



TO: Colin Farynowski, ASCT
Manager of Engineering, Town of Creston

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FROM: Jeff Ainge
Senior Advisor, Carey McIver & Associates Ltd.

PROJECT: Curbside Collection
Program Design
Assistance

SUBJECT: Curbside Collection Options

1. Introduction

The Town of Creston (the Town) has engaged Carey McIver and Associates (CMA) to assist with designing a new expanded curbside collection program to incorporate residential organics and recyclables collection along with household garbage. CMA involvement includes reviewing the current collection system, developing and presenting collection options for Council consideration, preparing a curbside collection Request For Proposals (RFP), drafting a community consultation program, providing a summary of the procurement and consultation results, and offering recommendations to Council to assist in decision making.

The timeline and process to guide program design assistance is outlined in Figure 1.

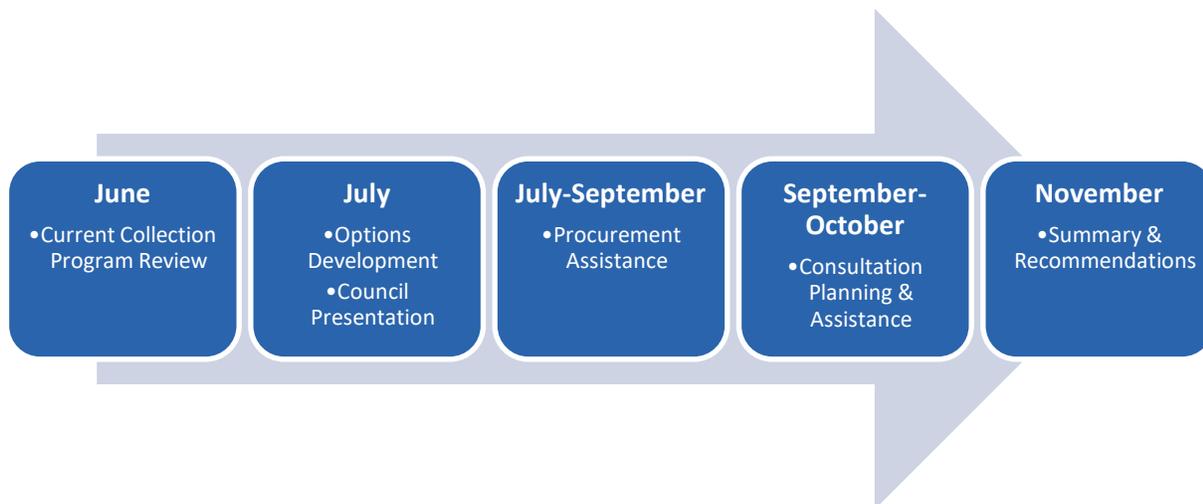


Figure 1: Workplan and Timeline for Curbside Collection Program Design Assistance

The purpose of this memorandum is to provide Council with background on the Regional District of Central Kootenay (RDCK) organic waste diversion strategy, discuss the merits of the Recycle BC offer to join their collection program, review the Town's current collection program, introduce curbside collection program design considerations, and provide a summary of the key components of the RFP.

2. RDCK Organics Diversion Strategy

The Town of Creston has been an active participant in the RDCK Organic Waste Diversion Strategy development as part of the Resource Recovery Plan update process. To facilitate the diversion of organics (yard waste, food waste and food soiled paper) from landfill disposal, the Strategy proposes to establish



organics processing (composting) facilities at both the RDCK Central Landfill and Creston Landfill. In January of 2020, the Province announced the RDCK was successful in its application to the Organics Infrastructure Program for funding to construct the two composting facilities.

The RDCK has secured a contractor to finalize the detailed designs for the organics compost facilities and transfer station upgrades, and to complete the required regulatory submissions, construction administration and facility commissioning. At this time, it is anticipated the Creston facility will be ready to receive organics material in the Fall of 2021.

A key component in developing the Organics Diversion Strategy has been securing commitments from the municipalities of Castlegar, Nelson and Creston to collect and deliver organics to the proposed facilities. To meet this objective the Town has committed to introducing curbside collection of separated residential organics as part of its current garbage collection program.

The RDCK will work with the Town to coordinate their facility construction and commissioning timelines with the Town's proposed new collection program rollout.

3. Recycle BC

On March 24, 2020, the Town received a formal offer from Recycle BC, the stewardship organisation responsible for residential packaging and paper product recycling throughout British Columbia, to join their program as a contracted collection partner for residential printed paper and packaging (PPP).

As a collection partner, the Town would be responsible for providing recycling containers to all residents and for performing curbside collection services to households. This can be achieved either with Town staff or through a private collection contractor. In return Recycle BC provides monthly incentive payments for the collection service, as well as a facility located within 60 km to receive collected materials. Recycle BC then takes on all responsibilities associated with receiving, processing, and marketing collected materials.

The financial incentive that Recycle BC provides to collection partners is based on whether collection is manual or automated. The incentive rate is currently under review, but for reference the current rate paid for manual multi-stream collection is \$38.45 per household. For manual single-stream collection the current incentive is \$34.50 per household. Automated single stream collection is currently \$33.40 per household. Recycle BC also pays contracted collection partners \$1.75 per household as an administration top-up and \$0.75 as an education top-up.



Currently, residents are encouraged to manage their recyclables by taking recycling to drop-off depots. In late June, the RDCK opened a new recycling drop off facility at the Creston landfill, and a new depot located at 412 Helen Street. Introducing curbside recycling collection adds a level of convenience to the resident's household waste management, and the opportunity to introduce this change concurrent with the introduction of organics collection means efficiencies in collection, program administration, and less disruption for the resident.



Town staff have advised Recycle BC that the Town is extremely interested in joining the program but will not be able to confirm the collection method or launch date until after completing a review and redesign of its current curbside collection program. When the Town is ready to join the program, it will enter into a formal service agreement with Recycle BC. Meantime staff will be reviewing the Recycle BC Master Service Agreement and Statement of Work for Curbside Collection Services to ensure that the Town's obligations to Recycle BC are incorporated into the new collection services contract.

4. Town of Creston Curbside Collection Review

Residential solid waste collection in the Town is regulated by the Solid Waste Management Regulations Bylaw No. 1900, 2019. The program is limited to garbage collection only at this time. Participation in the program is mandatory for residential dwelling units, such as single-family homes and other dwelling units such as duplexes, triplexes, four-plexes, secondary suites, condo and apartment units up to a maximum of four units on the property.

Properties with more than five residential dwelling units may apply to opt-in to the program. In addition, commercial properties with or without residential units attached, and that can meet the established container set-out limits, are required to participate in the program unless approved to opt-out with a private collection system in place. Approximately 2,610 total units are being serviced, made up of 2,350 residential dwelling units, 158 units in multi-unit properties, and 105 commercial units and community facilities.

Weekly garbage collection is provided on Tuesdays, Wednesdays and Thursdays using a manual system. The collection is contracted out to a local hauler (Tip-It Waste Solutions). Tip-it Waste Solutions is currently operating on a verbal month-by-month agreement.



Figure 3: A Tip-It collection truck

As established in Bylaw No. 1900, residents are required to provide their own garbage containers with a maximum size of 80 litres. The maximum permitted weight at the curb is 23 kgs. Collection is limited to two containers (or bags) per week, however additional garbage can be set out with a \$2 tag purchased from the Town. The cost to provide the service has recently been removed from general taxes and replaced with a utility fee model. The 2020 utility fee for curbside garbage is \$90 per year per household (and \$97 for commercial properties receiving this service).

When the collection program expands to include recycling, the inclusion of commercial properties may pose a challenge for Recycle BC whose responsibility is confined (by legislation) to residential recycling collection only. A discussion with them may result in an arrangement whereby the commercial properties can be included, but even if they do permit it, they will not pay a collection incentive for materials from commercial sources.

Likewise, collection of recycling from multi-family properties (the properties with more than four dwelling units with centralised collection) will require a separate agreement with Recycle BC, however they do allow this and there are examples of programs with blended single-family and multi-family collections.



In addition to curbside garbage, the Town offers a limited seasonal yard waste collection service (provided twice-a-year by Town crews). Branches and leaves are chipped and used as mulch in municipal operations; leaves and grass are composted and mixed with topsoil for municipal operations. A year-round self-haul yard waste drop-off location operated between 2010 and 2019 but is not currently operated due to budget concerns. A backyard composter rebate program is also offered to residents.

5. Program Design Considerations

In BC, best practices for residential curbside collection consist of three stream collection programs (recyclables, organics and garbage) where Recycle BC pays for recycling collection. These programs also provide waste diversion incentives by means of can limits on garbage as well as user pay approaches where residents that generate more garbage pay more for the service. Best practices also include on-going education and engagement as well as climate change considerations with respect to vehicle emissions.

Due to the existing use of drop-off depots for residential recycling, introducing residential recycling collection would change how residents handle the bulk of their recyclables. Experience shows that curbside collection of recycling provides convenience which in turn improves the capture rate of recyclable materials and increases diversion of materials from landfill.

Experience in most jurisdictions that have introduced organics collection would suggest that collecting organics weekly, with garbage and recyclables collected bi-weekly, greatly assists in building participation for organics diversion. Along with collection frequencies and consideration of set-out limits to boost participation, program design considerations for the Town include whether the expanded collection will be manual or automated, and whether to consider expanding organics to include curbside collection of yard waste as well as food waste.

Including yard waste is more prevalent in an automated collection program, where a larger cart for food scraps is required to be compatible with the lifting mechanism, meaning there is excess capacity in the cart for more material (i.e., the yard waste). This can reduce the “ick” factor associated with food waste collection (odour, insects), but also increases the amount of material collected in the organic stream (and thereby increases the amount paid for processing the organic waste). It may not be practical for winter climates with shorter yard waste “seasons”.

Manual Collection

The current collection for the Town is a manual system, whereby the collector leaves the cab of the truck to lift and empty the garbage containers into the truck hopper. This type of collection is also applicable for multi-stream collection, where recycling and food waste organics are also collected. Split-body trucks, which have a partition in the body of the truck to keep different materials separated, allow for two material streams to be set out at the curb for collection on the same day in the same truck.



Figure 4: Recycling & Organics Manual Set out



Figure 5: Manual Recycling Collection



In a manual system, curbside collection containers tend to be smaller and therefore less expensive to purchase and are often available through local hardware retail stores.

- The permitted 80 litre garbage container size works well for the current manual system.
- For organics, curbside containers with 45-50 litre capacity are ideal for residential food waste. Smaller under-counter/counter-top containers (*aka* kitchen catchers) could also be provided to assist in the collection and transfer of kitchen scraps from the home to the curbside container.
- Blue boxes, large reusable poly bags, or a combination can be used for manual recycling collection.
- Yard waste collected under a manual program would likely be in kraft bags, or in 80 litre containers.

Automated Collection

In recent years, many municipalities have switched to cart-based (automated) collection. This has often been precipitated by a desire to reduce worker injuries and increase the size of the labour pool for waste collectors. This can be an attractive proposition for a community already considering expanding their collection system to include recycling and organics, although it is not without its challenges. The larger cart sizes, and the ability for the lift arms to handle bulkier and heavier containers makes this type of collection suitable for yard waste if that is desired.

Carts for automated collection range in size and capacity from 80 litres to 360 litres. It is becoming more common to see larger (240 litre) carts used for recycling, with residential garbage carts ranging from 100 to 240 litres. Smaller 80 to 120 litre carts suit the organics stream, although as discussed above even these smaller carts are typically too big for food waste only organics programs. Automated collection programs which include yard waste typically promote the 240 litre cart for the organics material stream.

Some programs offer residents the option to select-a-size, so that those who generate more waste (of whichever stream) can have a larger cart. Swap out fees are usually applied for residents who request a cart size different from the default size initially provided, and the municipality would tailor the individual utility bills accordingly so that those who do have the larger carts pay a higher fee.

Table 1 below summarizes the pros and cons of cart-based collection based on the feedback gathered from work on other waste collection projects.



Figure 6: Automated Carts



Figure 7: Automated Collection



Table 1: Automated Collection Pros & Cons

Automated – PROS
<ul style="list-style-type: none"> • Less worker injuries • Increases labour pool for collection staff • Often lower operating cost per household • Considered easier for resident to move (no lifting) • Carts are animal resistant (e.g. raccoons, dogs, crows) • Carts can be made bear resistant (with clips) • Less potential for litter • Can add yard waste to the collection program • Improved data gathering • Enhanced community aesthetics on collection days
Automated – CONS
<ul style="list-style-type: none"> • Capital cost of the containers (typically \$60-\$150 dependent on size & purchase quantity) • Space required for cart maintenance, and storage of carts for new customers • Can be challenging to service the carts in areas with steep or narrow streets, or in communities where parking on the road is prevalent • Residents must set out the containers properly in order for them to be picked up by the truck • Does not easily accommodate times when a household has extra garbage • May increase contamination of recyclables and organics (Recycle BC reports that cart-based programs have double the amount of contamination than other collection methods) • Smallest cart size may be larger than current manual containers = May increase the amount of garbage set out per household • May increase the amount of container storage required at each home • Challenging for residents who usually drive their containers to the end of the driveway (e.g. long, rural driveways) • Significant staff time required to implement and administer a cart-based collection system • Service providers must have a “spare” cart compatible collection truck for days when the primary truck is out of action, increasing the capital cost associated with truck procurement



Combination (Hybrid) Collection

Although not common, a combination of cart-based and manual collection is possible. Under such a system, the heavier material streams such as garbage and organics (particularly yard waste where it is included in curbside pickup) would be collected via automated carts, and manual collection would be retained for recycling. The reason to collect recycling manually is the compliance rate is higher (collector intervention at the curb removes the non-compliant items) and Recycle BC pays manual collectors a higher incentive.

For a combination system, the collector would need to have trucks capable of both manual and automated lifting. This might mean a hybrid truck or a fleet of separate trucks dedicated to each collection method

Figure 8: Example of A Combination Collection Program Curbside Set Out (City of Burnaby)



Container Procurement

Selecting the appropriate containers is an important component of program design. Ease of storage and use, consistency at the curb for the collector, appropriate sizing for the different material streams, and aesthetics can influence the decision-making process. While manual program containers such as blue boxes, garbage cans, and green bins are relatively easy to locate in hardware stores at affordable prices, it is less common to see automated carts in a retail setting. A local government procurement process for containers or carts will generate interest from several suppliers, resulting in better-than-retail prices.

For consistency, convenience, and the ability to hot stamp a program or municipal logo onto containers or carts (such as the Regional District of Nanaimo Zero Waste and Beyond Composting branding shown in Figure 9), CMA suggests the Town plan on a container procurement process regardless of the collection option selected.

Distribution of the containers can be handled by Town staff, seasonal staff, the collection personnel, or bundled into the procurement contract for the vendor to handle. Ownership of the containers, and storage and coordination of replacements are issues to be resolved.



Figure 9: Examples of Program Branding on Curbside Containers



Estimated retail costs for manual program organics containers are in the \$40 range, while blue recycling boxes range from \$10 to \$15 dependent upon the size chosen. The estimated costs for automated carts span a range from \$60 to \$150 dependent on size, quantity purchased, origin of manufacturer (US currency exchange and transportation to destination), and specifications of the finished product.

Collection Frequency

Adjusting the frequency when certain materials get collected can be very effective in building participation, especially for organics collection. As mentioned previously, many other jurisdictions that have introduced organics collection would suggest that collecting organics weekly, with garbage and recyclables collected bi-weekly, greatly assists in building participation for organics diversion as well as allowing the allowable garbage limit to be reduced.

Regardless of the collection method selected, we would recommend retaining the current Tuesday/Wednesday/Thursday fixed day collection schedule. We would however suggest the collection frequency follow that as outlined here:

Week 1	Garbage & Food Waste
Week 2	Recyclables & Food Waste
Week 3	Garbage & Food Waste
Week 4	Recyclables & Food Waste

Considering in-house service

Just as collection programs and methods differ across jurisdictions, so too do the personnel responsible for the collecting. From recent experience with municipalities redesigning or renegotiating collection programs, several have used the process to consider who is best positioned to provide the service at the curb. Those considering bringing the service in-house are usually already providing some component of the curbside collection and have the capacity to expand their service.

As an example, until 2018 the City of Nanaimo had been providing garbage and organics collection with City crews, and recycling collection was provided by a contractor to the City. When the City introduced their new automated collection system, they brought recycling in-house and now provide collection of all three curbside streams. The move to automated was very much driven by the need to reduce WorkSafe BC claims and related expenses incurred by the City's manual collection program operators.

As a counter to that, in nearby Town of Qualicum Beach where the Town staff provided manual garbage collection and the Regional District of Nanaimo (RDN) contractor collected organics and recycling with a manual program, the Town recently handed responsibility for garbage collection over to the RDN for it to be provided by their contractor. The Town staff who had been on the garbage crew were redeployed in other Public Works roles.

Considerations include the capital costs for vehicles and the capacity to provide ongoing maintenance on what can be reasonably complex machines (especially the lift arm mechanisms). Relations with the municipal workers' union and the ability to have guarantees of service may influence a decision on bringing a service in-house. Having experienced staff available, or the ability to staff up and manage those staff to provide the service may prove challenging if this will be a new service for the municipality.

The ability to provide the service at an affordable cost to the taxpayer needs to be weighed, particularly in areas where a competitive procurement process could result in several private firms bidding on the



work. Finally, economies of scale do come into play whereby a private firm in the business will have mechanics, spare drivers and spare trucks, plus support staff who can all be quickly deployed to respond to any incidents to ensure their client is kept happy.

Collection Program Support Mechanisms

As mentioned previously, curbside collection best practices rely on regulation, education and enforcement as well as direct engagement (face to face) and the use of apps and social media.

Examples of effective regulatory mechanisms are bylaws, garbage set-out limits, disposal bans on recyclables and compliance and enforcement activities.

For the Town this could mean that if a three-stream collection service is implemented, Bylaw No. 1900 could be amended to establish garbage set-out limits of perhaps one can every-other-week rather than two cans weekly. The Bylaw would also be revised to ban from disposal residential food waste (and possibly yard waste), and Recycle BC's approved recyclable packaging and paper products.

Examples of effective public outreach and education materials used in other communities are numerous, and in our experience others are pleased to share their resources for use by programs just starting out. The RDCK has indicated it will prepare organics diversion information material specific to the region for its partners to use. The Town's current contractor uses an informative notice on garbage containers left uncollected as a compliance and encouragement mechanism. Tracking and monitoring of what is set out for collection is also essential to program success, particularly with respect to reducing material contamination to meet Recycle BC requirements.

6. Request For Proposals

The cost to collect and manage residential waste varies across the Province. These variations are the result of the type of collection method used, material types and volumes collected, disposal and processing fees, recovery of municipally provided collection container costs, Recycle BC incentives applied, competitive bidding, and so on. For these reasons there is merit in going to the marketplace with a competitive procurement process.

The benefit of a competitive Request For Proposal process over an Invitation to Tender is that the selection is not based on price alone, and it allows the proponents to include information on their relevant qualifications or experience, their proposed approach or methodology, and the price they would charge to provide the service requested. Given that the Town has not predetermined a collection method (manual or automated), nor types of containers to be used, an RFP is the preferred process for this project.

With the assistance of Town staff, the intent is to issue the RFP in late July with a late August closing date. A proponents' meeting will be held (likely via video link) to provide information and answer questions of those interesting in submitting proposals.

The key features of the RFP will include:

- Five-year term + two optional one-year extensions
- Contract will commence in January 2021 with Phase 1 Business-As-Usual collection of weekly garbage



- Phase 2 will implement recycling and organics collection when the RDCK composting facility is open (Fall 2021), allowing for the Town to procure the collection containers by way of a separate process
- Proposed Phase 2 service frequency:
 - Weekly organics collection
 - Alternating bi-weekly garbage and recycling collection
 - Potential for introduction of can limits for garbage
- Proponents are welcome to provide pricing and methodology for manual and automated collection systems
- Per household/month pricing

7. Summary & Next Steps

This Technical Memorandum reviewed the work completed to date with the RDCK organics diversion strategy, discussed the Recycle BC offer, reviewed the Town’s current collection system, discussed curbside collection program design considerations, and outlined key features of the RFP which will be issued later this month.

Once the RFP has closed, CMA will work with staff to evaluate the proposals received and calculate estimated annual utility fees based on the pricing and collection methodologies proposed. This will be the focus of the next Technical Memorandum. With the RFP proposals in hand, CMA will work with staff and your local communications resources to prepare a draft community consultation program and work plan for the purposes of seeking community input on the preferred collection method and anticipated residential utility fees.

If community open houses and meetings are possible (assuming COVID-19 restrictions are lifted), CMA would recommend that a public open house be held where the details of the proposed collection program (collection options and anticipated residential utility fee) are available for review and public discussion.

Following the consultation window, CMA will provide Council a Technical Memorandum summarizing the feedback received through the consultation process. This Memorandum, along with a final Memorandum summarizing the procurement process, will assist Council in selecting the preferred collection design and moving ahead with planning for a new collection program.