

# Key Concerns Analysis and Recommendations

## Key Concern 1 - Biweekly (every other week) Garbage Collection

During the phases of engagement, both residents and Councils raised concerns regarding a one-every-two week garbage collection (biweekly collection) schedule.

### Service Recommendation:

- In advance of a food waste collection program, increase public awareness of the cart upsize process to alleviate concerns of running out of space
- Stay the course of the strategy that upon the launch of a food waste collection program, reduce garbage collection to once every two weeks with a proactive deployment of an extensive communications and education program.

### Analysis:

Survey results from residents conveyed 70% support for biweekly garbage collection and year-round weekly food and yard waste collection. Common comments around biweekly garbage collection from residents include how those with extra garbage will manage waste and the possibilities of subsequent illegal dumping.

Further analyses of this concerns found that:

- Biweekly garbage and weekly organics collection are considered best practices according to the Ministry of Environment and Climate Change Strategy Best Management Practices for Curbside Collection of Residential Organic Waste Guide.
- Over 3.9 million British Columbians currently have access to a curbside food waste program, with 85% on a biweekly (every other week) garbage schedule.
- Nearby communities with biweekly garbage and weekly food waste collection include the City of Kamloops, City of Vernon, City of Salmon Arm, District of Summerland. In conversation with staff in these local government, their programs have overall been well received, and as with any change, there are some minor challenges at the time of implementation.
- Metro Vancouver studied the impacts of every other week garbage collection for single family homes in 2016 and found that Communities with biweekly garbage and weekly organics saw improvement in diversion rates from landfill ranging from 26% - 43%.

### Why:

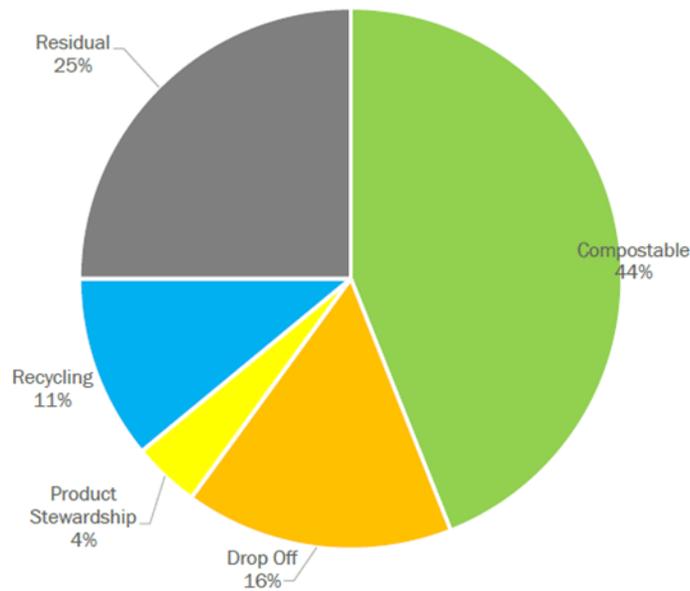
According to the Central Okanagan 2024 Spring Waste Composition Study completed by the RDCO:

- 75% of curbside waste going to the landfill in the Central Okanagan could be recycled or composted.
- 44% of residential curbside waste is compostable (food waste and soiled papers)
- 31% of residential waste could be diverted into existing recycling programs.

Improving the current curbside waste collection service by adding food waste to the yard waste cart would enable the average resident to reduce the contents within their curbside garbage cart

by 75% (see below graphics). With full participation in curbside waste diversion programs, the average resident could theoretically have space for 4 weeks of waste generation within a single 120L curbside garbage cart.

Chart 1: 2024 Spring Waste Composition Study – Curbside Waste Going to Landfill



Furthermore, adjusting collection frequency is an effective tool to build participation in organics diversion. With every other week garbage collection, residents are encouraged, through scarcity, to divert more organics as well as improving their recycling efforts. Without a biweekly collection frequency, changing behaviour to place organics in the appropriate bin might be undermined with program participation greatly reduced and extra emissions (from collection vehicles) will occur to collect half-full (or less) carts.

As with most changes to waste and recycling collection programs, unique challenges and use cases are present. These challenges include ensuring residents have:

- a yard waste cart (a limitation for some gated communities)
- access to education and information to help them navigate the change
- easy-access to larger carts upon request.

### Key Concern 2 - Wildlife (Bears, Rodents, other animals)

During engagement, residents and four (4) Councils expressed concerns that introducing a curbside food waste program would lead to an increase in wildlife challenges, in particular bears and rats.

#### Service Recommendations:

- Expand WildsafeBC program from a seasonal coordinator, to a year-round coordinator.

- Expand on attractant management education programming
- Provide bear resistant devices for existing and new curbside carts, available for public purchase at cost

**Analysis:**

76% of residents expressed concern with rats, bears and racoons. The Central Okanagan currently has ongoing challenges with bears accessing unnatural food sources such as garbage.

The Curbside Food Waste program will not introduce new attractants, but biweekly garbage collection could contribute to an increase in odours from non-compostable wastes, such as diapers.

To support residents, since 2018 the RDCO and member municipalities have engaged WildsafeBC to provide boots-on-the-ground education to residents to reduce negative wildlife / waste interactions. The program was expanded region wide in 2021. This is in addition to education and awareness distributed through the RDCOs Waste Reduction office.

The RDCO has tested several bear-resistant carts with varying levels of success. While bear-resistant carts can help to reduce potential bear-human conflicts overall, best practice for reducing wildlife conflicts is to properly store carts before collection day (ie: keeping carts inside, in a garage or in a bear-resistant outbuilding) and setting out garbage on day of collection.

To mitigate, attractant management options include:

- Freezing smelly food wastes,
- Placing carts out on the day of collection only
- Removing other attractants such as bird feeders, outdoor pet food, fallen fruit, etc.
- Double bagging diapers and other odourous garbage

While not fool-proof, locking carts can be a deterrent and reduce wildlife interaction for residents who must store carts outside (due to no garage). This can be done through 3<sup>rd</sup> party devices, unlocked and removed on the day of collection.

**Key Concern 3 – Service and Transfer Station Costs**

During engagement, residents and three (3) Councils had concerns regarding the magnitude of cost associated with a Curbside Food Waste Collection program.

**Service Recommendation:**

- To report back to the board with financial implications prior to purchasing land or initiating a new service contract relating to food waste collection transfer stations or composting.

**Analysis:**

A cost range\* of \$66 - \$90/HH/year was proposed to the public and to Councils. 33% of residents are willing to pay in the price range of \$66-\$90 and 16% were willing to pay \$94-\$188.

*\*Note: These cost estimates are based on the following data:*

- *2024 Waste Characterization - Food Waste & Compostable Quantities*
- *Negotiated 'Optional' Pricing for Food Waste + Yard Waste Curbside Collection*
- *Current Operations – House Counts*
- *Landfill Disposal Expenses – Glenmore Landfill Rates*
- *Quotes and Budgetary Pricing – Composting & Hauling Services*
- *Feasibility Study – Estimated Transfer Station Capital, Land, and Operational expenses*

*Assumptions included:*

- *Land value of \$6,000,000 per Transfer Station (2 required)*
- *Capital infrastructure cost of \$5,400,000 per Transfer Station (2 required)*
- *25% contingency & overhead applied to all values*

*The data and assumptions above were used to estimate an annual expense of \$66 to \$90 per year, and a sensitivity analysis was performed to explore financial impacts from:*

- *50% increase in land value (+\$7.16/yr)*
- *50% increase in program demand (+\$5.47/yr)*
- *50% increase in contractual expenses (+\$30.77/yr)*

*Overall, contract pricing associated with Food Waste composting, hauling, and Transfer Station operations remain the largest risk. Those expenses are well defined within recent procurement efforts, and the risk of significant cost escalation is limited to forecasted market demand and inflationary cost pressures, both of which are well below the 50% stress used for the sensitivity analysis.*

*In the context of other options, it should be noted that the 2022 Feasibility Study identifies that land costs would need to exceed \$60,000,000 before the status quo option (current service) would outrank comingled food and yard waste collection, when expanding consideration to other factors such as environmental performance, alignment with policy, and resident convenience.*

To limit risks and convey the most current costs in the context of the immediate market, staff will continue exploring partnership opportunities with WFN and review potential Transfer Station locations against criteria established through engagement. Prior to a land purchase commitment, staff will report to the Board with accompanying budget for land acquisition and site development.

#### **Key Concern 4 – Countertop Kitchen Appliance (kitchen composter)**

The public and four (4) Councils conveyed interest in kitchen composting appliances as a solution for food waste management (example models include LOMI, Food Cycler, Vitamix) rather than curbside collection.

#### **Service Recommendation:**

- Staff to monitor the results of other communities Countertop Kitchen Appliance pilots and consider learnings to support multifamily food waste management within the RDCO.

#### **Analysis:**

Kitchen Composting appliances were thoroughly evaluated in the feasibility study **and ranked in last place** for managing food waste from the single-family homes currently receiving curbside

services.

The estimated cost to implement kitchen composters of requires an initial investment of \$25 million to provide a unit to all single-family homes and an annual expense of \$5.3 million per year to maintain the program. Residents using these are likely to incur an additional \$15/household per year in electricity costs. These costs are 57% higher than status quo and 16% higher than the comingled curbside collection option being pursued.

The material that the kitchen appliance produces is still considered food waste under BC regulations and would need to be collected from curbside separately from other waste for composting, or, composted at home. Because the material is still considered a food waste, if it was to be added to the yard waste container at curbside, Transfer Stations, Hauling, and Composting would still be required at costs beyond the forecasted values above.

For dense multifamily developments without easy access to curbside waste services, or amenity capacity for large organics collection, kitchen composters may provide a reasonable solution. The material processed by the kitchen composter would be more dense than typical food waste, take less room to collect, and may enable integration into a larger-regional composting program.

### **Key Concern 5 - In-Region Composting Preference**

During engagement we heard concerns from the Public and one (1) Council regarding trucking material out of region.

#### **Analysis:**

An analysis of nearby composting operations was completed within the 2022 feasibility study, and four (4) viable processors have been confirmed within 150 km of travel from the Regional District's population center.

Through the same 2022 feasibility study, a 300 km round trip was included in calculations. Preference will be to keep GHG emissions low by limiting travel distances. In the event RDCO Food Waste was composted within the nearest facility, the round trip could be as little as 80 kms.

### **Key Concern 6 - Multifamily Needs**

Multifamily development and densification are continuing within the Central Okanagan and is quickly becoming a key resident base seeking access to responsible and well managed government services. The curbside food waste collection program as reported does not include multifamily units that are serviced by the private sector.

Furthermore, some multifamily units such as gated communities, currently receive curbside waste collection services, but do not have yard waste containers.

During engagement we heard concerns from the Public and two (3) Councils regarding Multifamily needs associated with a Food Waste Collection Program.

#### **Service Recommendation:**

- All homes on curbside collection without yard waste carts will be identified and offered an organics cart prior to any changes to waste collection scheduling.

**Analysis:**

Housing mixes are changing rapidly in the Central Okanagan with more and more development of multifamily dwellings versus single family homes. Although this first phase of food waste collection focuses on single family homes, multifamily apartments and condominiums will need to be considered for service in the future.

There are some multifamily strata's and gated communities that currently receive curbside collection, however many of these use private landscaping companies and often do not have yard waste carts. There are approximately 6000 homes (both single family and strata complexes) that do not receive yard waste collection.

Providing food waste collection program or services to multifamily dwellings (apartments and condo's) would be addressed in future phasing of the program. This phase of the program will create the means from which to process future food waste, collected from Multifamily units. In turn, this may enable choice and participation from Multifamily units, without having to overlap existing businesses with government services.

**Key Concern 7 - Impacts on GlenGrow and Access to Finished Compost**

The public and two (2) Councils had concerns regarding future GlenGrow availability.

**Service Recommendation:**

- Incentivize the food waste processor to maintain a quantity of finished compost for sale/use within existing markets.

**Analysis:**

The proposal to combine food waste with curbside yard waste means over 15,000 tonnes of yard waste would be diverted from the Glenmore Landfill's composting operation and sent to a processor that can compost both comingled materials.

While GlenGrow will continue to be produced, this removal of yard waste will reduce the volume of GlenGrow produced annual by approximately 50%. GlenGrow is used by residents, landscapers, parks and the agricultural sector. Having access to compost reduces use of commercial fertilizers and reduces water consumption in the region.

Impacts to City of Kelowna revenue because of this are unknown. Availability of compost within the region could be addressed through contractual requirements, for composters to ensure an equivalent quantity remains available for sale within existing markets.

**Key Concern 8 - Impacts on Landfill's Methane Capture System**

The public and one (1) Council had concerns over impacts on the RNG production for the Fortis BC processing plant at the Glenmore Landfill.

**Service Recommendation:**

- Continue to encourage diversion of food waste away from the landfill to reduce overall

greenhouse gas emissions.

- Gas collection system continues to be managed and expanded by the City of Kelowna to collect and treat landfill gas from historically placed organic material and new organic material that is not divertible.

**Analysis:**

Food Waste is one of the most readily decomposed waste streams entering a landfill and begins to decompose very quickly depending on the type of food waste. The US EPA states that food waste diversion has an outsized impact on reducing landfill methane emissions due to this quick decay rate. 50% of food waste carbon is released as gas within 3.6 years. The US EPA states that diverting food waste from landfills is an effective way to reduce overall methane emissions, and that an estimated 61% of methane generated by landfilled food waste avoids collection by landfill gas collection systems and becomes fugitive emissions.

The Glenmore landfill currently has an extensive landfill gas system that captures approximately 70% of the methane produced. According to the 2022 Feasibility Study, it is estimated that of the current organic materials going to landfill, 76% will continue to be landfilled including unrecovered food and yard waste, clean wood and other compostable waste and will therefore still need to be captured and managed now and into the future.

The FortisBC partnership with the City of Kelowna is expected to continue to be an innovative and efficient means to reduce environmental impact while managing the gas omitted from wastes that cannot be diverted.

**Key Concern 9 - Greenhouse Gas (GHG) Emissions Related to Long Haul Trucking**

The public and one (1) Council raised concern about using long haul trucks to haul material to composting processors and whether that had greater GHG emissions as a result.

**Service Recommendation:**

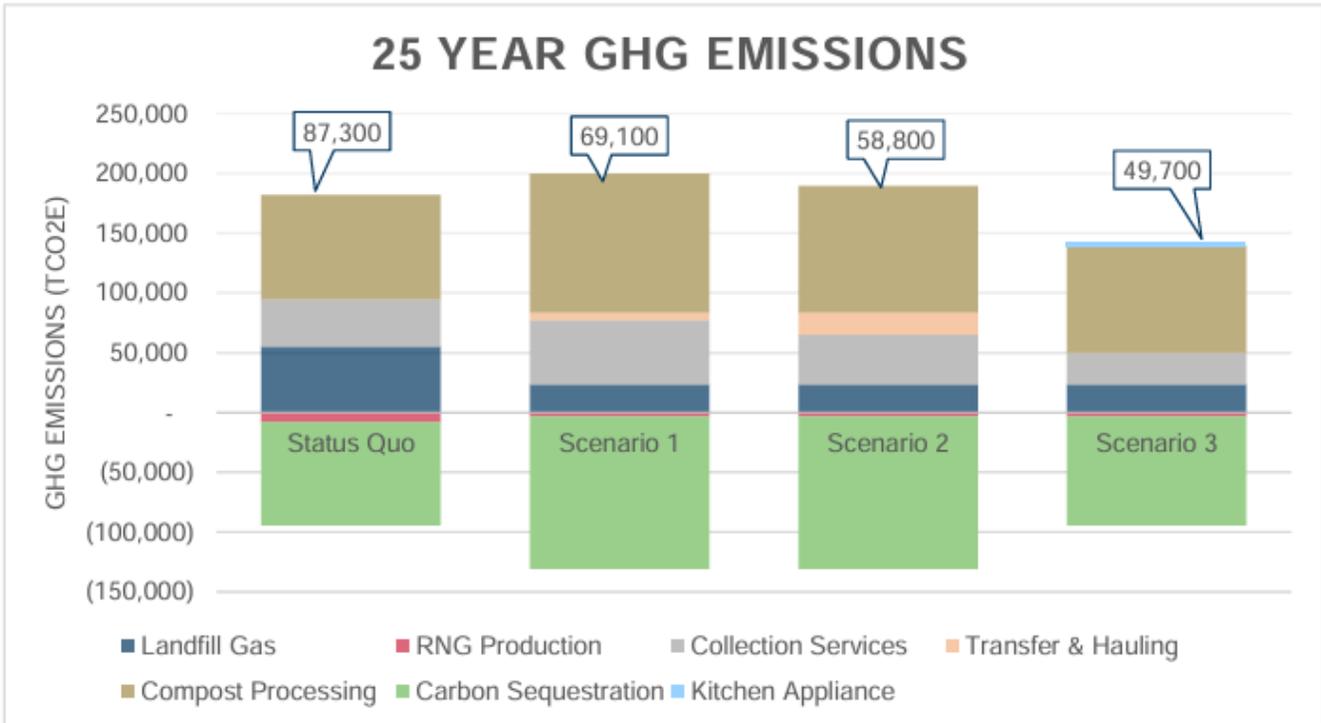
GHG can be further reduced by exploring alternative fuels associated with long haul trucking.

**Analysis:**

The 2022 Feasibility Study presented to the Regional Board in 2023 included a detailed analysis of GHG emissions resulting from status quo and the alternative scenarios. These scenarios were assessed and give a net GHG emission over the 25-year project evaluation period.

Within the same study, a 300 km round trip was included in calculations when determining GHG emissions. This radius includes four (4) via composting processors that could provide composting services. In the event RDCO Food Waste was composted within the nearest facility, the round trip could be as little as 80 kms.

The status quo (current model) results in the highest GHG emissions largely due to the impact of higher Landfill Gas production. All other options resulted in reduced GHG emissions, even after including transfer station operations, waste hauling, and curbside collection.



The best option, from a strictly greenhouse gas reduction standpoint is a kitchen composting unit, with the material produced composted at home. It was assumed that 20% of residents would put appliance material in the garbage. GHG emissions related to a pickup or drop off program of the finished material was not considered in the Feasibility Study.