



To: Public Works and Transportation Committee

Date: October 11, 2013

From: Tom Stewart, AScT.
Director, Public Works Operations

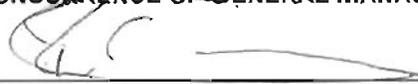
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Re: Garbage Collection - Review of Service Level Options

Staff Recommendation

1. That garbage collection service levels, outlined in Option 4 of the report from the Director, Public Works Operations dated October 11, 2013, be referred to the 2014 utility and capital budget processes to:
 - a) provide wheeled carts to all residents serviced with City garbage collection;
 - b) introduce variable rate pricing based on the size of cart preferred by residents.
2. Staff report back on details and requirements to implement the program.

Tom Stewart, AScT.
Director, Public Works Operations
(604-233-3301)

REPORT CONCURRENCE	
CONCURRENCE OF GENERAL MANAGER 	
REVIEWED BY DIRECTORS	INITIALS: DW
APPROVED BY CAO 	

Staff Report

Origin

In the annual *Report 2012 – Recycling and Solid Waste Management*, it was identified that staff would undertake a review of existing service levels for garbage collection, including variable rate programs such as ‘pay as you throw’ and bi-weekly collection. Variable rate incentive programs and/or garbage service level reductions can help to further waste diversion objectives through increased recycling and decreased waste disposal.

This report presents options for Council’s consideration.

Analysis

Background

The City has continued to expand its recycling services to residents as part of striving to achieve 70% waste diversion by 2015 in accordance with the regional Integrated Solid Waste and Resource Management Plan (ISWRMP) and the City’s Solid Waste Strategic Framework. In order to achieve this diversion target and lay the groundwork for aspiring to 80% diversion by 2020 per the ISWRMP, additional actions must be undertaken to divert waste – the status quo is not an option. Early actions are also critical as part of capitalizing on savings through diverting material away from disposal and into more cost-effective recycling material management and as part of taking advantage of those early gains before tipping fees rise. Tipping fees are projected to increase from the current rate of \$107 per tonne to \$151 per tonne by 2017. Reducing and recycling additional waste is also very important as part of best practices for demand side management to defer regional capital costs for new waste disposal infrastructure, which is ultimately reflected in the system costs shared by residents and the community as a whole.

To support residents and provide greater access to recycling, the City introduced the Green Cart program in June, 2013 to make yard trimmings and food scraps recycling more convenient for residents in single-family homes, and to expand organics recycling services to residents in townhomes. In the first two months of implementation, performance of this program was at 68% diversion for single-family households. While organics tonnages are higher in the summer months and this contributes to the high diversion rate for this period, it is nonetheless a positive reflection of the benefit of organics recycling initiatives. To this point, the City is currently introducing a pilot program for organics recycling in apartments.

Through the Blue Box and Green Cart recycling programs, residents in single-family and townhomes are now able to divert the majority of their household waste to recycling. Given these recycling alternatives are in place, adjusting service levels for garbage collection is the next aggressive and progressive step needed to drive additional waste diversion.

There are two variables which can be considered either individually or in combination to encourage residents to make maximum use of available recycling options by creating disincentives to waste disposal. These include: a) introducing financial incentives through variable rate programs, and/or b) service level reductions.

a) Variable Rate Programs

A variable rate program, also typically referred to as “Pay-As-You-Throw”, results in a sliding-scale fee structure for garbage disposal based on the size of garbage container used by residents, i.e. a lower cost for smaller-sized garbage containers and a higher cost for larger-sized containers. For the purpose of this report, it is assumed that under a variable rate program the City would provide carts for garbage collection in a range of sizes similar to that used in the Green Cart program, i.e. 80 litres, 120 litres, 240 litres and 360 litres. Residents would have the option to choose the cart size of their choice and pay the associated rate established by the City for each various container size.

A variable rate program can be used for either weekly or bi-weekly garbage collection service, provided carts are provided as part of the program.

Key Advantages

- Residents have ability to influence the amount they pay based on volume of garbage generated, i.e. user pay
- Financial incentives are created to increase recycling/diversion and reduce garbage
- Carts are provided for garbage collection service

Key Disadvantages

- Additional administrative work necessary to track cart sizes in order to appropriately assess costs
- Capital cost to provide and deliver garbage carts can be substantial

b) Garbage Collection Service Level Reductions

Service levels for garbage collection can be reduced by placing additional limits on the number of garbage cans allowed per week (i.e. one can vs. two cans) or by collecting garbage every two weeks instead of weekly. Recycling collection services can remain unaffected, i.e. weekly Blue Box and Green Cart collection. By reducing the number of garbage containers collected each week or by collecting garbage every other week, residents are motivated to recycle more and dispose less. Both the City of Surrey and the City of Vancouver have implemented bi-weekly garbage collection service using carts. The City of Surrey also collects recycling (in carts) on a bi-weekly basis (alternates with garbage).

Garbage collection service levels can be adjusted under the City’s current program where residents provide their own garbage containers, or if the City opts to provide carts to residents. Reductions in garbage collection service levels can also be used in combination with variable rate programs provided carts are used in the program.

Key Advantages

- Reduction to one can/week can be easily implemented and residents can continue to use/provide their own containers (no added capital cost)

Key Disadvantages

- Service level reductions (regardless of one can/week or bi-weekly) have limited cost savings compared to what residents might otherwise expect

Key Advantages

- Bi-weekly collection provides considerable incentive for residents to reduce garbage and increase recycling due to the inconvenience of every other week garbage collection (with no added capital cost if carts are not used)

Key Disadvantages

- Potential for contamination of garbage into other recycling streams (Blue Box/Green Cart) since residents are motivated to get rid of their waste
- Potential for increased illegal dumping (including dumping of household garbage into neighbourhood park garbage containers, commercial dumpsters, etc.)

Review of Service Level Options

There are five different options explored in this report for Council's consideration, including:

- 1) Status Quo – Two cans collected weekly (where residents provide their own containers);
- 2) One can collected weekly (where residents provide their own container);
- 3) Two cans collected bi-weekly (where residents provide their own containers);
- 4) Weekly cart collection using variable rate pricing (where carts are provided by the City);
- 5) Bi-weekly cart collection using variable rate pricing (where carts are provided by the City).

Each is explored in more detail below, and is summarized in *Attachment 1*. Some key assumptions used in this evaluation are: the waste shifts from garbage to recycling (e.g. reduced garbage disposal but increased recycling processing); broad assumptions must be applied to estimate the selection percentage of different sized carts residents may choose; and collection costs are higher to service City-provided carts vs. resident-provided cans.

In considering these options, it is helpful to have background information on the City's current garbage collection service levels as outlined in Option 1.

1. *Option 1 - Current Service Level/Status Quo:* The current level of service for curbside City garbage collection is:

- Weekly Collection: for up to two, 100 litre containers/bags, or a maximum of 200 litres per household per week;
- Additional Containers: residents may purchase a \$2 garbage tag and adhere it to each additional container/bag.

In addition, the City offers the following options for disposing of additional and/or large items:

- Additional Garbage: residents may also dispose of additional garbage by purchasing a \$5 garbage disposal voucher which they may use at the Vancouver Landfill to dispose of up to \$20 worth of material which they deliver themselves;

- Large Items: the City also introduced a large item pickup program (in June, 2013) where residents may have up to four large items collected annually at curbside (residents with City garbage and/or Green Cart service).

Some challenges with the existing service are that residents frequently use over-sized containers with wheels (120 litre or larger). Missing lids, broken handles, broken wheels and/or broken containers are common complaints – principally due to the quality of containers available for purchase by residents. Garbage can also become scattered by animals. These are challenges which could be addressed if the City were to provide designated carts for garbage collection.

2. *Option 2: One Garbage Can Collected Weekly*

Under this option, garbage collection service would be reduced to one, 100-litre container per week. Residents are responsible for providing their own containers. Additional bags of garbage could be collected if a garbage tag is used. The price of the additional garbage container tag could be increased from \$2/each to \$3/each as a further deterrent to additional garbage.

This is a fairly straight forward option and likely the easiest/quickest to implement. Information could be communicated to residents and a transition period established for implementation (i.e. 3 – 6 months).

Anticipated challenges with this option are: residents may use over-sized containers (120 litre or 140 litre containers) and overstuff garbage into containers. This could translate into operational concerns and complaints and real or perceived service level inequities (if oversized containers are tagged, residents will complain their garbage was not collected; if the oversized containers are being collected, residents will complain that the rules aren't being equally applied; where garbage is stuffed into containers, it will become lodged and difficult to empty). Illegal dumping activities could increase and there could be increased contamination in the recycling stream.

Some cost savings are expected through reduced tipping fees since more waste is expected to be recycled, or approximately \$125,000 annually. As such, this option is estimated to result in annual cost savings of approximately \$2.26 per household.

3. *Option 3: Two Garbage Cans Collected Bi-Weekly*

With this option, the level of service for garbage collection is reduced to collection of two, 100-litre containers bi-weekly, or every two weeks. Residents provide their own containers. Additional items could be collected as outlined in Option 1, i.e. via a garbage tag.

This option can also be implemented fairly readily, with allowance for a communication and transition period established for implementation (3 – 6 months).

As noted previously, bi-weekly collection service has the advantage of creating a strong incentive for residents to expand their recycling efforts by making garbage collection less

convenient. Disadvantages may include: potential use of oversized containers (as in Option 2); illegal dumping activities could increase, and there could be increased contamination in the recycling stream. These are issues which might be expected to be at a high level at the outset of the program change, and then taper to lower significance as residents become more accustomed to the changes.

Cost savings are expected through reduced collection costs and tipping fees since more waste is expected to be recycled, or approximately \$185,000 annually, equal to approximately \$4.18 per household.

4. *Option 4: Weekly Garbage Collection with Variable Rate Pricing Using Carts (Recommended Option)*

With this option, the City would provide carts to residents based on subscription to various sized carts, i.e. 80 litres, 120 litres, 240 litres and 360 litres. Carts would be emptied weekly. Staff would recommend the base or standard cart size be 120 litres to encourage less garbage (i.e. vs. 200 litres under the current program). Residents would have the option to subscribe to the smaller 80 litre sized cart or to a larger cart size, and pay the established rate. The incentive to reduce waste is built into the rate structure. The option to dispose of additional garbage could continue to be made available via a garbage tag, and it would be recommended to increase the tag cost to \$3/each.

Collection costs are higher under this option due to the additional time required to service carts vs. cans or bags. Once estimated garbage disposal savings are considered, the net operating cost of this option is approximately \$400,000. There is also an additional initial capital cost to purchase the carts for residents, estimated at \$2.2 million. The cart acquisition cost would not be reflected in the rates charged to residents as a funding provision has been established for this purpose.

This option requires a longer transition and implementation period due to the need to allow for a sign-up period, order and deliver carts, etc. or approximately 9-10 months.

Waste diversion is encouraged by reducing the weekly limit from the existing 200 litres maximum to a standard of 120 litres and by offering variable rates to create financial incentives to reduce garbage.

There are added collection costs under this option for servicing garbage carts, which are offset somewhat by reduced garbage tonnage. Overall, this option is expected to result in an annual increase of approximately \$8.84 per household (based on a standard 120 litre cart). However, residents can save by selecting a smaller cart size or pay additional amounts for a larger cart size.

5. *Option 5: Bi-weekly Garbage Collection with Variable Rate Pricing Using Carts*

This option is similar to Option 4, with the exception that garbage carts are collected every other week (or bi-weekly). Carts are provided by the City, with the standard recommended size being 240 litres due to collection frequency being every other week. The incentive to reduce waste is built into the rate structure. The option to dispose of

additional garbage could continue to be made available via a garbage tag, and it would be recommended to increase the tag cost to \$3/each.

Collection costs remain consistent with current costs (i.e. although it is more expensive to collect material from carts, this is offset due to bi-weekly servicing). There are added costs anticipated associated with additional administrative support as well as operating impacts from potential dumping and related issues, which are principally offset resulting in a net annual operating budget impact of approximately \$50,000. There is no anticipated change in the annual operating cost per household based on the standard size container issued. Residents would continue to have the option to pay less or more based on the container size of their choice.

This option requires approximately 9-10 months for implementation and transition.

There are capital/start up costs associated with this option, estimated at \$2.2 million. The cart acquisition cost would not be reflected in the rates charged to residents as a funding provision has been established for this purpose.

A summary of the options, which describes the key cost centres and an estimate of how each is impacted throughout the various options is provided below. Note that these costs use projected 2014 costs for an average single-family household as the base case for comparison purposes. The existing 2013 single-family household cost is also shown for information. The projected rate increases for 2014 relates to full year implementation costs for new programs introduced in June, 2013, i.e. the Green Cart and Large Item programs as well as reduced revenue projections for recycling commodities based on market conditions.

<i>Estimated Annual Cost Impact of Options Based on Single-Family Household</i>						
<i>Service Component</i>	<i>2013 Current Net Cost</i>	<i>Option 1: Status Quo 2014 Projected Cost</i>	<i>Changes to Option 1 – Status Quo Net Rate</i>			
			<i>Option 2: One 100 L Can Weekly</i>	<i>Option 3: Two 100 L Cans Bi-Weekly</i>	<i>Option 4: Carts Weekly (Based on 120 L Standard)</i>	<i>Option 5: Carts Bi-Weekly (Based on 240 L Standard)</i>
Garbage	\$106.00	\$106.20	-\$3.76	-\$5.68	\$7.22	-\$1.20
Yard Waste	\$77.50	\$82.30	\$1.00	\$1.00	\$1.01	\$0.75
Recycling	\$31.30	\$34.00	\$0.50	\$0.50	\$0.61	\$0.45
Other ¹	\$36.60	\$41.30				
Total	\$251.40	\$263.80	-\$2.26	-\$4.18	\$8.84	\$0.00

¹Large item program, litter collection, Recycling Depot, illegal dumping, environmental, and administration.

Recommended Option

Staff recommend Option 4. This approach provides carts to residents, building on the success of the Green Cart program. Many positive comments have been received from residents about the convenience of using carts for their organics, and many have requested that carts also be provided for residents to use for their garbage. Providing standard carts to residents will help to alleviate many common complaints ranging from missing lids to scattered garbage and litter in neighbourhoods. Maintaining weekly garbage collection service using a standard cart of a lesser

size (120 litres) coupled with providing variable rate incentives for alternative size carts provides maximum choice to residents while at the same time encouraging waste diversion. As such, this program is expected to help further the City's goal toward 70% waste diversion by 2015.

Financial Impact

This report has no direct financial impact as these details will be provided as part of the 2014 utility budget process for Council's consideration. It is expected that any financial impact affecting the rates charged to residents associated with this initiative would be principally reflected in 2015, based on an estimated late third quarter program implementation. Capital funding for cart acquisitions is available in the General Solid Waste and Recycling Provision.

Conclusion

This report presents options for garbage collection service level adjustments to help further waste diversion objectives. The suggested approach to provide weekly collection service using City-provided carts of a reduced capacity over current service levels (i.e. 120 litres vs. 200 litres), coupled with variable rate incentives for smaller or larger cart sizes, balances convenience and choice while encouraging additional waste diversion.



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Attachment 1

Option	Service Level		Containers		Additional Garbage			Anticipated Annual Cost		Capital Cost	Implementation Timeframe
	Weekly	Bi-weekly	Resident Provided	City Provided	Tag Cost Each	\$5 Garbage Voucher Program	Large Item Pick Up (4 items)	Based on 2014 Budget	Difference Over 2014 Projected		
1	✓		2 x 100 litres can		\$2	✓	✓	\$263.80**	None	N/A	N/A
2	✓		1 x 100 litres can		\$3	✓	✓	\$261.54**	-\$2.26	N/A	3 to 6 months
3		✓	2 x 100 litres can		\$3	✓	✓	\$259.62**	-\$4.18	N/A	3 to 6 months
4	✓		1 x 80 litres cart		\$3	✓	✓	\$234.84	-\$28.96	\$2.2 Million	9 to 10 months
			1 x 120 litres cart*	\$8.84							
			1 x 240 litres cart	\$62.84							
			1 x 360 litres cart	\$106.04							
5		✓	1 x 80 litres cart		\$3	✓	✓	\$222.00	-\$41.80	\$2.2 Million	9 to 10 months
			1 x 120 litres cart	-\$22.36							
			1 x 240 litres cart*	\$0.00							
			1 x 360 litres cart	\$78.08							

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Legend: * Standard Size
 ** Based on Average Single Family Home