

# The Low Emissions Community Plan

## ISSUE

Climate change is a complex issue facing Saskatoon and all communities in Canada and across the globe. Mitigation of climate change impacts involves the reduction and stabilization of greenhouse gas (GHG) emissions. Climate change mitigation is a challenge for many municipalities given its scale and complexity, the community's perception of urgency, and the City of Saskatoon's (City) ability to prioritize with limited resources.

In order to meet GHG emission reduction targets and to optimise financial and social benefits for the City and the community, a coordinated and comprehensive plan is needed. The Low Emissions Community (LEC) Plan provides specific actions which can guide the City in facilitating and leading corporate and community GHG emission reductions. In alignment with climate change commitments, it lays out a road map for reaching 80% community and City emissions reduction by 2050. While the LEC Plan models actions for the successful reduction of Saskatoon's GHG's, it also highlights significant financial and social benefits when compared to Business as Planned.

## RECOMMENDATION

That engagement with the Community and Stakeholders is undertaken to further advance planning and to develop comprehensive implementation strategies for preliminary initiatives included in the Low Emissions Community Plan.

## BACKGROUND

In November 2015, City Council committed the City to the Compact of Mayors, now known as the Global Covenant of Mayors for Climate and Energy, and the City became a signatory, committing to address climate change by reducing GHG emissions.

On June 26, 2017, City Council set Greenhouse Gas Emissions Targets for Saskatoon to reduce emissions below the 2014 baseline, as follows:

- “1. 40% reduction in greenhouse gas emissions for the City of Saskatoon as a corporation by 2023; and a reduction of 80% by 2050.
2. 15% reduction in broader community emissions by 2023 and a reduction of 80% by 2050.”

At its meeting on November 19, 2018, City Council was presented with an update on the LEC Plan referred to as the “Recommendations Report”, and a contract for the mapping and modeling for the Plan (called the Climate Change Mitigation Business Plan) was awarded to Sustainability Solutions Group. The LEC Plan provides specific mitigation actions that the City could take to facilitate and lead corporate and community GHG emission reductions in alignment with current reduction commitments. It lays out the road map for reaching the emissions targets set by City Council which include an 80% reduction by 2050.

At its meeting on April 1, 2019, the Standing Policy Committee on Environment, Utilities & Corporate Services was presented with the “Climate Change Projections and Possible Impacts for Saskatoon” Report. This report summarized the expected climate change projections and impacts to the Saskatoon region and the risks these changes pose to the City’s infrastructure, programming and service delivery. The Administration noted all risk estimates for identified climate impacts would likely increase over time if actions to address conditions were delayed or avoided.

This report addresses several outstanding Council Resolutions, which are outlined in Appendix 1 – Background and Outstanding Resolutions.

### **DISCUSSION/ANALYSIS**

#### The Low Emissions Community Plan

Consisting of 40 actions, the LEC Plan creates a roadmap for the community and the City to meet established GHG reduction commitments by 2050. The benefits of these actions and the costs of inaction are described in order to outline choices that impact the climate, community, economy, and quality of life for all citizens. The full LEC Plan can be found at: [saskatoon.ca/lowemissions](http://saskatoon.ca/lowemissions).

The benefits of the LEC Plan are significant when assessed against business as planned (BAP) projections. In a low emissions community, health is improved due to a more active lifestyle, cleaner air and improved water and soil. The LEC Plan contributes to broader efforts to address global heating and extreme weather emergencies such as fire, flood and heat that are projected under BAP. Tangible health benefits from reduced emissions include reduced rates of hospitalization, illness, disease and mortality. In addition to increased health, further co-benefits of a low emissions community include:

- Diverse and resilient economy;
- Reduced expenses for residents, businesses and the municipality; and
- Improved equity and quality of life.

In order to achieve the societal and economic benefits outlined above, the LEC Plan uses the principles of *Reduce, Improve and Switch* to propose and prioritize the map for GHG reduction. Actions are categorized into sectors including: buildings, transportation, land use, energy generation, water conservation, and waste management. A list of the 40 actions is included in Appendix 2 – LEC Plan Executive Summary – The Low Emissions Community Plan.

The LEC Plan is a complete strategy which models how to successfully achieve outcomes through collaborative, strategic and phased implementation over time. The intent of the LEC Plan is to propose a coordinated series of phased actions, which meet the GHG reduction targets and optimize the societal and financial benefits. Like saving for retirement, benefits are optimized with an early start, and sustained, and consistent with well-planned execution.

Without an overarching strategy for climate change, the City risks not achieving the full benefits outlined in this plan, or meeting City Council's strategic objectives and targets. The LEC Plan sets out a series of broadly defined actions. Prior to moving forward, City Council would review and approve individual initiatives on a case by case basis. While engagement has informed the development of the LEC Plan, in order to develop comprehensive implementation plans further engagement with the community and stakeholders would occur prior to moving forward with major investments, incentives or policy changes.

### Financial Implications

CityInSight, an integrated energy, emissions and finance model, has been extensively utilized to prepare climate plans for municipalities across Canada and was used by consultant Sustainability Solutions Group to prepare content and analysis for Saskatoon's LEC Plan.

The model has identified that with climate change infrastructure and equipment investment, operational savings and, in the case of local energy production, revenues would result. Through the climate model, the LEC Plan outlines how incremental expenditures by the community and the municipality in buildings, vehicles and other energy-related equipment and infrastructure result in long-term savings. Refer to Appendix 3– LEC Plan - Financial Analysis and Marginal Abatement Costs for further information on Financials.

There are 27 of the 36 actions plotted on the Marginal Abatement Cost (MAC) Curve resulting in financial savings over the period from 2020 to 2050 on a dollar per tonne perspective. Appendix 3 includes a MAC Curve and a high level financial analysis for the LEC Plan recommended actions. These savings would be realized by both the municipality and the community.

The LEC Plan, as it is informed by the model, illustrates that joint investment in low emissions community actions results in increased employment in the local economy. The LEC Plan is estimated to generate approximately 100,000 person years of employment between 2020 and 2050, or an average of 3,300 per year compared to the BAP scenario. Many jobs are in the renewable energy sector, with solar photovoltaics, district energy systems, and heat pumps to install. Others are related to home retrofits and new building construction.

### Status of Climate Change Commitments

In 2014, Saskatoon's GHG emissions totalled 3,850,000 tonnes CO<sub>2</sub>e. Under BAP circumstances from the climate model, the City's emissions would rise to 4,350,000 tonnes CO<sub>2</sub>e, a 13% increase over the next 30 years.

The 40 actions modelled in the LEC Plan can achieve emissions reductions of 3,310,000 tonnes CO<sub>2</sub>e in the year 2050, bringing the city and community's total emissions down to 780,000 tonnes CO<sub>2</sub>e - an 80% reduction compared to 2014 levels as outlined in the following table.

## The Low Emissions Community Plan

Figure 1: Climate Change Commitment Projections

Item	City of Saskatoon	Community	Total
<b>2014</b>			
2014 GHG Baseline (tonnes CO <sub>2</sub> e)	106,300	3,743,700	3,850,000
<b>2023</b>			
2023 GHG Reduction Target (%)	40%	15%	
2023 Modelled performance (%)	49.63%	11.61%	
<b>2050</b>			
2050 GHG Reduction Target (%)	80%	80%	
2050 Target Emissions (tonnes CO <sub>2</sub> e)	21,300	748,700	779,000
2050 Modelled performance (%)	89.39%	79.71%	
2050 Modelled performance (tonnes CO <sub>2</sub> e)	11,300	759,600	770,900

Even with the actions implemented as modelled for in the LEC Plan, the 2023 community emissions commitment for 15% emissions reduction falls short, with a projection of 11.61% CO<sub>2</sub>e reduction by 2023. The model illustrates the 15% community emission reduction target being achieved in 2027. Inability to meet full implementation scope and the LEC Plan's proposed timelines would likely result in delay or failure to meet the emissions targets by 2050.

### ADDITIONAL CONSIDERATIONS

#### Business as Planned

In order to determine the viability of the LEC plan, Saskatoon's BAP scenario was carefully modelled and evaluated. BAP assumes no additional policies, actions or strategies are implemented by 2050 beyond those that are currently underway or in the planning phase. The emissions are modeled in the BAP scenario to understand the impact and effectiveness of current actions. It is akin to a business as usual or status quo scenario but is more realistic as it assumes some pre-existing plans or actions that are in effect over time. The detailed results of this alternative are included in Appendix 4 - LEC Plan - Business as Planned.

#### Approaches in Other Jurisdictions - Declaring a Climate Emergency

Forty Canadian Cities have called for urgent action to significantly address the effects of climate change and global heating within a shorter time-frame, and have adjusted emissions targets to reach 100% (net zero) or negative emissions by 2050. The municipalities which have declared a climate emergency are located in: Ontario (13), British Columbia (19), Nova Scotia (3), New Brunswick (3), Prince Edward Island (1) and the Yukon (1).

#### Legal Considerations

Action 10 refers to incentivizing homeowners to implement deep energy retrofits. One tool to achieve this is a Property Assessed Clean Energy (PACE) loan program. Saskatchewan's Ministry of Government Relations has developed draft legislative proposals for amendments to *The Cities Act*. The proposed amendment would enable the City to offer PACE financing for energy efficiency and renewable retrofits for home

owners and Industrial, Commercial and Institutional customers. Until *the Act* is amended, the City cannot offer PACE programming. The legislative proposals are currently undergoing consideration and review by the Provincial Government. As a result, it is likely that the City will have the ability to implement a PACE program in 2021.

Some actions in the LEC Plan around existing housing retrofits would require a detailed, legal review in the design phase. At this time retrofits for existing housing cannot be mandated but may be incentivized through program offerings such as future PACE financing referred to above.

### NEXT STEPS

Next steps would involve consideration by Council of funding strategies and preliminary initiatives. Each initiative would then involve engagement with the Community and Stakeholders to further advance the planning and implementation strategies for preliminary initiatives included in the Low Emissions Community Plan.

A complementary report titled "Preliminary Low Emission Community Plan Initiatives 2020-2021" will be presented at the Standing Policy Committee meeting for Environment, Utilities & Corporate Services on August 6, 2019, for consideration at the 2020-2021 Budget deliberations for funding in order to proceed with further engagement and planning of preliminary initiatives from the LEC Plan.

Further reporting on climate commitment status would occur prior to each budget cycle.

### APPENDICES

1. Background and Outstanding Resolutions
2. LEC Plan Executive Summary – The Low Emissions Community Plan
3. LEC Plan - Financial Analysis and Marginal Abatement Costs
4. LEC Plan - Business as Planned

### Report Approval

Written by:	Hilary Carlson, Project Manager, Sustainability Amber Weckworth, Education and Environmental Manager
Reviewed by:	Jeanna South, Director of Sustainability
Approved by:	Angela Gardiner, General Manager, Utilities & Environment