

Program Costs and Options for Curbside Waste and Organics

Establishing Program Costs

The analysis, program costs, and recommendations contained in the previous reports, and the information in this attachment, rely on several external and internal data sources. For example, the City consulted the National Solid Waste Benchmarking Initiative, which is an evolving tool for managing and monitoring the performance of solid waste industry collection, processing, and disposal systems across Canada. Attachment 2 provides details on costs for programs in communities participating in this initiative. Attachment 2 also includes publicly available data from other communities on the costs of solid waste collection.

In addition to these external sources, the Administration collected data from its Electronic Data Management Systems including the Accounting Systems, Service Verification System, Landfill Scale and Point of Sale Systems.

Finally, the Administration also reached out to industry through a confidential “Request for Information.” The specific results from this exercise are confidential, but could be provided to City Council in a private session, if desired.

Program Costs for Curb Side Waste and Organics

Table 1 provides total program cost breakdown, outlines the estimated costs, or estimated costs for each part of the service, their total cost and the average cost per curb side customer per month, based on total service line cost divided by approximately 70,000 households citywide. These cost are based on the recommended level of service in the Unified Waste Utility Waste Management Level of Service for Waste and Organics (bi-weekly waste and bi-weekly organics collection).

Service		Total Cost	Cost per House Hold per Month
Solid Waste	Collection	\$ 4,001,800	\$4.80
	Landfilling	\$ 2,017,700	\$2.40
Organics	Collection	\$ 5,882,000	\$7.00
	Processing	\$ 2,179,800	\$2.60
Admin Cost	(Both)	\$ 2,344,500	\$2.80
Recovery Park Capital		\$ 1,680,000	\$2.00
Total		\$18,105,800	\$21.60

Table 1: Curbside Waste and Organics Costs

Note 1: Figures in this table are representative of the upper bound of cost estimates and are for budget purposes, lower financial risk scenarios have been used, and figures are also based on assumptions in the cost model as described in this attachment.

Note 2: Seasonal weekly organics collection is an extra \$4.8M annually or \$5.70 per household per month. Details on this differential can be found in attachment 1 of the Unified Waste Utility Waste Management Level of Service Report

Services not included in the utility scope	Total Cost	Property Tax Impact
Recycling Depots	\$250,000	0.11%
Compost Depots	\$800,000	0.36%
HHW Days	\$250,000	0.11%
Christmas Tree Drop	\$ 20,000	0.01%
Environmental Awareness	\$493,000	0.22%

Table 2: Cost of Services out of the Utility Scope

Table 2 provides the costs of some of the programs that are not in the scope of the proposed utility. These programs generally provide collective benefits and are proposed to be funded by property taxes.

In Table 1, curbside solid waste collection cost is based on the actual cost to deliver this program and includes:

- The capital and reserve cost for collections trucks, including interest and procurement costs.
- The operating cost for collections trucks including fuel, oil, maintenance.
- Operations staff costs, including burden and overhead.
- The cost for new collections carts (approximately \$0.10 - \$0.25 per month).
- The cost to maintain existing collections carts (approximately \$0.50 per month).
- The cost of cart deployment due to requests to down size carts.
- The cost for storage of the trucks.

Landfilling cost is based on the landfill air space value and actual tonnage at the landfill, less the replacement amount for the landfill as these programs should extend landfill life. Estimates indicate a 23 year extension to the current landfill life based on implementing both the organics and waste utility programs.

As listed in Table 1, the organics collection costs are based on the actual cost for solid waste with consideration for the differences between these programs including:

- Greater haul distances for trucks.
- Higher density material resulting in trucks limiting out on weight faster than with solid waste.
- Higher number of total vehicles required due to weight restrictions and haul distances.
- The capital cost for deployed organics carts are included in the collection costs (70,000 carts funded from \$8.5M borrowed against the program is equivalent to \$1.20 per household per month).
- Maintenance costs for the new 70,000 carts are also included in the collections cost (approximately \$0.50 per month).
- Additional details on the cost differences between solid waste types is found in Attachment 1.

Table 1 includes an estimate for processing costs for organics. This is based on the range of costs in the request for information and the range of costs shown in National

Benchmarking data. This also reflects the range of possible technologies a vendor may be able to use and the yet unknown participation rate in the organics program. The close of the organics RFP will reduce the uncertainty in these estimates.

The administrative costs contained in Table 1 are all the program costs not directly associated with collection and processing of waste and organics. This includes but is not limited to:

- Software Licensing.
- Administrative and Financial Support Staff.
- Environmental Protection Officers (those proposed to be charged to the project).
- Project Capital costs, excluding the cost of new carts and trucks.
- Proposed Communications Budgets.
- A correction to the Automated Garbage Container Replacement Reserve.
- The Customer Service Centre.

As noted in the previous reports, the \$18M proposed cost for the new level of service for waste is higher than the current \$13M annually that is being paid. However, the real cost of the current program, if amortized, is \$23M annually, meaning that the proposed program will save \$5M annually over the next 50 years.

Funding Options for Solid Waste and Organics

The City has three options to fund solid waste: (1) by utility-based user fees, (2) by the property tax; and (3) by a combination of fees and taxes, subject to legal constraints. The Administration has recommended funding solid waste services through a unified waste utility as this approach would best meet financial and environmental objectives.

More specifically, a full utility was proposed in the Unified Waste Utility Waste Management Level of Service for Organics and Waste report as it best fit the values established by City Council in January of 2017 and was the direction of City Council in June of 2018. A condensed version of the unified utility recommendation is illustrated in the two tables below.

Est. Cost Recovery Amounts by Cart Size		
Small Cart	Medium Cart	Large Cart
\$16.00	\$18.00	\$21.00

Property Class	Property Tax Impact (-3.5%)	Utility Rate Impact (assuming medium cart)	Net Impact to Property Class
Average Residential	-\$5.27	\$18.00	\$12.73
Median Multi-Family	-\$21.77	-	-\$21.77
Median Commercial Property	-\$26.44	-	-\$26.44

As the second table shows, delivering and paying for waste and organics through utility-based user fees removes the existing property tax subsidization from the multi-family and commercial property classes. It is important to note that the setting of the rates for the various black cart bin sizes would be based on a rate setting philosophy that has yet to be approved by City Council; the numbers shown in the first table are simply the estimated amounts for cost recovery for each bin size.

Nonetheless, the level of service report did not explicitly address potential program funding options for each sub-program (e.g., curbside waste collection and curbside organics collection). The remaining section of the report provides additional information on the various funding options for waste and organics for City Council’s consideration.

In developing the options, several assumptions are made so that an appropriate comparison and evaluation of each option can be made. These assumptions are:

- All figures are estimates and are based on average, or median assessed values and the medium cart size.
- Figures shown are monthly amounts.
- Each option, includes three waste (black) cart sizes and one organics size.
- To apply any property tax changes, the options use the average assessed value of \$371,000 for single family residential properties; a median assessed value of \$1,532,000 for multi-family residential properties; and the median assessed value of \$1,154,000 for commercial properties.

Moreover, the evaluation of the options are based on the following criteria:

1. Equity- do those who benefit from the service pay for the cost of delivering the service?
2. Efficiency – does the cost of the service reflect optimal amount of waste generation? Does it encourage waste diversion? And, are costs of delivering the service recovered?
3. Sustainable – does the funding model ensure that the delivery of waste services is financially and environmentally sustainable over the long-term
4. Accountability/Transparency – are the costs of service hidden to the user or are they clear to the user?

Option 1: Waste as a Utility with Organics property tax funded

This option proposes to deliver and fund curbside waste services through a utility based fee. The organics program, by contrast, would be funded by the property tax. The new

organics program would thus take the place of the Curbside Solid Waste Program on the property tax. As a result, the net effect of this option is that the single family residential households would be subject to an \$8 fee per month (assuming a medium sized cart).

The effects of this option is are shown in the following tables:

Est. Cost Recovery Amounts by Cart Size		
Small Cart	Medium Cart	Large Cart
\$6.20	\$8.00	\$11.00

Property Class	Property Tax Impact (0% change)	Utility Rate Impact (assuming medium cart)	Net Impact to Property Class
Average Residential	-	\$8.00	\$8.00
Median Multi-Family	-	-	-
Median Commercial Property	-	-	-

The primary advantages of this option are twofold: (1) single family residential waste costs are fully-funded and sustainable over the long term; and (2) fairness is enhanced as the costs for single family residential waste garbage collection and disposal are entirely borne by those receiving the service.

However, there are two significant disadvantages of this option: (1) it may result in greater levels of contamination in the green cart program as research indicates residents tend to maximize use of the cart viewed as 'free' before using carts they pay for; (2) and (2) the multi-family and commercial property classes are paying for the organics program without receiving the service.

As with the recommended option, the numbers shown in the first table are simply the estimated amounts for cost recovery for each bin size, and will be subject to formal rate setting in a future report to City Council.

Option 2: Waste and Organics Funded by Property Tax

This option proposes to fund both curbside single family residential waste collection and organics collection through the property tax. Under this option there is no individual cart price, as that is built into the price of this service, though residents may select other cart sizes in line with the current level of service.

The effects of this option are shown in the table below. As the table shows, this option requires a dedicated property tax increase of just under five percent to fully fund the programs costs associated with the delivery of waste and organics. This potential tax

increase is beyond what is required to pay for the delivery of other City tax-supported programs and services.

Property Class	Property Tax Impact (3.9-4.9%)	Utility Rate Impact (assuming medium cart)	Net Impact to Property Class
Average Residential	\$7.10	-	\$7.10
Median Multi-Family	\$29.24	-	\$29.24
Median Commercial Property	\$35.50	-	\$35.50

The primary advantage of this option is that it contemplates a fully funded waste service and organics program in the short-term. However, there are several disadvantages with this option, namely: (1) while providing a program for additional waste diversion, it does not provide an incentive to reduce waste or encourage use of the correct waste cart (a key benefit of the PAYT program); (2) program/service costs are hidden to the user, thus reducing accountability and transparency; (3) long-term program/service funding may be unsustainable due to competing pressures on the property tax; and (4) the multi-family and commercial property classes are paying for the waste and organics programs without receiving the services.

Option 3: Waste and Organics Funded by Property Tax with Service Fees for Larger Carts

This option blends Option 2 with some small elements of the unified waste utility. More specifically, it proposes to have the cost of the programs funded by the property tax with the small cart cost included in the program. Single family residential households that require larger carts would pay a monthly fee for the larger cart.

The effects of this option are shown in the tables below. The first table illustrates the estimated cost recovery costs for the larger carts. The second table shows the potential impacts to various property classes. As illustrated in the second table, this option requires a dedicated property tax increase of just under three percent to fully fund the programs costs associated with the delivery of waste and organics.

Est. Cost Recovery Amounts by Cart Size		
Small Cart	Medium Cart	Large Cart
\$0.00	\$1.70	\$4.80

Property Class	Property Tax Impact (2.7%)	Utility Rate Impact (assuming medium cart)	Net Impact to Property Class
Average Residential	\$5.77	-	\$7.47
Median Multi-Family	\$16.80	-	\$16.80
Median Commercial Property	\$20.40	-	\$20.40

The advantages of this option are: (1) it provides a small incentive for waste diversion and (2) similar to Option 2, it contemplates a fully funded waste service and organics program in the short-term. Like Option 2, there are a several disadvantages of this option: (1) the base cost recovery amounts will not establish sufficient price differential to incentivize waste diversion, so formal rate setting will need to consider imposing a greater differential between bin rates; (2) the cost-benefit of deploying smaller carts may not generate enough positive waste diversion to merit the expense; (3) long-term program funding may be unsustainable due to competing pressures on the property tax; (4) program costs are largely hidden to the user, thus reducing accountability and transparency; and (5) the multi-family and commercial property classes are paying for the waste and organics programs without receiving the services.

As with the recommended option, the numbers shown in the first table are simply the estimated amounts for cost recovery for each bin size, and will be subject to formal rate setting in a future report to City Council.

Recovery Park Funding Opportunity

There is also another element to this program package that should be considered. Multi Material Stewardship Western funding (MMSW), through the Multi-Material Recycling Program (MMRP), is collected when program participants create recyclable materials. The funds are then returned to the participants who have active programs to recycle materials.

MMSW funding is expected to increase to approximately \$25/household in 2019 from the previous \$12/household in 2018. This additional funding could support the amortized capital payments for Recovery Park removing it from both property tax and utility funding options. Administration will be reporting back in November 2018 regarding the Multi Material Stewardship Western (MMSW) funding and how this funding could be applied to the City’s waste programs.

All of the options described above assume that Recovery Park capital re-payment is funded through the MMSW funding. These funding options are for comparison purposes only and the costs presented are identified based on the level of service (Bi-weekly collection) presented in the Unified Waste Utility Waste Management Level of Service for Organics Report.