

Solid Waste Reduction and Diversion Plan

ISSUE

In 2015, the City of Saskatoon (City) adopted the performance target of 70% waste diversion from the Saskatoon Regional Waste Management Centre (Landfill) by 2023. In 2019, the diversion rate for waste handled by the City was 24%. Of the remaining waste thrown in the garbage, 65% of curbside and 57% of multi-unit material could have been diverted through programs or technology being used in other Canadian jurisdictions.

A study of current data, research into national best practice, community engagement, and analysis, has resulted in a plan made up of a series of achievable actions that together can likely meet the waste diversion target and make significant strides to meeting the long-term greenhouse gas reduction (GHG) goal for Saskatoon.

The *Solid Waste Reduction and Diversion Plan* (Appendix 1) details:

- Program performance projections for Curbside Organics, Recovery Park and regulation of recycling and organics for businesses and organizations;
- The status and likelihood of meeting the 70% diversion target for the Saskatoon Landfill by 2023;
- Results of the *2019 Waste Characterization Study*;
- Further waste reduction and diversion opportunities that have achieved results in municipalities across Canada; and
- Proposed actions, priorities and timelines for Saskatoon waste reduction.

BACKGROUND

At its meeting held on April 27, 2015, City Council received Attachment 3, *Proposed Performance Measures: Making Progress Towards our Strategic Goals*, which included a target to “divert 70% of waste from the Saskatoon Landfill” and resolved unanimously:

“That City Council approves the proposed performance measures listed in Attachment 3 of the report of the City Manager dated April 20, 2015.”

At its meeting held on May 23, 2017, City Council received the *Waste Diversion Opportunities* report outlining the steps in developing a Waste Diversion Plan, and resolved, in part:

“That the report be received as information and forwarded to the Saskatoon Environmental Advisory Committee for information.”

In November 2017, the report *Integrating Recovery Park with the Required Saskatoon Regional Waste Management Centre Projects* reported:

“... if the City were to construct a replacement landfill facility, very preliminary estimates put this capital cost at approximately \$100M plus decommissioning of the existing site...”

A new landfill would result in increased operating cost impacts due to:

- The landfill would be further from the city centre;
- A new landfill further from the City could result in a reduction of landfill revenue, as customers may chose commercial sites that are more easily accessed; and
- A transfer station may be required to minimize trips to the new landfill, generating additional operating costs and implications.”

In 2018, the Administration reported 40 to 50 years of Landfill operating space remaining, depending on the amount of waste received.

At its meeting held on January 7, 2019, the Standing Policy Committee on Environment, Utilities and Corporate Services received the *Waste Diversion Update* report providing an update on the development of the Waste Diversion Plan, and resolved:

“That the report be forwarded to the Saskatoon Environmental Advisory Committee for information.”

In addition to the performance target of 70% waste diversion from the Saskatoon Landfill by 2023, the *Low Emissions Community (LEC) Plan* outlines a path to meet Saskatoon’s GHG reduction target of 80% by 2050. The LEC Plan includes cumulative greenhouse gas reductions from waste actions of 1.303 million tonnes of CO₂e by 2050, across Saskatoon. This equates to reducing or diverting 90% of organics, 95% of plastics, and 90% of paper from the City’s landfill and the two privately operated landfills in the region that accept the majority of Industrial, Commercial and Institutional waste.

The [Environmentally Responsible Processing of Waste Materials](#) and the [Alternative Options to Consider for Recycling and Waste Diversion](#) presentations were recently received at the Standing Policy Committee on Utilities, Environment and Corporate Services in 2020.

CURRENT STATUS

In 2019, Saskatoon’s waste diversion rate was 24%, which falls short of the target of 70% diversion from the Saskatoon Landfill by 2023. The approved curbside organics program, Recovery Park, and regulation of recycling and organics for businesses and organizations are all expected to begin operating by 2023. When fully implemented, these programs are projected to improve the diversion rate to 41-54%. Despite this significant improvement, it is unlikely that the performance target of 70% will be achieved by 2023.

DISCUSSION/ANALYSIS

The *Solid Waste Reduction and Diversion Plan* (the Plan) provides 27 actions for program and policy development to optimize service delivery and reach the waste diversion target of 70% from the Saskatoon Landfill. This could be achieved as early as 2030 if the plan timelines are followed.

The vision for the Plan is to produce less waste overall and recycle or compost as much as possible. This includes waste which would have been deposited in not just the Saskatoon Landfill, but at other waste operations in the Saskatoon area. The Plan’s

mission is to establish Saskatoon as a leader in waste reduction and diversion in the Prairie region.

Plan Foundations

In preparing the Plan, multiple factors were carefully considered. The Plan is grounded in data gathered through the *2019 Waste Characterization Study* and builds upon earlier waste management planning initiatives in order to understand opportunities and challenges specific to Saskatoon. This work was informed by public engagement carried out over many years and for numerous waste initiatives. The work included a best practice review of waste practices in other municipalities with careful consideration for those with similar size, demographics and cold weather limitations. Local data and community feedback were analyzed relative to national best practice scans and Council direction in order to create the Plan and the recommended actions.

Reduction and Diversion Actions

Saskatoon's residents, businesses, and organizations are key to successfully achieving the vision and mission of the Plan. The Plan discusses the ways in which the City can continue to improve waste reduction by working with the community and encouraging positive behaviour, including:

- Partnerships and collaboration;
- Leading by example;
- Education and research;
- Enforcement;
- Economic incentives; and
- The Triple Bottom Line decision-making.

To achieve its vision and mission, the Plan introduces 24 specific actions through the lens of a waste management hierarchy, which emphasizes source reduction and reuse; followed by recycling and composting; and finally, energy recovery from waste and landfilling. The actions are carried out within short, middle or long-term time frames as follows:

Short Term Actions: 2021-2023

1. Accessible curbside collections program.
2. Business and organization waste diversion regulation compliance.
3. Emergency waste management and recycling strategy.
4. Compost depot program review.
5. Residential multi-unit organics.
6. Construction and demolition waste diversion: City of Saskatoon options.
7. Recycling market development for Recovery Park.
8. Disposal ban at the Saskatoon Landfill.
9. Recycling depot program review.
10. Waste reduction through procurement and specifications.
11. Federal single-use plastic ban and performance standards for plastics.
12. Provincial stewardship program review.

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Medium Term Actions: 2024-2025

13. Waste management service and sustainability plan.
14. Residential waste cart technology.
15. Special/bulky waste program.
16. Construction and demolition waste diversion: community options.
17. Public space and event waste reduction.
18. Food waste reduction program.
19. 2024 Waste characterization study.
20. 2025 Solid Waste Reduction & Diversion Plan update.

Long Term Actions: 2026+

21. Share, reuse, and repair program.
22. Textile and apparel reduction and recycling program.
23. Economic incentive tools to support reduction and diversion.
24. Landfill closure and replacement plan.

Administration considered the [Environmentally Responsible Processing of Waste Materials](#) and the [Alternative Options to Consider for Recycling and Waste Diversion](#) presentations recently received at the Standing Policy Committee on Utilities, Environment and Corporate Services in 2020. Waste-to-energy options will be assessed as part of the landfill closure and replacement plan after reduction and diversion options have been exhausted and a firm date is established for the closure of the Saskatoon Landfill.

Projected Performance

For each action in the Plan with diversion potential, a performance range has been projected based on results in other communities and expert feedback. The projected diversion from the Saskatoon Landfill anticipated in the Plan (Appendix 2 – Solid Waste Diversion Rate Projections) presents the high and low points of the range for each action and illustrates the cumulative impact to the overall diversion rate.

Approved projects including the Curbside Organics Program, Recovery Park, and the Regulation of Recycling and Organics for Businesses and Organizations are projected to improve the waste diversion rate to 41% on the low end to 54% on the high end.

Actions in the Plan have the potential to increase diversion from the Saskatoon Landfill to 51% on the low end to 79% on the high end.

Going beyond the 70% waste-diversion target for the Saskatoon Landfill and achieving the city-wide GHG reduction targets described in the LEC Plan for the waste sector would require further actions to reduce and divert waste from both the Saskatoon Landfill and privately-owned landfills.

Measurement and Data

Currently, waste management performance measurement is based on the best available quantitative and qualitative information for Saskatoon and is included as part of annual reporting through the *Integrated Waste Management Report* and the Environmental Dashboard at Saskatoon.ca. Accurate data is instrumental for planning,

continuous improvement, and decision-making founded on actual, local performance and preferences.

The Plan discusses improvements to performance measurement which will allow for a better understanding of the broader impacts of waste management and waste reduction. An updated GHG calculation tool will provide a more detailed understanding of the impact of waste management practices by material type. Material capture rate data collected in 2019 provides a good measure of diversion program effectiveness and will be highlighted in the next *Integrated Waste Management Report*.

City-wide waste generation data, which is required to benchmark and measure progress on waste reduction, is currently limited because the City does not handle all of Saskatoon's waste and data is not consistently available from non-City sources. Improvements to waste generation data by sector are required and an action in the Plan will involve determining a process for gathering this data.

The next *Waste Characterization Study* will help verify waste generation data, detail what is in each waste stream, and provide another look at material capture rates. There is an opportunity to expand the type of information that is gathered in the Study with forethought on the audit process. The *Waste Characterization Study* is a recurring capital project next planned for 2024 and will capture data on the impact of new programs such as curbside organics and Recovery Park.

Reporting

Moving forward, the Plan will be reviewed and refreshed regularly to incorporate changes in local conditions, provincial or federal policies, and industry trends. The review process will identify new and outstanding actions to be prioritized for business case development, budget consideration and implementation. The review process will be informed by ongoing public engagement, a waste characterization study in 2024, best practice research, and continued involvement in solid waste industry associations. The next review is planned for 2025.

Benefits to the Plan

To align with the City's sustainability priorities, the Triple Bottom Line Decision-Making Tool was used to conduct a high-level evaluation of The Plan. Overall, the results of the review improved the Plan through additional consideration of the City's social and governance priorities. Benefits are highest in the Environmental Health and Integrity and Economic Prosperity and Fiscal Responsibility.

The Plan will contribute to making Saskatoon a great place to live, work, learn, and play through several wide-ranging benefits including:

- Improved quality of life;
- Improved environmental health;
- Reduced greenhouse gas emissions;
- Reduced use of finite resources;
- Economic diversity; and
- Deferred infrastructure investment for solid waste management.

Engagement

Community engagement has been extensive through the evolution of Saskatoon's waste management services. Beginning in 2006, with the development of the Saskatoon Waste and Recycling Plan, the City has used a variety of public engagement tools to ensure that community input was included in waste planning, including:

- The 2010 *Let's Talk Recycling* engagement (prior to implementing curbside recycling) found that 70% of those surveyed wanted a new recycling program;
- Over 7,000 residents participated in the 2011 Saskatoon Speaks Community Vision, establishing the waste vision: We produce less waste and recycle or compost most of it;
- The 2019 residential waste and recycling survey found resident support for food waste reduction (90% of those surveyed), single-use item reduction (87%), and disposal bans (70% for recyclables and 68% for organics);
- Over 5,000 residents participated in the curbside and multi-unit organics and waste utility engagement; 80% of those surveyed supported curbside organics, 82% multi-unit organics, and 60% a waste utility;
- A total of 870 individuals participated in engagement on the Industrial, Commercial, and Institutional (ICI) Regulatory Approaches for recycling and organics indicating a strong interest in diversion for that sector; and
- In 2019, an external subject matter expert workshop (Appendix 3 - *Waste Reduction and Diversion Plan – Comprehensive Engagement Report*) was held to refine the vision, mission, and actions for the Plan. Participants identified education, municipal leadership, and measurement as key themes for successful waste management. These themes are emphasized throughout the Plan.

The Plan includes a chronology of waste management milestones on page 49.

FINANCIAL IMPLICATIONS

The Plan is an administrative guidance document which provides clear actions to optimize waste management services and achieve 70% diversion from the Saskatoon Landfill. Each action listed in the Plan would be brought forward for Council's consideration and budget approvals to move through the stages of development, implementation and operations.

- Development includes research, engagement, and pilots and typically is completed using capital funding. The result is a decision report outlining options, implications and the administration's recommendation.
- Implementation involves putting into place all the components necessary for a successful service or program following approval and funding. The activities will vary depending on the specific action. Implementation typically utilizes capital funding with a transition plan to operating funding.
- Operations is the sustainment and ongoing delivery of the program to meet expected service levels as well as result evaluation and continuous improvement. Once operational, budget adjustments are made to reflect the actual program cost.

Corporate work alignment, project portfolio assessment and external capital funding opportunities for implementation of the Plan's actions will be reviewed regularly.

The financial impact of waste diversion on the Saskatoon Landfill

Achieving the 70% waste diversion target will impact landfill revenue. In order to achieve the 70% target, an additional 57,000 tonnes would need to be diverted from the City's landfill. This could result in an annual revenue reduction of approximately \$2.7M in tipping fees (estimated from the 2021 budgeted landfill revenue and actual tonnes in 2019 of \$48/tonne). These revenues are not lost, but spread into future years, while allowing the landfill to operate longer than if no diversion occurred. Changes made now can extend the life of the Landfill and help save or defer the future costs of creating a new landfill or having to haul waste long distances.

ENVIRONMENTAL IMPLICATIONS

The 24 actions in the Plan are projected to divert an additional 9,300 to 24,200 tonnes of material from the City's landfill, contributing between 10% to 25% diversion towards the 70% waste diversion target. The actions in the Plan will also result in waste reduction, which will be projected as individual actions are developed.

Diverting between 9,300 and 24,200 tonnes of waste that is currently landfilled, reduces emissions between 4,900 and 14,000 tonnes of CO₂e of greenhouse gas (GHG) per year. This excludes diversion from construction and demolition actions and bulky waste action, since the current Environment & Climate Change Canada calculator for waste related GHGs does not include these materials. An updated calculator is anticipated in 2021.

OTHER IMPLICATIONS

There are no financial, legal, or social implications directly triggered by this information report.

NEXT STEPS

Implementation will continue for the curbside residential organics program, the regulatory approaches to require recycling and organics for the ICI sector, and Recovery Park as directed by City Council. Operational funding to sustain these programs will be brought forward in the 2022-2023 budget.

A follow-up report is planned in mid-2021 that will provide business cases and financial implications for other immediate and short-term actions in the Plan, in advance of the 2022-2023 multi-year business plan and budget.

Reporting on the Plan status will be incorporated into the annual *Integrated Waste Management Report* beginning in 2021.

The Administration intends to continue to work with the Province of Saskatchewan on its Saskatchewan *Waste Management Strategy* which was released in January 2020 and the Government of Canada on its proposed *Integrated Management Approach to Plastic Products*, which completed engagement in December 2020.

APPENDICES

1. Solid Waste Reduction and Diversion Plan
2. Solid Waste Diversion Rate Projections
3. Waste Reduction and Diversion Plan: Comprehensive Engagement Report

Solid Waste Reduction and Diversion Plan

Report Approval

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