

September 6, 2018

To: Members  
Public Works and Infrastructure Committee

Re: Organic Waste Service Recommendation

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RECOMMENDATION

1. That City Council approve a residential year-round curbside food and yard waste collection and processing service, described as Service Option 4 in this report.
2. That City Council approve Service Option 4's preliminary implementation plan, recognizing that:
  - a. The total cost of the preliminary implementation plan as presented is \$3.5 million in capital funding from the Solid Waste Reserve to be considered in the 2019 budget process.
  - b. A competitive procurement process will begin in 2019 to facilitate final plan development and the construction and operation of an organic processing facility.
  - c. A pilot will be conducted in 2020 to test, evaluate and adjust any service details prior to city-wide implementation.
  - d. Administration will return to City Council with the final implementation plan in Q2 of 2021.
  - e. City-wide implementation as presented will be complete by 2023.
  - f. Funding the annual operating expenditures of Service Option 4 from general revenue or a user fee, will be determined by City Council's decision regarding a solid waste curbside collection services funding policy, to be considered through a subsequent report that will be brought forward in October 2018.
3. That City Council approve Service Option 2, a full growing season yard waste depot for implementation in 2019, establishing a permanent depot site as well as a lead into Service Option 4.
4. That this report be forwarded to the September 24, 2018 meeting of City Council for approval.

CONCLUSION

Administration's recommended option of implementing Service Option 4, a year-round curbside food and yard waste collection and processing service (organic waste service), has the potential to increase residential diversion by an additional 20 to 34 per cent annually. By accepting all food waste, commonly referred to as a "scrape the plate" program, as well as compostable products such as paper towels and pizza boxes, makes the recommended option easy to understand and use. Weekly curbside organic collection will allow remaining garbage to be

collected on a biweekly year-round basis, having eliminated odour and pest control issues by removing organic material from the garbage cart. Organic waste makes up over 50 per cent of residential waste. The volume of waste disposed at the City of Regina's Landfill (Landfill) is expected to decrease by 18,000 tonnes. This will eliminate 760 tonnes of greenhouse gas emissions and extend the life of the Landfill an additional two and a half years. The organic material collected can be processed into compost or renewable energy, generating revenue for the City of Regina (City). Weekly curbside organic collection can also reduce stress on wastewater infrastructure, by providing alternative disposal options for fats, oils, grease and food waste that is commonly disposed of through the sewer system.

Consistent with the implementation of biweekly garbage collection during winter months, a pilot curbside organic waste service will be initiated to finalize operational details, address public concern and build support for the new service. The pilot project will give residents the opportunity to use the service and provide feedback that will be incorporated into the City-wide implementation.

Estimated annual operating expenditures of the recommended organic waste service are \$7.9 million. The concurrent move to biweekly garbage collection year-round will save \$4.6 million. If savings realized from reduced garbage collection frequency are applied against the costs of the organic waste service, a \$36 increase to property taxes on a home assessed at \$350,000 or an additional \$51 annual user fee would fund the two services.

Until the organic waste service is available to all residential properties that currently receive City provided waste services, expansion of the current yard waste depot service to a large single site that can operate throughout the growing season (April to November) is recommended (Service Option 2). Due to the increased volume of yard waste diverted by residents and anticipated continued demand, the current depot program will not be able to effectively manage anticipated volumes in the future.

## BACKGROUND

In 2009, a solid waste management plan, Waste Plan Regina (WPR), was developed to review the way in which the City was managing its solid waste and to consider alternatives for meeting and managing the long-term waste and diversion needs of the community. At that time, Regina had experienced unprecedented growth in population and the economy which had resulted in higher waste generation, most of which was disposed in the Landfill. WPR provides recommendations for the City's solid waste programs and services with attention to ensure that solid waste is being managed in an appropriate and sustainable manner.

In 2011, City Council adopted WPR's Enhanced Residential Service Level (Enhanced Services) option which identified services that could divert 30 to 40 per cent of residential waste. Enhanced Services included a seasonal curbside yard waste collection service. At that time, City Council also set a long-term target of 65 per cent diversion of residential waste by 2020. To achieve that goal, Waste Plan Regina's Comprehensive Residential Service Level option would need to be considered. This option includes both curbside food waste and yard waste collection.

Appendix A provides details of both Service Level options and the City's actions related to each recommended service within the options.

Currently, the City offers temporary depots to divert yard waste from the Landfill. Yard waste is comprised of leaves, grass clippings, garden waste, weeds and tree branches. The depots operate six Saturdays each spring and fall, for a total of twelve weeks annually, and are located at four sites throughout the City, two at City-owned locations (Kinsmen Park and 500 Arcola Avenue) and two high school sites (Michael A. Riffel and Thom Collegiate). City staff are present to assist residents with unloading material and to ensure contaminants such as plastic bags and garbage are removed from the yard waste. Since the inception of the yard waste depots, the material collected continues to increase. The current model can no longer support the volume of material residents are prepared to divert from their garbage. Public feedback from surveys conducted at the 2016 depots indicated that residents would prefer an option with more days or longer operating hours.

Among Canadian municipalities with populations over 150,000, Regina and Saskatoon are the only two that do not have some type of City-wide organic waste collection. On June 24, 2018, Saskatoon's City Council approved the development of a year-round curbside residential organic waste collection, utilizing a single green cart for co-mingled food and yard waste.

## DISCUSSION

For the past three years, the City's residential waste diversion rate has remained static at 20 per cent. Implementation of the remaining diversion services outlined in WPR is needed to move toward the 65 per cent residential diversion goal set by City Council. Services aimed at diverting organic waste will have the most impact, as this waste stream makes up over 50 per cent of residential waste.

Administration's evaluation of organic waste service options examined the current composition of residential waste, gathered public input on waste management priorities and documented best practices in waste management, with a focus on municipalities in central Canada.

### *Waste Composition*

Over half the material residents place in the garbage each week is organic waste. Curbside waste studies show that on average during the growing season, 25 per cent is yard waste. Throughout the year, 27 per cent is food waste and compostable products make up the content of the garbage cart.

Prior to the implementation of the Blue Cart Recycling Program in 2013, recyclable paper and packaging made up 40 per cent of residential garbage. Based on curbside waste studies in 2017, the percentage has decreased to 12 per cent. Participation by Regina's residents has contributed to a successful recycling program. With that, organic material represents the greatest volume of divertible waste remaining in the garbage cart. This information is illustrated in Appendix B.

### *Resident Feedback*

Extensive community consultation was conducted on the preferred residential service options during the development of Waste Plan Regina, which included telephone polls, focus groups, website feedback, public meetings and comment cards.

In 2016, the City conducted market research to reconfirm public priorities for solid waste management. The research showed how residents view the role and responsibilities of the City related to waste diversion and improvements to be made to the City's solid waste management services:

- 96 per cent of residents agree that it is important to reduce the amount of household waste going to the landfill.
- 91 per cent of respondents feel that the City has a responsibility to help residents reduce the amount of waste going to the landfill.
- 77 per cent agreed that curbside food waste collection should be a priority.
- 88 per cent agreed that curbside yard waste collection should be a priority.

Market research conducted in March 2018 showed that:

- 62 per cent of respondents who receive curbside collection services agree the City should introduce a new curbside organic, compostable collection service, including 32 per cent who strongly agree.
- Among residents who sort their household waste all or most of the time, most, 65 per cent and 59 per cent, support a new curbside organic service collection.
- Support for curbside organic pick-up is significantly higher among young people ages 18 to 34.

Additional feedback will be collected during the pilot project from residents participating in the curbside organic waste collection service. The feedback will be analyzed and incorporated into a final implementation plan to be presented to City Council in Q2 of 2021.

### *Organic Services Best Practices in Canadian Municipalities*

Administration reviewed solid waste services offered in Saskatchewan, British Columbia, Alberta, Yukon, Northwest Territories and Manitoba. After compiling the initial data, site visits were made to organic waste processing facilities in Alberta and Manitoba for a more detailed examination. All the municipalities offered some form of curbside organic collection of either yard waste or food and yard waste. These sites were chosen due to similarities in climate, geography, demographics, landfilling costs and provincial regulation. The information is summarized in Appendix C.

### **Organic Waste Collection Options**

There are two distinct methods of collecting residential waste: drop-off depot and curbside collection. The choice between the two depends on the desired outcomes of convenience, resident participation, waste diversion as well as program cost and resident affordability. The

table below contrasts the collection options and their impact on the desired outcomes.

	<b>Drop-off depot</b>	<b>Curbside collection</b>
<b>Convenience</b>	Low/Medium	High
<b>Participation</b>	Low/Medium	High
<b>Diversion</b>	Low	Medium/High
<b>Program Cost</b>	Low	Medium/High
<b>Affordability</b>	High	Medium

Resident participation in an organic waste service is closely related to how convenient it is to use and if food items are accepted. According to *Environment Canada's Technical Document of Municipal Solid Waste Organics Processing*, curbside organic collection that includes food waste results in high participation, upwards of 90 per cent, as it replaces general garbage collection for the disposal of food waste. Curbside collection that only allows yard waste is limited to the growing season and will only be used by those that produce this waste. Yard waste depots require residents to travel to a disposal location making them less convenient. For that reason, some residents will opt to dispose of yard waste in their garbage cart. Drop-off depots are inappropriate for food waste due to health and odour concerns.

Higher levels of participation result in more material diverted from the Landfill. Based on internal waste composition audits, a curbside yard waste collection service could add an additional 13 per cent to the current residential diversion rate; a “scrape the plate” program has the potential to increase the rate an additional 34 per cent, resulting in a residential waste diversion rate of 54 per cent.

Expenditures associated with operating drop-off depots are less than \$350,000 annually. However, the lower volume of diverted material related to this type of collection, results in a high expenditure per diverted tonne. This results in an inefficient program. Conversely, although annual curbside collection expenditures are estimated at \$7.9 million, the exclusion of organic waste from the garbage cart, will realize a savings of \$4.6 million as garbage collection can be adjusted to a biweekly frequency from the current weekly schedule.

Drop-off depots are an affordable option for users. Since the City began operating yard waste depots in 2014, there has been no charge to the user. The expenditures of the depots are charged against the operations of the Landfill. A curbside collection service would require funding from either general revenue or a user fee. Some residents might consider either a financial hardship.

### **Options**

Administration evaluated two depots and two curbside organic waste service options. Appendix D provides details of these options as well as the benefits and risks of each:

#### *Service Option 1: Status quo*

Operate yard waste depots at four locations throughout the city on Saturdays from 9 a.m. to 4 p.m. for six weeks in the spring and six weeks in the fall.

*Service Option 2: Full growing season yard waste depot (Recommended as a lead into Service Option 4)*

Operate a full growing season yard waste depot beginning in 2019. This option provides residents access to a single site with additional operating days to improve availability and meet growing program needs. Preliminary planning has identified adequate space within the footprint of Regina's Landfill, with a separate entrance allowing residents to drop off yard waste without interacting with landfill operations.

*Service Option 3: Curbside yard waste collection*

Provides weekly collection of yard waste throughout the growing season (April to November). Yard waste can be processed into compost through existing service providers.

*Service Option 4: Curbside food and yard waste collection (Recommended)*

Provides weekly collection of food and yard waste year-round. The processing method will be determined through the procurement phase. Service Option 4 will allow all yard and food waste, including meat, dairy, produce, fats, oils and grease to be disposed in the organic waste stream. The "scrape the plate" program also can extend to compostable food containers such as pizza boxes and paper towels.

The current depot model does not address resident concerns of program accessibility. Public feedback from surveys conducted at the 2016 depots included:

- Depots operating one day per week are inconvenient as they may conflict with other weekend commitments.
- Yard work often occurs on Saturday which does not provide adequate time to get material to the depots.
- Residents have expressed concern that leaving yard waste out for a week can attract pests.

City facility sites are available only on the weekend and access to school sites has been limited to Saturday's only. All the sites have been experiencing increasing incidents of illegal dumping during the week resulting in escalating clean-up costs and strained relationships with school administration partners. Depots are set up and taken down each day, resulting in significant staging costs. Resident participation in the current depot program has outpaced its capacity. Finding alternate locations adequate to meet the growing needs of the program has become a challenge.

Depots typically capture only a fraction, 10 to 25 per cent, of available material. The current depot program has experienced continued growth collecting 228 tonnes of material in 2014, 311 tonnes in 2015 and 405 tonnes in 2016. The program is on pace to collect over 1,000 tonnes in 2018. The current model can no longer support the volume of material residents are prepared to divert from their garbage. Based on the historical trends of collected tonnes and number of residents using the depots, there is an opportunity to improve the diversion of yard waste in the near term through a more accessible depot service.

A full growing season, single-site yard waste depot is recommended to be in place for spring 2019, establishing a permanent yard waste site and as a lead into the curbside organic waste service. This will provide the level of service needed to meet the current needs of the community and move closer to City Council's residential waste diversion target.

Food and yard waste collection is convenient for users as acceptable material is easy to understand. If it can be eaten, grown or composted, it can be disposed in the organic waste cart. Residents that do not have yard waste can divert food waste. Residents that compost at home can dispose of food waste that is not recommended for backyard composting, such as meat, dairy and other cooked foods.

The program's convenience will result in high participation. Year-round collection will achieve the highest diversion, resulting in less waste going to the Landfill. This will reduce the amount of greenhouse gas emissions and extend the life of the City's Landfill.

Service Option 4 is the only option that moves Regina toward City Council's target of 65 per cent of residential waste diversion.

Year-round food and yard waste collection will provide cost saving opportunities in other solid waste programs. Garbage collection frequency can be reduced as less waste will be disposed at the Landfill. This reduced frequency will result in an estimated savings of \$4.6 million. Landfill costs will be reduced marginally as less material is handled. It can also reduce costs associated with the City's wastewater infrastructure by creating a viable alternative for disposal of fats, oils, grease and other contaminants that impact the operations of the wastewater infrastructure and treatment plant.

Implementing a full growing season yard waste depot (Service Option 2) while developing a curbside food and yard waste collection service (Service Option 4) is recommended as it provides residents with a more accessible and affordable program than is currently delivered and allows for the time required to develop a comprehensive curbside program. Once the curbside collection service is implemented, the yard waste depot can handle any additional yard waste generated by residential properties, similar to the overflow handled by the Big Blue Bin Program with recyclable material.

There is an opportunity to implement a curbside yard waste program by 2020 and transition to a full organic waste service once a food waste processing technology is in place. This is not recommended. It would be an unnecessary service for many residents that do not produce yard waste. As well, the service would only be used during the growing season for those that have yard waste. Other communities have indicated that their residents experienced confusion and frustration with not understanding the limitations of a yard waste service.

#### **Preliminary Implementation Plan – Service Options 2 and 4**

The development of a residential curbside organic (food and yard) waste collection and processing service will require immediate work on several major initiatives. The preliminary

implementation plan, pending budget approval is:

**2019**

- Replace the current yard waste depot program with a single-site location for spring 2019 (Service Option 2).
- Begin the competitive procurement process for a consultant with expert knowledge and experience in the implementation of residential organic waste diversion programs.
- Begin the competitive procurement process for the collection of residential curbside organic waste for the pilot period only.
- Begin the competitive procurement process for the construction and operation of an organic waste processing facility.

**2020**

- Begin the curbside organic waste pilot project.

**2021**

- Evaluate the pilot and adjust the final implementation plan.
- Prepare and present the final implementation plan to City Council in Q2.

**2022 or 2023**

- City-wide implementation (Service Option 4).

**RECOMMENDATION IMPLICATIONS**

**Financial Implications**

Initiatives associated with the development and implementation of WPR services are funded through the Solid Waste Reserve. Each recommendation will follow the proper procedures for capital and operating cost requests as directed in *The Regina Administration Bylaw, No. 2003-69*.

Implementing Service Option 2 will have no direct cost impact to the residents. This depot option will be a “no charge” service, the same as the current depot program. The capital investment of \$500,000 to get the site ready will be covered through reprioritizing existing WPR capital funding. The increase to annual operating expenditures has been referred to the 2019 budget process. The intent is that the annual operating expenditures, estimated between \$255,000 and \$350,000 will be funded through revenue earned from the Landfill’s tipping fees, as this outlay will contribute to extending the life of the Landfill.

Service Option 4 requires both a capital investment and annual operating funds. The capital required to implement the recommended service is estimated to be \$3.5 million. The capital investment would include the services of a consultant, a communication strategy, internal costs associated with procuring collection and processing partners as well as undertaking a pilot of the service.

The estimated annual operating expenditures are \$7.9 million. A weekly curbside organic waste service would reduce the need for weekly garbage collection. Biweekly garbage collection could

be extended to a year-round schedule. The opportunity to offset the annual expenditures by savings resulting from reduced garbage collection, could lower the overall expenditure of the combined services.

The annual operating expenditures of the curbside organic waste service can be funded either through a user fee or property tax. The choice will be determined by City Council's decision regarding a solid waste curbside collection services funding policy, to be considered through a subsequent report that will be brought forward in October 2018. If savings realized from reduced garbage collection frequency are applied against the costs of the organic waste service, a \$36 increase to property taxes on a home assessed at \$350,000 or an additional \$51 annual user would fund the two services.

### Environmental Implications

The City's waste diversion programs are part of the integrated solid waste management plan for the collection and disposal of waste, which ensures protection of the natural environment by following provincial regulation and best practices.

Food and yard waste is the main contributor to greenhouse gas emissions at a landfill. Reduction of this waste stream will decrease the City's carbon footprint by 760 tonnes of greenhouse gas emissions, the equivalent of removing 140 cars from the road annually.

### Policy and/or Strategic Implications

The long-term outcomes of an organic waste service have strong links to *Design Regina: The Official Community Plan*. Through extensive community engagement, the public identified eight community priorities during the development of *Design Regina: The Official Community Plan* which were endorsed by City Council in 2012. The continued implementation of WPR, specifically an organic waste service, directly contributes to four of these priorities:

1. Promote conservation, stewardship, and environmental sustainability
  - Environmental sustainability is a key principle of Regina's long-term strategic direction. An organic waste service increases opportunity for Regina residents to align with this principle through day-to-day activities, ensuring current waste disposal needs are met without compromising the needs and quality of life of future generations. As a service this will significantly influence the long-term environmental sustainability of the City by reducing greenhouse gases and increasing the useable life of the Landfill.
2. Foster economic prosperity
  - Processing food waste requires the development of a non-existent industry in Regina. Facilities and expertise in this industry exist across North America and the development of an organic waste service will attract economic interest. Using the City program as a foundation, organic waste processors can increase capacity to service commercial, institutional and regional customers.

3. Optimize regional cooperation
  - Both the Landfill and private waste haulers in Regina service a geographic region that extends beyond the city limits. New waste services developed by the City will trickle into the surrounding region and allow future consideration of regional strategies to manage solid waste.
4. Achieve long-term financial viability
  - The diversion of additional waste will contribute to extending the life of the Landfill, deferring capital investment for expansion (\$50 million) or construction (over \$100 million) of a new landfill site. Significant deferral of this capital investment will occur when organic waste diversion is extended to all landfill users.
  - Diverting organic waste provides opportunities to generate revenue, reducing the reliance on general revenues or user fees to pay for solid waste services. Organic waste can be used to generate electrical power or natural gas. As well, an organic waste service will reduce operating expenditures associated with existing services, such as garbage collection and landfill operations, as the demand for those services is diminished.

#### Other Implications

Diverting food waste from household sinks and toilets will alleviate obstructions in wastewater infrastructure and reduce risks to the wastewater collection system. Fats, oils and greases and foods such as coffee grounds and other scraps can be safely disposed in the organic waste cart.

A reduction of food waste in the wastewater will reduce treatment requirements and result in additional capacity at the Wastewater Treatment Plant.

#### Accessibility Implications

None with respect to this report.

#### Communication

An extensive communication strategy will be developed to advise and educate residents of the change to the City's waste management program. On-going public awareness and education campaigns will be used to communicate the recommendation and focus on encouraging residents to divert waste from the Landfill.

Delegated Authority

The recommendations contained in this report require City Council approval.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "L. Legault".

Lisa Legault, Director  
Solid Waste

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Karen Gasmu".

Karen Gasmu, Executive Director  
Transportation & Utilities

Report prepared by:  
Janet Aird, Manager Waste Diversion Services  
Ben Brodie, Waste Minimization Specialist

LL/JA/BB/pw