WASTE & RECYCLING SERVICES

Residential Collection Services Review: Service Efficiency Opportunities

Table of Contents

1. Introduction

As part of the *2018 Collection Services Review* report the consultant made 10 recommendations based on the research and analysis completed (UCS2019-0113 Attachment 4). Some of these recommendations are related to service efficiency opportunities.

On 2019 February 4, Council directed Administration to assess and pursue service efficiency opportunities identified in the report and return to Utilities and Corporate Services Committee by Q2 2020 with findings.

This document provides a summary of Waste & Recycling Services' (WRS') ongoing efforts to pursue the service efficiency opportunities identified in the 2018 Collection Services Review, and other opportunities identified by Administration.

2. Service Efficiencies

WRS continues to focus on the four service value objectives developed in the consultants' report (UCS2019-0113 Attachment 1): customer experience, safety, environment and costs. WRS continually strives to balance operational efficiencies in line with the value objectives to be part of the fabric of the community by providing courteous, reliable, safe and environmentally responsible collection services.

Significant efficiencies have been realized in WRS' residential collections over time through automation of collection, reductions in fleet maintenance costs, and implementation of improved route design software.

To realize further efficiencies, WRS is pursing the following opportunities:

- Fleet initiatives: an alternative fuel strategy, in-truck technology and a truck rental pilot
- Reduced set-out: a tag-a-bag program and a variable set-out pilot
- Workforce management: seasonal employee sharing

Additionally, WRS assessed the cost-benefit of extending collection shifts to a ten-hour work day. Progress on these opportunities is summarized below.

2.1 Fleet Initiatives

Alternative fuel strategy

In the *2018 Collection Services Review* report, the consultants recommended developing an alternative fuel strategy: "*A feasibility analysis should be conducted to assess the financial and environmental benefits and concerns to WRS if alternative fuels such as CNG were used in one of the districts or the entire fleet. Electric vehicles are also worth considering as they are being tested across several jurisdictions across North America.*"

The City undertook a comprehensive feasibility analysis to inform the alternative fuel strategy.

The City is committed to improving air quality, reducing greenhouse gas (GHG) emissions, and carbon footprint by transitioning to cleaner fuel and low emissions vehicles. The City engaged a consultant to assess the feasibility of different alternative fueled vehicles for Calgary's fleet of refuse trucks (side, front and rear loading vehicles). Based on the consultants' report, an alternative fuel strategy has been developed by Corporate Analytics & Innovation (CAI), WRS and Fleet.

Key initiatives of the strategy include purchasing electric-hybrid and battery-electric vehicles this year to be field tested in 2021. Additionally, bio-diesel is being considered as a short-term solution to reducing GHG emissions, as it would have a lower environmental impact, and no or little cost and performance impact, compared to the diesel baseline.

In-truck technology

WRS is currently undertaking a project to equip collection vehicles with technology which will primarily improve customer support while also improving collection efficiency. The In-truck technology project will assess opportunities to:

- Simplify and automate recording of field data
- Improve record management for collection concerns (tagged carts)
- Improve asset tracking
- Modernise route mapping and add turn-by-turn routing
- Add flexibility for future program options (such as variable set-out)
- Improve service validation to support customer service
- Modernize in-field workforce management

Truck rental pilot

WRS is planning to undertake a pilot in 2020 to test the feasibility and perform cost analysis to determine if it is more economical to rent additional collection vehicles seasonally during weekly green cart collection as compared to leasing the vehicles for the entire year.

2.2 Reduced Set-Out

Tag-a-bag program

In efforts to promote diversion and waste reduction, a major initiative is the implementation of a tag-a-bag program for residential garbage. The planned start date was June 1, 2020, however, given the COVID-19 situation, it is now tentatively scheduled to begin in the Fall of 2020. With tag-a-bag, if a household's black cart is full and the household has extra bags of garbage, they will need to buy tags to put on the extra garbage bags for them to be picked up. Tags will be $3 each and will be available at convenience stores and grocery stores around Calgary. The tag-a-bag program is a first step towards greater fairness in our garbage collection fees, as homes that reduce waste and divert more materials into the Blue and Green cart will be less likely to need to buy tags for extra garbage. This program introduces a financial incentive to fully use waste diversion programs and reduce the amount of garbage put out for collection. The program may also improve collection efficiency and reduce driver exposure to safety issues through reducing the amount of excess garbage that drivers must get out of their vehicle to collect.

Variable set-out pilot

WRS is currently exploring customer behaviour to develop a detailed plan for piloting a variable set-out pay-as-you-throw (PAYT) program. This program will potentially charge customers based on how often their cart is set out for collection. A decrease in set-out rates could further increase collection efficiency. Potential cost savings will be estimated and included in a report to Council in Q2 2021.

2.3 Workforce Management

Seasonal employee sharing

WRS continues to collaborate with other business units to benefit operations and support employee satisfaction. The 2019 seasonal employee sharing pilot with Roads allowed 20 seasonal staff to be employed year-round by moving from WRS to Roads in the winter for snow and ice control (SNIC) operations before moving back to WRS in the spring when weekly green cart collection resumes. The pilot should reduce hiring and onboarding costs, and may increase employee retention.

Ten-hour work day

The *2018 Collection Services Review* report recommended that WRS consider extending collection shifts: "*Drivers work 9.5 hours per day for a total of 38 hours per week. If there is a desire to improve collection rates by extending the shifts to a 10-hour day, the extra 30 minutes could result in 60 to 100 more pick-ups per shift thereby improving the daily efficiency of each collection vehicle.*"

Route design software that factored in field verified static and dependent variables validated the consultant estimation of 60 to 100 additional pick-ups per shift. Based on truck capacity, this equates to a reduction of vehicles.

While there are significant cost savings of removing vehicles, these savings would be offset by additional costs (salary & wage, maintenance, fuel and compensation) due to the additional 0.5 hour per day.

Potential cost savings were estimated and a clear savings opportunity did not emerge. WRS' best estimate indicates the net benefit to customers would be a $0.05 reduction on monthly user fees, though it could be higher or nothing at all.

The impact to customers of implementing a ten-hour work day was considered, with the biggest impact being that residents would be required to place their carts out by 6:30am instead of 7am, and noise impacts associated with earlier collection. To maximise the efficient use of the additional thirty minutes, the time would be added to the start of the day to mitigate the impact of afternoon rush hour traffic on transportation times.

Given that there is not a clear savings opportunity with changing to a 10-hour work day, WRS will continue to focus on refining operational efficiencies to reduce travel time and increase productive time collecting carts. For example, beginning in 2019 and continuing in 2020, WRS is undertaking major route design and collection day changes to accommodate city growth.