●●●
TBD	TBD	HELP offers loans and rebates for heat pumps (none awarded in 2021). Education is planned in 2022/23.	<see Action 10>	<see Action 10>	<b>Implementation</b> ●●●●●
TBD	TBD	Funding approved for research and design of an energy retrofit incentive program for ICI buildings (includes heat pumps).	\$0	<see Action 11>	<b>Development</b> ●●●●●
TBD	TBD	Funding approved for research and design through Action 15 (includes industrial processes).	\$0	<see Action 15>	<b>Development</b> ●●●●●

<sup>7</sup> HELP Program funding enhancements and incentives are funded from 2022-2026. The HELP Loan offerings were fully allocated in 2022, with no additional loan funding identified at the time of writing this report.

Transportation



#	Action	Start Date (planned)	Responsible Department	Target Indicators
17	Electrify the Municipal fleet over the near-term.	2020	Roadways, Fleet and Support	100% of the Municipal fleet is electrified by 2030.
18	Electrify the Municipal transit fleet.	2020	Saskatoon Transit	100% of the transit fleet is electric by 2030.
19	Implement a vehicle pollution pricing program in high traffic areas.	2024	Sustainability	5% vehicle emissions reduction from high traffic areas over 2016 levels by 2026.
20	Increase transit routes and frequency through future updates to the Transit Plan.	2019	Saskatoon Transit	Shift 5% of personal vehicle trips to transit by 2030, 10% by 2050.
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.
22	Electrify commercial vehicles through incentive programs, education, and automotive dealer partnerships.	2024	Sustainability	50% of new heavy truck sales are zero-emitting by 2030, 100% by 2040.
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.

Other Indicators Being Considered	Performance (against target)	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Progress Score 2021
% of new municipal fleet vehicles procured that are not electric	1% fleet vehicles electrified	Funding approved for EV strategy development in 2022-23. Four pilot vehicles and two chargers purchased and operating. Expression of interest submitted for 20 electric pickup trucks.	\$200	\$395	<b>Implementation</b> ●●●○
% of new buses that are not electric	0% transit vehicles electrified	One-year electric bus pilot concluded. Funding approved to purchase two electric buses.	\$114	\$2,640	<b>Implementation</b> ●●●○
TBD	TBD	No progress.	\$0	\$0	<b>Not started</b> ○○○○○
TBD	0% greater transit ridership per capita	Construction of a pilot BRT station started. Federal funding for entire BRT network delayed (expected in 2023).	\$500	\$0	<b>Implementation</b> ●●●○
% or # of total registered vehicles that are electric (0.2% or 477 EVs in 2021)	TBD	Funding approved for strategy development in 2022-23. EV chargers purchased for public charging pilot (installation expected in 2022).	\$100	<see Action 17>	<b>Development</b> ●●○○○
% of new heavy truck sales that are not electric	TBD	Funding approved for strategy development (includes commercial vehicles).	\$0	<see Action 17>	<b>Development</b> ●●○○○
% increase in active mode share	12% active transportation mode share	Approval for 14th St, 31st St, Dudley St, and Victoria Ave bikeways; infill sidewalk strategy approved and construction started; traffic calming and sidewalk preservation funded through Municipal Economic Enhancement Program (MEEP); accessible curb ramp installations continue; Pedestrian and Cyclist Accommodation in Work Zones and Detours Policy approved. Downtown active transportation network on hold to coincide with downtown entertainment district and BRT.	\$1,105	\$10,067 <sup>8</sup>	<b>Implementation</b> ●●●○

<sup>8</sup> Includes \$6,067M in capital funding and \$4M reallocated from other sources.



## Waste

#	Action	Start Date (planned)	Responsible Department	Target Indicators
24	Improve and expand waste management programs and services to increase reduction and diversion.	2020	Water and Waste Operations	<p>90% reduction and diversion of organics from the waste stream by 2050.</p> <p>95% reduction and diversion of plastic from the waste stream by 2050.</p> <p>90% reduction diversion of paper from the waste stream by 2050.</p>

Other Indicators Being Considered	Performance (against target)	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Progress Score 2021
Waste diverted from the City Landfill (25% in 2021)	<p>14% residential diversion of organics</p> <p>13% residential diversion of plastic</p> <p>65% residential diversion of paper</p>	Bylaw 8310 amended (ICI regulation in effect 2022). Funding approved for feasibility study of landfill bans and multi-unit organics program development. Curbside organics collection to begin 2023. Recovery Park construction in-progress (opens 2023). Development of variable-rate garbage collection directed by Council.	\$10,724	<p>\$2,118 (capital)</p> <p>\$4,567 (operating)</p>	<p><b>Implementation</b></p> <p>●●●○</p>

## Water Conservation



#	Action	Start Date (planned)	Responsible Department	Target Indicators
25	Decrease water use through efficiency, monitoring, and leak reduction.	2020	Saskatoon Water	5% reduction in water volume pumped by 2026 from 2016 levels.
26	Reduce residential and ICI water use through education programming and water efficiency incentive programs.	2020	Sustainability	<p>20% reduction in outdoor water use by 2050 from 2016 levels.</p> <p>30% reduction in indoor water use by 2050 from 2016 levels.</p>

Other Indicators Being Considered	Performance (against target)	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Progress Score 2021
TBD	2.5% less volume pumped	Deployment of AMI system is 90% complete. Two-year evapotranspiration-based irrigation pilot concluded in city parks. Capital and operating funding approved. Implementation underway.	\$670	<p>\$380 (capital)</p> <p>\$300 (operating)</p>	<p><b>Implementation</b></p> <p>●●●○</p>
TBD	<p>41% more water used outdoors</p> <p>10.5% less water used indoors</p>	Water Conservation Strategy under development. Capital and operating funding approved. Program development started.	<see Action 25>	<see Action 25>	<p><b>Development</b></p> <p>●●●○</p>



## Land Use

#	Action	Start Date (planned)	Responsible Department	Target Indicators
27	Build complete, compact communities through infill development, mixed-use buildings, and compact housing.	2020	Planning and Development	5% less residential floor area per dwelling than 2016 levels by 2035 and 25% by 2050.
28	Focus development on densification in previously developed areas, increasing the number of multi-family buildings.	2020	Planning and Development	25% greater stock share of multi-family homes than 2016 share by 2050 for new builds.

Other Indicators Being Considered	Performance (against target)	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Progress Score 2021
Floor area per dwelling per person	TBD	University Sector Plan approved and work began on the College Corridor Plan spring 2021. Corridor Collaboration Team formed to align and coordinate work amongst City departments.	\$2,000	\$9,478 (operating)	<b>Implementation</b> ●●●○
TBD	TBD	Corridor Infill Development team formed to respond to infill applications.	<see Action 27>	<see Action 27>	<b>Development</b> ●●●○

## Energy Generation



#	Action	Start Date (planned)	Responsible Department	Target Indicators
29	Install solar PV systems on municipal buildings.	2020	Facilities Management	24 MW of solar capacity on municipal buildings by 2026.
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.
31	Increase Landfill Gas Capture from the Saskatoon Landfill.	2020	Water and Waste Operations	50% methane capture annually by 2026.
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.

Other Indicators Being Considered	Performance (against target)	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Progress Score 2021
#/% new buildings built without solar panels #/% municipal building roof retrofits without solar panels installed	0 MW solar installed	Renewable and Low Emissions Energy Implementation Plan progressed (2022 completion). Consultant hired to complete a feasibility study on eight municipal buildings. Further pre-design studies and funding applications occurring in 2022.	\$180	\$177	<b>Development</b> ●●●○
TBD	0 MW solar installed	Feasibility study for the 2.2 MW Dundonald Solar Farm on Parcel M was completed and funding approved. Construction tender to be released in 2022.	\$0	\$4,250	<b>Development</b> ●●●○
Renewable natural gas produced and used for heating and power production (7.51 MW)	36% methane captured	Feasibility study and design contract for landfill gas expansion awarded and work began. Capture wells installed in 2020 and began producing and more are planned. Wastewater treatment plant biogas being used for heating to offset natural gas usage.	\$0	\$8,600	<b>Implementation</b> ●●●○
TBD	3.8 MW solar installed	HELP launched Sept 2021 with up to four years of funding. External funding approved in 2022 provides rebates for solar panels.	<see Action 10>	<see Action 10>	<b>Implementation</b> ●●●○



## Energy Generation (Continued)

#	Action	Start Date (planned)	Responsible Department	Target Indicators	Other Indicators Being Considered	Performance (against target)	Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Progress Score 2021
33	Encourage existing ICI building owners and mandate new buildings to install solar PV systems.	2025	Sustainability	20 MW of ICI solar capacity by 2030, 200 MW by 2050.	TBD	<see Action 32>	Funding approved for the ICI Energy Efficiency and Energy Generation Project to research and design a program.	\$0	\$375	<b>Development</b> ●○○○○
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.	TBD	0 MW solar installed	No progress.	\$0	\$0	<b>Not started</b> ○○○○○
35	Install a CHP facility at St. Paul's Hospital.	2020	NA	Two 540 kW CHP units installed at St. Paul's Hospital by 2023.	NA	NA	Project cancelled in 2020.	\$0	\$0	<b>Cancelled</b> ○○○○○
36	Implement district energy systems in the downtown and north downtown areas.	2025	Sustainability	(1) One RNG boiler (37 MW) installed in 2026, and a second installed in 2034. (2) One CHP unit (9.6 MW thermal, 10.5 MW electricity output) installed in 2034. (3) One CHP unit (6.4 MW thermal, 7.0 MW electricity output) installed in 2042.	TBD	0 boilers/CHP units installed	No progress.	\$0	\$0	<b>Not started</b> ○○○○○
37	Construct a hydropower plant at the weir.	2020	Saskatoon Light and Power	6 MW of hydropower capacity at the weir, with an operational efficiency of 55% or greater by 2027.	TBD	0 MW hydropower installed	On hold unless adequate funding and/or partnerships become available.	\$0	\$0	<b>Not started</b> ○○○○○
38	Install renewable energy storage over time.	2023	Saskatoon Light and Power	50 MW of grid-tied electricity storage is added gradually between 2025 and 2050.	TBD	0 MW of grid storage installed	Investigated through the Solar Farm Feasibility Study (Action 30) and determined not feasible at this time due to cost and lack of vendor/product certainty and standardization.	\$0	\$0	<b>Not started</b> ○○○○○
39	Procure renewable electricity from third party producers.	2040	Saskatoon Light and Power	1600 MW of renewable electrical capacity procured by 2050.	TBD	0 MW procured	No progress.	\$0	\$0	<b>Not started</b> ○○○○○
40	Procure renewable natural gas from third party producers.	2040	Sustainability	50% of municipal natural gas demand displaced with RNG by 2050.	TBD	0% natural gas displaced	No progress.	\$0	\$0	<b>Not started</b> ○○○○○



## 2.2 CLIMATE ADAPTATION REPORT CARD

### Decision Making

Action	Initiative	Start Date (planned)	Responsible Department
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
	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
	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
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
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
	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
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

Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Progress Score 2021
An Equity Toolkit, new TBL Improvement Tool, and website resource were created as how-to guides for City staff applying the TBL Policy. Operating funding for the TBL was not approved during the 2022/2023 budget.	\$260	\$60	<b>Implementation</b> ●●●○
No progress. Initiation to begin in 2023 as operating funding approved for climate adaptation implementation.	\$0	\$165 (operating)	<b>Not started</b> ○●●●○
The City's Environmental Dashboard was updated and an indicator for climate adaptation status was added. Sustained funding approved for climate adaptation implementation beginning in 2023.	\$0	<see A02>	<b>Implementation</b> ●●●○
No progress. Initiation to begin in 2023 as operating funding approved for climate adaptation implementation.	\$0	<see A02>	<b>Not started</b> ○●●●○
Triple Bottom Line assessments were used to consider climate adaptation improvements to over 60 projects in 2021. Green Pathways and the Urban Forestry Management Plan are both plans that use green infrastructure to adapt to climate change and will guide future work. Operating funding for the TBL was not approved during the 2022/2023 budget.	<see A01>	<see A01>	<b>Implementation</b> ●●●○
Updates to the Zoning Bylaw continue throughout 2022 with the final update package planned for 2023. Additional updates to support resiliency have not yet been identified.	\$750	\$400	<b>Implementation</b> ●●●○
Study completed in partnership with the University of Saskatchewan and Concordia University to assess how rainfall in Saskatoon has changed and how greater rainfall risk due to climate change can be used to update design standards (see K27).	\$0	<see A02>	<b>Implementation</b> ●●●○



Action	Initiative	Start Date (planned)	Responsible Department
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
	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
	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
	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
	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
	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
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

Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Progress Score 2021
No progress. Initiation to begin in 2023 as operating funding approved for climate adaptation implementation.	\$0	<see A02>	<b>Not started</b> ○○○○○
No progress. Initiation to begin in 2023 as operating funding approved for climate adaptation implementation.	\$0	<see A02>	<b>Not started</b> ○○○○○
No progress. Initiation to begin in 2023 as operating funding approved for climate adaptation implementation.	\$0	<see A02>	<b>Not started</b> ○○○○○
No progress. Initiation to begin in 2023 as operating funding approved for climate adaptation implementation.	\$0	<see A02>	<b>Not started</b> ○○○○○
No progress. Initiation to begin in 2023 as operating funding approved for climate adaptation implementation.	\$0	<see A02>	<b>Not started</b> ○○○○○
No progress. Initiation to begin in 2023 as operating funding approved for climate adaptation implementation.	\$0	<see A02>	<b>Not started</b> ○○○○○



Action	Initiative	Start Date (planned)	Responsible Department
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
	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	Communications & Public Engagement
	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
	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
	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

Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Progress Score 2021
Updating of the Municipal Emergency Management Plan was paused during COVID-19 and has been re-initiated in 2022 with a draft going to engagement with critical stakeholders. Funding approved for development of an emergency waste strategy in 2023.	\$0	\$80	<b>Implementation</b> ●●●○
A Crisis Communication Plan was prepared that defines a process for informing staff, external partners, and residents during emergencies and works in conjunction with the Municipal Emergency Response Plan. The City of Saskatoon uses notifiynow as a mass notification system for the residents of Saskatoon in the event of a public safety event requiring residents to take action for their own safety.	\$25 (operating)	\$0	<b>Implementation</b> ●●●○
Fleet Services added staff resources and prepared a proposal for an Apprenticeship Program to increase reserve staffing, both to improve seasonal equipment switch-over service.	\$0	\$0	<b>Implementation</b> ●●●○
Council approved the Roadways Emergency Response Plan for extreme snow events. It provides for extra staffing and contractor resources in response to snow falls >25 cm.	<see G15>	<see G15>	<b>Implementation</b> ●●●○
Saskatoon Water met with Gardiner Dam representatives to discuss Lake Diefenbaker Irrigation Projects.	\$0	\$0	<b>Initiated</b> ●○○○



Services (Continued)

Action	Initiative	Start Date (planned)	Responsible Department
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
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
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
	I23. Analyze the impacts of “climate refugee” migration to Saskatoon on population growth and service demand.	2022-2025	Planning and Development

Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Progress Score 2021
Adjustments were made to the City's evacuation process in response to unplanned Provincial changes. A support process was developed for individuals living in unsafe outdoor locations (implementation in 2022).	<see G15>	<see G15>	<b>Operations</b> ●●●●○
Council directed the development of a variable-rate garbage collection utility. A Water Conservation Strategy is under development (includes affordability actions).	<see LEC Action 25>	<see LEC Action 25>	<b>Development</b> ●●●●○
The Home Energy Loan Program launched. The Energy Assistance Program and Healthy Yards continue to operate. Public engagement on Saskatoon Transit's Fare Strategy was postponed due to COVID-19 (future date to be determined).	<see LEC Actions 10, 26>	<see LEC Actions 10, 26>	<b>Development</b> ●●●●○
No progress.	\$0	\$0	<b>Not started</b> ○○○○○

Assets



Action	Initiative	Start Date (planned)	Responsible Department
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
	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
	K26. Network and share information with other municipalities that will likely experience Saskatoon's projected climate conditions.	2020-2021	Sustainability - Climate
	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
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
	L29. Support increased soil and mulch/ compost cover in planted areas to improve storm water retention and enhance plant viability.	2022-2025	Parks
	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, Sustainability - Community Leadership

Progress Update	Budget 2020-21 (000's)	Budget 2022-23 (000's)	Progress Score 2021
No progress. Updates to the City's new Enterprise Asset Management System are planned after it launches in 2022.	\$0	\$0	Not started ●●●●●
Contract awarded for condition assessments of civic buildings. Assessments of one quarter of buildings in-progress. Facilities is documenting design/ construction standards. The first two phases are standards related to arc flash safety and standards based on leveraging the work done in the Energy Performance Contract Project. Additional phases will be added in 2023.	\$0	\$1,038 <sup>9</sup>	Development ●●●●●
No progress. Operating funding approved for staff to begin work in 2023.	\$0	\$0	Not started ●●●●●
Work with partner universities concluded. Analysis and modelling work is planned to inform updates to design standards.	\$0	\$0	Implementation ●●●●●
The Urban Forestry Management Plan was received by Council. An implementation plan and updates to the Park Development Standards are under development.	\$0	\$0	Development ●●●●●
Parks utilized -1,200 m <sup>3</sup> of compost in city parks and sports fields. The public Dig-Your-Own compost and mulch program and donations to schools and community gardens from the City's compost depot continued.	\$0	\$0	Implementation ●●●●●
Funding was approved for renewal of the Victoria Park Recreation Facility (programming will include food production and an urban agriculture program). Funding was approved for a sustainable food pilot beginning in 2023.	\$0	\$430	Development ●●●●●

<sup>9</sup> Estimated Project costs provided by Facilities Management.



## PART 3: LOOKING AHEAD

### 3.1 Climate Emergency and Updating Emission Targets

#### 3.1.1 Climate Emergency

The Intergovernmental Panel on Climate Change (IPCC) released its 6th Assessment Report in February 2022 stating 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 the time for 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 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 our 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.

#### 3.1.2 Global Climate Commitments

Countries around the world are committing to ambitious climate targets. The 26th Conference of the Parties Summit, or COP 26, occurred in Glasgow in November 2021, and was a crucial moment for global climate commitments and collaboration, including keeping global temperature rise below 1.5°C. At that meeting, 197 governments agreed to the Glasgow Climate Pact which includes new or updated emissions targets known as Nationally Determined Contributions (NDCs) that cover around 80% of the world's greenhouse gas emissions.

The Government of Canada (Canada) has a net-zero emissions target by 2050, in alignment with the 1.5°C warming threshold, and has adopted the *Canadian Net-Zero Emissions Accountability Act* to provide an accountability and transparent framework to deliver on this target. In March 2022, **Canada's 2030 Emissions Reduction Plan** was introduced, which provides a roadmap for the Canadian economy to achieve 40-45% emissions reductions below 2005 levels by 2030, building upon the actions outlined in Canada's previous climate plans.

Cities continue to be at the forefront of climate action, both leading mitigation and adaptation efforts and responding to the effects of climate change. The C40 Cities is a leading group of mayors and their cities providing leadership around climate action and environmental justice. Membership in the C40 Cities is earned based on a set of Leadership Standards (see below), with 97 cities as active members including 2 Canadian cities (Toronto and Vancouver).

The C40 Cities are leading the way for cities around the world and have published *Deadline 2020*, which identifies the C40 cities' share of the remaining global carbon budgets to 2100, for 1.5°C and 2°C scenarios. The report identifies that "to remain within a 1.5°C rise, average per capita emissions across C40 cities need to drop from over 5 tCO<sub>2e</sub> per capita today to around 2.9 tCO<sub>2e</sub> per capita by 2030. For wealthier, high emitting cities that means an immediate and steep decline in current emission levels. Many rapidly developing cities can maintain their current levels for up to a decade, and in a small number of cases there is some scope for emissions per person to rise slightly before they fall to zero. In all cases, cities must diverge considerably from their current business-as-usual emissions trajectories."

## C40 Leadership Standards 2021-2024:

- 1. PLAN.** City has adopted a resilient and inclusive climate action plan aligned with the 1.5°C ambition of the Paris Agreement, and updates it regularly;
- 2. DELIVER.** In 2024, City remains on track to deliver its climate action plan, contributing to increased resilience, equitable outcomes and halving C40's overall emissions by 2030;
- 3. MAINSTREAM.** City uses the necessary financial, regulatory and other tools at their disposal to address the climate crisis and mainstreams their equitable climate targets into the most impactful City decision making processes;
- 4. INNOVATE.** City innovates and starts taking inclusive and resilient action to address emissions beyond the direct control of the city government, such as associated with goods and services consumed in their city;
- 5. LEAD.** Mayor and the City demonstrate global climate leadership and inspire others to act in support of the Paris Agreement.

### 3.1.3 Race to Zero

Race to Zero is the UN-backed global campaign to mobilize net-zero initiatives. It aims to rally cities, businesses, regions, investors, and educational institutions to the overarching goal of “reducing emissions, across all scopes, swiftly and fairly in line with the Paris Agreement, with transparent action plans and robust near-term targets.”<sup>10</sup> Cities can commit by joining the Cities Race to Zero Campaign<sup>11</sup>. 29 Canadian cities (including Regina, SK) have pledged their net-zero commitments, joining 1,049 cities from across the globe in the initiative.

## 3.2 Carbon/Climate Budget

City Council requested a report on the feasibility of implementing the City of Edmonton's carbon budgeting approach at its meeting on April 6, 2021. A carbon budget sets the total amount of carbon dioxide equivalent (CO<sub>2</sub>e) emissions permitted over a period (usually with milestones in 2030 and 2050), to stay within a temperature threshold of 1.5°C (or 2°C in some instances). It can then be broken down by year or budget-cycle.

Carbon budgets are forward-looking – meaning emissions of the activities of the municipality are estimated for the year or period ahead and then those projections are used to make decisions. Carbon budgets mimic financial budgets by setting an upper limit of the amount of CO<sub>2</sub>e available to emit; if that amount is exceeded in 1 year, it must be made up in another year. By integrating the carbon budget system into the financial budget, every business unit becomes responsible for considering and meeting the carbon budget.

Saskatoon's current CO<sub>2</sub>e emission reduction targets are set against a 2014 baseline. The City measures progress against those targets by completing the annual greenhouse gas (GHG) inventory. This method looks at past results, similar to a financial statement for a business, it does not provide insight for planning activities to help us meet those targets.

Implementing a carbon budgeting approach could have numerous benefits including:

- **Improved carbon/GHG literacy** -The system would build carbon literacy across the corporation, ensuring better understanding of climate mitigation and the impacts of actions.
- **Increased accountability** - Implementing a carbon budget system would increase accountability for meeting established targets once integrated with the financial budgeting process.
- **Increased transparency and less risk of missing targets** - Saskatoon's current approach is a target set against a baseline, meaning it can only be measured after actions (and decisions) have been completed, through the process of inventorying GHGs.
  - While GHG inventories continue to be an important measurement tool, they lack the ability to provide real-time carbon implications for future activities and planning.
  - Our current climate targets can easily be missed since funding decisions for projects do not consider how projects will affect our emission reduction targets.
- **Improved Governance over climate mitigation** - Supports the City's strategic planning work by supplying relevant data to help inform priorities and make decisions on the right initiatives to pursue, providing the City with a meaningful indicator to assess and support progress on the Strategic Plan.

In Q3 2022, the Sustainability Department will work on developing principles for a carbon budget policy and present the principles and resourcing needs to City Council. If funding is approved, the full policy will be developed and submitted for approval. Next, if the policy is approved, a procurement process can begin to hire a consultant and develop the accounting framework. This framework will require approval.

Finally, If the carbon accounting framework and carbon budget system are approved, an implementation plan and funding request will follow. The implementation plan will ensure there is adequate resources and support for each department to make the transition to this new way of integrating carbon emissions into their budget planning with the expectation that a carbon budget system is piloted for the 2024-2025 budget deliberations.



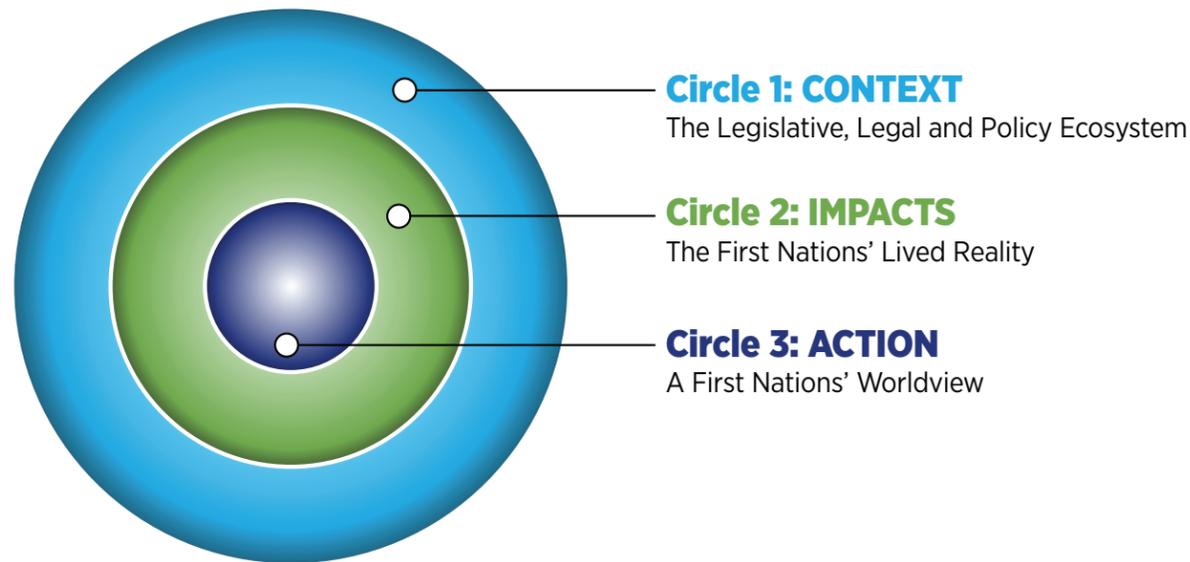
<sup>10</sup> Race to Zero – Campaign Overview. <https://climatechampions.unfccc.int/join-the-race/>

<sup>11</sup> Cities Race to Zero Pledge form available at [https://www.c40knowledgehub.org/s/race-to-zero-pledge-form?language=en\\_US](https://www.c40knowledgehub.org/s/race-to-zero-pledge-form?language=en_US)

### 3.3 Indigenous Lens for Climate Planning

The Assembly of First Nations (AFN) published the *Declaration of a First Nations Climate Emergency Resolution* in May 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<sup>12</sup>.

The three components of a First Nations Climate Lens (see figure below) bring broader issues into focus to enable meaningful conversations about how First Nations solutions can re-frame the climate conversation and lead to transformative and systemic change and emphasizes the centrality of First Nations governance, rights, and knowledge systems.



#### Circle 1: CONTEXT - The Legislative, Legal and Policy Ecosystem

For First Nations, climate action is a rights and responsibilities based activity that occurs within a legislative, legal, and policy context. This stems from our inherent jurisdiction over our lands and territories, as well as our affirmed right to self-determination. The broader ecosystem for this includes the federal government's commitment to pass legislation to implement the United Nations Declaration on the Rights of Indigenous Peoples (UN Declaration), to implement the Truth and Reconciliation Commission's Calls to Action, and the Calls for Justice from the National Inquiry on Missing and Murdered Indigenous Women and Girls, as well as Indigenous-specific jurisprudence and the protections afforded to First Nations by the Constitution Act, 1982.

#### Circle 2: IMPACTS - The First Nations' Lived Reality

In Canada, climate conversations often disregard the historical legacy of colonization, which has included relocating First Nations, forcibly removing children from their families and placing them in Residential Schools, and prohibiting the use of traditional languages and practices, among other atrocities. Climate change exacerbates many of the resulting impacts of colonization, including those relating to mental health and well-being, poverty, poor housing, food and water insecurity, and the erosion of rights, culture, and access to lands. The lived reality of First Nations needs to be understood and incorporated into analyses of the distribution and experience of climate-related impacts. In this regard, addressing the climate crisis cannot be separated from the broader project of First Nations self-determination and reconciliation.

<sup>12</sup> Assembly of First Nations National Climate Gathering Report, March 2020. [https://www.afn.ca/wp-content/uploads/2021/04/Climate\\_Gathering\\_Report\\_ENG.pdf](https://www.afn.ca/wp-content/uploads/2021/04/Climate_Gathering_Report_ENG.pdf)

#### Circle 3: ACTION - A First Nations' Worldview

First Nations-led solutions are multidimensional, interrelated, interconnected, and grounded in First Nations law, knowledge, language, and governance. The core of a First Nations worldview is an understanding that we are one with the land. This recognition lays the foundation for a set of legal principles and orders that, while unique to each individual First Nation, represent natural, spiritual, and environmental law. It is this sacred responsibility that continues to guide how First Nations interact with, protect, and respect Mother Earth.

### 3.4 Climate-related Financial Disclosure and Risk

The **Task Force on Climate-related Financial Disclosures (TCFD)** provides recommendations on the types of information that companies should disclose to support investors, lenders, and insurance underwriters in assessing and pricing risks related to climate change. The 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-maker 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<sup>13</sup>. As stated in the September City Council Report "Climate Strategy Impacts in the Global Financial Markets", the City is monitoring the Government of Canada as they consider mandating climate reporting in line with the TCFD Framework starting in 2024.<sup>14</sup>

Chartered Professional Accountants (CPA) Canada has provided a guide for cities to adopt the TCFD recommendations and framework<sup>15</sup>, *Enhancing Climate-related Disclosure by Cities: A Guide to Adopting the Recommendations of the Task Force on Climate-related financial Disclosures (2019)*, 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 its allocated where needed, enhancing access to external funding, and increasing public awareness.

<sup>13</sup> A listing of 2020 Municipal Financial Reports that include TCFD reporting or discussion can be found at: <https://cuspnetwork.ca/initiative-2/>

<sup>14</sup> [https://www.iasplus.com/en-ca/news/regulations/2022/climate-disclosure-canada-mandates-tcf-d-for-banks#:~:text=The%20federal%20government%20is%20committed,Financial%20Disclosures%20\(TCFD\)%20framework.](https://www.iasplus.com/en-ca/news/regulations/2022/climate-disclosure-canada-mandates-tcf-d-for-banks#:~:text=The%20federal%20government%20is%20committed,Financial%20Disclosures%20(TCFD)%20framework.)

<sup>15</sup> CPA 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/en/business-and-accounting-resources/financial-and-non-financial-reporting/sustainability-environmental-and-social-reporting/publications/tcf-d-guide-for-cities>



### 3.5 Nature-based Climate Solutions and Emission Inventories

Supplemental guidance to the *Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC)* was issued in September 2022 to guide cities through the inventory process to understand how trees and forests affect GHG emissions.

Other City initiatives are being led by the Green Network team - such as work in partnership with Municipal Natural Assets Inventory and processes for Natural Capital Asset Valuation - and look to formalize baselining and inventorying the green network to better track and manage ecosystem services and understand the opportunities present in nature-based climate solutions.

Further work to determine processes to coordinate and track the Green Infrastructure Strategy's nature-based climate solutions relative to the current climate mitigation and adaptation plans and the GPC's supplemental guidance is underway. In 2024, it is planned that Green Pathways status reporting will be brought forward and aligned with reporting on GHG mitigation and adaptation in the Climate Action Plan.

### 3.6 GHG Management Platform

In the 2022 Capital Budget, City Council approved capital funding for a project to pilot a GHG Management Platform. Through this project, a collaborative workflow platform will be procured to be used to manage and display the City's progress toward its GHG reduction targets and the actions in the *LEC Plan* as we transition to a low emissions future. This platform will aim to automate the *LEC Plan* progress reporting, helping us understand in real-time with continuously updated data, our progress on LEC Actions.

Work has been initiated to progress this 2-year pilot and further information will be available in due course.



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