



2026-2030 General Operating
and Capital Draft Budget

Pre-treated Organics Program

February 6, 2026

Organics Program Evaluation

Agenda

- Food Waste Diversion
- Wildlife Attractants
- Operations
- Climate Impact
- Program Costing
- Staff Recommendation

Food Waste Diversion

Nelson Next Aspirational Goal

Generate lowest waste per capita

Expected Diversion from City-Wide Pre-treated Organics Program

155kg per household per year

Bucket Weight Initiative

Direct Measurement of Food Waste Diversion

- 216 households collected all pre-treated food waste for 6 weeks
- Average diversion rate: 165 kg wet food waste per household per year

	Average Household Size (people/household)	Average Soil Amendment Collected (6 Weeks) (kg)	Wet Food Waste Equivalent (6 Weeks) (kg)	Estimated Wet Food Waste Equivalent (12 Months) (kg/household/year)
Bucket Weight Participants	2.4	4.8	19	165

Expected Diversion

**Estimated Wet Food
Waste Equivalent
(12 Months)**

(kg/household/year)

165

**Expected
Diversion with
Full-Scale
Implementation**

(kg/household/year)

155



Wildlife Attractants

Pre-treated Organics Program

- Reduces food waste in the curbside garbage
- Food scraps are processed into dry material and stored indoors.
- Provides soil amendment while reducing dependence on backyard composting.
- For home use, soil amendment must be mixed into soil at a minimum 10:1 ratio to avoid attracting pests and wildlife.

Green Cart Program

- Bear-resistant curbside organic carts.
- Wet food waste must be stored securely indoors until collection day.
- Centralized composting yields soil amendment for purchase.

Food waste is still found in the waste stream with any organics diversion option in place. Regulatory tools and resident education are required to minimize food waste in garbage.

Operations



Operational needs and challenges under different organic waste diversion options.



FoodCycler Operations

Carbon Refill Station:

Carbon provided by FCS; monitoring by Coordinator

Appliance Distribution:

Direct delivery to be provided by FCS if program is implemented city-wide

Repairs and Returns:

Customer Support provided by FCS

Returns administered by Coordinator

Drop-off Bins (Public Works):

Empty and clean bins – system improvements required

Pre-treated material hauled to transfer station

Soil amendment also used in City Parks



Green Cart Operations

Implementation Would Require:

- Neighbourhood suitability assessment
- Semi-automated collection truck in fleet or third-party
- Program adaptations for physical constraints: topography, lane width, street-parking.

Modernization Feasibility Assessment:

- No successful bids for collection modernization feasibility assessment

Climate Impact of Organics Program

High-Level Life Cycle Assessment (LCA)

- Custom high-level LCA completed November 2025
- High-level comparison of 2 organics diversion options from program outset
- Lower embodied emissions and greater emissions savings under Green Cart Program Option (from program outset)

Major Climate Impact of Organics Diversion

- Major emissions savings from diverting organic waste from the landfill.
- Both Pre-treatment and Green Cart Program options deliver significant emissions savings compared to landfill baseline.

Climate Impact of Organics Program

Additional high-level LCA work completed since December 2025.

Climate Parity

- 2,400 FoodCycler appliances already purchased
- Either diversion option must offset carbon impact of existing fleet of FoodCyclers.
- Green Cart and Pre-treated Organics Program options result in similar emissions savings in the short-term.

Costing

Current State

- The previous workshop discussed a 20-year average cost to show a full cycle of each program.
- We currently have 2,400 FoodCycler appliances within the community with warranties beginning to end December 31, 2027
- The current 2026 fees will support either direction for 2026.

Options

Option 1: Pre-treated Organics

Order 1,900 additional FoodCyclers appliances.

Take advantage of the one-time extended warranty on pre-existing appliances to December 31, 2031.

Continue to evaluate the program over the next few years before replacing first order of appliances.

Option 2: Green Carts

Order bear-resistant carts for residents.

Continue supporting existing FoodCycler appliances during standard warranty period.

Continue to evaluate the program over the next few years.

Cost Comparison

The costs listed below include all expenses associated with delivering waste, recycling, and an organic diversion program, as outlined in Option 1 or Option 2.

	2026 Budget	2027 Budget	2028 Budget	2029 Budget	2030 Budget	2031 Budget	Total
Operating Expenses							
Option 1 - Pre-treated Organics	982,529	1,023,441	1,071,926	1,081,211	1,111,317	1,141,100	6,411,524
Option 2 - Green Cart	859,329	1,499,233	1,559,373	1,580,596	1,622,932	1,666,427	8,787,891
Difference	- 123,200	475,792	487,447	499,385	511,615	525,327	2,376,366
Capital Expenses							
Option 1 - Pre-treated Organics	1,263,150	102,080	54,163	56,330	58,583	60,926	1,595,232
Option 2 - Green Cart *	1,142,680	53,396	55,009	56,670	58,382	60,717	1,426,853
Difference	- 120,470	- 48,684	846	340	- 201	- 210	- 168,379

** Assumes 33% funding support on capital purchase (not guaranteed)*

Costing

Summary

- Capital costs are relatively consistent across both options for the next 6 years if the City extends the warranty for the existing 2,400 FoodCycler appliance to December 31, 2031.
- Over the next six years, operating costs for Option 2 (Green Carts) are estimated to be \$2million higher than those for Option 1(Pre-treated Organics)

Summary

Waste Diversion

A high level of diversion is expected with city-wide implementation of Pre-treated Organics Program.

Regulation and resident education are required to achieve lowest waste per capita.

Wildlife Attractants

Pre-treatment supports residents to reduce food waste in the curbside garbage and lessen dependence on backyard composters.

Ongoing education and regulatory tools are required to minimize food waste in curbside garbage.

Summary

Operations

Public Works operational priority is to modernize the current two-stream collection system.

Improvements needed on the central pre-treated organics drop-off bins for convenience and efficiency in 2026.

Pre-treated Organics Program is currently more operationally feasible than Green Cart.

Climate Impact

Similar short-term emissions savings between Green Cart and Pre-Treated Organics Program options.

Summary

Costing

Full-scale Pre-treated Organics Program extends warranty on existing 2,400 appliances, and maximizes value of previous program investments.

Over the next six years, the Green Cart program is expected to incur significantly higher operating costs and would require increases to annual fees earlier than the Pre-treated Organics Program.

Staff Recommendation

Program Actions	Operations	Education & Evaluation:	Regulation
Implement city-wide Pre-treated Organics for 6-year period followed by re-assessment	Upgrade central organics drop-off bins in 2026	Measure waste generation, diversion, and program participation	Explore regulatory tools to achieve Nelson Next Aspirational Goal to generate lowest waste per capita.
Purchase 1,900 additional FoodCyclers	Introduce twice-yearly curbside yard waste collection	Provide ongoing resident education to maximize diversion	Pilot a Clear Bag No Tag policy in early 2027
Equip all eligible Nelson households	Continue with modernizing two-stream curbside collection		



Thank you.

City of
NELSON

Dear Mayor and Council,

We are pleased to submit the revised Life Cycle Assessment (LCA) regarding the City of Nelson's organic waste management options. This updated analysis incorporates specific local operational constraints and the "transition costs" associated with the City's existing inventory of FoodCycler units.

To assist Council in interpreting these findings, we are providing this covering letter to outline the scope of the analysis, the rationale behind the methodological choices, and the specific limitations of this type of study.

1. Context: High-Level vs. Detailed LCA

Life Cycle Assessment is a spectrum of analysis. A "Detailed LCA" is a forensic engineering audit used for product certification, requiring primary data for every component. In contrast, this report is a "Screening-Level" (High-Level) LCA. It uses localized operational data combined with standard emission factors to identify environmental "hotspots" and directional trends.

What this study CAN do:

- It effectively demonstrates the relative order of magnitude between scenarios (e.g., showing that *any* diversion is vastly superior to landfilling).
- It highlights the specific drivers of emissions in each system (e.g., transportation vs. manufacturing).

What this study CANNOT do:

- It is not a forensic accounting audit precise enough to distinguish between statistically similar results.
- Limitation: Small numerical differences (such as the 0.005 kg CO₂e difference between the two diversion scenarios) should be viewed as a statistical tie. Consequently, this report should not be used as the sole determinant for procurement or policy decisions when results are this close.

2. Rationale for the "Hybrid" Methodology

In response to staff requests to understand the immediate climate implications of the decision facing Council, we adopted a "Hybrid" approach that incorporates elements of Consequential LCA (assessing the specific consequences of a decision).

- **Short-Term Reality:** Staff identified that switching to a Green Bin program requires retiring 2,400 functioning FoodCycler units. This creates a "carbon debt" (the

wasted manufacturing emissions of the retired units) that must be "paid off" by the new system.

- **The Transition Period:** By including these "transition costs," the revised model provides a snapshot of the *short-to-medium term* (5–10 years). It answers the specific question: "*What happens to our carbon footprint in the next decade if we switch systems now?*"

3. The Impact of Methodology on Results

It is critical that Council understands how this specific methodological choice drives the final conclusion.

- **Under Conventional Attributional Modeling:** If we used standard ISO-compliant rules (which ignore "sunk costs" and compare technologies from a blank slate), the Green Bin program would demonstrate a clear efficiency advantage. Structurally, bulk collection via truck is less carbon-intensive per kilogram than manufacturing individual appliances.
- **Under the Hybrid Modeling:** However, when we apply the penalty of the "transition debt" to the Green Bin scenario, that structural advantage is effectively neutralized for the upcoming planning cycle.

4. Strategic Implications The inclusion of these transition costs shows that for the immediate future, the two pathways are at "Climate Parity" (0.660 kg vs. 0.665 kg CO₂e).

Since the climate outcomes are effectively identical when the cost of transition is accounted for, we recommend that Council's decision be driven by operational and community priorities—such as wildlife conflict reduction, resident convenience, and capital preservation—rather than greenhouse gas metrics alone.

Sincerely,

C Lakhan

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