Triple Bottom Line Implications – Variable Waste

Process and Methodology

Administration used the City of Saskatoon's Triple Bottom Line (TBL) Improvement Tool to comply with *Council Policy C08-001 - Triple Bottom Line*.

In conducting the analysis, the Administration relied on the expertise of the Waste Utility Project Team and Subject Matter Experts from the Water & Waste Operations, Finance, and Sustainability Departments, as well as consulted the following information:

- Previous recommendations and Choosing by Advantage[1] work undergone by the Unified Waste Utility Project;
- Schumatz Economics Research Associates, Inc research and recommendations;
- A jurisdiction scan on variable waste funding models;
- Public engagement results from Saskatoon Talks Trash[2]; and
- The Solid Waste Reduction & Diversion Plan[3]

This review is meant to be a high-level way to identify the initiative's environmental, social, economic, and governance outcomes, as well as to identify opportunities to achieve even greater sustainability benefits. The results are meant to support ongoing decision making, rather than be relied upon as a fixed sustainability evaluation.

Caveats and Limitations:

- The focus of the TBL assessment was in reviewing variable cart options, other variable pricing models for garbage collections were considered out of scope including pay per tip, fixed rate, variable schedule and hybrid options.

Results & Findings

Overall, the results of Administration's TBL review indicate that:

- That a variable black cart garbage utility model introducing variable cart sizes and pricing, paid through utility fees achieves multiple TBL benefits.
- There are additional opportunities that could be explored to enhance the TBL outcomes of the initiative (see the "For Further / Future Consideration" sections later in this document).
- Concerns were noted of a negative financial impact to low-income residents with the transition a fee-based utility. Additional resources supporting the affordability objectives of the waste utility project will be required to implement program recommendations.

A summary of results for each TBL principle and indicator are included in the subsequent section of this document.

[1] Decision Making Process for Organics Collections, Waste Pay As You Throw Utility , and Recycling Program (May 2018)
[2] Changes to Waste Management in Saskatoon - Engagement Results Council Report (June 2018)
[3] Solid Waste Reduction & Diversion Plan for the City of Saskatoon (January 2021)

Principle: Environmental Health and Integrity

Indicator	TBL outcomes
Renewable Energy	• No Impact/Not Applicable
Conservation of Resources	• Saskatoon currently uses 360 litre (96 gallon) black carts for its residential curbside garbage collection. New carts will be a substantial investment for the new program. Storage and collection, delivery issues result from those residents downsizing and returning their large black carts. • The City has recycled damaged garbage carts in the past.
Climate Change Mitigation and Adaptation	• Greenhouse gas (GHG) emission reduction is directly correlated with the source reduction and diversion potential of waste. Waste decomposing anaerobically in a landfill is a large contributor to methane, a greenhouse gas 25 times worse that CO2. The GHG reduction is estimated at 3,000 – 10,000 tonnes CO2e per year.
Green Buildings and Sustainable Land Use	• By removing material from the landfill each year, a variable waste program is a significant step in approaching our waste diversion targets and extending the life of the landfill.
Sustainable Transportation	• Variable cart programs can increase operating efficiency for garbage programs associated with routing and collections if residents put out less garbage at the curb with increased waste diversion practices. . Consideration of overall impact to collections for all waste programs will need to be considered. • Travel distances for collection operations would be increased if a new more distant landfill was required or additional garbage trucks required on the road. Waste diversion increasing the life of the current landfill can further reduce requirements for transportation and fleet.
Healthy Ecosystems	• Concern over illegal dumping is often cited as a barrier to acceptance of variable waste programs. Experience from other municipalities has shown that this issue can be managed through effective education, adequate enforcement measures and by providing outlets for recycling, composting and bulky waste collection. While early stages may be acute in the first months, it should abate within 3 months of implementation[4]. • Education and waste bylaw enforcement will continue to play a critical role in the success of the curbside waste programs.
Clean Air, Water, and Land	• The City's landfill can accept garbage for an estimated 46 to 54 years. Landfill operating life can be extended through waste diversion programs and prolong landfill replacement (additional land requirements). • Reduction of waste and specifically organics are anticipated to have long term positive effects to groundwater impacts at the landfill (leachate reduction).
Waste Reduction and Diversion	• The City continues to implement actions identified in the Solid Waste Reduction and Diversion Plan towards a 70% waste diversion target. • Research indicates that introducing variable pricing incentives can have a significant positive benefit by both reducing waste generation and increasing diversion, 5,000 (5%) – 16,000 (17%) tonnes per year.
Storm Water Management	• No Impact/Not Applicable
Sustainable Food System	• No Impact/Not Applicable

[4] Citizen Budget Commission. A Better Way to Pay for Solid Waste Management (February 2015)

For Further / Future Consideration

- Since Saskatoon would be using multiple carts in a new variable cart program, changing lid color on a garbage cart to use in organics program would be an economical way to provide both garbage and organics carts.
- Depending on neighborhood design, cart collection occurs at the street-front or in back lanes. The lifespan of lanes is significantly affected by heavy vehicle usage, affecting the overall structure of gravel lanes and requires more frequent maintenance and above-average re-application of aggregate. Higher risk of incidents are associated with back lanes due to limited maneuverability and site obstructions, including incidents with overhead utilities and built structures (i.e. buildings, fences, light poles). Cart relocation where viable to the street-front could improve lifespan of the lane and decrease incidents.

Principle: Social Equity and Cultural Wellbeing

Indicator	TBL Outcomes
Equity and Opportunity	• Utility fees promote equity and fairness as residents pay only for service they receive. • Smaller cart options can support customers with mobility issues, smaller carts are easier to move to the curb. • Concerns of a negative financial impact to low-income residents with the transition to a fee-based utility. Affordability program design and impacts are identified in future reports.
Diversity and Inclusion	• No Impact/Not Applicable
Heritage, Arts, and Culture	• No Impact/Not Applicable
Self Sufficiency and Living with Dignity	• There is a negative impact associated with the transition from a tax supported program to the utility. The waste utility doesn't recognize differences in each households' ability to pay. Developing a utility affordability program would help with this issue. • When costs are paid through property taxes, landlords arrange payment (arranging payments can be a challenge for those participating in some income support programs).
Health and Wellbeing	• No Impact/Not Applicable
Safety and Resiliency	• Increased risk of slips/trips and collisions were identified based on operations deploying additional carts in the field. • Smaller carts are safer to move around for residents. • Enhanced public accountability is associated with user fees (i.e. carts returned from the curb, less obstructive in back lanes).
Civic Participation	• Variable cart sizes are expected to incentivise residents to reduce the amount of garbage they generate by wasting less and diverting more, as well as giving residents control over their costs. • In 2008 Saskatoon Talks Trash: Curbside engagement[5] "A small majority (approximately 60%) of residents who participated in engagement activities demonstrated support for a PAYT approach. A vocal minority (about 30%) expressed strong opposition, while a third group were uncertain or had further questions."

[5] Saskatoon Talks Trash: Curbside Online Survey Summary 2018

Recreation	• Waste collection supports an attractive, healthy community outlined in the Strategic Plan 2022-2025.

For Further / Future Consideration

- Other Cities have used garbage trucks to promote local artwork and murals on their garbage trucks and carts[6].

Principle: Economic Prosperity and Fiscal Responsibility

Indicator	Business As Usual
Innovation	• Pricing incentives in the form of variable user rates can support higher levels of waste diversion and benefits equity and accountability. • With what is essentially a new "bundle of services" for a solid waste system – new rates, new services, new cart sizes – and customers make their choices based on this set of signals.
Sustainable Procurement	• No Impact/Not Applicable
Financial Planning and Resourcing	• A waste utility program ensures the long-term financial stability of waste management services by ensuring operations are adequately funded by those who benefit from the program. A waste utility program also provides the funding opportunities for future initiatives that support existing operations, and/or further encourage waste reduction and diversion. • A utility model provides the ability to develop strategies to address emergency situations and allows the City to develop new approaches (variable rate models, cost recovery for broken carts, vehicle replacement cost increases); City provides waste management at a reasonable cost and is an essential service; utility model is transparent and shows true cost of the service; ability to explore new mechanisms to cover costs based on needs (e.g. fleet replacement schedule, broken cart replacement, cart yard).
Affordability for Users	• Future changes to the waste utility result in a higher overall cost to the average residential property due to the fact homeowners will no longer be subsidized by commercial and industrial properties. • User control over costs, and accountability are improved when the user fee is clear to those required to pay for the service. Increased transparency is achieved as residents have access to information on how the price or charge is set and how expenditures are made. • Responsiveness to citizen affordability is among the values established for the design of the future waste utility and providing discounts for garbage, recycling, and organics for low-income residents.
Support the Local Economy	• The commercial sector would no longer be subsidizing residential waste costs (as they do when paid through property taxes). The utility fee would properly fund curbside waste services that had historically been running deficits previously addressed through property tax increases.

[6] City of West Columbia Rolls Out "Public Works of Art" or the City of Edmonton City tosses out the art with the garbage

Asset Management	• The inventory of carts in the garbage program will increase with a variable waste model. Better tracking and data management will occur under a utility model. • Replacing existing 360 L carts with smaller carts will put as many as 60% of carts out of operation, and replaced by new carts. These carts may be retired or stored until future use. The new carts are expected to have approximately 5-7 years of useable life. • Currently the City replaces approximately 5,000 damaged black carts per year (8.5% of inventory) and puts into service approximately 1,000 black carts associated with new homes.
Skills and Training	• The City's service providers can continue to provide education at their facilities and school education programs for waste diversion programs (i.e. compost and organics). • Continue to support Newcomer Recycling and Composting Workshop and recycling guides in different languages. • Partnerships with partners like The Saskatchewan Waste Reduction Council.
Labour Rights and Employment	• Additional carts can increase the work in Operations (i.e. additional work orders, customer cart swapping) to ensure we get carts to program customers. Increased workflow to the Containers group could result in higher worker injury. Cart swap fees and/or restricted swap windows to discourage seasonal cart size changes. • As collections are already automated, it would be anticipated there wouldn't be significant operational impacts.

For Further / Future Consideration

- Options for procurement options for cart acquisition such as borrowing or lease agreements could be explored.
- Cart swap fees and/or restricted swap windows to discourage seasonal cart size changes to mitigate impacts to operations should be included.
- Affordability program options are to be developed in further reporting with the project.

Other Notes

- Financial implications (i.e. utility rates) arising from each option are included in future reporting.

Principle: Good Governance

Indicator	Business As Usual
Ethical and Democratic Governance	• Implement recommendations in the Solid Waste Reduction and Diversion Plan. • Transparency in funding of waste services for garbage. • Accountability improves when the purpose of user fee is clear to taxpayers. The closer the link between the beneficiaries of a service and payment for that service, the greater the degree of accountability.
Effective Service Delivery	• Residents can have the choice of cart sizes (e.g. 180 L, 240 L & 360 L) for bi-weekly year round pick up which would then be charged on the utility bill every month. Variable fees can then be charged based on quantity (variable size) of garbage to give the customers choice, control of their costs and provides an incentive for reducing or diverting more waste from the landfill.

Education, Communication, Engagement, Capacity Building	• Continue to support waste programs such as Education Rooms and School Programs, Newcomer Workshops and Neighborhood Cart Blitz Program. • Community social based marketing and communication programs
Monitoring, Reporting and Compliance	• Continue the following data collection and reporting actions such as the Annual Integrated Waste Management Report, National Solid Waste Benchmarking Initiative, Waste and Recycling Survey every two years, Waste Characterization Studies. • Continue a variety of enforcement actions in accordance with the No. 8310 – Waste Bylaw, 2004.
Agility and Adaptiveness	• A utility model addresses current issues with delivering service to industrial and commercial properties, who are currently paying for a service they don't receive through property taxes." • Stable funding is more responsive to risks to ensure reliable service delivery. • Utility models are considered best practice based on research. • Customers have the ability to base cart size on use with new diversion programs available (i.e. curbside organics, recovery park).
Roles, Responsibilities and Rewards	• The City's shift to a waste utility funding model is a significant step toward creating the transparent link between waste behaviour and cost of waste services. Variable cart sizes is expected to incentivise residents to reduce waste through cost controls.

For Further / Future Consideration

- Reward programs from waste audits such as City of Des Moines Gold Level Recycling Program[7].

[7] City of Des Moines Gold Level Recycling Program