

Options for diverting organic material from the landfill

Jörn Scherzer, Head of Climate, Waste & Resource Recovery

Libby Frude, Advisor Resource Recovery

The why and our existing commitments

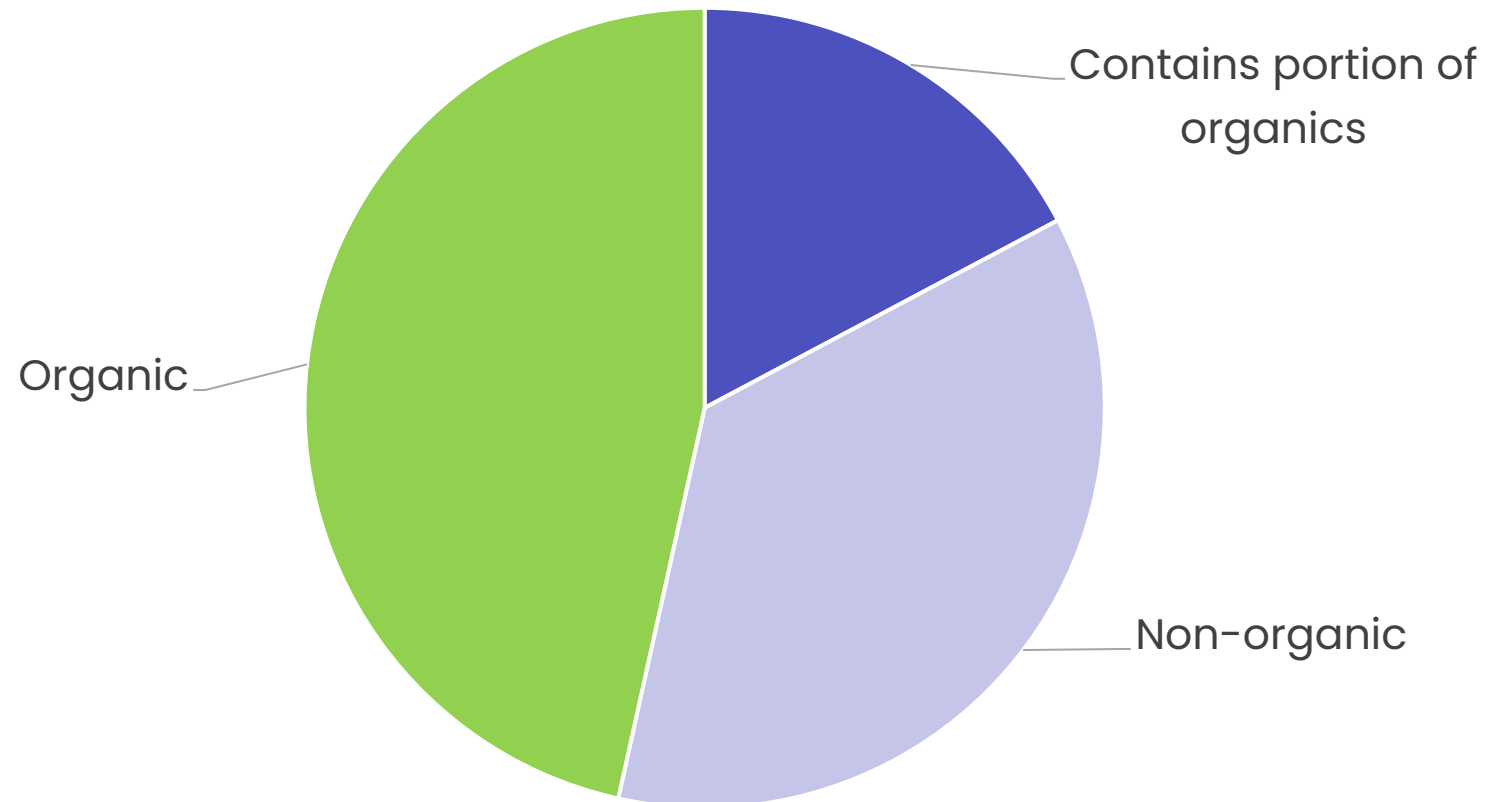
Why organics matter

- Primary source of landfill methane and leachate
- Reducing Lower Hutt's emissions (5% comes from landfill); and a large share of Council's organisational emissions
- Preserving the lifespan of Silverstream landfill
- Returning organic material to land supports the circular economy



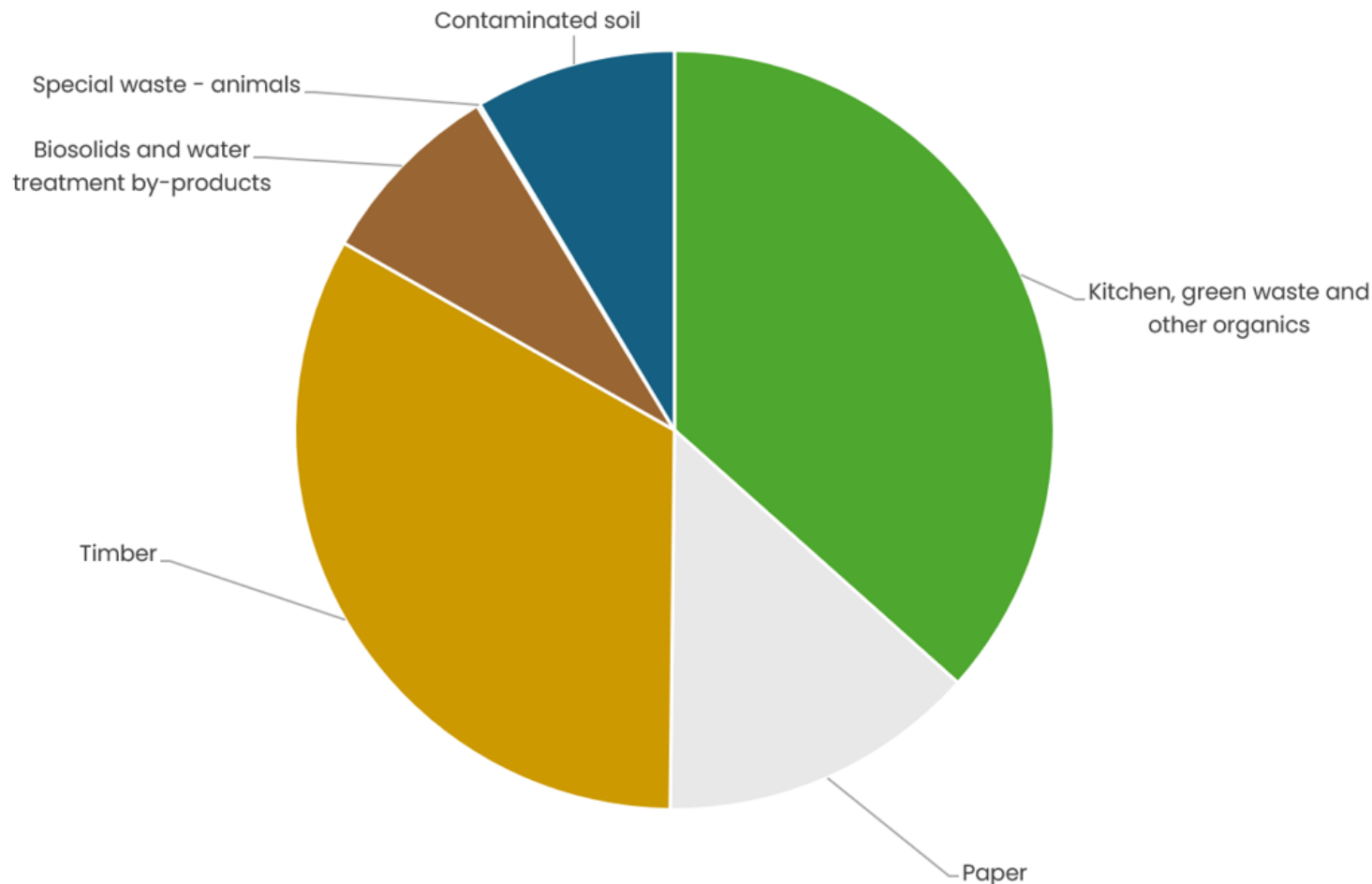
Organics in Silverstream waste streams

Estimated proportion of organics based on 2022 SWAP



Organic waste streams at Silverstream

Proportion of Identifiable Organic Waste Streams



Please note: this analysis draws out only the estimates for “identifiable” waste streams with organic content and is not comprehensive – so proportions are fairly rough but indicative

Council commitments



Reduce the total amount of final material sent to landfill by:

- 10% by 2027
- 30% by 2030

Reduce emissions from biogenic methane by reducing the total amount of organic waste disposed to landfill by 50% by 2030.

Having a regional organics processing facility by 2029 was a key sub-target for achieving the regional targets.

What are we doing, and gaps

What we're doing already

Soil



What we're doing

Solution pathways:

- ✦ Working with Fulton Hogan on a potential soil and aggregate recycling facility (SARF) at Silverstream
- ✦ Soil remediation through Environmental Decontamination Limited (EDL) trial

Driver identification:

- ✦ Subregional project: Contaminated soil

Gaps

- ✦ SARF is not yet confirmed or established, subject to decision making
- ✦ EDL commercial plant subject to trial outcomes
- ✦ National regulation to enable reuse still being considered

Biosolids



What we're doing

- ✦ Successful biosolids reuse trial, and application in borrow areas at Silverstream landfill
- ✦ Potential biosolids application at other sites (Eastbourne landfill remediation; Belmont Park)
- ✦ Biosolids coordination & information exchange group across councils and WW/Tiaki Wai

Gaps

- ✦ Biosolids reuse: Small scale application (10t/ha) for one-off plantings, there have to be other solutions for the majority of annual volumes

What we're doing already

Timber



What we're doing

Downstream diversion:

- Diversion of non-treated native timber at Silverstream Zero Waste Hub
- Establishment of diversion pathway for treated timber under way, at Silverstream Zero Waste Hub
- C&D plant opened in Porirua in May 2026

Upstream diversion:

- Implementation of the construction & demolition bylaw requirements

Gaps

- The C&D plant in Porirua is currently only available for WasteCo, and scale is relatively small
- WM planning a commercial scale C&D plant as part of its Manor Park proposal, but awaiting consent, and may not be part of the Phase 1 development work

Paper & Cardboard



What we're doing

- Residential kerbside recycling collection service includes paper and cardboard
- Separate diversion bays at Silverstream Zero Waste hub

Gaps

- Kerbside collection only caters for residential volumes.
- Commercial / institutional waste outside Council influence, volumes unknown. Significant volumes still mixed in general waste

What we're doing already

Green waste



What we're doing

- Opt-in 4-weekly kerbside collection service, over 6,000 subscribers (this complements WM's private weekly offering)
- Separate collection and lower rates at Silverstream Zero Waste Hub, discount voucher also applies to mixed loads

Gaps

- Residential kerbside collections are "opt-in", a quarter of households may currently have a green waste collection (either HCC or WM) – significant volumes not captured
- No regulatory requirement to restrict disposal of GW in rubbish

Food waste



What we're doing

- Funding contribution to food waste prevention programmes (incl Love Food, Hate Waste)
- Collaborated with WCC on regional processing solution, albeit unsuccessful outcome

Gaps

- Some households compost, but FOGO in red bins remains at about 50% of waste
- No city wide service offering or options to divert FOGO, including for commercial sector

Key take aways

- Council has limited influence on key waste streams (eg biosolids, commercial waste).
- The recovery of C&D waste (e.g timber) is dependent on commercial investments, such as from WM. Landfill disposal still the cheapest option. The economics remain very challenging.
- Council has the ability to more directly affect how FOGO is managed, hence the previous focus on the kerbside service.

Recap on previous work toward a regional processing solution for FOGO

Background

- In 2020, FOGO excluded from new HCC kerbside service due to the lack of a processing solution → decision was made to work on a regional approach later on
- WCC/HCC/PCC later developed a joint business case → recommended weekly FOGO collection as the preferred option in 2023. HCC conditionally included this in its 2024 LTP
- Residential FOGO collection could provide “baseload”, but enable the diversion of FOGO from the commercial sector once in place
- WCC & HCC collaborated on a joint procurement process for a regional solution
- Council was updated every quarter on progress

Recap: Processing options at scale in Aotearoa



Composting



Wet Anaerobic Digestion



Dry Anaerobic Digestion

There are small-scale trials of dehydrators, pyrolysis and other technologies in Aotearoa, but these are not operating at scale and are not anticipated to do so in the near future.

Where we are at now



Procurement for a regional processing solution concluded in March 2026.



None of the proposals met all of Council's key requirements for quality, feasibility and cost expectations.



Decision made to *not* progress with any supplier (did not meet cost expectations and/or requirements).



Without a processing solution, implementation of a FOGO kerbside collections service is not possible in the near term.

Recap of recent decisions: HCC & WCC

Hutt City Council

- Agreed that implementation of a kerbside FOGO service is not currently feasible due to the absence of a processing solution in the near term
- Agreed **officers would provide a briefing on options to divert organic material from the landfill, in the context of reducing emissions and extending the remaining life of Silverstream landfill**

Wellington City Council

- Directed officers to engage with other councils to identify opportunities to collaborate and to report back
- Directed officers to monitor developments in processing technologies and markets, and to report back to the Committee within six months on any material changes

Today

**Are there feasible
options going
forward?**

Discounted options

Mechanical Biological Treatment (MBT)

End product – compost-like output (CLO) – destined for landfill.

Thermal processing (e.g. incineration, pyrolysis, gasification)

Very high costs and no examples of this technology operating at commercial scale in New Zealand.

Stock feed

Not suited to large scale diversion due to contamination risk (eg meat), not applicable to green waste.

Home composting

Lower diversion rate compared to kerbside, and not suitable for some food waste.

Possible options that could work at city-wide scale

Consider role of
composting
service providers,
such as Kai Cycle

Consider
increasing
frequency of green
waste service

Continue work on
a FOGO kerbside
collection, reliant
on a regional
processing
solution

Working with composting service providers

Composting service providers

Composting service providers are a single or distributed network of composting sites where residents and/or businesses can drop off food scraps and garden waste to be composted locally

Pros

- ✓ Solution for households without enough space to compost at home
- ✓ High quality compost produced for local use
- ✓ Soil restoration
- ✓ Co-benefits – social connection, kai resilience, education, skills development, employment
- ✓ Can work with drop off & collection models

Cons

- ✗ Requires suitable space (large enough, affordable, consented)
- ✗ Reliant on someone to manage site(s) to ensure viability
- ✗ Odour concerns from surrounding community
- ✗ Scale limitations (depends highly on design of scheme)
- ✗ Less suitable for certain food waste (e.g. meat, fish, dairy, eggs)
- ✗ Costs still uncertain

Increase green waste service frequency

Green waste service change (to fortnightly or weekly)

Council currently operates an opt-in four-weekly collection service.

Pros

- ✓ Relatively easy to implement
- ✓ Improve service satisfaction (there has been repeated feedback about increasing service frequency)
- ✓ Would allow for the addition of food waste in the longer term
- ✓ Green waste still makes about 20% of kerbside rubbish, so targets a sizable amount of material
- ✓ Could complement with bylaw requirement to minimise green waste disposal in rubbish bins

Cons

- ✗ Doesn't offer a solution to divert food waste in the short term
- ✗ Still optional service – likely to miss out on significant green waste volumes

Green waste service change continued

Below are the indicative costs and organic diversion achieved from increasing the service frequency.

Optional four-weekly green waste, weekly rubbish (status quo)

Annual cost (Council)	\$12M
Annual cost (households)	\$346-\$570
Organic diversion (% of total residual waste)	11%

Fortnightly green waste

Annual cost (Council)	\$12.1M
Annual cost (households)	\$344 - \$567
Organic diversion (% of total residual waste)	15%

Weekly green waste

Annual cost (Council)	\$13.2M
Annual cost (households)	\$432 - \$653
Organic diversion (% of total residual waste)	16%

FOGO service

Kerbside collection (FOGO)

A dedicated bin for food organics and green organics (FOGO) that is collected on a weekly basis from residents.

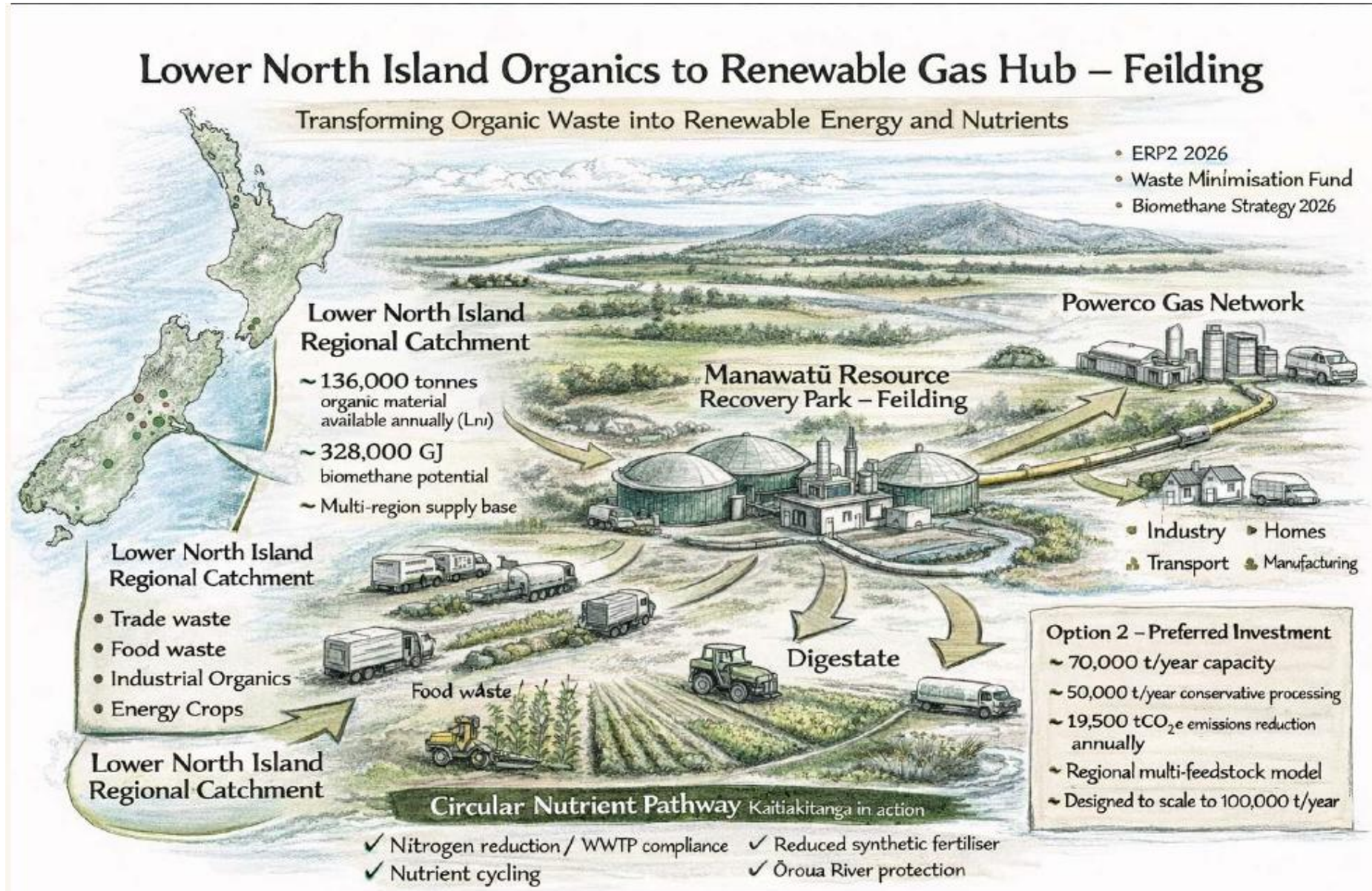
Pros

- ✓ Most effective method to achieve scale and high diversion
- ✓ Captures more material – food waste as well as green waste
- ✓ Affordability maximised due to economies of scale
- ✓ A residential service could be an enabler for the commercial sector

Cons

- ✗ Reliant on an available large-scale processing solution
- ✗ Requires separate collection
- ✗ Optional uptake doesn't work – needs everyone participating

The opportunity



Key features

Proposed solution

Regional facility to process diversified mix of organic material via anaerobic digestion (AD).

Outputs:

- *Biomethane for Powerco*
- *Digestate application to MDC irrigation land*

Supply

Industrial and trade-waste streams (meat, dairy, beverage & food processing residue) as primary supply.

Household food and green waste as secondary supply.

Indicative cost

\$50-\$80/tonne gate fee.

Additional cost, potentially in the order of \$60 to \$100/tonne, to consolidate and transport material to the facility.

Timing

Response on MfE funding application anticipated in July 2026.

Pending approval, anticipated timing for having plant up and running **July 2028**.

Key advantages

- Existing site at water treatment plant, lots of space
- Site already consented
- Centrally located in a large catchment covering the lower North Island, including many agriculture-related industries
- Good transport connections
- MDC keen to collaborate
- Proposed gate fees appear very cost effective



With the Manawatu facility, what could costs look like for a FOGO service?

A comparison of the annual cost per household

Red bin size	Weekly rubbish, optional four-weekly green waste (status quo)		Fortnightly rubbish, weekly FOGO	Cost different per household
80L 14% market share	Rubbish only	\$226	\$291	↑ \$65
	Rubbish & green waste	\$346		↓ \$55
120L 60% market share	Rubbish only	\$283	\$333	↑ \$50
	Rubbish & green waste	\$403		↓ \$70
240L 26% market share	Rubbish only	\$450	\$464	↑ \$14
	Rubbish & green waste	\$570		↓ \$106

Costs are modelled on a processing fee of \$175/tonne, assuming the biomethane hub in Fielding were to go ahead and costs meet expectations
 Costs exclude annual mixed recycling costs of \$130/year, as this applies to all households regardless
 All costs modelled on a consistent basis, not directly comparable to the HCC's targeted rates for the current service

Comparing kerbside options

Cost comparison of kerbside options

This compares the status quo to the introduction of a weekly FOGO collection service OR increasing the service frequency of the optional green waste collection (ex recycling costs).

	Weekly rubbish, optional four- weekly green waste (status quo)	Fortnightly rubbish, <u>weekly</u> FOGO	Weekly rubbish, optional <u>fortnightly</u> green waste	Weekly rubbish, optional <u>weekly</u> green waste
Annual cost (Council)	\$12M	\$14.3M	\$12.1M	\$13.2M
Annual cost (households)	\$346-\$570	\$312 - \$497	\$344 - \$567	\$432 - \$653
Organic diversion (% of total residual waste)	11%	31%	15%	16%

What does this all mean?

- Kerbside collection remains the option with the highest diversion potential, but dependent on processing facility → Manawatu proposal could deliver this. Long distance transport can be electrified to mitigate emissions.
- Can align kerbside service model change with planned contract re-tender in 2028, for service start in 2029. Such a change can be implemented and regionally coordinated, regardless of possible amalgamation.
- Green waste service frequency change could be a cost effective interim option to increase diversion, and could be delivered as part of the current contract.
- Composting service providers could be explored as an option for MUDs, as they do not tend to generate green waste.
- Your choices will affect the ability to achieve WMMP targets

Questions & feedback & next steps

Kia ora
Thank you