

20²⁴₂₅
Multi-Year Budget

Climate Budget



1 Introduction

1.1 Background

City Council has directed Administration to develop a Climate Budget as part of the 2024/2025 Business Plan and Budget. The Climate Budget approach was chosen by City Council based on [research and recommendations](#) from Administration. Completing a Climate Budget is now an expectation for every budget cycle, as set out in the Multi-year Business Plan and Budget Policy (C03-036), which also established the following Climate Budget principles:

- Alignment with existing greenhouse gas (GHG) reduction targets and the *Low Emissions Community Plan* (LEC Plan).
- Integration with financial budgeting system.
- Transparency around how specific emission reduction projects are expected to impact emissions – every funded project will have GHG projections estimated for it.
- Accountability for the City and each Department – the expectation is that every business unit is responsible for our collective goal. Each action will have a department assigned to it for the corresponding financial budget cycle.
- Time-bound to ensure actions start now – implementation plans based on the LEC Plan actions and supplementary implementation plans will determine which actions should be implemented and funded for each budget cycle.

A Climate Budget is a governance framework that some cities are using to focus and progress their climate work. Saskatoon's first Climate Budget highlights recent progress on climate action, summarizes funded and unfunded projects to reduce GHG emissions, and identifies the resulting gap between those measures and the community's GHG target for the 2024/2025 budget cycle.

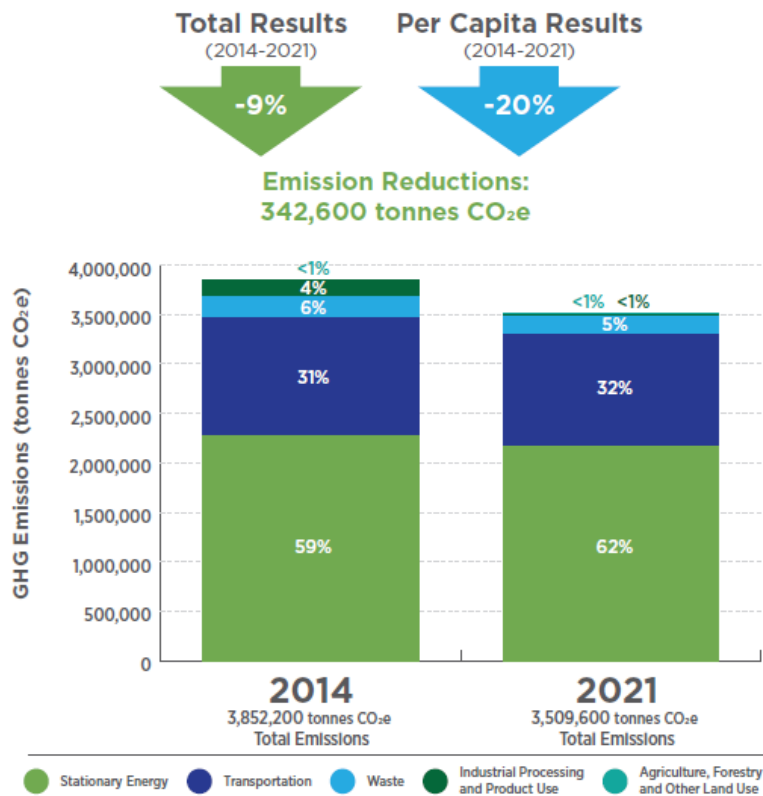
The 2024/2025 Climate Budget presents projects being implemented by the City of Saskatoon (City) to reduce GHG emissions within the corporation and the community and highlights important initiatives that will help to achieve long-term GHG targets. Many of these initiatives are either guided by or linked to actions in the LEC Plan. Responsibility for implementing the actions – including identifying funding needs and opportunities – is delegated to relevant Departments. The integration of the Climate Budget into the 2024/2025 Multi-year Budget requires Departments to report on their GHG mitigation measures in a similar manner to how they report on their finances.

1.2 Greenhouse Gas Targets and Progress

The 2019 LEC Plan is Saskatoon’s current action plan to achieve the GHG emission reduction targets; however, the emissions model is currently based on the previous target of 80% below 2014 levels by 2050. The City recently updated its long-term emissions target to net-zero by 2050 and will use this target – along with a new interim target established through the LEC Plan refresh (tentatively scheduled for 2024, pending approval through the 2024/2025 Financial Budget) – to guide climate mitigation actions toward 2050.

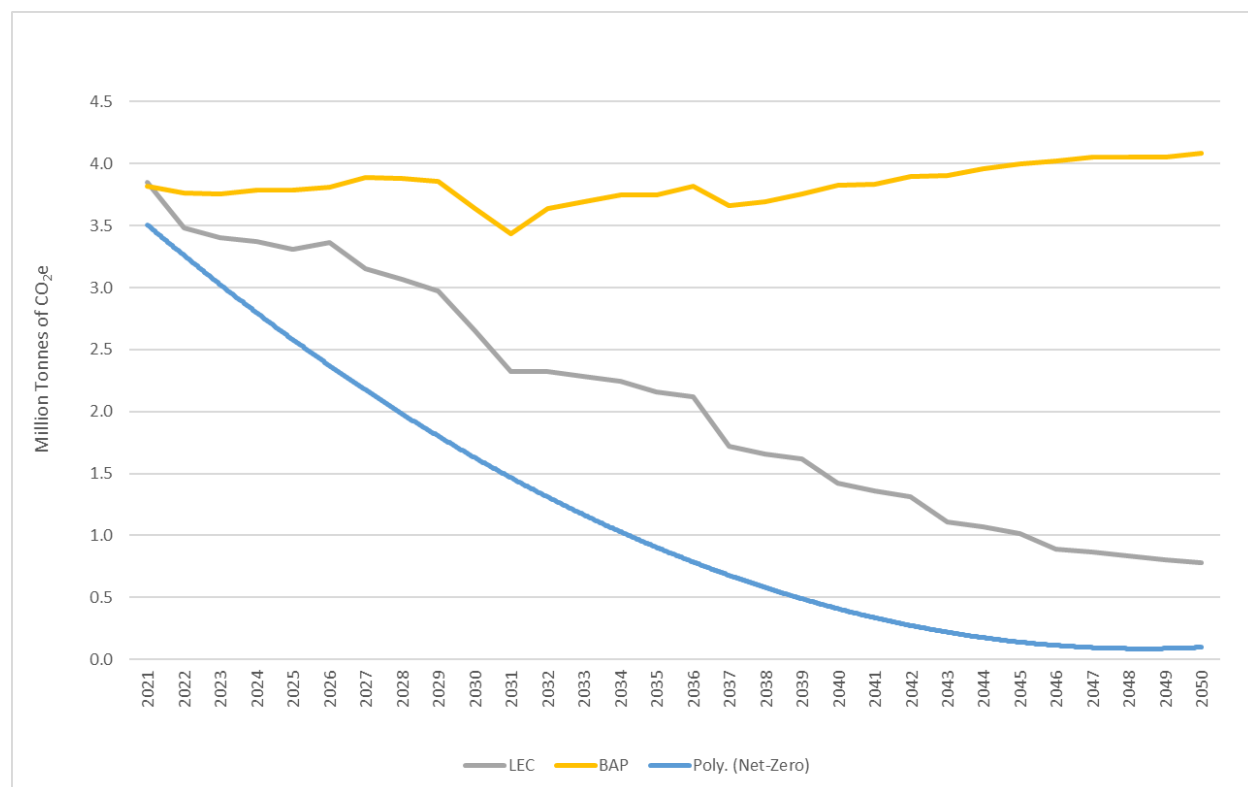
The City’s most recent GHG inventory shows that community-wide emissions decreased by 342,600 tonnes CO₂e between 2014 and 2021, representing a decrease in overall emissions of 9% and a decrease in per capita emissions of 20%. The Climate Budget is intended to help accelerate that decrease by focusing on emission reduction initiatives at the budget cycle level, rather than looking at the 2050 target date.

Figure 1: 2021 Community GHG emissions compared to the 2014 baseline.



	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
Total Emissions (tonnes CO₂e)	3,852,200	3,509,600
Per Capita Emissions (tonnes CO₂e per person)	15.6	12.4

Figure 2: Graph showing the City’s Business-as-Planned (yellow), Low Emissions Community Plan (grey), and Net-Zero (blue) GHG emission scenarios. The net-zero scenario is a hypothetical projection that will be modeled through the LEC Plan refresh.



1.3 Recent Strides in Climate Action

Climate action is embedded in the City’s strategic goal of Environmental Leadership, with Environmental Sustainability identified as one of ten City Council priority areas. A key action of this priority area is to implement the actions in the Low Emissions Community Plan (LEC Plan) and the Corporate Climate Adaptation Strategy (Adaptation Strategy) within proposed timeframes.

Climate work is further guided through the City’s membership in CDP, Global Covenant of Mayors for Climate & Energy, and FCM/ICLEI’s Partners for Climate Protection program. The City received a CDP score of A- in 2022, recognizing that the City has demonstrated best practice standards across adaptation and mitigation, has set ambitious goals, and has made progress towards achieving those goals.

The City’s most recent [Climate Action Plan Progress Report](#) provides an update on actions from the LEC Plan and Adaptation Strategy. The graphics below summarize progress made on actions in the LEC Plan, as reported in the 2022 report. The 2024 report will provide an update on actions through to 2023.

Figure 3: Climate action strides in the 2021 Climate Action Progress Report.



2 2024/2025 Climate Budget Analysis

2.1 2024/2025 Climate Budget

The 2024/2025 Climate Budget includes all capital projects with measures that are expected to reduce emissions and major capital projects that are expected to increase emissions. Section 3: Projects in the 2024-2025 Climate Budget, details the projects that meet the Climate Budget reporting criteria. Section 4: Methodology, Assumptions, and Uncertainty provides more information on the Climate Budget, reporting criteria is presented in the section.

Projects were categorized as follows:

- Projects with Quantified GHG Reductions
- Projects with Non-quantified GHG Reductions
- Projects that Lay the Foundation for GHG Reductions
- Major Capital Projects with Quantified GHG Additions
- Major Capital Projects with Unquantified GHG Additions

2.2 Impact of Reductions

Table 1 estimates the impact of capital projects submitted through the 2024/2025 Business Plan and Budget that are expected to result in GHG reductions relative to the City’s business-as-planned (BAP) emissions scenario.

Table 1: Estimated impact of capital projects included in the 2024/2025 Climate Budget that are expected to result in GHG reductions relative to the City’s business-as-planned (BAP) emissions scenario, LEC modelling, and net-zero targets.

Year	BAP Projection (tCO ₂ e)	GHG Inventory (tCO ₂ e)	LEC Target (tCO ₂ e)	Quantified GHG Reductions Funded	Quantified GHG Reductions Unfunded	Climate Budget Impact (tCO ₂ e)	Carbon Reduction Shortfall (tCO ₂ e)
2021	3,818,800	3,509,600	3,851,700				
2022	3,763,100		3,478,000				
2023	3,752,700		3,405,100				
2024	3,785,000		3,371,900			3,509,600	
2025	3,785,300	3,509,600	3,308,100	800	9,300	3,499,500	191,400
2026	3,812,400		3,366,200			3,499,500	123,200
2027	3,889,600		3,154,600			3,499,500	324,700
2028	3,879,200		3,066,700			3,499,500	402,500
2029	3,859,300		2,970,100			3,499,500	489,000
2030	3,641,200		2,653,400			3,499,500	795,600

For clarity, Table 1 includes modelled projections from the LEC Plan for the business-as-planned (BAP), 2021 Community GHG Inventory, and LEC Plan Targets. The net-zero target was estimated, as shown in Figure 1. The Climate Budget Impact uses the

most recent GHG inventory value for Saskatoon of 3,509,600 tonnes CO₂e¹, and subtracts the estimated reduction for 2024/2025 from quantified reduction projects.

If all funded and unfunded projects with quantified GHG reductions are implemented in 2024/2025, the City could achieve 10,100 tonnes CO₂e reductions. This means that the total community GHGs in 2025 would be 3,499,500 tonnes CO₂e². This would leave, as shown in Table 1, a carbon deficit or shortfall of 191,400 tonnes compared to the LEC modelled targets. In other words, additional projects totaling 191,400 tonnes CO₂e in reductions would need to be identified and funded to meet the 2025 target as modeled by the LEC Plan.

The projected GHG reduction reflects nine projects that could be quantified. There are five additional projects that cannot be quantified and 18 projects that lay the foundation for future GHG reductions. Other emission reductions from projects that occurred between 2019 (when the LEC Plan was completed) and 2023 are not available. More accurate modelling will be completed through the LEC Plan refresh.

Four of the nine projects quantifying GHG emission reductions for 2024/2025 have a funding plan, with reductions totaling 800 tonnes CO₂e. The remaining reductions (9,300 tonnes CO₂e or 92% of total quantified reductions) are for projects that are currently unfunded. All five unquantified reduction projects are funded as are six of the 18 projects that lay the foundation for GHG reductions.

Figures 4 and 5 graphically demonstrate the Business-as-Planned (yellow), Low Emissions Community Plan (grey), Net-Zero (blue), and Climate Budget (red) emission scenarios until 2050 and Figure 5 zooms in, focusing on 2021-2030. The pink line in Figure 5 projects the GHG reductions that are included in the scope of the funded and unfunded projects which are anticipated after the 2024/2025 budget cycle.

Beyond 2024/2025 at full build-out, the funded and unfunded initiatives achieve approximately 20,000 tonnes CO₂e reduction (9.9% of the 2025 target), leaving a shortfall of approximately 181,500 tonnes CO₂e, or 90.1% of the 2025 target.

When just looking at the funded initiatives, 1,200 tonnes CO₂e would be reduced at full build-out (0.6% of the 2025 target), leaving approximately 200,300 tonnes CO₂e, or a shortfall of 99.4% of the 2025 target.

¹ Ibid.

² Assumes the 2024 starting GHGs are equivalent to the 2021 GHGs of 3,509,600 tonnes CO₂e, as measured and reported in the 2021 Climate Action Plan: Progress Report 2021. To compare against the targets additional emission reductions are likely to result from the unquantified and foundational measures, although not all of these would occur in 2024/2025.

Figure 4. Comparison of City of Saskatoon Business-as-Planned, Low Emissions Community Plan, Net-Zero, and Climate Budget emission scenarios.

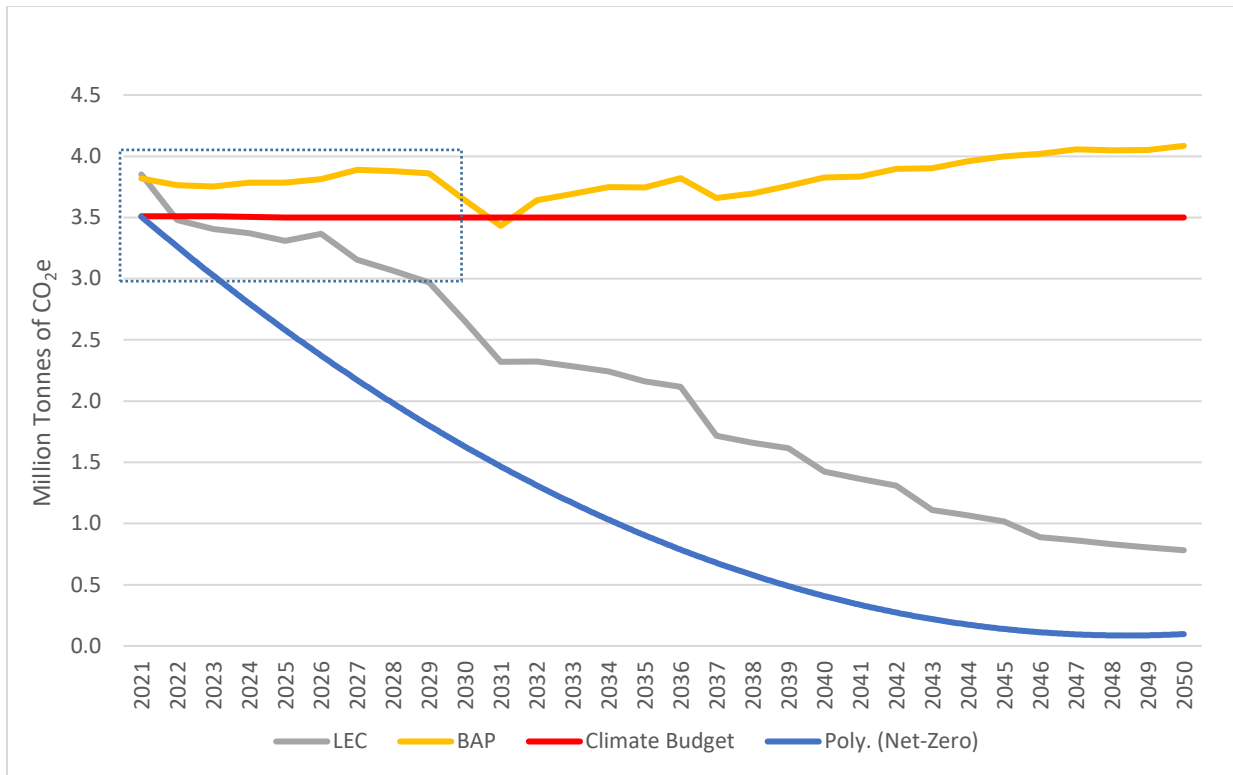
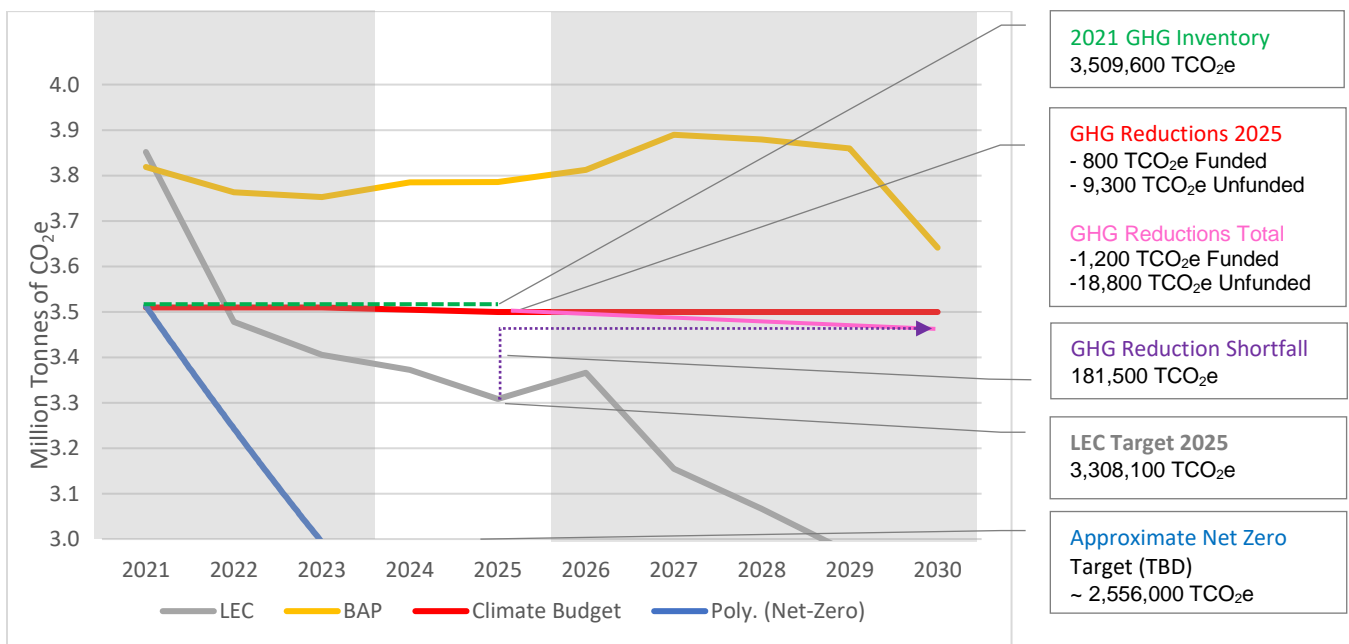


Figure 5. Detail - comparison of City of Saskatoon Business-as-Planned, Low Emissions Community Plan, Net-Zero, and Climate Budget emission scenarios.



3 2024/2025 Climate Budget Projects

3.1 Projects with Quantified GHG Reductions

All projects with quantified emission reductions that relate directly to actions in the Low Emissions Community Plan or are expected to result in GHG emission reductions are included in Table 2. Descriptions of each measure are included in the notes below. Further, Administration was directed by the Standing Policy Committee on Environment, Utilities, and Corporate Services to “separate items that require direct capital investment and which items involve generating loan capacity and/or potentially create a return on investment. That with this reporting – where the requirement is an investment or loan portfolio there be further identification of which funding tools could be most effective to achieve them”. There are seven projects with a potential return on investment (ROI) identified in Table 2 with further information on funding mechanisms in the notes below.

Table 2. 2024/2025 projects with quantified GHG reductions.

Capital Project	Climate Budget Project	Responsible Department	Total Budget 2024/2025 (\$000s)	Climate Budget 2024/2025 (\$000s)	GHG Impact 2024/2025 (t CO ₂ e)	GHG Impact at Build-Out (t CO ₂ e/yr)	Funding Status
P.00583: Transit Replacement Bus Project	Purchase of 30 Battery Electric Buses	Saskatoon Transit	51,300	47,000	(1,788)	(894)	Funded ROI
P.00706: Leisure Services-Facility Equip Replacement	Purchase of Electric Ice Resurfacer	Rec & Comm Development	525	150	(4)	(2)	Funded ROI
P.02197: WTR - Water & Energy Conservation Initiatives	Water Conservation Measures at Spray Pads / Paddling Pools	Sustainability	8,133	8,133	1,138	(155)	Funded ROI
P.10080: Archibald Arena Rehabilitation	Energy Efficiency Upgrades at Archibald Arena	Rec & Comm Development	8,093	3,320	(180)	(180)	Funded
TOTAL – FUNDED			\$68,051	\$58,603	(834)	(1,231)	
P.01956: Property Assessed Clean Energy	Expansion of Home Energy Loan Program	Sustainability	14,000	14,000	(1,440)	(1,440)	Unfunded ROI
P.02650: Integrated Solar/Renewable Energy Strategy	Installation of PV Panels at Municipal Buildings	Sustainability	2,600	2,600	(467)	(467)	Unfunded ROI
P.10033: ICI Energy Efficiency + Generation	Energy Incentive/ Financing Program for ICI Sector	Sustainability	40,875	40,875	(7,228)	(16,541)	Unfunded ROI

P.10034: Integrated Civic Energy Management Program	Energy and Water Conservation Measures at Municipal Buildings	Sustainability	580	580	(17)	(51)	Unfunded
P.10077: Fleet Replacement with Electric Vehicles	Purchase of 87 Electric Vehicles and Charging Ports	Roadways, Fleet & Support	\$4,250	\$4,250	(113)	(259)	Unfunded ROI
TOTAL – UNFUNDED			\$62,305	\$62,305	(9,265)	(18,758)	
TOTAL – OVERALL			\$130,356	\$120,908	(10,099)	(19,989)	

Description of Projects in Table 2

P.00583: Transit Replacement Bus Project – This project includes the purchase of 30 battery electric buses, resulting in estimated savings of 894 tonnes CO_{2e} per year relative to the equivalent operation of 30 conventional diesel buses. Saskatchewan Research Council (SRC)³ completed a financial analysis on the electric bus pilot and found \$250,000 in savings over the 15-year life of the bus. Other benefits of the electric bus project include lower diesel emissions, quieter operations, and GHG reductions (894 tonnes CO_{2e} per year). The cost to the City for 30 electric buses is approximately \$47M and a funding plan has been prioritized as part of the Major Capital Prioritization Funding Plan to include \$11.75M external loan funding in each of 2024 and 2025. Matching funding has been applied for from the Federal Government’s Zero Emission Transit Fund (ZETF) program. A loan from the Canadian Infrastructure Bank is being researched to determine if a better rate can be utilized than from traditional debt sources.

P.00706: Leisure Services-Facility Equipment Replacement – This project includes the replacement of the ice resurfacing machine at Lions Arena with an electric model, resulting in estimated savings of 2 tonnes CO_{2e} per year as well as improved indoor air quality. An additional \$15,600 has been identified through the 2024/2025 Business Plan and Budget Operating Options to assist in the conversion of a total of five ice resurfacers to electric models by 2031 in alignment with the LEC Plan. If the pilot electric model provides evidence of long-term savings and useful life extension, consideration could be given to accelerating the replacement of the ice resurfacers through a green loan, with future budget adjusted to reflect savings.

P.02197: WTR - Water & Energy Conservation Initiatives – This project includes the development and implementation of water conservation initiatives including parks irrigation optimization, spray pad and paddling pool improvements,

³ Saskatchewan Research Council (SRC), [Saskatoon Transit Electric Bus Performance Report](#). Jan 2022.

reduction of irrigated areas, and non-potable water use pilots, related to the Civic Water Conservation portion of the Park and Green Space Network Adaptation to Extreme Heat Project. GHGs relating to construction activities during the 2024/2025 budget cycle are estimated at 1,138 tonnes CO_{2e}; however, the project will realize net GHG reductions of 155 tonnes CO_{2e} per year starting in 2032. The project was part of an application to the Disaster Mitigation Adaptation Fund (DMAF) (Round 2) program that will provide 40% matching funds for eligible costs. This will then require an anticipated green loan of \$7.7M to provide the matching funding for DMAF. If 40% funding is not secured, then the scope of work will be reduced. The Civic Water Conservation project is expected to save increasing amounts each year from \$250k in year one to a final projection of \$900k per year in year eight.

- P.10080: Archibald Arena Rehabilitation – This project includes the retrofit, repair, and upgrade of Archibald Arena, with energy efficiency updates resulting in estimated savings of 180 tonnes CO_{2e} per year starting in 2025.
- P.01956: Property Assessed Clean Energy – This project includes the expansion of the Home Energy Loan Program for energy efficiency and renewable energy upgrades to single-family residential homes, resulting in estimated savings of 1,440 tonnes CO_{2e} per year. The program requires loan financing of up to \$14M per year, although a smaller program is also possible (for example \$3.3 M for 110 participants). The program can be structured to completely cover all loan payments with participants paying interest on their loan plus an admin fee to cover the operating costs. Admin fees would need to be approximately \$880 (currently \$500).
- P.02650: Integrated Solar/Renewable Energy Strategy – This project includes installing solar photovoltaic panels at municipal facilities, resulting in estimated savings of 467 tonnes CO_{2e} during the 2024/2025 budget cycle. The upfront capital cost for the installation of 1MW of solar generating capacity has been estimated to be \$3,030,000. The electricity generated will offset electricity consumption by the buildings and reduce utility costs. While the project may pay itself back within the life of the panels if capital or mill rate funding was allocated, using a loan with interest payments would result in the payback for the systems to be longer than the life of the asset (unless external grant funding is also found). Administration applied to the Low Carbon Economy Fund for this project but was unsuccessful. Another intake for the program is expected in fall of 2023.
- P.10033: ICI Energy Efficiency + Generation – This project builds on the Home Energy Loan Program by establishing an energy education and incentive/financing program for the Industrial, Commercial, and Institutional sector. An internal or external loan could be used to finance a program using participant interest and admin fees to payback the loan. Benchmarking, education, capacity building, and rebate programs would support financing programs but would

not have a direct financial payback but may be eligible for FCM funding. GHG reductions relating to activities implemented during the 2024/2025 budget cycle are estimated at 7,228 tonnes CO₂e.

P.10034: Integrated Civic Energy Management Program – This project includes a roadmap of actions to conserve energy and water in municipal buildings, resulting in estimated savings of 17 tonnes CO₂e during the 2024/2025 budget cycle. An additional \$170,000 has been identified through the 2024/2025 Business Plan and Budget Operating Options to provide a dedicated resource to support the Civic Commissioning and High-Performance Building Program.

P.10077: Fleet Replacement with Electric Vehicles – This project includes the purchase of up to 87 electric vehicles and required charging ports to replace existing internal combustion engine fleet vehicles at end-of-life, where feasible, resulting in estimated savings of 113 tonnes CO₂e during the 2024/2025 budget cycle. Electric vehicles have a higher purchase price and require charging infrastructure (and potential electric upgrades). However, they cost less to run due to savings in gasoline/diesel and maintenance. The City’s pilot indicated that the total cost-of-ownership could be lower for an electric vehicle than an internal combustion engine vehicle meaning savings should cover the increased costs. Therefore, this project could be a potential Green Loan candidate. GHG reductions of 113 tonnes CO₂e are projected from the transition of 87 vehicles in 2024/2025. The ZEV Roadmap will further identify these costs and savings.

3.2 Projects with Non-quantified GHG Reductions

Some projects that relate directly to actions in the Low Emissions Community Plan or are expected to result in GHG emission reductions but, due to uncertainties and data limitations, cannot be quantified. The emissions impact of these projects are included in Table 3. Descriptions of each project are included in the notes below.

Table 3. 2024/2025 projects with non-quantified GHG reductions.

Capital Project	Climate Budget Project	Responsible Department	Total Budget 2024/2025 (\$000s)	Climate Budget 2024/2025 (\$000s)	Funding Status
P.00901: Park Upgrades, Enhancements & Repairs	Irrigation System Upgrades	Parks	4,110	1,199	Funded
P.02051: Landfill Optimization	Landfill Gas Wellfield Restoration	Water and Waste Operations	10,972	500	Funded
P.02328: Transit Implementation Plan	Bus Rapid Transit	Saskatoon Transit	151,050	151,050	Funded
P.02468: Active Transportation Plan Implementation	Ongoing Implementation of AT Plan	Transportation	3,000	2,600	Funded

P.10084: Material Recovery Facility	Ongoing Implementation of Recovery Park Master Plan	Sustainability	700	700	Funded
TOTAL – FUNDED			\$169,832	\$156,049	

Description of Projects in Table 3

P.00901: Park Upgrades, Enhancements & Repairs – This project involves landscape upgrades and enhancements to parks that include plantings, irrigation system replacements, and installation of subsurface drainage systems. Capital construction activities will generate GHG emissions during the 2024/2025 budget cycle, but these emissions will be offset by water conservation projects resulting in a net reduction in GHGs over the assets’ operating life.

P.02051: Landfill Optimization – This project includes constructing a new landfill cell and restoring function to the landfill gas wellfield. Construction activities will generate GHG emissions during the 2024/2025 budget cycle; however, the optimization of landfill operations, including the landfill gas collection and power generation system, will result in GHG reductions overall.

P.02328: Transit Implementation Plan – This project includes the ongoing development, construction, and implementation of a Bus Rapid Transit (BRT) system. Construction activities will generate GHG emissions during the 2024/2025 budget cycle; however, the project facilitates improved access to and capacity of the public transit system and will realize GHG reductions through efficient routing and increased ridership.

P.02468: Active Transportation Plan Implementation – This project supports the implementation of the Active Transportation Plan, contributing to a more balanced transportation system that will realize various health, environmental, safety, social, and economic benefits.

P.10084: Material Recovery Facility – This project includes all actions in the Solid Waste Reduction and Diversion Plan that support the realization of the full scope of the Recovery Park Master Plan. The 2024/2025 request is to establish a mattress recycling program.

3.3 Projects that Lay the Foundation for GHG Reductions

Projects that lay the foundation for GHG reductions include all activities that will help build capacity or provide information for climate work but do not have a direct emission reduction, like feasibility studies and strategies, are included in Table 4. Descriptions of each project are included in the notes below.

Table 4. 2024/2025 projects that lay the foundation for GHG reductions.

Capital Project	Climate Budget Project	Responsible Department	Total Budget 2024/2025 (\$000s)	Climate Budget 2024/2025 (\$000s)	Funding Status
P.01281: SL&P - Sustainable Power Generation Options	Exploration of Green Power Generation Opportunities	SL&P	400	400	Funded
P.01964: Waste Reduction Initiatives	Implementation of Waste Diversion Program for Municipal Buildings	Sustainability	70	70	Funded
P.01975: Corporate Wide EMS	Implementation of Environment Management System for City Operations	Sustainability	115	115	Funded
P.02390: Green Infrastructure Strategy	Ongoing Implementation of Green Infrastructure Strategy	Sustainability	35	35	Funded
P.02539: Climate Change Mitigation Business Plan	Update of Low Emissions Community Plan	Sustainability	250	250	Funded
P.10008: Wastewater - Cogeneration Study	Feasibility Planning for a Biogas Energy System at Wastewater Treatment Plant	Saskatoon Water	213	213	Funded
P.10016: Solid Waste Reduction & Diversion Plan Development + Plan Implementation	Ongoing Implementation of Solid Waste Reduction and Diversion Plan	Sustainability	235	235	Funded
P.10085: Single-use Plastic Reduction	Feasibility Study and Implementation Plan for Single-Use Items and Plastics	Sustainability	150	150	Funded
P.10086: Proper Disposal of Elm Wood	Development of Program to Dispose of Elm Wood	Sustainability	150	150	Funded
P.10088: Special/Bulky Waste	Development of Program to Manage Special/Bulky Waste	Sustainability	350	350	Funded
P.10089: Construction & Demolition Waste	Design of a Construction and Demolition Waste	Sustainability	75	75	Funded

	Reduction and Diversion Program				
P.10090: Public Space & Event Reduction	Development of Program to Manage Waste for Public Spaces and Events	Sustainability	375	375	Funded
TOTAL – FUNDED			\$2,418	\$2,418	
P.10015: Electric Vehicle Adoption Roadmap	Increase Uptake of Electric Vehicles in the Community	Sustainability	140	140	Unfunded
P.10069: Solar Access and Orientation Review	Identify Potential Applications for Rooftop Solar Installations	Planning & Development	300	300	Unfunded
P.10081: District Energy	Research and Development of District Energy System for Municipal Buildings	Sustainability	300	300	Unfunded
P.10082: Innovation Fund	Establishment of Fund to Facilitate Community GHG Reduction Initiatives	Sustainability	350	350	Unfunded
P.10092: Equitable and Sustainable Food System	Develop an Action Plan to Progress an Equitable and Sustainable Food System	Sustainability	495	495	Unfunded
P.10093: Natural Areas' Protection and Health	Implementation of Natural Area Process & Policy and Natural Asset Framework	Sustainability	407	407	Unfunded
TOTAL – UNFUNDED			\$1,992	\$1,992	
TOTAL – OVERALL			\$4,410	\$4,410	

Description of Projects in Table 4

P.01281: SL&P - Sustainable Power Generation Options – This project involves the investigation of new power supply options for Saskatoon Light & Power and other projects that support GHG reductions. The 2024/2025 request is for staff and contractor services to study options for sustainable electricity.

P.01964: Waste Reduction Initiatives – This project includes the development and implementation of a ‘Green Team’ program to foster a culture of workplace

environmental sustainability with an initial focus on recycling and organics diversion. The 2024/2025 request is for the implementation of the Leading Green program.

- P.01975: Corporate Wide Energy Management System (EMS) – This project includes the development and implementation of an environmental management system to help the City meet its environmental compliance obligations. The 2024/2025 request is for software to centralize and manage information during deployment of the EMS.
- P.02390: Green Infrastructure Strategy – This project includes the implementation of the Green Infrastructure Strategy to create an interconnected green network for Saskatoon. The 2024/2025 request is to consolidate existing data into a master database, define a monitoring program, and link KPIs to the database to inform decision making and track performance.
- P.02539: Climate Change Mitigation Business Plan – This project includes updating the Low Emissions Community Plan to guide the community toward its net-zero GHG emissions target. The 2024/2025 request is to update the existing Plan, as well as identify an interim GHG target aligned with Council-set principles.
- P.10008: Wastewater - Cogeneration Study – This project includes feasibility planning for a biogas energy system at the wastewater treatment plant. The overall impact on GHG emissions is unknown at this point.
- P.10016: Solid Waste Reduction & Diversion Plan Development + Plan Implementation – This project includes the continued development and delivery of actions in the Solid Waste Reduction and Diversion Plan. The 2024/2025 request is to develop a food waste reduction program pilot and prepare for the update of the Plan in 2027.
- P.10085: Single-use Plastic Reduction – This project includes the feasibility study and implementation plan for the reduction of single-use items and plastic. The 2024/2025 request is for the feasibility study, public engagement, and action planning.
- P.10086: Proper Disposal of Elm Wood – This project advances the development and implementation of a program that addresses barriers to proper elm wood disposal. The 2024/2025 request is to operate an elm wood disposal pilot targeting the residential sector.
- P.10088: Special/Bulky Waste – This project includes the development of a special/bulky waste program to support the success of the variable black cart garbage program and address ongoing illegal dumping issues. The 2024/2025 request is to design, implement, and operate a pilot program.

- P.10089: Construction & Demolition Waste – This project includes the design of a construction and demolition waste reduction and diversion program for the community. The 2024/2025 request is for the feasibility study, including research and engagement on potential program options.
- P.10090: Public Space & Event Reduction – This project includes the design and implementation of a waste reduction and diversion program for public spaces and events. The 2024/2025 request is for program development, design, and implementation of the program, including the purchase of containers.
- P.10015: Electric Vehicle Adoption Roadmap – This project includes initiatives aimed at increasing the uptake of electric vehicles in the community. The 2024/2025 request includes staff support and communications to promote EV community charging.
- P.10069: Solar Access and Orientation Review – This project supports the City’s renewable energy targets and includes identifying potential applications of rooftop solar installations and the development of related guidelines to encourage the use of solar energy.
- P.10081: District Energy – This project includes a feasibility study of a district energy system for municipal buildings.
- P.10082: Innovation Fund – This project includes a feasibility and design study for the establishment of a fund to facilitate community-led GHG reduction initiatives.
- P.10092: Equitable and Sustainable Food System – This project includes the development of a Food Action Plan that will progress an equitable, sustainable, and secure food system in the community. The 2024/2025 request is for an engagement strategy and related communications to facilitate development of a Food Action Plan.
- P.10093: Natural Areas' Protection and Health – This project includes implementing initiatives outlined in Pathways for an Integrated Green Network, the Green Infrastructure Strategy implementation plan. The 2024/2025 request is to implement the Natural Area Process and Policy Framework and the Natural Asset Framework.

3.4 Projects with Quantified GHG Additions

At City Council’s request, the identification of capital projects estimated to result in GHG additions relative to the Business-as-Planned emission scenario were also included in the 2024/2025 Climate Budget analyses. A total of 28 projects were identified as “GHG Additions”, with the majority of those projects in preliminary stages of scoping and/or design. The 18 projects that were quantifiable are estimated to result in GHG additions of 15,700 tonnes CO_{2e}.

Projects valued at \$2M or greater (combined value in 2024/2025) and expected to result in GHG additions that could be quantified are included in Table 5. Project details for the projects listed in the table below can be found in 2024/2025 Approved Capital Budget Project Details.

Table 5. 2024/2025 Projects with Quantified GHG Additions

Project Name	Responsible Department	Total Budget 2024/2025 (\$000s)	GHG Impact (t CO ₂ e)	Funding Status
P.00625: Land Development-Trunk Sewer-NorthEast Sector	Construction & Design	18,385	434	Funded
P.00634: Land Development-Trunk Sewer-North Industrial	Construction & Design	8,767	999	Funded
P.00837: Lane Rehabilitation & Drainage Improvements	Construction & Design	3,405	239	Funded
P.01407: Land Development-Kensington	Construction & Design	9,880	978	Funded
P.01408: Land Development-Airport Industrial Business Park	Construction & Design	7,757	667	Funded
P.01411: Land Development-Aspen Ridge	Construction & Design	39,820	1,694	Funded
P.01416: Land Development-Trunk Sewer-Hampton Village	Construction & Design	3,671	430	Funded
P.01418: Land Development-Trunk Sewer-Holmwood	Construction & Design	5,170	82	Funded
P.01419: Land Development-Brighton	Construction & Design	13,888	648	Funded
P.01435: Land Development-Primary Watermain-North Industrial	Construction & Design	7,064	43	Funded
P.01436: Land Development-Blairmore Primary Watermains	Construction & Design	30,960	140	Funded
P.01551: Broadway Bridge Repair	Technical Services	9,971	280	Funded
P.01619: Storm Sewer Trunk And Collection	Saskatoon Water	33,742	199	Funded
P.01769: Land Development-Marquis Industrial Area	Construction & Design	4,480	1,558	Funded
P.02592: Wastewater-N40 Forcemain	Saskatoon Water	10,000	398	Funded
P.10056: Paved Roads And Sidewalk Preservation	Construction & Design	82,450	5,136	Funded
P.10059: Water Preservation	Technical Services	52,724	1,436	Funded
P.10060: Waste Water Preservation	Technical Services	17,256	309	Funded
TOTAL – OVERALL		\$359,390	15,670	

3.5 Projects with Non-quantified GHG Additions

Projects valued at \$2M or greater (combined value in 2024/2025) and expected to result in GHG additions that could be quantified at this time are included in Table 6. The list

does not include projects that met the reporting exclusion criteria as outlined in Section 3.2 below. Project details for the projects listed in the table below can be found in 2024/2025 Approved Capital Budget Project Details.

Table 6. 2024/2025 Projects with non-quantified GHG Additions.

Project Name	Responsible Department	Total Budget 2024/2025 (\$000s)	Funding Status
P.10074.01: Fire Hall 10	Saskatoon Fire	8,962	Funded
P.10074.02: Fire Hall 11	Saskatoon Fire	9,750	Funded
P.01135: Civic Buildings Comprehensive Maintenance Program	Facilities Management	8,768	Funded
P.01174: SL&P Street Lights - Land Development	SL&P	3,184	Funded
P.02288: Transportation Safety	Transportation	3,900	Funded
P.02600: White Buffalo Youth Lodge	Rec & Comm Development	2,000	Funded
P.10006: Water Treatment Capital Development Expansion Plan	Saskatoon Water	36,938	Funded
P.10007: Water Treatment Raw Water Monitoring Program	Saskatoon Water	4,553	Funded
P.10070: New SL&P Operation Centre Building	SL&P	10,000	Funded
TOTAL – FUNDED		\$88,055	
P.02037: Snow Management Facilities	Roadways, Fleet & Support	15,000	Unfunded
TOTAL – UNFUNDED		\$15,000	
TOTAL – OVERALL		\$103,055	

4 Methodology, Assumptions, and Uncertainty

4.1 Project Identification Methodology

The projects highlighted in the tables above were selected on several criteria, initially based on if the project will realize a net reduction or a net addition relative to the City’s BAP emission scenario. As reported in the LEC Plan, the BAP scenario assumes that no additional policies, actions, or strategies will be implemented by 2050 beyond those that are currently underway (as of 2019). The BAP scenario modelling accounts for population and demographic trends and estimates and uses energy and GHG emissions-related information from local, provincial, and federal governments to inform modelling assumptions. Additional details about modelling assumptions of the BAP and LEC scenarios can be found in Appendix D of the LEC Plan.

For Climate Budget reporting, project managers were required to know if their project has or will have GHG emission implications, and then were required to identify and quantify (if applicable) those emission implications for the 2024/2025 Multi-Year Business Plan and Budget if the project met the following inclusion criteria:

GHG Reductions:

- Project related directly to actions in the Low Emissions Community Plan
- Any other project expected to result in GHG emission reductions

GHG Additions:

- Project valued at \$2M or greater (combined value in 2024/2025) and expected to result in GHG additions

Projects reported as having both GHG reduction and GHG addition components were further assessed on the type of project, and ultimately on if the project will realize a net reduction or a net addition relative to the BAP. For example, energy-efficiency projects typically involve construction activities which result in GHG additions; however, the energy savings over time result in the project being categorized as a GHG reduction measure.

4.2 GHG Quantification Methodology

Following this initial screen, project managers were required to estimate the GHG emissions associated with their projects. Sustainability Department provided high-level guidance to project managers on identifying project components associated with GHG implications, and a GHG Calculator to convert activity data to tonnes of carbon dioxide equivalents (tonnes CO₂e).

GHG quantification was not required for projects meeting the following exclusion criteria:

- Project in early scoping (e.g., projects at the pre-design or strategy level, where critical details have not been defined)
- Project expected to have no or minimal GHG emissions (e.g., strategies, programs, software, and other non-emitting activities; projects that include replacements of equipment with similar equipment)
- Project unplanned (e.g., weather-related or major disaster event response)
- Project led by City Board or Corporation (e.g., Police, TCU Place, SaskTel Centre, Remai Modern, Libraries, etc.)
- Scope 3 emissions (i.e., emissions embodied in fuels, food, construction materials, etc.)

4.3 Assumptions and Uncertainty

For projects submitted for budget consideration – with or without a funding plan – there is considerable uncertainty associated with both the magnitude of the emissions and the timing of implementation. All quantified projects in the Climate Budget were calculated based on the best available knowledge at the time of 2024/2025 budget preparations. Local emission factors were used, where available, with the others taken from Environment and Climate Change Canada's National Inventory Report⁴. Project managers were responsible for the accuracy and robustness of their calculations and

⁴ Environment and Climate Change Canada. National Inventory Report 1990-2020: Greenhouse Gas Sources and Sinks in Canada – Part 2. 2022.

instructed to document any methodologies and assumptions used to estimate GHGs at the project level. The GHG estimates calculated for the Climate Budget are for projects that have not been implemented, and often for projects that have not been fully defined or scoped. The impact of these projects will ultimately be reflected in the City's GHG inventories.

Reported quantified projects are specific to the 2024/2025 budget cycle; that is, the reported emissions are estimated emissions in 2024 and 2025 that would result from funded measures implemented in 2024 and 2025. For the projects with quantified GHG reductions, specifically, annual emission reductions at the time of project build-out are also estimated. Cumulative emissions are not projected beyond this reporting cycle. For this initial Climate Budget, only Scope 1 emissions (from sources located within the city boundary) and Scope 2 emissions (occurring as a consequence of the use of grid-supplied energy within the city boundary) were required for GHG estimation. Scope 3 emissions (from sources outside the city boundary, including emissions embodied in fuels, food, construction materials, etc.) were not required in GHG estimates. Similarly, GHGs resulting from carbon sequestration activities were not required in GHG estimates. The City's GHG inventories currently do not include the role or impact of carbon sequestration activities (e.g., land use and land use change) toward the 2050 net-zero emissions target.

5 Moving Forward / Next Steps

5.1 Greenhouse Gas Management Platform Pilot

Administration is currently developing a web-based platform to help track, manage, and communicate progress towards our long-term GHG emissions target and LEC Plan actions, as the community transitions to a low emissions future. Automating the tracking and reporting processes is expected to reduce staff resources (by approximately \$30,000) required to complete annual Climate Action Plan progress reporting, allowing Sustainability staff to progress other important environmental initiatives. The new platform is expected to be launched in early-2024.

5.2 Low Emissions Community Plan 2.0

The City's climate mitigation plan – the LEC Plan – will be updated in 2025 pending funding approval through the 2024/2025 budget process. The update will incorporate the community's new net-zero target and include updated models for both business-as-planned and low emissions scenarios. The project will also include the setting of an interim GHG target aligned with City Council-set principles.

5.3 2026/2027 Climate Budget

The 2026/2027 Climate Budget will build from the experiences of the 2024/2025 Climate Budget process. Planned enhancements include more comprehensive and timely guidance for project managers regarding project identification and project-level GHG quantification.

Administration is also considering opportunities to 'close the loop' on projects reported in the 2024/2025 Climate Budget that could not be quantified.