

Landfill Infrastructure Replacement and Recovery Park Site Design Options

ISSUE

Administration, with the help of the Owner's Engineer, Stantec Consulting Ltd. (Stantec), has updated the concept plan for Recovery Park since it was last presented to City Council. The updated concept plan now considers traffic impacts due to the anticipated increase of customers, improved waste storage to meet industry standards, and the facilities necessary for the east landfill cell expansion, which is estimated to be required by 2023.

The current budget allocates \$16M for the planned construction of landfill-related facilities and \$7.4M in costs associated with waste diversion, for a total of \$23.4M. The four options provided in this report range from the minimum required site components, with estimated costs within the allocated project budget, to the fully envisioned master plan of Recovery Park, with estimated costs higher than the available funding.

BACKGROUND

2.1 History

On May 25, 2015, City Council considered the Vision for Recovery Park report. This report described the intention of Recovery Park to be a "one-stop" facility that functions to provide clear, easy, efficient, flexible, and cost effective waste diversion and landfill transfer, as part of the Saskatoon Regional Waste Management Centre. At this meeting, City Council resolved:

- "1. That a consultant be hired to develop a business case and options for delivery models for Recovery Park; and
2. That Capital Projects #2187 – US Composting Facility, #2050 – C&D Waste Management Centre, and #1482 – SW Recycling Depots each contribute \$50,000 to fund the business case development for a total cost of \$150,000".

Appendix 1 – Council Resolutions and Background, provides further history of Recovery Park budget and design.

2.2 Current Status

The design of Recovery Park is underway, with a decision from this report required to begin procurement for construction early 2020. The site is required to be operational by late 2022 so that the Landfill cell expansion can occur in 2023.

2.3 Public Engagement

Administration has not yet performed public engagement specific to Recovery Park; however, results of The City of Saskatoon's (City) 2019 waste-related studies provide some understanding of current behaviour and potential attitudes towards planned services. Appendix 2 – Recent Preliminary Waste Characterization and Public Survey Results provides a summary of findings.

2.4 City of Saskatoon's Current Approach

After further design and review of cost estimates from Stantec, Administration is providing four concept options ranging from the minimum required site components, with estimated costs within the allocated project budget, to the fully envisioned Master Plan of Recovery Park, with estimated costs higher than the available funding. Options were created through extension of traffic impacts, operational optimization, user experience, and right-of-way requirements.

2.5 Approaches in Other Jurisdictions

Appendix 3 – Municipal Benchmarking, provides a summary of what other municipalities are offering for haulers to drop off recoverable materials as a means to divert waste from the landfill. In brief, it is common for major municipalities to provide year-round acceptance of Household Hazardous Waste, gently used items, construction materials, etc. It is also common for accepted items to be charged at a reduced tipping rate, a per item fee, or at no fee at all.

OPTIONS

The below brief descriptions of presented options include Class D (4) estimates for their capital costs, which have an expected variance of -30% to +50%. Please see Table 1 and Table 2, as well as Appendix 4 - Summary of Options, and Appendix 5 - Concept Design Plans, for further detail on inclusions, exclusions and considered impacts of each option.

Option 1: Minimum Required Build (\$23.1 M)

This option de-scopes Recovery Park's design and consequential estimated construction cost to within the currently allocated budget, while including components required for the landfill cell expansion and maintaining current level-of-service. Option 1 provides some improvements to handling, but does not provide space for handling new material streams that could increase diversion. Household hazardous waste and yard waste drop-off would continue to occur at external sites. No provision for additional equipment is included, with leasing included under the operating budget.

Option 2: Additional Recovery Scaled (\$26.0M)

This option includes the required components for landfill cell expansion indicated in Option 1, with the addition of three roll-off bin locations and a bulk surface storage area for diverting prioritized materials. A separate unscaled diversion/recovery area is not included; all users drive through the scales, with space for diversion after the scales. Household hazardous waste and yard waste drop-off would continue to occur at external sites.

Option 3: Additional Recovery - Scaled and Non-scaled (\$31.1M)

This option includes the required components for landfill cell expansion indicated in Option 1, with the addition of a flexible non-scaled diversion area, eleven more roll-off bin locations, a bulk surface storage area for diverting prioritized materials, added bins for mixed recycling to allow for relocation of the Meadowgreen depot, and a paved surface to host Household Hazardous Waste Days. Yard waste drop-off would continue to occur at external sites.

Option 4: Recovery Park Master Plan (~\$40.8M)

This option includes all envisioned Recovery Park components needed to become a one-stop facility: a scaled area, a flexible non-scaled area, 30 roll-off bin locations, a bulk surface storage area, a household hazardous waste facility, bins for mixed recycling to allow for relocation of the Meadowgreen depot, a covered storage building with loading docks, and an area for yard waste drop-off. All components have been fully built to service a city population of 500,000 residents.

Table 1: Option Considerations

Option	Class D Capital Cost Estimate	Annual Operational Cost (above BAU)*	Annual Maintenance Cost (above BAU)	Annual Contracted Recycling Costs (above BAU)	Possible Annual Revenue Loss in Tip Fees	Tonnes Diverted (above BAU)	Diversion Rate Impact (% above BAU)	GHG Reductions (T CO ₂ E above BAU)	Landfill Life Extension (years beyond BAU)
1	\$23.1M	\$0.2M	\$0.40M - \$0.47M	-	-	-	-	-	-
2	\$26.0M	\$0.3M	\$0.43M - \$0.56M	\$0.2M - \$1.8M	\$1.4M	2,000 T - 14,000 T	1% - 10%	7,700 T	0.4 - 2.7 yrs
3	\$31.1M	\$0.7M	\$0.52M - \$0.75M	\$0.5M - \$2.4M	\$1.6M	5,000 T - 17,000 T	4% - 13%	8,400 T	0.9 - 3.3 yrs
4	\$40.8M	\$1.5M	\$0.61M - \$0.99M	\$1.2M - \$4.6M	\$2.3M	5,000 T - 26,000 T	4% - 19%	12,800 T	0.9 - 5.4 yrs

*BAU: Business as usual

Triple Bottom Line Analysis

Table 2 compares success measures in the Triple Bottom Line Tool that differs between options. The overall scores in each category may be higher or lower when considering all criteria, but the relative change between the options would be the same.

Table 2: Option Triple Bottom Line Comparisons

Option	Environmental Health & Integrity	Social Equity & Cultural Wellbeing	Economic Prosperity & Fiscal Responsibility	Good Governance
1	Needs Improvement (0-20%)	On Track (20-40%)	Needs Improvement (0-20%)	Needs Improvement (0-20%)
2	On Track (20-40%)	On Track (20-40%)	On Track (20-40%)	On Track (20-40%)
3	On Track (20-40%)	Exceeding Expectations (60-80%)	On Track (20-40%)	Exceeding Expectations (60-80%)
4	Meeting Expectations (40-60%)	Exceeding Expectations (60-80%)	Meeting Expectations (40-60%)	Leading the Way (80-100%)

RECOMMENDATION

That the Standing Policy Committee on Environment, Utilities and Corporate Services recommend to City Council that Option 3: Additional Recovery, Scaled and Non-Scaled, be approved for the Recovery Park site design, and that Capital Project #2050 be adjusted to reflect the estimated cost of \$31.1M.

RATIONALE

Option 3 provides the most flexibility for material recovery, through increased material storage and a non-scaled entrance, without developing additional infrastructure for programs with many unknowns (namely, the Household Hazardous Waste facility and the leaf and yard waste depot). The design is flexible to expand the facility to the full service Recovery Park at a future date when required. As well, the estimated incremental capital costs from Option 1 to Option 3 (\$8M) are largely dedicated to material recovery infrastructure, which most closely represents the original intent and budget of \$7.4M for Recovery Park. The additional service levels with Option 3 have the potential to improve the City’s diversion rate, service levels, and other criteria as identified using the Triple Bottom Line tool.

ADDITIONAL IMPLICATIONS/CONSIDERATIONS

Financial Implications

Currently the budget for this project is \$23.4M, as approved by Council in August 2018. The estimated costs for Option 1 conforms to the existing funding plan. If costs for the other Options come in as estimated, the shortfall will need to be made up with debt, which would be phased in starting in 2022 as seen in the following table:

Table 3: Capital Financing Costs

	Existing Funding Plan \$23.4M	Option 2 - \$26.0M	Option 3 – \$31.1M	Option 4 - \$40.8M
Total Debt	\$10.575M	\$13.175M	\$18.275M	\$28.818M
Estimated Debt Term	15 years @ 4.00%	15 years @ 4.00%	15 years @ 4.00%	30 years @ 3.50% *
Annual Debt Payment	\$951,100	\$1,185,000	\$1,644,000	\$1,566,900
2019 Mill Rate Phase-in	\$865,000	\$865,000	\$865,000	\$865,000
2022 Mill Rate Phase-in	\$86,100	\$320,000	\$779,000	\$701,900
2022 approx. Mill Rate Increase due to capital costs	0.03%	0.13%	0.32%	0.28%

*Option 4 includes a borrowing term of 30 years compared to 15 years in the other options to keep the 2022 phase-in comparable.

The estimated increase to operational costs, maintenance costs, revenue loss and recycling costs are shown in Table 1.

The funding source for the landfill cell expansion cost is the Landfill Replacement Reserve. In 2018, the Landfill Replacement Reserve balance was almost \$1.3M, a positive number for the first time in seven years. If a new cell isn't constructed in 2023, options would include landfilling on top of Landfill Gas System, which would sacrifice a portion of the \$15M investment in that facility, or incurring tipping fees at another landfill, which would cost internal city collections approximately \$6.5M/year in tipping fees, as well as a \$4M/year revenue loss for the landfill.

Materials Acceptance Prioritization

Administration has produced a ranking of materials considering available information on current service levels, local alternatives, operational efficiencies, diversion potential, partnership and/or funding opportunities, and potential Greenhouse Gas emissions reduced.

Appendix 6 – Material Acceptance Prioritization outlines ranking once a site design is chosen. Business cases for material acceptances can be performed considering optimal use of available storage.

Integrated Waste Projects

Recovery Park is alongside many programs and initiatives related to the reduction, recycling, and responsible disposal of waste that Administration is undergoing.

Appendix 7 – Integrated Waste Project Summary provides a summary of related current and upcoming reports.

COMMUNICATION ACTIVITIES

Once the design and level of service is determined, site construction and recycling procurement can begin. Closer to construction occurring, communication updates will be provided prior to the work happening and throughout the duration of the project. As construction nears completion, recycling contracts are in place, and an opening date is confirmed, further communication updates will be provided. Highlights will include the types of materials that will be accepted at Recovery Park and the convenience of accepting numerous materials at one location. Communications will also be needed to educate users of existing programs that may transition over to Recovery Park, such as the Household Hazardous Waste Days.

APPENDICES

1. Council Resolutions and Background
2. Recent Preliminary Waste Characterization and Public Survey Results
3. Municipal Benchmarking
4. Summary of Options
5. Concept Design Plans
6. Material Acceptance Prioritization
7. Integrated Waste Project Summary

REPORT APPROVAL

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