

Preliminary Low Emission Community Plan Initiatives 2020-2021

ISSUE

In 2017, City Council adopted medium and long term greenhouse gas (GHG) reduction targets. To help achieve such targets, the City of Saskatoon (City) commissioned the Low Emissions Community Plan (LEC Plan) to model how GHG reduction commitments can be met through a broad set of corporate and community initiatives. What are the various initiatives that the City can implement to help the Community and the City achieve these GHG reduction targets?

BACKGROUND

2.1 History

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.

At its June 26, 2017 meeting, City Council set GHG 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.

At its meeting on April 1, 2019, the Standing Policy Committee on Environment, Utilities and 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 full LEC Plan can be found online at Saskatoon.ca/lowemissions. The 40 actions which would help to achieve the City’s climate change target by 2050 are included as Appendix 1 – LEC Plan Executive Summary – The Low Emissions Community Plan.

2.2 Current Status

Several of the broader actions identified in the LEC Plan are moving forward by way of initiatives which are either underway or received funding approvals. Other initiatives have funding requests through other programs. Refer to Appendix 2 – Planned Projects

in Support of the Low Emissions Community Plan for the list of LEC initiatives that are currently underway or likely to be in 2020, with funding strategies separate from this report.

The LEC Plan has informed preparation for the 2020-2021 Business Plan and Budget. The Sustainability Division - in partnership with Facilities Management, Building Standards, Water and Waste Operations and Saskatoon Light & Power - is bringing forward the following initiatives for consideration:

- High Performance Civic Building Policy – Phase 1 - New Construction
- Community Incentive Program for Building Efficiencies and Renewable Energy
- Industrial / Institutional / Commercial (ICI) and Multi-Unit Waste Strategy Implementation
- Leading by Example - City operated facilities mandatory ICI compliance
- Citywide Solar/Renewables Strategy Development
- Sustainability Support to Operationalize Triple Bottom Line Policy

The initiatives outlined above for 2020-2021, as stand-alone projects, represent strides that can be taken towards meeting the GHG emissions reduction targets but would not achieve the cumulative GHG reductions for the full actions shown in the LEC plan.

2.3 Public Engagement

Public engagement was completed for the LEC Plan and a summary can be found in Appendix 3 – LEC Plan Community Engagement Summary. The feedback was used to inform the recommendations of this report.

The majority of the initiatives outlined above are in preliminary stages and engagement would be carried out with Stakeholders and the Community in order to more clearly understand issues, opportunities and constraints for each project. Engagement input into the planning development would occur in order to meaningfully inform the implementation proposal prior to moving forward with major investments, incentives or policy changes.

The preliminary phase of the ICI and Multi-Unit Waste Strategy project is in development and work is currently underway including engagement with stakeholders, businesses and organizations. A report is planned for Q4 outlining engagement outcomes, options and a recommendation for program implementation in 2020-2021. Advanced engagement, program education, and change management would be included into the next stages of this project.

2.4 City of Saskatoon's Current Approach

The City does not currently have a corporate-wide strategy that focuses on achieving GHG reduction targets, and instead projects and initiatives are implemented by individual departments and divisions.

The phased or incremental implementation of the LEC Plan is intended to reform this approach as it is interconnected with other City strategies including the:

- Local Actions - Saskatoon's Adaptation Strategy;
- Green Infrastructure Strategy;
- Growth Plan to Half a Million;
- Official Community Plan;
- Local Energy Access Program; and
- Triple Bottom Line Policy.

2.5 Approaches in Other Jurisdictions

All the recommended actions included in the LEC Plan are based on best practices and common or emerging activities in other jurisdictions.

OPTIONS

This section of the report addresses and evaluates four options, three of which could advance the LEC Plan, and help the City and the Community to achieve its long term emissions reduction targets. The options proposed are to be considered as part of the 2020-2021 budget deliberations.

The options range from a business as planned approach to one that focuses on developing corporate and community capacity to inform, plan and implement emissions reduction projects.

Option 1: Business as Planned

This option proposes to continue with the City's "Business as Planned" approach. Specifically, this scenario assumes no additional policies, actions or strategies are implemented by 2050 beyond those that are currently underway or in the planning phase. Refer to Appendix 4 – Business as Planned Scenario (Option 1) for further information on this option.

Financial/Economic Implications

This option has no additional upfront investment to implement.

Environmental Implications

According to modelling in the LEC Plan, this option produces sub-optimal environmental implications. For example, according to the analysis:

- Additional vehicles and homes will increase gasoline use by almost 50% over the time period, while natural gas use is projected to increase by 123%;
- Electricity use is projected to increase by 95%;
- Energy prices projected to increase 2% annually on average reaching almost \$2 Billion for the community at large by 2050 (compared to \$866 Million in 2016); and
- Total projected GHG emissions increase to 4,350,000 tonnes of CO₂e by 2050, an increase of 13% compared to 2014 levels.

The Advantages of Options 1

- Little to no up-front costs to implement.

The Disadvantages of Option 1

- Missed financial and economic opportunity for future cost savings and revenues when compared to Option 2, 3 or 4. The community incentive program and the solar strategy study would result in community operational savings through energy efficiency and renewable energy generation once implemented and fully operational. When implemented and applied to new construction, corporate operational savings could be achieved through the high performance building policy due to higher building energy efficiency;
- Potential to increase infrastructure maintenance and rehabilitation costs;
- Peaks in emergency spending for climate related disasters;
- Increased insurance costs;
- Magnifying effects on issues such as energy poverty and social inequities;
- Emergency spending or social supports for individuals displaced by climate disasters locally and globally; and
- No umbrella strategy for climate change action resulting in limited coordination of efforts across civic departments to address emissions reductions.

Option 2: Building Overall Capacity

This option identifies preliminary initiatives introduced through actions in the LEC plan. It proposes to prepare and develop a comprehensive implementation plan that includes engagement with Stakeholders and the Community. Engagement activities would also inform the scope and development of the preliminary feasibility studies and planning needed prior to implementation of climate change mitigation projects included in the LEC Plan. In the majority of the cases, project investment and implementation would occur at a later phase, if and when project funding becomes available.

Option 2 also prepares for the implementation of ICI and Multi-Unit waste reduction initiative, as engagement and reporting are scheduled to be complete by the end of 2019.

The initiatives included in this option are:

- High Performance Civic Building Policy – Phase 1 - New Construction;
- Community Incentive Program for Building Efficiencies and Renewable Energy;
- Industrial / Institutional / Commercial (ICI) and Multi-Unit Waste Strategy; Implementation (2021 only);
- Leading by Example - City operated facilities mandatory ICI compliance (2021 only);
- Citywide Solar/Renewables Strategy Development; and
- Sustainability Support to Operationalize Triple Bottom Line Policy.

Appendix 5 – Building Overall Capacity (Option 2) provides additional details on this option. It includes individual initiative costs, emission reduction impact, and co-benefits.

The goal of this Option is to generate a more complete understanding of community and stakeholder perspectives, funding needs for specific and strategic initiatives, and expected paybacks by 2022. This will create a state of readiness to assist in preparing applications for external funding grants and further exploration of funding options. This work will help to prepare the City and Community to build capacity and prepare for implementing an initiative over time, ahead of its full start date.

Furthermore, with the exception of the ICI and Multi-Unit waste reduction initiative, the majority of the bundle is focussed on gathering stakeholder and community feedback and using it to inform the preparation of low-cost plans and policies. This work aims to assist, discuss, build partnerships, educate or incentivize GHG reduction in both corporate and public areas, without immediate budget requests for major initiatives.

Financial/Economic Implications

To support implementation of this option, funding of \$435,000 in 2020 and \$987,000 in 2021 (\$494,000 for ICI / Multi-Unit waste reduction) would be required.

Environmental Implications

Because this option does not include more extensive implementation of climate change mitigation infrastructure or major projects, which actively reduce carbon emissions, there is a risk that this option is not aggressive enough to meet the targets of 80% reduction by 2050 within the current LEC Plan as modelled. With project implementation later than outlined in the LEC Plan, all targets would shift by at least two years. Accelerating the plan after 2021 is an option, but it becomes more challenging and possibly more costly as the cumulative effect over time of the early initiative is lost with each year of minimal or no action.

Advantages of Option 2

- In proceeding with preliminary work on the High Performance Building Policy, Community Incentive Program for Building Efficiencies and Renewable Energy, Leading by Example; City-wide Solar Strategy, and Sustainability Support to Operationalize Triple Bottom Line Policy, engagement with Stakeholders and the Community can contribute to comprehensive implementation planning ahead of significant project investments.
- In proceeding with preparation of a High Performance Building Policy, the City will be a leader in terms of building efficiency. This would result in GHG emission reductions, and possible operational cost benefits. Further sustainability- and equity-related operational building issues such as bird strike mitigation and access to water bottle fill stations would be addressed through the development of this policy.
- Exploration, engagement, research and feasibility studies would go into creation of a Community Incentive Program for Building Efficiencies and Renewable Energy. Completion and implementation of the study recommendations could lead to significant reduction of GHG – if started early, as well as decreased community spending on water and energy.

- Waste Reduction Strategies for ICI and Multi-Units, as well as the City's Leading by Example application of these initiatives, have the potential to lead toward significant reduction of emissions and contribute to Saskatoon's 70% waste diversion target; optimizing waste operations; extend life of the landfill; and creating equity for mandatory diversion with both homeowners and ICI/Multi's/City of Saskatoon.
- The City-wide Solar Strategy would show the opportunities, barriers, community feedback and business case for Solar and renewables. The benefit of this plan is that it will show the largest opportunities for solar in terms of economic, social and environmental (GHG reductions). The strategy will also consider Local Energy Access and mitigation measures for energy poverty in the community.
- Sustainability support for Triple Bottom Line Policy implementation will provide assistance to the corporation to reduce GHG emissions, and through stakeholder engagement, identifying and implementing opportunities. Through a dedicated support resource, the policy can be applied to relevant initiatives to ensure that social, environmental, and economic benefits are realized.
- The funding could be used to leverage external funding. Preparation of this work would create a state of readiness to assist in preparing applications for external funding grants and further exploration of funding options for later phases.

The Disadvantages of Option 2

- In many instances the initiatives are preliminary and emissions reductions would not be achieved until the detailed design work for projects and program is complete and items are fully implemented.
- Coordination with the Facilities Division would be required when preparing the High Performance Building Policy as the work would include revisions to: current policies; operational procedures; and maintenance processes. In order to mitigate this risk, Facilities would be integrated in the development of the policy.
- The Solar Strategy may impact Saskatoon Light & Power business planning, and may require changes to operational processes, due to further integration of renewables into service delivery.
- Strategies to reduce waste may result in a business impact for the Saskatoon Regional Waste Management Centre. The broader business impacts of waste reduction are currently being examined in the preparation of the Waste Reduction Strategy, with input from Water and Waste Operations team.

Option 3: Community Capacity-Building

This option is similar to option 2, but limits the work to community projects from the longer list of planning and policy projects outlined in Option 2. The initiatives included in this option are:

- City-wide Solar Strategy; and
- Community Incentive Program for Building Efficiencies and Renewable Energy.

Appendix 6 – Community Capacity-Building (Option 3) provides additional details about this option.

Initiatives proposed within this option focus on Community engagement and capacity-building in order to address limited resources that are currently available for climate change mitigation work. This work includes community engagement and seeks to define how to incentivize or facilitate community initiatives to build homes more efficiently, as well, in preparation of a solar strategy to detail limitations, opportunities, and priorities for solar power within the community in coordination with the power utility and other levels of government. This option does not include budget requests for major GHG mitigation infrastructure.

Financial/ Economic Implications

This option requires funding of \$220,000 in 2020, and \$220,000 in 2021, in order for implementation.

Environmental Implications:

Like Options 1 and 2, this option is not aggressive enough to meet the targets of 80% reduction by 2050 within the current LEC model. With later project implementation, all targets would shift. Accelerating the plan after 2021 is an option, but it becomes more challenging and likely more costly as the cumulative effect over time is lost.

Advantages of Option 3

- In proceeding with the Community Incentive Program for Building Efficiencies and Renewable Energy and the City-wide Solar Strategy, engagement with Stakeholders and the Community can contribute to comprehensive implementation planning ahead of significant project investments.
- The City-wide Solar Strategy will show the opportunities, barriers and business case for Solar and renewables. The benefit of this plan is that it will identify the largest opportunities for solar in terms of economic, social and environmental (GHG reductions). The strategy will also consider Local Energy Access and mitigation measures for energy poverty in the community.
- Exploration, research and feasibility studies would go into creation of a Community Incentive Program for Building Efficiencies and Renewable Energy study. Completion and implementation of the study would lead to significant reduction of GHGs – if started early, as well as decreased community spending on water and energy.
- The funding could be used to leverage external funding. Preparation of this work would create a state of readiness to assist in preparing applications for external funding grants and further exploration of funding options for later phases.
- In the LEC Plan, the majority of the GHG emission reductions are through community initiatives. This option focusses limited resources on facilitation of community-led initiatives for this sector, which are likely to have a broad impact in the long term.

Disadvantages of Option 3

- The actual initiatives are preliminary and emissions reductions would not be achieved until later phases.
- A focus on community initiatives only could shift funds away from City's operational efficiencies and optimization.
- The Solar Strategy may impact Saskatoon Light & Power business planning, and may require changes to operational processes, due to further integration of renewables into service delivery.

Option 4: Corporate Capacity-Building

This option proposes to implement some climate mitigation work, with a focus on corporate initiatives. More specifically, it focusses on preliminary corporate planning and policies in order to engage with stakeholders and prepare for climate change mitigation infrastructure recommended in the LEC Plan when funds are available. The initiatives included in this option are:

- High Performance Building Policy – Phase 1 - New Construction;
- ICI and Multi-Unit Waste Reduction Strategy;
- Leading By Example – City Operated Facilities Mandated by ICI Compliance; and
- Sustainability Support to Operationalize Triple Bottom Line Policy.

Appendix 7 – Corporate Capacity-Building (Option 4) provides additional information on this option. It includes individual initiative costs, carbon impact and co-benefits.

Financial/Economic Implications

Preparation of this work would require \$215,000 in 2020, and \$767,000 in 2021.

Environmental Implications

Like Options 1, 2, and 3, this option presents risks of not meeting the targets of 80% reduction by 2050.

Advantages of Option 4

- In proceeding with preliminary work on the High Performance Building Policy, Leading by Example - City operated facilities mandatory ICI compliance, and Sustainability Support to Operationalize Triple Bottom Line Policy, engagement with stakeholders can inform the initiative planning and contribute to comprehensive implementation planning ahead of significant project investments.
- In proceeding with preparation of a High Performance Building Policy, the City will be a leader in terms of building efficiency. This would result in GHG emission reductions, and possible operational cost benefits. Further sustainable and equitable operational building issues such as bird strike mitigation and access to water bottle fill stations would be addressed through the development of this policy.

- Waste Reduction Strategies for ICI and Multi-Units, as well as the City's Leading by Example application of these initiatives have the potential to lead toward: significant reduction of emissions and contribute to Saskatoon's 70% waste diversion target; optimizing waste operations; extend life of the landfill; and creates equity for mandatory diversion with both homeowners and ICI/Multi's/City of Saskatoon.
- Sustainability support for Triple Bottom Line Policy implementation will provide assistance to the corporation to reduce GHG emissions and by identifying and implementing opportunities. Through a dedicated support resource, the policy can be fairly applied to relevant initiatives to ensure that social, environmental and economic benefits are realized.
- The funding could be used to leverage external funding. Preparation of this work would create a state of readiness to assist in preparing applications for external funding grants and further exploration of funding options for later phases.

Disadvantages of Option 4

- In many instances the actual initiatives are preliminary and emissions reductions would not be achieved until later phases.
- Coordination with the Facilities Division would be required when preparing the High Performance Building Policy as the work would likely include revisions to: current policies; operational procedures; and maintenance processes. In order to mitigate this risk, Facilities would be integrated in the development of the policy.
- Strategies to reduce waste may result in a business impact for the Saskatoon Regional Waste Management Centre. The broader business impacts of waste reduction are currently being examined in the preparation of the Waste Reduction Strategy, with input from the Water and Waste Operations team.

RECOMMENDATION

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

- 1) That Option 2 – Building Overall Capacity work plan is approved in principle; and
- 2) That during the 2020-2021 Budget Options discussions at the August 19th, Governance and Priorities Committee, funding of \$435,000 in 2020, and \$987,000 in 2021 be considered for implementation of Option 2.

RATIONALE

Taking a proactive approach to climate mitigation infrastructure decreases the risk for emergency or unplanned spending as a consequence of climate change. Without global climate action, costs are projected to increase in areas including: insurance; emergency investment into infrastructure and adaptation; health care; social supports for climate refugees or citizens displaced as a result of extreme weather events.

Beyond emissions, further co-benefits outlined in the LEC Plan include the potential for job creation in the renewable and construction sectors, improved health, consideration for energy access for low- and middle-income earners, and a more resilient energy system.

Option 2 – Building Overall Capacity proposes a suite of work that is informed through engagement with the community and stakeholders that prepares for the implementation of climate change infrastructure when funds are available. Choosing to do less—such as proposed in Options 1, 3 and 4, or focussing on smaller components increases the risk of not meeting GHG targets in the near and long-term by a larger margin.

Option 2 focusses on engagement and planning work to prepare “shovel-ready” projects, and without these resources and planning, future funding opportunities from other levels of government may not be successful.

Of all four options, Option 2, with more initiatives, would likely lead to the most significant environmental impact.

Environmental Implications

In 2014, Saskatoon’s GHG emissions totalled 3,852,000 tonnes CO₂e. Under Business as Planned circumstances (Option 1), by 2050 the City’s emissions will rise to 4,085,000 tonnes CO₂e per year - a 13% increase.

The 40 actions in the LEC Plan can achieve emissions reductions of 3,305,000 tonnes CO₂e in the year 2050, bringing the City’s total annual emissions down to 780,000 tonnes CO₂e - an 80% reduction compared to 2014 levels. This includes 98,000 tonnes CO₂e (2.6%) of emissions reductions achieved by municipal corporate actions, and 2,288,000 tonnes CO₂e (97.4%) are achieved by community actions.

Option 2 is beneficial in that it plans for future GHG emissions reduction infrastructure in a manner that balances community and corporate projects considering current funding limitations. While Option 2 is a modest start to LEC Plan implementation, the full suite of projects in Option 2 can result in significant benefits once completed in later work plan phases. The work plan proposed in Option 2 initiates momentum for the LEC Plan actions 1, 6, 7, 24, 29, 32, 34, and 38. If fully executed in accordance with scope, targets and timing as modelled, the LEC actions are positioned to achieve a cumulative (30-year) emissions total of approximately 14,600,000 tonnes CO₂e by 2050, or approximately 31% of the cumulative total reduction for all 40 actions. Options 3 and 4 would result in a smaller portion of the cumulative total and Option 1 would achieve no reductions.

Furthermore, both Options 2 and 4 proactively contribute to the City’s Solid Waste diversion target of diverting 70% of waste from the City’s landfill by 2023. The options facilitate long-term LEC plan Action #24, which ultimately projects total diversion rates of 90-95% for all organics, plastic and paper landfilled (city and commercial services).

Financial Implications

Option 2 sets out a plan which requires a funding commitment of \$435,000 in 2020, and \$987,000 in 2021. Limited funding options are currently available, other than through

the Reserve for Capital Expenditures. Operational impacts from proposed initiative implementation would be further explored through the work carried out in this phase.

The initiatives included in Option 2 focus on the preparation of low-cost plans and policies that aim to assist, educate or incentivize GHG reduction in both corporate and public areas, without immediate budget requests for major initiatives. Triple Bottom Line implementation support allows for co-benefits and improvements to be considered within projects that already have funding in place, leveraging higher and more effective outcomes from existing initiatives and funding.

The goal of Option 2 is to generate a more complete understanding of funding needs for specific and strategic initiatives and expected paybacks by 2022. This will create a state of readiness to assist in preparing applications for external funding grants and further exploration of funding options. In providing resources and deliverables to create a state of readiness for funding applications, applications would be better executed, more complete and have a higher likelihood of success.

Additional Considerations

Monitoring and reporting out results of the recommended initiatives is critical to evaluate the success of a project and if it should be expanded on or scaled up into the future. The results of any emissions gains or reductions will be analyzed and then communicated through annual GHG inventory reporting.

The City has several climate change initiatives that require ongoing sustainable funding. Full implementation of the first phase of the LEC Plan as proposed cannot be achieved within the current funding structure. Reaching emissions reduction targets requires sustained funding for ongoing planning, management and implementation for climate change mitigation infrastructure. Substantial investment in infrastructure such as renewable energy, electrifying transportation systems, new service offerings for residents, as well as project management, program development, corporate coordination, and data management is required. The Administration will investigate funding approaches and report back to committee with a funding strategy that aims to provide long-term sustainable funding for the LEC Plan and climate change mitigation projects.

Further reports on the ICI and Multi-Unit Waste Strategies as well as the Waste Diversion plan are scheduled for the fall of 2019. Further detail around engagement, research, recommendations and rationale for the Strategies and Plan, as well as detailed implementation options, will be available at this time.

COMMUNICATION ACTIVITIES

Communications planning, activities and engagement will be developed for the initiatives in early 2020, subject to approval of funding. Communications for strategy or project and programming updates will also be communicated more generally through the Climate Action Plan website pages on an ongoing basis.

APPENDICES

1. LEC Plan Executive Summary – The Low Emissions Community Plan
2. Planned Projects in Support of the Low Emissions Community Plan
3. LEC Engagement Summary
4. Business as Planned Scenario (Option 1)
5. Building Overall Capacity (Option 2)
6. Community Capacity-Building (Option 3)
7. Corporate Capacity-Building (Option 4)

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