Rangitīkei District Council

Kerbside collections and organic material management feasibility study

Prepared for: Rangitīkei District Council
Prepared by: Tonkin & Taylor Limited

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Executive summary

Rangitīkei District Council **(RDC)** have engaged Tonkin + Taylor **(T+T)** to explore options for how kerbside collection services in Rangitīkei might be provided in the future. This information will inform RDC's key decisions regarding how waste, organic material and recycling is collected across the district.

RDC do not currently offer a kerbside collection service to residents. Information gathered as part of developing Council's 2024 Waste Assessment indicates that various private companies offer household waste collection services in Rangitīkei, with over 80% of waste entering RDC's waste management system coming from these services.

Kerbside recycling collections are not available to households in Rangitīkei, however residents do have the option of dropping this material off at one of the RDC's drop off facilities. For the most part, diversion of waste from landfill relies on the Council owned network of six transfer stations across the District.

Te rautaki para I Waste strategy was released by the Ministry for the Environment **(MfE)** in March of 2023. Of particular relevance to RDC is the strategy's desire to improve household kerbside recycling. While not a legislative requirement, Te rautaki para I Waste strategy and supporting policy guidance has signalled that:

- By 2027, all district and city councils provide recycling collections to households in urban areas[1].
- By 2030, all district and city councils provide food scraps (or food and garden waste) collections to households in urban areas.

At the time of writing (November 2024), the Government is considering whether the requirements described will become a mandated requirement for councils across the country. Despite this uncertainty, RDC is being proactive in their response by undertaking this options assessment and feasibility study to best understand the associated issues, opportunities and approaches to delivering on such requirements.

The uncertain political landscape, and therefore prioritisation of the kerbside standardisation proposals as they currently stand, creates some complexities for RDC in deciding the most appropriate way forward. This was recognised in RDC's 2024 Long Term Plan **(LTP)** consultation, which asked residents to provide input and feedback on their appetite and desire for RDC to introduce kerbside waste services.

This feasibility study is divided into two parts: exploring potential kerbside collections and examining the associated collection and processing of organic materials and dry recyclables.

Part 1

Defining future waste management services has been approached using a two-fold approach, defining what and how services are provided. The options considered were:

Stage one options: What	Stage two options: How
Option 1.1 – Rubbish only (*status quo*)	Option 2.1 - No Council Involvement (*status quo*)
Option 1.2 – Recycling & rubbish	Option 2.2 – Regulated by Council
Option 1.3 – Organics & rubbish	Option 2.3 – Outsourced to Contractor

[1] 'Urban areas' in relation to these proposals follow the Stats AOTEAROA definition of settlements with a population greater than 1000 residents (the lower threshold for the smallest category).

Stage one options: What	Stage two options: How
Option 1.4 – Recycling, organics & rubbish (discrete, separate services i.e. delivered by multiple providers)	Option 2.4 – Operated by Council
Option 1.5 – Full-service suite (package of services including recycling, organics, rubbish)	

Each option was evaluated based on its impact on:

- Rates.
- User cost.
- Waste diversion.
- Environmental outcomes.
- Statutory obligations.
- Equity.
- Flexibility.

Analysis suggests that a full-service suite delivered through a contract (Options 1.5 and 2.3) would provide the best balance across the evaluation criteria.

While administering a contract delivers a good balance on the desired outcomes of the evaluation criteria. This will require additional Council resourcing and relies on interest from the private sector in undertaking this contract, which is not guaranteed. If moving forward with the preferred options, RDC needs to consider factors including:

- Health and safety.
- Circular economy implications.
- Market availability.
- Data collection.
- Funding options.
- Communicating changes with residents.
- Regulatory requirements.

Part 2

Part 2 of this report provides an evidence base for RDC to evaluate viable approaches to process organic and recyclable materials.

Options RDC may consider for organic materials collections include:

a Green material only **(GO).**

b Food material only **(FO).**

c A combined green and food material collection service **(FOGO).**

d Collection of both green material and food material, but via separate collections (Separate FO and GO).

To process organic materials the following options were identified:

a Landfill (status quo).

b Vermicomposting.

c Open windrow composting.

d Aerated static pile composting.

e In-vessel composting.

f Anaerobic digestion (wet & dry).

Preferred options for collections and processing have not been defined at this stage of the feasibility assessment. To progress decision making regarding organic material, it's recommended to conduct further analysis, which would involve evaluating the available material in Rangitīkei and engaging with the market. In the meantime, RDC will need to progress decision making around the approach to trade-offs between policy flexibility, balance between capital cost and output quality, the suitability

of certain technologies for large-scale operations, and prioritisation of factors like cost, quality, waste type, and resource recovery potential.

In the context of recyclable materials, should RDC decide to introduce kerbside recycling collection, it can leverage existing market connections as outlined in Part 1 of this report.

Part 3

It is recommended that RDC prioritise making the following key decision:

1 Confirm a preferred approach to delivering kerbside collection services (stage one part two).

Depending on the preferred approach RDC will need to consider four potential paths forward, described in Table 0.1.

Table 0.1: Paths forward for consideration

Preferred option	No Council Involvement *(status quo)*	Regulated by Council	Outsourced to Contractor	Operated by Council		
Undertake a detailed assessment of potential service configuration e.g. container size, collection methods, materials to be collected.		✗	✗	✓	✓	
Undertake a detailed assessment of potential bylaw options.		✗	✓	✓	✓	
Engage with the market to establish potential organic processing options that may influence the service configuration for organic materials.		✗	Dependant on potential bylaw provisions.	✓	✓	

1 Introduction

Rangitīkei District Council **(RDC)** have been working alongside Tonkin & Taylor Limited **(T+T)** to deliver the district's Waste Assessment and subsequent Waste Management and Minimisation Plan **(WMMP).**

As an extension of this work, RDC applied to the Ministry for the Environment **(MfE)** to deliver a feasibility study to analyse the feasibility of implementing dry recycling and organic materials collections (including consideration of processing options) to support decision making on the implementation of kerbside collections for Rangitīkei District. In March 2024, RDC received confirmation from MfE that this application was successful.

This report serves as the deliverable for the feasibility study exploring potential options for kerbside collections and the potential options for processing organic materials and dry recyclables.

Part 1 of this report guides RDC's decision-making on potential future kerbside services in Rangitīkei, with a focus on RDC 's role and evolving waste policies in Aotearoa.

Part 2 of this report considers the potential options that are available to RDC for collecting and processing of materials from the kerbside, should RDC choose to deliver collection services.

Should RDC decide to act as the provider or regulator of services, it is anticipated that the preferred options will be considered by RDC and this direction will inform any future potential business case work.

2 Current Situation

This section discusses several factors that are likely to influence RDC's decision to review kerbside collections, including how the current kerbside collection arrangements impact on diversion of material from landfill and collection efficiencies, and the impact of the evolving central government policy environment.

2.1 Policy Direction

Policy direction (signalled and enacted) will continue to impact and influence RDC's decisions relating to both waste management and minimisation. This section provides a summary of recent and evolving policy developments likely to impact on kerbside collections and organic material processing in Rangitīkei.

2.1.1 Kerbside standardisation

In early 2022, MfE consulted on three proposals to transform recycling in Aotearoa which included:

- Improvements to kerbside recycling (including standardisation of bin services across local government areas and mandating food material collection).
- Introduction of a container return scheme (**CRS**).
- Separation of business' food material.

In March 2023, alongside the release of the new *Te rautaki para | Waste strategy*, the then Government announced changes to kerbside recycling and food scraps collections. This included specific requirements for all district and city councils, to be implemented between 2024 and 2030:

- Councils across Aotearoa will accept the same materials in their household collections - National standardisation of kerbside materials[2].
- Recycling collections will be available to households in all urban areas by 2027.

[2] Gazetted in February 2024.

- Food scraps collections will be available to households in all urban areas by 2030.
- Waste companies, operators and councils required to collect and report more of their waste data.

The 2023 announcement to standardise kerbside recycling also signalled the introduction of minimum performance standards for councils. These standards specify the diversion of waste from landfill. This includes:

1 Divert 30% of household kerbside waste from landfill by 2024.

2 Divert 40% of household kerbside waste from landfill by 2028.

3 Divert 50% of household kerbside waste from landfill by 2030.

At the time of writing this report (November 2024), the National standardisation of kerbside materials is in effect. The current Government is currently considering whether the signalled policies that are yet to be implemented will be progressed and mandated. It is anticipated that this will consider the current economic environment, their contribution to waste minimisation, their impact of carbon emissions and local government planning cycles[3].

This uncertainty creates some challenges for councils across the country, in particular for those councils such as RDC who do not currently provide any kerbside services. While some uncertainty remains, diversion of waste from landfill, in particular organic material, is a key priority in both *Te rautaki para I Waste strategy* and the waste chapter of Aotearoa New Zealand's Emissions Reduction Plan, suggesting that the direction of policy will continue to reflect this position and therefore it remains sensible for RDC to plan for increased diversion, with a particular focus on organic materials.

2.1.2 Waste Levy Funding

Central Government policy announcements have indicated that compliance with any future introduced statutory requirements will be tied to how waste levy funding is allocated. Consequently, failure to meet the signalled targets would likely result in reduced or withheld waste levy funding.

RDC's funding allocation from the waste levy for 2023 was approximately $270,000[4]. This funding supports RDC's active involvement in delivering waste activities. This includes delivering Council's WMMP that outlines how RDC will progress efficient and effective waste management and minimisation within the district.

The total waste levy collected is continuing to increase, with the introduction of the Waste Minimisation (Waste Disposal Levy) Amendment Act 2024. Of note to RDC, the Act will:

- Increase the levy per tonne of mixed municipal wastes from residential, commercial and industrial sources disposed via Municipal landfill (class 1) from $60 (current at 1 July 2024) to $75 from 1 July 2027.
- Broaden the scope of the waste disposal levy to fund a more comprehensive set of Government waste and environment priorities e.g. activities that reduce environmental harm or increase environmental benefits beyond waste management.

Funding allocation from the waste levy to RDC could be used to offset costs associated with any new kerbside services. Additionally, failure to meet the signalled minimum performance standards for councils may have increasing financial consequences for RDC as the waste levy increases further.

[3] https://environment.govt.Aotearoa/what-government-is-doing/areas-of-work/waste/improving-household-recycling-and-food-scrap-collections/

[4] Sourced from Ministry for the Environment TA Payments as at January 2024.

2.1.3 National waste licensing

In 2022, the Government at that time agreed to the introduction of a national licensing scheme for the waste and resource recovery sector. This was also highlighted as an action in the Emissions Reduction Plan and was signalled to be a significant component of the proposed repeal/replacement of the Waste Minimisation Act 2008 and Litter Act 1979.

Cabinet papers[5] and minutes[6] outline that the Government (at that time) agreed that national licensing be introduced in a phased manner. This licensing would place obligations on transfer stations, resource recovery facilities, and transporters.

Licensing is unlikely to be introduced before 2027 and the change in Government since the initial licensing proposals were made may have further impacts on this timeline and prioritisation. However, the direction of moving towards a single national system has been signalled. It is advisable for RDC to consider the medium-long term impact of this for any future kerbside collection systems considered and adopted by RDC, as well as mechanisms that could support waste services and data collection. An example of this could be a Rangitīkei District solid waste management and minimisation bylaw, likely based on similar bylaws implemented across New Zealand.

2.2 2024 Long Term Plan

In March 2024 RDC opened consultation for the 2024 – 2034 Long Term Plan **(LTP).** As part of the LTP consultation two options related to household collection services in the District were put forward. These were:

Option 1 (Preferred option)

Provide a Council-run collection to the urban households in Bulls, Marton, Hunterville, Mangaweka, and Taihape with three bins for: organics, rubbish, and recycling from January 2027.

Option 2

Provide a Council-run collection to the urban households in Bulls, Marton, Hunterville, Mangaweka, and Taihape where one bin is issued from 1 January 2027 for recycling and a second bin is provided for organics (food and garden waste) from 1 January 2030. Residents will need to have a separate contract for rubbish disposal.

Following public consultation, RDC received 454 submissions for the LTP. Of this, 369 submissions were received on the kerbside collection options. 54% of all submitters who submitted on kerbside collections supported a Council provided service option and preferred rolling out three bins in January 2027 (Option 1). 31% of submitters preferred Option 2 i.e. a recycling service offered in 2027, followed by an organic materials collection in 2030. 15% of respondents preferred an alternative option. Some suggested alternatives for rural ratepayers and other kerbside collection methods. Others expressed concerns about cost and the recycling process.

Following LTP deliberations and considerations, RDC has opted to pursue option two, staging the introduction of a recycling bin and an organic material bin. Option 2 was chosen to allow RDC to monitor the progress of legislative development and better respond to any changes Central

[5] ENV-23-SUB-0005 Office of the Minister for the Environment – Waste Legislation 3: Regulating how people manage waste (waste-legislation-3-regulating-how-people-manage-waste.pdf (environment.govt.Aotearoa))

[6] ENV-23-MIN-0005 Cabinet Environment, Energy and Climate Committee – Minute of Decision: Waste Legislation 3: Regulating how people manage waste (ENV-23-MIN-0005-waste-legislation-3-regulating-how-people-manage-waste.pdf (environment.govt.Aotearoa))

Government may implement. Additionally, it provides time for RDC to undertake research e.g. industry engagement, on the best options for residents.

2.3 Kerbside collections

Part 1 of this work considers available service types and their potential delivery methods. In evaluating any potential new services (collections and processing in Part 2) consideration has been given to the existing waste management services in Rangitīkei.

2.4 Current situation

2.4.1 Kerbside rubbish collection services

Information gathered as part of RDC's 2024 Waste Assessment indicates that Rangitīkei Wheelie Bins and EnviroNZ/Budget Waste offer the following services to households in Rangitīkei:

- Kerbside collection of 60 L rubbish bags.
- Kerbside collection of rubbish wheelie bins.
- Collection of skip bins (commercial waste volumes).

Indicative costs for services are described in Table 2.1.

Table 2.1: 2024 costs for kerbside collections in Rangitīkei

Provider	Collection method	Annual cost	Assumptions
EnviroNZ/Budget Waste	120L bin	$338.64	Collected weekly charged at $28.22 per month
EnviroNZ/Budget Waste	240L bin	$350.00	Collected weekly charged at $350.00 annually
Rangitīkei Wheelie Bins	240L bin	$564.00	Collected fortnightly charged at $47.00 per month
Rangitīkei Wheelie Bins	60L bag	$372.32	Collected weekly assuming 2 bags per week at $3.58 per bag

According to collectors, most household customers use a 60L bag for rubbish. Kerbside collections for recyclable materials have previously been offered by the private sector, however transport inefficiencies and low uptake by customers has seen the service stop.

Collections for commercial volumes of waste are also available in the district, however the focus of this report has been on collections from households only.

2.4.2 Recycling services

Kerbside recycling collections are not available to households in Rangitīkei. Instead, households will need to store their recyclable materials in their own containers and transport these to the nearest transfer station. The transfer stations collect recyclable materials in line with the standardised kerbside materials requirement set out by MfE, as well as specialist recycling (batteries, farm plastics). There is no gate fee at the transfer stations to drop off standard recyclable materials (the cost of this service is funded through rates as outlined section 2.3).

2.4.3 Transfer stations in Rangitīkei

RDC operates six transfer stations across the district. Five sites are operated by Smart Environmental under a contract. One site, in Mangaweka, is operated by Mangaweka adventure. As a network, the transfer stations provide good infrastructure that is consistent with the national approach to resource recovery networks and divert a diverse range of materials from landfill.

Limited data availability means that further insight into where material is generated e.g. from households or businesses is not available. However, based on data and discussions with private collectors, it is evident that a number of households engage and participate in a kerbside rubbish collection provided by the private sector (Figure 2.1).

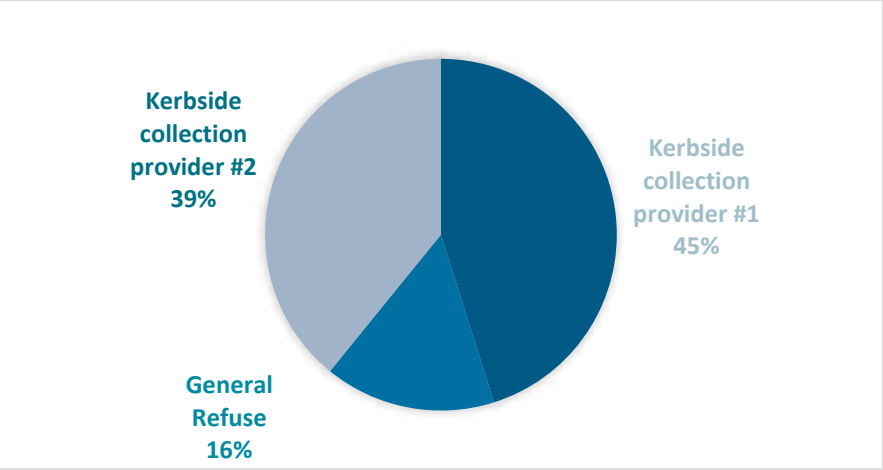


Figure 2.1: Modelled view of transfer station waste sources

2.5 Impact for Rangitīkei

The current situation presents a number of challenges for RDC that have been considered in this feasibility study. The impact of these are described in Table 2.2.

Table 2.2: Considerations for options development

Issue	Impact
Signalled policy direction yet to be enacted	• Any options taken forward will need to align to the standard materials requirements noting that Central government have confirmed the standardisation of kerbside materials. • The proposed options are based on the logic of RDC adhering to indicated timelines (for recycling and food scraps collections by 2027 and 2030), assuming the proposals are enacted. • Increasing opportunities to divert recyclable and organic material e.g. via a kerbside collection, aligns to both Te rautaki para | Waste strategy, and the options presented in RDC's Waste Assessment. Improved diversion opportunities should be pursued despite minimum standards for diversion not yet being confirmed or enacted.
Increased waste levy funding available to RDC	• Should new minimum standards be implemented, RDC might face levy allocation restrictions if these standards aren't met. The suggested options have been formed to improve on RDC's diversion capability in preparation for possible enactment of these standards.
Proposed national waste licensing	• The impact of a national licensing regime should be considered if RDC chooses to act as the provider or regulator of kerbside collections to ensure than any local rules reflect a potential future national approach.

Issue	Impact
RDC's decision to endorse a staged approach to kerbside collections for recycling and organic materials only	• The options put forward in this work consider the evolving policy direction, but acknowledge that regardless of government direction, there will not be a perfect solution. Therefore, the options presented, and subsequent analysis has focused on identifying trade-offs between options beyond signalled policy direction.

Part 1 – Kerbside Collections

3 Kerbside Collections analysis

A two-staged approach has been taken to develop and assess options to deliver kerbside services in Rangitīkei (Figure 3.1).

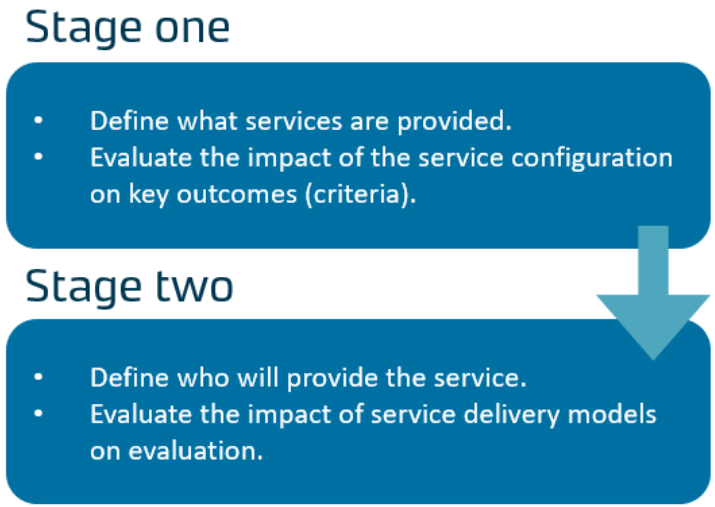


Figure 3.1: Options development approach

The stage one analysis considers the potential options for '**what**' services are provided. The focus of this stage has been on what kerbside services households will have access to. Further detail regarding collection frequencies, bin sizes, and collection routes may be required depending on the outcomes of the options assessment.

The second stage of the analysis has considered the potential options for **'how'** RDC may be involved in delivering future services i.e. will RDC remain 'fully out' or opt to become involved in delivering a service.

By combining the analysis findings from both stages, it is possible to identify a potential path, or pathways, for further consideration, analysis and decision making. One set of evaluation criteria are applied to options for both stages.

Where available the assessment is based on quantitative measures and data. Where this is not possible, the assessment is based on a qualitative evaluation of the option against the criteria. Where a criteria is considered ineffective to differentiate between options in either stage this has been omitted. The evaluation criteria reflect discussions had as part of preparing Counci's WMMP, and broader Council objectives as articulated and discussed with the community in the context of the most recent LTP process. The evaluation criteria are described in Table 3.1

Table 3.1: Options evaluation criteria

Criteria groups	Criteria	Criteria definition
Costs	Impact on rates	Impact on the solid waste disposal charge per separately used or inhabited part of a rating unit **(SUIP)** is minimised or avoided.
	Cost to user	The option avoids cost duplication and is likely to evoke cost efficiencies.
Environmental	Diversion	The solution provides households the means to divert materials from landfill.
	Wider environmental outcomes	The anticipated net greenhouse gas emissions associated with the option including transport emissions, and embodied emissions in equipment are minimal, environmental harm is reduced
Other considerations	Statutory obligations	RDC's ability to meet their requirements under the LGA, WMA and Health Act including ability to

Criteria groups	Criteria	Criteria definition
		receive the necessary data to report against targets, divert material from landfill in line with diversion targets can be met, and adequately protect public health.
	Equity	The options provides a service/an equivalent service be available to all households.
	Flexibility	The option is flexible to factors outside of RDC's control e.g. markets collapse, government direction changes etc.

The ability of the option to deliver on each of the above criteria has been scored against the scale set out in Table 3.2.

Table 3.2: Evaluation scoring scale

Scale	Overview
Bad	The option fails to address the criteria.
Poor	The option inadequately addresses the criteria, or there are serious inherent weaknesses.
Fine	The option broadly addresses the criteria, but there are some weaknesses or perverse outcomes.
Good	The option successfully addresses all relevant aspects of the criteria, any shortcomings are minor.

3.1 Stage one (What)

3.1.1 Options identification

The stage one analysis focuses on **'what'** kerbside collection service may be delivered (Table 3.1). Five options have been identified, including the status quo. The options have been developed considering kerbside collection services provided across Aotearoa.

Any kerbside collection service described in Table 3.3, could be delivered by the options described in stage two of this analysis (Table 3.7) i.e. regulated via a bylaw, delivered by a contractor to Council etc.

Table 3.3: Kerbside service configuration options

Option	Rubbish	Recycling	Organics
Option 1.1 – Rubbish only (Status Quo)	Status quo[7]	Not available at kerbside	Not available at kerbside
Option 1.2 – Recycling and rubbish	Status quo	New kerbside collection service	Not available at kerbside
Option 1.3 – Organics and rubbish	Status quo	Not available at kerbside	New kerbside collection service
Option 1.4 – Recycling, organics and rubbish	Status quo	New kerbside collection service	New kerbside collection service

[7] Status quo will see rubbish disposal available via the transfer station network, and the existing private sector collections continuing.

Option	Rubbish	Recycling	Organics
Option 1.5 – Full-service suite (Recycling, organics, and rubbish)	New kerbside collection service	New kerbside collection service	New kerbside collection service

At this stage (feasibility) the actual service elements have not been defined in detail e.g. providing dry recycling has been considered, but the materials collected, and the containers used have not been defined. Similarly, for organics, the focus of the stage one evaluation has been on the impact that providing an organics service may have, further detail and analysis will be required to determine what the service looks like e.g. deciding food only vs. food and garden combined, collection frequency and container size and type.

3.1.2 Options analysis

The stage one analysis focuses on the impact of offering/not offering kerbside service elements (rubbish, recycling and organics) on the evaluation criteria.

The impact on rates has not been assessed for the stage one options, instead, the focus of the evaluation has been on the overall cost to households. At this stage of the evaluation, there is no direction as to the degree of RDC's involvement, and therefore the potential impact on rates.

A summary of the evaluation is provided in Table 3.4. Detailed evaluation is available in 0.

Table 3.4: Stage one - Summary of evaluation

		Cost to user	Diversion	Wider environmental outcomes	Statutory obligations	Equity	Flexibility
1.1	**Rubbish only**	Good	Poor	Bad	Poor	Bad	Poor
1.2	**Recycling and rubbish**	Fine	Fine	Poor	Fine	Fine	Fine
1.3	**Organics and rubbish**	Fine	Fine	Fine	Fine	Fine	Poor
1.4	**Recycling, organics and rubbish**	Bad	Fine	Fine	Fine	Good	Fine
1.5	**Full-service suite (recycling, organics, and rubbish)**	Poor	Good	Good	Good	Good	Fine

3.1.3 Preferred option/s

Based on the analysis undertaken and summarised in Table 3.4, the preferred option is to deliver a full-service suite (rubbish, recycling and organics) (Option 1.5). The option is not anticipated to provide a perfect outcome, however, on-balance, has been evaluated to provide better outcomes across the criteria analysed relative to other options. Key trade-offs involved in moving forward with Option 1.5 are described in Table 3.5.

Table 3.5: Option 1.5 trade-offs

Benefits	Risks/considerations
True cost of waste management is better understood/improved transparency.	New annual cost for households ($240.00 to $360.00) in place of any existing cost ($520.00 - $564.00).
Provide easy and efficient channels for households to manage their recyclables and organics, especially in urban areas.	Increased vehicle movements, impacting emissions.
Positions RDC to meet signalled diversion targets and the kerbside standardisation requirements.	Reliance on the demand for processed materials.
Provides better opportunities to establish transport efficiencies.	

3.1.4 Alternatives to be considered

RDC approved the proposed LTP Option 2 – staged provision of a recycling bin (issued in January 2027) and an organic material bin (issued in January 2030). If RDC were to align with this approach, Option 1.4 would be the most aligned option. However, like the preferred option, this does not provide a perfect solution, and trade-offs are likely to be involved with progressing option 1.4. These are described in Table 3.6.

Table 3.6: Option 1.4 trade-offs

Benefits	Risks/considerations
Provide easy and efficient channels for households to manage their recyclables and organics, especially in urban areas.	Households will need to engage or retain an additional service provider for rubbish which may lead to confusion.
Provides better opportunities to establish transport efficiencies.	RDC has limited control over waste disposed to landfill, a key lever to achieve the signalled diversion targets and performance standards.
Reduced pressure on RDC resourcing relative to option 1.5 i.e. fewer bins to service and contracts to manage.	Multiple additional annual cost for households ($240.00 to $360.00) i.e. a bill from the private sector and RDC for kerbside services.
Private sector retain existing market share for rubbish collections.	

It is important to note that Option 1.3 scores the same as Option 1.4 in the above assessment. While Option 1.4 is likely to incur a higher cost to users, the option provides improved flexibility and better aligns to signalled policy direction. Meanwhile, Option 1.3 is expected to be a lower cost to users, however is a less equitable option. In considering these trade-offs it is recommended that Council considers how these may or may not align to the Councils overall vision and goals for waste across the district. Given the current priorities for Council Option 1.4 has been put forward as the preferred alternative option.

3.2 Stage two (How)

3.2.1 Options identification

Options for **how** waste services may be provided in the future have been developed with consideration to the role and involvement of RDC. These are described in Table 3.7.

Table 3.7: Service delivery approaches

Option	Description
Option 2.1 - No Council Involvement (status quo)	The private sector will continue to provide rubbish services to households. They may choose to introduce recycling or organics service offerings however there will be no specific requirement for this. RDC will not have the ability to license operators or set out conditions for service providers. Diversion opportunities are reliant on the existing transfer station network.
Option 2.2 – Regulated by Council	RDC will develop, introduce and enforce a bylaw that includes, but is not limited to, requiring the separation of waste into rubbish, recycling and organic material for collection. The option to regulate may also open opportunities for RDC to license operators and set standards for services, including the requirement for the private sector to provide recycling and or organics collections alongside any kerbside rubbish collection service.
Option 2.3 – Outsourced to Contractor	For this option RDC will engage a contractor to deliver a kerbside collection service. This may include rubbish, recycling and/or organics collections.
Option 2.4 – Operated by Council	RDC will own the assets used to deliver the service including trucks and bins and will employ staff to deliver the service. This may include rubbish, recycling and or organics collections.

The options considered reflect the approaches taken by a number of Council's across New Zealand. As an aside, RDC could consider a service that is delivered on their behalf by a neighbouring council. This option involves a number of complexities and dependencies that Council would need to work through which are outside the scope of this work, and therefore it is has not been assessed alongside other options. Rather, this approach would be sensible to consider as part of any future Section 17A review for RDC.

3.2.2 Options analysis

The stage two analysis focuses on assessment of each of the potential models for service delivery against the evaluation criteria. Diversion from landfill has not been assessed in stage two, this is given that the actual service configuration will impact on diversion, more so than the delivery approach. In this evaluation, the impact of rates has been assessed as an additional criterion. This is because due to the current challenging financial climate, affordability and the ability to mitigate rates impacts wherever feasible is a priority for RDC. Estimating rate impacts stands as a critical differentiator among options. As outlined in Table 3.1, this criteria is defined as the "impact on the solid waste disposal charge per separately used or inhabited part of a rating unit (SUIP) is minimised or avoided".

A summary of the evaluation is provided in Table 3.8. Detailed evaluation is available in Appendix B.

Table 3.8: Stage two - Summary of evaluation

		Impact on rates	Cost to user	Wider environmental outcomes	Statutory obligations	Equity	Flexibility
2.1	**No Council Involvement (status quo)**	Good	Bad	Poor	Poor	Poor	Fine
2.2	**Regulated by Council**	Good	Poor	Fine	Fine	Fine	Poor
2.3	**Outsourced to Contractor**	Poor	Fine	Good	Good	Good	Fine
2.4	**Operated by Council**	Poor	Poor	Good	Good	Good	Good

3.2.3 Preferred option/s

The preferred approach to deliver this option is to outsource the delivery of kerbside services to a contractor (Option 2.3). As is the case for the Stage one analysis, the option will require RDC to trade-off between priorities i.e. while administering a contract delivers on the desired outcomes/evaluation criteria, a considerable resourcing constraint will be placed on council officers and relies on interest from the private sector, which is not guaranteed. The trade-offs considered as part of option 2.3 are described in Table 3.9.

Table 3.9: Option 2.3 trade-offs

Benefits	Risks/considerations
RDC can exert greater control over environmental outcomes.	Adhering to the contract term may limit RDC'S capacity to adapt to change e.g. policy direction.
Engaging an experienced contractor may result in cost efficiencies and reduce operational risks.	Households will be required to pay a new charge in their annual rates bill.
RDC can meet the indicated diversion requirements without owning and operating plant and equipment.	While the level of service is variable for rural households, every household in the district retains the potential to contribute to landfill diversion efforts.
	RDC will need to resource the contract management, requiring considerable time and experience.
	Relies on interest from the private sector.

As part of the options assessment, Option 2.4 scores the same as the preferred option. On paper, the option warrants further consideration. However, when considering the practicality and potential investment needs of implementing and operating this approach, particularly for a small council, the option is unlikely to be feasible for RDC. Particularly when considered against the other options that have been recommended.

3.2.4 Alternatives to be considered

Noting the constraints associated with Option 2.3 and 2.4 (outsourced to contractor), RDC could also consider Option 2.2 (regulated by Council) – to develop, introduce and enforce a bylaw. In-depth analysis as to what a bylaw may include has not been undertaken as part of this work. However, examples of solid waste management and minimisation bylaws across Aotearoa indicate that provisions could include the ability for RDC to:

- Require the separation of waste into rubbish, recycling and organic material for collection.
- License operators.
- Set standards for services, including the requirement for the private sector to provide recycling and/or organics collections alongside any kerbside rubbish collection service.

In considering Option 2.2, the trade-offs described in Table 3.10 would be involved in moving forwards with the option.

Table 3.10: Option 2.2 trade-offs

Benefits	Risks/considerations
RDC's resourcing pressure is reduced, relative to administering a contract or operating a service.	RDC'S control over environmental outcomes remains limited.
Households won't be charged a new rates charge. The private sector is likely to provide services, and consequently, payments for the cost would be directed towards them.	Market forces will determine the cost to households, and it might limit the potential to pass on savings.
	RDC will need to resource sustained monitoring and enforcement of the bylaw.

3.3 Kerbside collections implementation considerations

Several factors, not differentiated in the options evaluation, could still influence Rangitīkei's kerbside collections, regardless of RDC's level of involvement. The extent of RDC's involvement, either as a contract manager or waste services regulator, will dictate how these factors are best addressed. Given this, the following factors could be considerations for any upcoming procurement process (if RDC enters the market) or managed via regulatory tools like bylaws (if RDC 's role is regulatory).

3.3.1 Health and safety

The waste and resource recovery sector have been working to improve the health and safety of staff involved with kerbside collections. The WasteMINZ Health and Safety Sector have taken a lead at a sector level with active support from local authorities, waste collection companies and WorkSafe NZ.

The work has been informed by research on safety statistics across the sector, best practice in Aotearoa and internationally and balancing practical considerations with safety.

The implications for rubbish, recycling and organic materials collections include:

- Approaches that avoid manual handling are preferred.
- Collections that involve staff moving around vehicles are less safe than those where containers can be handled remotely.

In the unique context of Rangitīkei, particularly attention will need to be paid to designing a service that can adequately manage risks while work on high speeds roads including state highways and rural roads.

3.3.2 Data collection and reporting

Consideration should be given to how RDC will record, collect and use service-related data to inform service improvements as well as to meet statutory data obligations under the Waste Minimisation Act. Access to future data needs and requirements as signalled by Central Government should be considered and built into any new system from its implementation stage.

If data collection is well designed, it is possible to track system performance and identify opportunities for improvement. For example, combining participation rates, residual waste composition and contamination rates will identify the aspects of service use that can be supported with information and education.

3.3.3 Funding

If RDC enters the market for collections, funding will be a consideration for the procurement process. Across Aotearoa the standard approach to funding collections is to introduce a targeted rate for recycling and organics collections. For rubbish collections RDC could opt to charge households using a pay-as-you-throw **(PAYT)** model, or fund collections via a targeted rate.

By implementing a targeted rate, all households who are eligible for the kerbside collection will be charged an annual fee in their rates, regardless of how often, or whether they choose to use the service.

In contrast, in a PAYT system each household is only paying for the rubbish they generate – providing a financial incentive for people to reduce their waste. A PAYT system may be administered using physical tags, or a radio frequency identification tag (RFID tag). This approach is typically adopted for rubbish collections only with recycling and organic materials collections funded through a factor on user charges or a targeted rate.

There is a trend amongst local authorities to introduce a targeted rate for kerbside collection services. However, a small number of councils have recently rolled out PAYT systems that are typically administered using removeable physical tags although RfID tags are an emerging option in this area. A PAYT system that uses RFID tags has not yet been implemented in Aotearoa.

3.3.4 Communications

Any district-wide communications that support the delivery of a kerbside services will need to provide clarity on the implications for all residents. Consistent messaging across the district is likely to be important for the successful performance of a service.

Where services are provided by multiple operators or involve a high degree of tailored responses, a universal umbrella communication approach is challenging. This may impact efficiencies in delivery of effective behaviour change messaging.

3.3.5 Strengthened regulatory instruments

The absence of any solid waste bylaw in Rangitīkei presents a number of challenges. While the option to regulate (introduce a bylaw) has been presented as a stand-alone option, regulation could support any of the options outlined. A comprehensive legal and policy review would be required to test the legal and commercial limits of potential bylaw options, however, at a high-level, a bylaw could be introduced to:

- Control rubbish capacity (i.e., by limiting bins size).
- Support RDC to access to good quality data for collections in the district e.g. from the private sector.
- Introduce waste licensing regime and associated terms and conditions to include waste diversion targets, reporting obligations and associated compliance requirements.

Standard bylaws are available and could be adapted for RDC at a relatively low cost. Any new bylaw would be subject to a complete special consultative procedure.

Part 2 – Material management

Part 2 of this work has focused on decisions associated with the processing of materials from kerbside collections. If RDC chooses to deliver an organics collection, consideration will need to be given to available processing infrastructure and how the material collected will best be managed and processed. For dry recyclable material, RDC will need to consider processing and end markets for materials.

This section of the report considers the potential options that are available to RDC for processing of this material.

4 Organic materials

4.1 Defining organic materials

Before analysing options to manage organic materials, the different organic materials that RDC may manage need to be defined. Organic materials considered in this feasibility study are defined as:

- **Organic material**: This type of material includes green (also known as garden waste) and food material. Other degradable materials such as biological sludges (from wastewater treatment), paper, cardboard and timber are typically separately quantified in waste composition analysis[8]. Unlike green/garden and food wastepaper, cardboard and some timber may be suitable for recycling (remanufacturing to produce similar materials).
- **Food material (FO):** Food material comes from food that is not eaten. This includes household kitchen scraps and food that is produced but not consumed. It also includes commercial waste created during production, processing, distribution and the sale of food.
- **Green material (GO):** Green material includes grass cuttings, hedge clippings, tree trimmings and other vegetation. This is sometimes also referred to as garden waste.
- **Food and green combined (FOGO):** a collection which involves both food and green material being collected together.

4.2 Current situation

4.2.1 Available organic material

This section outlines the potential organic material available for collection by RDC. Information has been adapted from RDC's 2024 Waste Assessment, and therefore engagement with producers of organic materials has not been undertaken as part of this work.

4.2.1.1 Domestic organic material

There is currently no organic material kerbside collection service provided by RDC or the private sector in Rangitīkei. Instead, domestic residents can dispose of organic materials using the following methods:

- With general waste in kerbside collections of rubbish bags and bins provided by the private sector.
- Drop offs to RDC transfer stations (separate green material drop-offs at all transfer stations bar Mangaweka).
- Drop offs to RDC transfer stations (as part of rubbish drop-offs).
- Home composting, or community composting where available.

Quantifying the total volume of organic material available for processing in Rangitīkei is challenging, given that in depth and specific data collection has not taken place. However, modelling using the methods listed above,

[8] Sludge, paper/cardboard and timber are categorised separately from 'organic waste' in the Solid Waste Analysis Protocol (waste composition). The protocol is the methodology for determining waste composition in Aotearoa.

and consideration of other sources of organic materials have been combined to establish a high-level view of potentially available organic materials.

Annual quantities of green material collected via RDC's transfer station network are shown in Figure 4.1. For the 2022/2023 financial year, 0.87 tonnes of green material was collected.

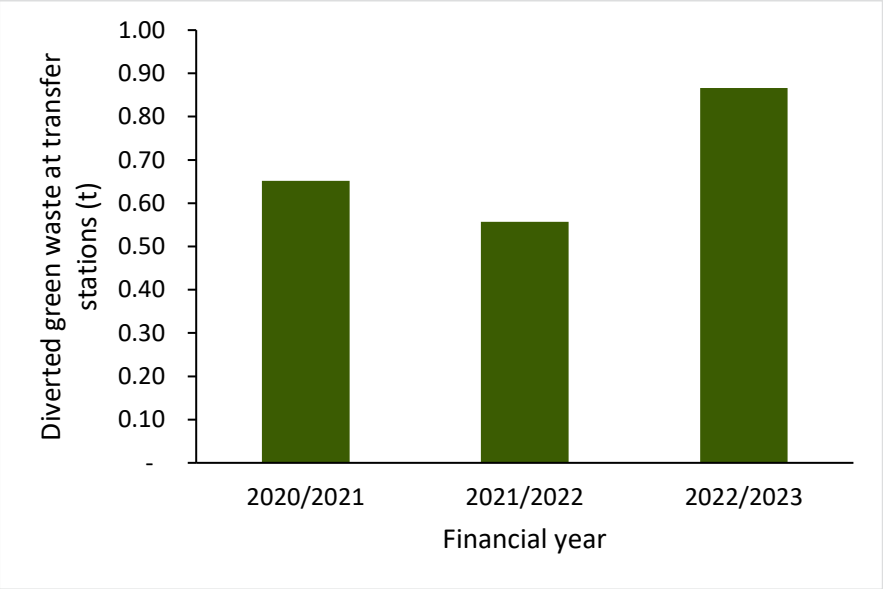


Figure 4.1: The amount of diverted green material from transfer stations in the Rangitīkei District.

Further organic material is available for diversion from landfill, noting that 39% of overall residual waste consisted as organic material[19]. Based on the 5,648 tonnes of rubbish that was collected across RDC's transfer stations for 2022/23, 2,202 tonnes of organic material Is currently landfilled. Based on these figures, existing capture of green materials in Rangitīkei is less than 1% indicating that there is potential to capture additional green materials from the system for diversion. Further analysis is required to understand the suitability of this material for diversion from landfill, and any further processing requirements.

4.2.1.2 Commercial organic material

As part of this work, detailed information has not been collected to understand the quantity or composition of organic materials outside of RDC's resource recovery system. This section provides a high level view of potential further sources of organic materials, at a commercial scale.

Based on economic activity in Rangitīkei analysed as part of RDC's 2024 Waste Assessment, the following sources of organic material warrant further consideration:

- Manure and animal carcasses e.g. meat processing and off-farm.
- Forestry residues e.g. Hautapu Pine Taihape.
- Food manufacturing and commercial volumes of food material e.g. RNZ Base Ohakea.
- Crop residues.

Modelling undertaken as part of the Waste Assessment indicates a potential 2,410 tonnes of organic materials generated from farms in the district. Uncertainty remains as to the potential quantities of organic materials from forestry, horticulture and food manufacturing/commercial sources.

While this material has been quantified at a high level, it is important to recognise that this material is not necessarily available for processing. This is given that some processing of materials occurs outside of the Council system, likely including:

- Composting of organic material on farms or private properties.

- Arborists chipping vegetation and commercial operations selling this as a mulch.
- Stock feed being diverted to piggeries instead of ending up in landfills.
- Commercial volumes from businesses collected by the private sector e.g. New World and Woolworths where national contracts are likely to be in place.
- Organic material that is mixed with general waste being transported to landfill/

Future policy direction and market requirements may mean that this material will need to be managed off farm.

4.2.1.3 Conclusions

Based on analysis of the current situation, Table 4.1 sets out the potential sources of organic materials available for processing.

Table 4.1: Organic materials generated in Rangitīkei

Source	Material type	Quantity (t)
RDC transfer stations	Green material	0.87
Kerbside rubbish	Food and green material combined	2,202*
Farm waste	Food and green material combined	2,410*
Forestry	Green material and carbon rich material e.g. sawdust	Unknown
Manufacturing	Food material	Unknown

Note: * indicates the material is currently managed via landfill or other disposal methods e.g. farm dumps.

4.2.2 Organic material processing

A number of organic material processors are operating in or nearby Rangitīkei, including community scale initiatives, alongside more technical and commercially scaled solutions across the North Island.

In considering the need for, and suitability of, an organic material processing solution/s, often there is a default assumption that this needs to involve development of a new, dedicated solution. However, it is important to explore the viability of existing processing operations. This section outlines some of the current organic processing operations within and surrounding the Rangitīkei district.

4.2.2.1 RDC composting trial

RDC officers have worked alongside local food manufacturers and farmers to trial small-scale on farm simple turned pile composting. As part of the trial, local food manufacturers have supplied cabbage, grass clippings, broccoli stalk and mixed food material to be composted. Local farmers receive these materials and combine them with paper, cardboard and sawdust to achieve an appropriate carbon to nitrogen ratio.

The trial's success has been evidenced by laboratory testing, indicating the finished product exceeds the Aotearoa guideline for minimum organic matter, phosphorus and nitrogen. The success of the trial can be attributed to ongoing education with farmers regarding turning of materials to generate sufficient heat.

4.2.2.2 Community composting

Community scale organic processing initiatives operate in Rangitīkei. The focus of these initiatives tends to be on growing and providing kai to the community, rather than processing organic materials. However, it is likely that some small scale composting occurs on site e.g. composting of discarded produce or trimmings from gardens to be applied on gardens. Initiatives outside of the region also operate in a relatively close proximity

e.g. Timona Park Orchard Trust Fielding less than 30 minutes drive from Marton.

Other local initiatives including the Taihape Garden Club may facilitate small organic material processing e.g. knowledge sharing to enable composting at a household level.

4.2.2.3 On Marae composting

There are 13 active Marae are situated across Rangitīkei. These Marae operate at various scales and with varying purposes. The scale of any on Marae composting is unknown at this point in time.

Composting provides an opportunity to enhance the mauri of Hineahuone (earth-formed woman in te reo Māori) through creating healthy, nutrient rich soil. Creating soil enables whānau (family) and hapū (subtribe) to grow their own kai. Building food security, while knowing the whakapapa (genealogy or origin) of kai. There may be opportunities in the future for Marae to work alongside organisations including Para Kore to compost on location.

4.2.2.4 Lower North Island Composting

There are a number of well-established composting operations in the lower north island. These include:

- Envirofert Tuakau - process commercial food and green material near Tuakau in the northern Waikato District.
- EnviroNZ Hampton Downs – process food and green material using static pile composting site and engineered composting system (in-vessel composting).
- Composting NZ Otaihanga – Composting facility accepting green materials.

These facilities provide a number of larger scale solution for organic materials management. However, consideration should be given to the potential capacity of these facilities to accept additional feedstock. An additional consideration is the cost and environmental impact of transportation, both from the origin of the materials to the processing site and from the processing site to the markets.

4.2.2.5 Additional facilities currently proposed

South Taranaki, New Plymouth and Stratford District Councils completed a feasibility study in 2021 on options for local organic material recovery processing. The feasibility study recommended further investigation for the establishment of a network of organic material recovery facilities in Taranaki that would cater for both council and industry quantities of organic waste, that aligned with mana whenua environmental bottom lines. The councils and primary industry partners, have since been collaborating on procuring one or more local processing solutions that will address both organic material and broader outcomes (including increased circularity locally and emissions reduction). An expression of interest was completed in 2023 and a Request for Proposals from shortlisted parties is currently underway. Until this process is complete, the final solution cannot be confirmed.

In addition, Wellington City, Hutt City and Porirua City Councils have recently competed an options assessment and business case to assess options for collections of organic materials and associated processing consideration. The business case provided a preliminary view on the preferred solution for collection and options. At this stage, the preferred solution has not been progressed through the Councils' Long term Plan process.

4.2.3 Conclusions

Based on the current situation the following is evident:

- RDC currently controls a small portion of any organic material generated in the region.

- Further analysis is required to quantify potential organic materials from forestry and industry e.g. crop residues, manufacturing.
- Minimal organic processing is undertaken in the region, where processing does occur this is at a small scale.
- Further analysis is required to understand the potential capacity of out of region processing solutions.

4.3 Organic material collections

4.3.1 Organic material collections considerations

While the focus of Part 2 has been to consider options for processing materials, the characteristics of the organic materials collections and processing are strongly interlinked. This section introduces considerations in selecting an organic material collection approach, and presents four options to collect organic materials.

4.3.1.1 Materials collected and container type

In Aotearoa, organic materials at a household and commercial scale are generally collected as a food only, garden/green only or a combined food and garden stream. The containers suitable for collection of each of these streams from households are noted in Table 4.2. Containers for commercial streams will depend on the quantity of materials and available collection vehicles. Examples range from containers that are similar to household collections through to bulk containers (sealed skip bins).

Table 4.2: Container types

Food organics	Food and garden organics	Green material only
		
23 L FO food only container (ECP Ltd. 2023).	240 L FOGO wheelie bin (Christchurch City Council 2023).	240 L GO wheelie bin (Northland Waste 2023).

Note: FOGO wheelie bins may range from 80 L – 240 L

In general, the following should be considered in determining a container type:

- Wheelie bins of 80-240 L are used for the collection of FO, FOGO and GO, particularly with weekly collections[9].
- 80 L bins can be preferred given they provide a balance between sufficient capacity for materials while limiting contamination.
- Smaller 23 L containers are more suited to FO collections.
- Kitchen caddies, that are emptied into a larger bin, may be provided by council to support and encourage best use of the service.
- Compostable bin liners may be provided alongside bins, however this is largely dependent on the ability of the end material processing technology to manage such waste streams.

[9] Containers smaller than 80L are not considered suitable for automated collections and are likely to be damaged using this collection method.

Councils can apply to MfE for a subsidy per bin purchased to support them in rolling out kerbside organic materials collections. Table 4.3 outlines the market cost and available subsidies available to councils.

Table 4.3: Market costs and subsidies for containers

Bin type	Available funding	Market cost
7L kitchen caddy	$5.00	$12.50
23L food only bin	$15.00	$18.89
80L wheelie bin	$40.00	$97.00
120L wheelie bin	$45.00	$107.73
140L wheelie bin	$50.00	$118.76
240L wheelie bin	$55.00	$119.59

Note: Accurate as of December 2024, cost sourced from MfE.

4.3.1.2 Transportation

The container type selected largely determines options for transportation. Given that certain lifting and loading mechanisms are suited to specific container types. Options for the collection of organic material are described in Table 4.4.

Table 4.4: Transportation considerations

Container type	Collection methods	Associated vehicle
23L food only container	Collected manually Bespoke lifting mechanism	Bespoke truck
80 – 240L wheelie bin (FO/FOGO/GO)	Automated collection e.g. mechanical arm	Side loader Rear loader
1.5m^3-4.5m^3 bin	Automated collection	Rear loader
		Front loader
Bulk containers (4.5m^3 - 9m$^{3)}$	Hydraulic lift system or a winch system	Front loader vehicle or a roll-off truck.

4.3.2 Organic material collection options

The collection options available to RDC will be determined by the target organic materials. This is given that, as described in the previous sections, certain containers are specific to the material type, and that the container will determine the collection vehicle.

In saying this, collection options have been identified for the following materials:

a Green material only **(GO).**

b Food material only **(FO).**

c A combined green and food material collection service **(FOGO).**

d Collection of both green material and food material, but via separate collections (separate FO and GO).

Options have been identified and cover the following aspects:

- Customer group – who will receive the collection – households and potentially commercial activities (who are likely to general materials at a similar scale to households).
- Collection bin type.
- Collection vehicle type.
- Collection frequency.
- Implications for rubbish collection frequency following implementation of the organics collection.

The options for organic material collections are summarised in Table 4.5 over the page.

Table 4.5: Household organic material collection options information

	A. Green only	B. Food only	C. Combined food and green	D. Separate food & green
Customer group	Household	Household and commercial	Household and commercial	Household and commercial
Collection bin type	>80L	23 L food material (household) >80 L food material (commercial)	>80 L	240 L green material, 23 L food material
Collection vehicle type	Side-lifter	Low entry vehicle (manual)	Side-lifter	Side-lifter
Collection frequency	Four-weekly	Weekly	Weekly	Weekly – food material Four - weekly – green material
Rubbish collection frequency	Weekly	Fortnightly	Fortnightly	Fortnightly

Note:

4.4 Organic material collections – options analysis

This analysis focuses on providing an evidence base for RDC to consider all feasible collection options. The evaluation provides a summary of risks and benefits for each option, rather than a multi-criteria analysis. This approach acknowledges that the assessment is at the feasibility stage, and for the most part, there is a lack of evidence to establish detailed options. Table 4.6 provides a summary of risks and benefits.

Table 4.6: Organic material collections – risks and benefits

Collection options	Household	Commercial	Risks	Benefits
Green only (GO)	✓	×	• New transport fleet emissions, potential for inefficiency of collection, as collection is unlikely to be from every domestic property along the route. • Poor flexibility to respond to any potential change such as mandatory food organics collection. • Does not align to current signalled policy direction. • Without limiting capacity or uptake (making the service opt-in) there is potential for green materials managed outside of the waste management system, e.g., through home composting initiatives, to be induced into the system.	• Separation of green materials allows RDC an opportunity to grow or create a more circular use of organics materials.
Food only (FO)	✓	✓	• Assuming a weekly collection, there is a high collection frequency to collect a small volume of material meaning emissions relative to materials captured may be high. • Requires detailed education and behaviour change tools particularly during roll-out, to enable households to use the collection system correctly. • There are limitations on processing options in the absence of secure access to supplementary/bulking material for composting.	• Separation of FO allows RDC an opportunity to grow or create a more circular use of organics materials. • Aligned to signalled policy direction.
Combined food & green (FOGO)	✓	✓	• May expect more contamination in a FOGO collection. • Good flexibility for domestic users. • • Without limiting capacity or uptake (making the service opt-in) there is potential for green materials managed outside of the waste management system, e.g., through home composting initiatives, to be induced into the system.	• Maximum diversion potential. • Aligned to signalled policy direction.

Collection options	Household	Commercial	Risks	Benefits
Separate food and green	✓	✓	• More bins for households to manage and store, potential for confusion with different collection frequencies for different containers. • Without limiting capacity or uptake (making the service opt-in) there is potential for green materials managed outside of the waste management system, e.g., through home composting initiatives, to be induced into the system.	• Maximum diversion potential • Aligned to signalled policy direction. • Separation of food organics allows RDC an opportunity to grow or create a more circular use of organic materials.

On balance a small, combined food & green (FOGO) collection for urban areas will be useful to maximise the capture of materials while limiting the potential to induce green materials into the system. Further research (engagement with households) will be useful to understand current behaviours and the uptake of home composting and other material management methods e.g. feeding food waste to animals.

4.5 Organic material processing

This section highlights processing options and provides an evidence base for RDC to consider all feasible options.

As mentioned in previous sections of this report, decisions relating to collections and processing are largely interlinked. The processing options discussed below are suited to various combinations of organic materials i.e. food only, green only or a combination of the two. In some cases, organic materials will be collected together, in others separately collected organic materials (and supplementary materials) are combined prior to, or during processing.

4.5.1 Organic material processing considerations

4.5.1.1 Selecting processing approach

The most suitable approach for organic material management is largely dependent on the composition of the material (Figure 4.2). Typically processing options fall into three categories: combustion, composting, and both forms (wet and dry) of anaerobic digestion.

It is important to note that a processing site may draw on multiple sources to secure a suitable composition of organic materials for processing. For example:

- Composting could be used to process a mixture of food only collections, green material, primary processing waste streams[10] and bulking material (wood chip, sawdust).
- A wet anaerobic digestion process may combine food only collection material with other putrescible materials to optimise feedstock for gas production.
- A dry anaerobic digestion may process a mixture of, for example, food only collections, food and green material and primary processing waste streams[13].
- Vermi-composting could be used to process a mixture of food only and higher carbon materials. Examples include pulp wastewater sludge and repulped paper/cardboard.
  - Vermicomposting requires a feedstock that provides a mix of nitrogen rich and carbon rich materials that are suitable for worms to process. In New Zealand this often involves fibre waste from wood or pulp and paper processing alongside food and food processing residues.

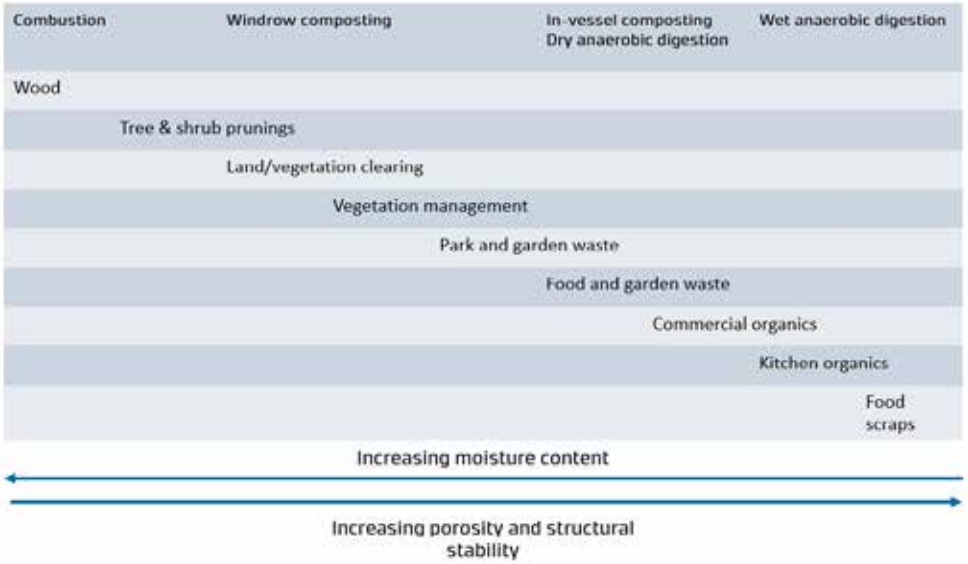


Figure 4.2: Treatment method based on physical and chemical properties. Adapted from Understanding the processing options, Fact Sheet 5, DEECCW.

[10] For example, water treatment sludges or unwanted by-product from food processing.

These materials can be obtained as a combined stream through (for example) FOGO collections or from multiple sources e.g. green materials from landscaping, food materials from food manufacturers. Most of the processing examples noted in Section 4.2.2 take the second approach, securing an appropriate mix of materials from a variety of sources to enable the production of products with established end markets.

4.5.1.2 Markets for processed organic materials

The sale of the end product is essential to the ongoing financial viability of any organic processor's operation. The value and use of the processed organics materials differs substantially depending on the type, location, quality and quantity of materials.

This section provides a summary of potential end markets for organic materials once processed, and notes considerations relevant to each market.

4.5.1.2.1 Stockfeed

Feeding unwanted organic materials to stock can range in size from small scale food material to chicken feed to large commercial piggeries and commercial food recovery to stockfeed processors. Utilising suitable organics as stockfeed is a high-value use of organic material which benefits all parties involved.

Primary suppliers of organic materials suitable for stockfeed include supermarkets, hospitality, and horticulture businesses. Rapid collection and/or appropriate storage is required to ensure organic materials arrive in a suitable condition to feed to stock. Contamination is a significant concern for recipients of diverted stockfeed, typically due to plastic packaging.

As noted in section 4.2.1, there is likely to be some organic material in Rangitīkei already being diverted to stockfeed uses. However, this is likely to be at a small scale e.g. food material produced on farm is fed to animals, producers of commercial volumes of food material holding relationships with farmers directly.

4.5.1.2.2 Council use

Council operations typically use composts and soil conditioners for landscaping (parks and gardens) and land stabilisation. Providing products of appropriate quality for supply to council can support an 'internal market' by utilising the compost produced in the region using food and/or green material managed by the council.

4.5.1.2.3 Retail

There is an active retail market for compost with bagged product available from landscaping, garden supplies and retailers e.g. Farmlands and Mitre 10.

Bulk compost is sold by landscaping and garden supplies yards and in some case by compost operations directly. With this, there is a significant market in supplying to new housing developments. The market for bagged product tends to be dominated by national suppliers (Tui, Daltons, and Living Earth) with bagged product shipped around the country.

4.5.1.2.4 Horticulture

Horticulture is an important outlet for compost and soil conditioners across Aotearoa. Organic certification has become a de facto standard for this market with BioGrow and Assure Quality the key certification providers.

Application rates to horticulture crops are dependent on the local soil requirements including limits on maximum nutrient loading. As each compost product has a different nutrient content, the maximum application rates can differ.

4.5.1.2.5 Grassland and arable crops

Products from organic processing such as compost or vermicast can be applied to land used for growing grain or for dairy, beef and sheep farming. The application rates of compost to grasslands differ from the application rates for horticulture.

In addition to the use of processed organic products, grassland and arable land in the Southland region may also be receiving dewatered waste activated sludge and dissolved air flotation sludge as biproducts from primary processing.

4.5.1.2.6 Biofuel and energy

Biogas is usable to generate heat and/or power. There are potential economies of scale with energy infrastructure, for example landfill gas or anaerobic digestors at wastewater treatment plants. Some heat is usable to support the temperatures required for effective digestion, often alongside power generation. The Ecogas project in Waikato combined power generation and heating of greenhouses to maximise the value gained from the biogas.

Woody organic material including larger branches from green material and wood processing residue can be used as boiler fuel. Sawdust can processed into pellets, provided a consistent fuel for specialised boilers or existing coal fired boilers.

4.5.2 Organic material processing options

The processing options noted in Section 4.5.1 and associated markets have been considered for their suitability to the Rangitīkei District and consider the economies of scale for Rangitīkei. These are

- Landfill (status quo).
- Vermicomposting.
- Open windrow composting.
- Aerated static pile composting.
- In-vessel composting.
- Anaerobic digestion (wet and dry).

It is important to note that the scale of material produced in Rangitīkei is likely to see processing infrastructure underutilised. Table 4.7 provides further information on the processing options and associated potential markets considered. This information is largely illustrative and assumes that shredding/mixing/screening of materials will be contracted.

Table 4.7: Organic material processing options

Option	Suitable feedstock	Outputs	Potential markets	Indicative capital cost	Indicative gate fee (per tonne)
1. Landfill (status quo for food organics)	Food and green materials.	Methane	Heat/power.	N/A	
2. Vermicomposting	Food materials, some 'softer' green materials.	Liquid – worm tea Solid – vermicast	Landscaping, Retail, Horticulture, Grassland/ arable.		$53 - 100
3. Open windrow composting	Mainly green materials, can accommodate some food materials.	Compost, mulch	Landscaping, Retail, Horticulture, Grassland/ arable.	Approx. $1M assuming 2,000 -3,000 TPA	$66 - 100
4. Aerated static pile composting	Food and green materials.	Compost	Landscaping, Retail, Horticulture, Grassland/ arable.	Approx. $2 - 5 M assuming 2,000 -3,000 TPA	$95+
5. In-vessel composting	Food and green materials.	Compost	Landscaping, Retail, Horticulture, Grassland/ arable.	Approx. $5 - 10 M assuming 2,000 -3,000 TPA	$100 - 180
6a. Anaerobic digestion (wet)	Food materials, can accommodate some soft green materials.	Methane, carbon dioxide and liquid digestate	Biofuel (heat/power), Horticulture, Grassland/ arable.	Approx. $10 M + assuming 2,000 -3,000 TPA	$120 - 270
6b. Anaerobic digestion (dry)	Green materials.	Methane, carbon dioxide and digestate	Biofuel (heat/power).		

4.6 Organic material processing – options analysis

This analysis focuses on providing an evidence base for RDC to consider all feasible options. The evaluation provides a summary of risks and benefits for each option, rather than a multi-criteria analysis. This approach acknowledges that the assessment is at the feasibility stage, and for the most part, there is a lack of evidence to establish detailed options. Table 4.8 summarises risks and benefits for processing options.

Table 4.8: Organic material processing – options analysis

Processing options	Detail	FO	GO	FOGO	Other[11]	Risks	Benefits
Landfill (status quo)	Organic material and material is collected as part of the municipal waste stream and disposed of in landfill.	✓	✓	✓	✓	• No new diversion potential. No opportunity for resource recovery or circular use of organic material. • Limited flexibility to respond to potential broader policy or waste material changes.	• No additional or new end markets needed. • No immediate capital-costs, continued costs associated with disposing the organic material to landfill.
Vermicomposting	Vermicomposting relies on the use of worms to rapidly break down organic material.	✓	✓~	✓*	✓	• Limited diversion potential as mainly suitable to food organics. • Will require reliable and consistent resourcing with good understanding and knowledge of vermicomposting processes. • Requires a course of carbon rich material suitable for worms e.g. fibre waste.	• Indicative gate fee (per tonne) at $53 - $100. • Established demand for quality vermicast, outputs can be used on their own or to boost other compost material. • Opportunity to create a local resource recovery processing network and keep material in use at a community scale. • Can accommodate quantity variations, easily scalable for rural communities.

[11] Other organic materials include fats and oils, sludges.
~ Potentially suitable for leaves and lawn clippings.

Processing options	Detail	FO	GO	FOGO	Other[11]	Risks	Benefits
Open windrow composting	Windrow composting is an aerobic, hot method of composting, that breaks down organic materials in around 10 - 20 weeks.	✗	✓	Subject to location	✗	• Less infrastructure requirements than other systems, however larger areas of land required (indicative Approx. $1 M assuming 2,000 -3,000 TPA) • This method typically produces lower nutrient soil improver products rather than high nutrient compost. • Limited diversion potential as mainly suitable to green materials.	• Smaller, community scale applications of the process can be implemented for processing of smaller quantities of green material. • Established approach in Aotearoa for green material. • Indicative gate fee (per tonne) at $66 - $110).
Aerated static pile composting	Aerated static composting operations use the same method but with material laid over pipes which either pump air into or draw air through the piles.	✓	✓	✓	May be suitable	• Pre-processing and aeration arrangements required (indicative $55 M for a 55,000 TPA facility). • Sufficient demand for quality compost however processing approach can deliver inconsistent quality. • The investment and technical equipment make this process difficult to scale. • More suited to a region wide response.	• Emissions from composting are offset by avoiding landfill disposal of organic material. • More opportunity for diversion as can process a wider range of organic materials. • Established approach in Aotearoa and internationally for food and green material.

Processing options	Detail	FO	GO	FOGO	Other[11]	Risks	Benefits
In-vessel composting	In-vessel composting involves an enclosed system, semi-automated aerobic hot composting takes place within a controlled environment and supporting specific bacteria to process the organic material.	✓	✓	✓	May be suitable	• Investment in pre-processing and processing vessel equipment (indicative $70 M for a 55,000 TPA facility). • Iindicative gate fee (per tonne) at $100 - $180). • Investment required limits ability to create localised circular economy and technical equipment make this process difficult to scale. • More suited to a region wide response.	• Outputs include compost and this process produces a high-quality output. Fully pasteurised materials that are outputted after in-vessel treatment are physical contaminant and pathogen free, this makes more markets viable as the product is more attractive to a range of end users. • Good diversion potential as can processes both food and green materials. • Established approach in Aotearoa and internationally for food and green material.
Wet anaerobic digestion	Wet anaerobic digestion occurs in a sealed, oxygen-free system. It utilizes microorganisms to break down organic matter, producing biogas and nutrient-rich biosolids.	✓	✓*	✓*	May be suitable	• Indicative $35 M for a 55,000 TPA facility). Land requirements are not as extensive as other processes. • Limited diversion potential as mainly food organics. • The investment limits ability to create localised circular economy, however if located close to the end market can create good circular outcomes. • Main market potential includes biofuel (heat/power), horticulture, grassland/arable. There are viable markets (heat, power) for biogas.	• Wet digestion of biological sludges is well established in Aotearoa. • Food material digestion is well established internationally but relatively new in Aotearoa. • Indicative gate fee (per tonne) at $120 - $270), processing costs can be offset through sale or use of biogas for electricity production. •

Processing options	Detail	FO	GO	FOGO	Other[11]	Risks	Benefits
Dry anaerobic digestion	Operates within gas-tight chambers, reducing the need for water.	✓	✓*	✓	May be suitable	• Specialist processing equipment costs are necessary, land requirements are not as extensive as other processing technologies. • Specialist equipment and associated installation/ operational skillset and resource will be needed.	• The emissions from anaerobic digestion are offset by energy (biogas) and avoiding landfill disposal. • Dry digestion is suitable for food and green material so diversion is maximised.

4.6.1 Organic material processing conclusions

Selecting a suitable processing approach will largely depend on the materials targeted for collection. In the first instance, existing processing infrastructure should be employed. If the preferred collection method is FOGO then employing a local static aerated pile composting solution is sensible, if it is not possible to transport materials for processing elsewhere. Experience across Aotearoa suggests that transporting materials to a larger scale processor is likely to be comparable in costs with establishing a small scale facility in District. Further analysis will be required to understand the life cycle costs of either approach specific to Rangitīkei.

There are likely to be large scale processing facilities (with associated economies of scale) accessible to the Rangitīkei District. Because of this, working with an existing processor or a new facility established with or for other local authorities is likely to provide best value for money for the District unless the private sector initiates a processing facility in District.

5 Dry recycling

5.1 Defining recyclable materials

Before analysing options to manage recyclable materials, we have defined the different organic materials that RDC may manage at the kerbside. These definitions align to the Standard Materials for Kerbside Collections Notice 2023 (Notice No. 1) gazette Notice published by MfE on September 13th 2023[12].

Dry recycling is defined as "the collection of common recyclable packaging materials, such as glass, steel, aluminium, some plastics, paper and cardboard" namely including[13]:

- Glass bottles and jars.
- Paper and cardboard.
- Plastic bottles, trays and containers of resin identification codes 1, 2, and 5.
- Aluminium and steel tins and cans.

The following materials are considered to be excluded from any dry recycling collection[13]:

- All three dimensional items smaller than 50mm at their widest point.
- All two dimensional items smaller than 100mm by 140mm.
- All glass, plastic, steel and aluminium containers larger than four litres.
- Lids, caps, and tops (excluding tethered lids).
- Aerosols.
- Liquid paperboard.
- Aluminium foil and trays.
- Plastics with resin identification codes 3, 4, 6, or 7.
- Soft plastics.
- Plant pots.
- Paint containers.
- Hazardous substance containers.

[12] Standard Materials for Kerbside Collections Notice 2023 (Notice No. 1) - 2023-go4222-New Zealand Gazette

5.2 Current situation

In Rangitīkei, Kerbside collections for recyclable materials have previously been offered by the private sector, however transport inefficiencies and low uptake by customers has seen the service stop. As a result, no kerbside collections for recyclable materials are available to households in Rangitīkei.

5.2.1 Available recyclable material

5.2.1.1 Domestic recyclable material

Recyclable materials are collected via RDC's transfer station network. Table 5.1 summarises the total volumes of recyclable materials collected for 2022/23.Table 5.1: Material quantities 2022/23

Material	Quantity (t)
Glass	416.84
Plastics (1, 2, 5)	106.59
Metals	95.01
Paper and cardboard	159.36
Total	**777.80**

Based on the 2023 population, annual recyclable materials sent to transfer stations in Rangitīkei is 0.048 tonnes, or 48 kg per person.

In addition, 48% of overall residual waste consisted of recyclable material[13]. Based on the 5,648 tonnes of rubbish that was collected across RDC's transfer stations for 2022/23, 2,711 tonnes of recyclable materials could be diverted from landfill. Experience across Aotearoa indicates that applying a capture rate between 50%-60% will significantly reduce the material available for processing i.e. not all of the material described in Table 5.1 are likely to be collected and available for processing.

5.2.1.2 Commercial recyclable material

Some commercial volumes of recyclable materials may be disposed of at transfer stations, but due to infrastructure limitations, this is likely to be a small portion of the materials.

It is assumed that most businesses in Rangitīkei utilise a recycling collection and will engage a collector from the private sector. Therefore, quantities of recyclable materials from commercial properties are largely unknown.

5.2.2 Recyclable material processing

Materials collected via the transfer station network are currently collected and processed by a number of service providers. These are described in Table 5.2

Table 5.2: Material processors

Material	Processor	Location
Glass	Visy	Auckland
Plastics	Smart Environmental	Fielding
Metals	Bay Press/ Sims Pacific	Auckland/Wellington
Paper & cardboard	Oji Fiber Solutions	Auckland/Wellington

Alongside the Fielding material recovery facility (MRF) that RDC is utilising for plastics, Palmerston North City Council also operate a nearby MRF processing kerbside recycling stream comprising plastics (1,2,5) cans and

[13] Rangitīkei Waste Assessment 2024

paper/card. This could provide additional processing capacity to RDC for any collected materials.

5.2.3 Conclusions

RDC have established access to a number of processors for recyclable materials if they were to decide to deliver a kerbside recycling collection i.e. deliver options 1.2, 1.4 or 1.5 as defined in Part 1 of this report. Although these would require a new collection service, given kerbside standardisation, the existing processors are set up to accept the materials collected. It is unlikely to be financially viable to establish kerbside recycling processing within Rangitīkei. There may however be benefit in considering options for optimising transport costs through bulking or backload arrangements.

Part 3 – Next steps and recommendations

6 Summary

This report has considered options for how Rangitīkei can improve waste diversion and management at the kerbside. The role of RDC in delivering these improvements has been a particular focus of this report, with specific analysis provided in Section 3.2 Stage two (How).

The preferred kerbside collection configuration is to deliver a full-service suite (rubbish, recycling and organics) (Option 1.5). When considering alignment with previous LTP decisions, Option 1.4 may be preferred. Under option 1.4, rubbish collections will be delivered using the status quo approach, and a second service provider(s) will provide organics and recycling collections.

While a number of options have been recommended based on the assessment undertaken and the prioritisation of the criteria evaluated, their actual suitability or approach to implement is highly dependent on RDC's desire to enter the kerbside collection market. In this assessment, the preferred approach to deliver any kerbside services is to outsource the delivery of kerbside services to a contractor (Option 2.3), alternatively RDC could also consider Option 2.2 – to develop, introduce and enforce a bylaw.

In any scenario that progresses Option 1.4 or Option 1.5, organic materials and dry recyclables are proposed to be collected from the kerbside. Further consideration will need to be given to the processing approach for these materials.

Part 2 of this report set out approaches to collecting and processing these materials, noting the risks and benefits involved in any approach.

6.1 Conclusions and next steps

With this in mind it is recommended that RDC prioritise making the following key decision and subsequent actions.

1 Confirm a preferred approach to delivering kerbside collection services (stage one, part two).

Informed by this key decision, the path forward for various preferred options for RDC is described in Table 6.1.

Table 6.1: Paths forward for RDC

Preferred option	No Council Involvement (status quo)	Regulated by Council	Outsourced to Contractor	Operated by Council
Undertake a detailed assessment of potential service configuration e.g. container size, collection methods, materials to be collected.	✘	✘	✓	✓
Undertake a detailed assessment of potential bylaw options.	✘	✓	✓	✓
Engage with the market to establish potential organic processing options that may influence the service configuration for organic materials.	✘	Dependant on potential bylaw provisions.	✓	✓

6.2 Developing a case for investment

Following the paths forward described in Table 6.1 RDC may need to develop a case for investment. This will be based on RDC's appetite for introducing kerbside collections, the target materials collected (rubbish, dry recycling, organic materials).

To develop a case for investment RDC will need to consider the costs and benefits of one or more options against the status quo. It will be sensible for RDC to complete a more detailed options analysis as part of a detailed business case for the preferred approach. The business case should include a:

- Management Case: Set out programme and risks
- Commercial Case: Define procurement approach and market analysis (particularly important to assess RDC's ability to access economies of scale)
- Financial Case: Funding of CAPEX and OPEX, and cashflows to prove overall viability

The information provided in the Feasibility Study provides muchg of the evidence based required to develop a full Business Case should Council elect to pursue investment in service delivery and/or processing.

6.3 Further considerations

6.3.1 Risks and opportunities

As part of progressing any option, RDC will be exposed to risks and opportunities. These will need to be carefully managed and continually assessed by RDC through any course of future action. Risks and opportunities that require further consideration are described in Table 6.2.

Table 6.2: Risks and opportunities

Item	Risk or Opportunity	Comment
Limited interest from the market	Risk	RDC may decide that the preferred approach is to engage a contractor and find that there is limited interested from the market.
Community partnership model	Opportunity	There is potential for iwi or a community/non-profit organisation to work with RDC as a contractor or in a bespoke partnership model across the suite of options.
Local economic benefit	Opportunity	Depending on the approach taken to delivering collections services opportunities for a social procurement approach may become apparent.
Market risk	Risk	There may be no secure outlets for recovered materials or the value is lower than anticipated.
Market risk	Opportunity	New/additional outlets for processed materials are identified and/or the value is higher than anticipated.
Synergies with other activities	Opportunity	The provider of kerbside services can collaborate with neighbouring service providers to tap into existing collection routes and processing infrastructure.

Item	Risk or Opportunity	Comment
Central government direction	Risk/opportunity	Uncertainty in central government requirements regarding RDC's role and service delivery for waste and recycling creates potential risks for timing, investment and targets. However, the absence of specific timeline requirements allows RDC the opportunity to fully consider the options that are available to them to deliver the best outcomes for their community.
Timeline	Risk	Decisions surrounding the delivery of services will need to consider the potential of the signalled direction to provide a kerbside recycling service by 2027.
LTP decisions & pressures	Risk	RDC is facing cost pressures and competing priorities that limit the political appetite to introduce a new service e.g. three waters, Cyclone Gabrielle recovery.
Funding approach	Risk	Depending on the approach taken there may be a new targeted rate for households in the face of rising cost pressures.
Retreat of private providers	Risk	The existing kerbside collection arrangement relies on market forces, and therefore, there is no obligation to provide kerbside collection services to households. This provides some uncertainty.
Equity of service provision	Opportunity	Under the status quo, only urban households have access to kerbside collection services. Future procurement could prioritize providing similar services to rural households.
Servicing remote areas	Risk	Collection in remote areas poses efficiency concerns. Additional analysis is needed to balance factors like emissions, environmental impact, and equity.

6.3.2 Material management considerations

For any materials, dry recyclable or organic, the following factors could be considerations for any upcoming procurement process (if RDC enters the market) or managed via legislative tools like bylaws (if RDC 's role is regulatory).

6.3.2.1 Circular economy

Collecting different materials together can affect their quality, for instance, shattered glass contaminating paper in comingled recycling. Some domestic processors have material limitations; for example, glass-contaminated paper cannot be processed in Aotearoa. Tight contamination controls are also applied on exported materials under environmental agreements.

For a kerbside waste service to deliver on circular economy outcomes i.e. to collect and reprocess materials while retaining their highest value, a collection method that ensures this material quality is required, along with effective education, communication, and enforcement is required. Contamination impacts system performance, product marketability and the achievement of circular economy goals such as nature regeneration and pollution reduction.

6.3.2.2 Transport efficiencies

Where transport distances are large (from collection to processing), minimising both volume and weight may help to improve the overall

financial viability of the processing solution. Wet materials are heavy with a consequential impact on transport costs.

Larger scale processing typically means lower cost per unit of material processed when all other factors are the same. This needs to be balanced with the cost of transporting feedstock to a larger processing site, or the overall capital costs involved in developing larger scale solutions.

Across Aotearoa there are examples of materials being transported significant distances to access lower processing costs or a preferred facility. Examples include Auckland Council transporting material to EcoGas Reporoa – utilising reverse logistics to manage transportation costs and impacts, centralised MRF for regional inputs e.g. Queenstown Lakes District Council consolidate materials in Wanaka for transportation to Queenstown for processing.

6.3.2.3 Technical complexity

More complex approaches, required for food material and similar putrescible materials present a number of challenges, particularly in the context of RDC's operations. Both the initial costs associated with the construction and the ongoing operational expenses are typically higher than more straightforward solutions. Consideration will also need to be given to procuring specialised equipment and technical expertise to operate and maintain equipment and ensure compliance with regulatory requirements.

6.3.2.4 Consenting and location

Each processing technology option (for example vermicomposting or in-vessel composting) needs to be considered within the context of the relevant rules and requirements of the applicable regional and district plan. A comprehensive analysis of consenting requirements will need to be undertaken upon final site selection.

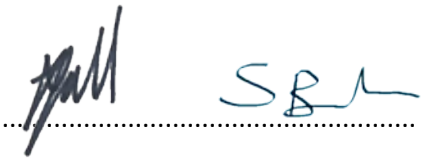
When the location of a new facility is being considered, a number of considerations will need to be addressed including: Area required for processing, existing location options available in/ just outside of the region, land characteristics – i.e. slope, nearby receptors, buffer distances and distance from collection areas and markets.

7 Applicability

This report has been prepared for the exclusive use of our client Rangitīkei District Council, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor Ltd
Environmental and Engineering Consultants

Report prepared by:



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Appendix A Part one stage one options analysis

A1 Option 1.1– Rubbish only

A1.1.1 Cost to user

Rubbish bags in Rangitīkei are currently available for $3.20/bag. Assuming a household sets out one bag per week (a low estimate), the annual cost for rubbish collections will be $166.40. Benchmarking from across Aotearoa indicates that council run services for rubbish collections can range from $85.00[14] to $187.00[15].

By having only rubbish collections available in the district, households are likely to direct the majority of materials into landfill, given this is the most convenient disposal avenue. Because of this, households are likely to pay for more materials at the rate for rubbish, where this could be disposed of via cheaper avenues (recycling or composting).

The cost to user has been evaluated as *good* for Option 1.1

A1.1.2 Diversion

Option 1.1.1 relies on the existing transfer station network to make diversion opportunities accessible. While the transfer station provides good coverage and capacity to divert recyclable and organic materials from landfill, realising this opportunity relies on households transporting materials on their own accord.

Diversion has been evaluated as *poor* for Option 1.1

A1.1.3 Wider environmental outcomes

Option 1.1.1 is likely to result in the continued disposal of organic materials to landfill, generating emissions. It is also likely that recyclable materials are being disposed of to landfill by households given that diversion opportunities are not readily available relative to other options. This limits circular economy outcomes and occupies valuable landfill capacity. Given there is only one material collected, fewer trucks may be required relative to providing recycling and organics services, reducing embodied emissions and transport emissions.

The wider environmental outcomes have been evaluated as *bad* for Option 1.1

A1.1.4 Statutory Obligations

Continuing with the status quo is unlikely to position RDC to meet the signalled diversion targets. Similarly, RDC is not positioned to provide recycling collections to households in urban areas of 1,000 people or more by 2027 or provide food scraps (or FOGO) collections to households in urban areas of 1,000 people or more by 2030. With rubbish collections available to households, there are adequate measures in place to protect public health, meeting RDC's obligations under the Health Act 1956. Moreover, if there were to be a ban on organic materials being disposed of to landfill, no diversion mechanism is in place to support this.

The statutory obligations have been evaluated as *poor* for Option 1.1

[14] Timaru District Council
[15] Auckland Council

A1.1.5 Equity

Households in urban centres have access to a rubbish collection. However, access to diversion opportunities is largely determined by the resources available to each household i.e. where a household has time, transport and the knowledge to access the transfer stations diversion opportunities are available.

Equity has been evaluated as *bad* for Option 1.1

A1.1.6 Flexibility

Given that there is no reliance on markets for materials, this option is unlikely to be impacted by changes to demand for materials outside of RDC's control. The option has limited ability to respond to shifts in population or household waste generation e.g. if population increases constrain landfill capacity materials cannot be diverted away from landfill at the kerbside. However, if access to disposal facilities is impacted by severe weather it is unsanitary to stockpile large volumes of rubbish. Whereas by providing a recycling and rubbish collection, clean recyclable materials can be safely stockpiled, reducing the total volume of mixed waste needing to be stored.

The flexibility for Option 1.1.1 has been evaluated as *poor.*

A2 Option 1.2 – Recycling & rubbish

A2.1.1 Cost to user

Households will pay for rubbish collections and a recycling collection. Providing a recycling collection will require new fleet and additional resourcing for the service provider, costs that may be passed on the service user. Where households are not currently recycling, there will be a new cost, however, this may be offset by requiring a decreased rubbish capacity i.e. recyclable materials that were being disposed of to landfill, and therefore paid for as waste, will be diverted from landfill with decreased disposal costs. Benchmarking from other councils across Aotearoa indicate that recycling collections range from $44.00[16] to $127.00[17] (contracted several years ago). Wanganui District Council have recently rolled out a recycling only collection for $143.00 providing a reasonable indicator of costs if a service were to be procured now..

The cost to user has been evaluated as *fine* for Option 1.2.

A2.1.2 Diversion

Option 1.2 provides a new avenue/new capacity for diversion from landfill. It is assumed that the status quo will continue, including the operation of transfer stations. Based on this approach, diversion opportunities are more accessible to households, and there is an avenue to easily divert recyclable material at a household level. The option may incentives households to recycle who were not already by removing barriers to recycle e.g. transport, knowledge of diversion options/services.

Diversion has been evaluated as *fine* for Option 1.2.

A2.1.3 Wider environmental outcomes

Option 1.2 is likely to result in the continued disposal of organic materials to landfill, generating emissions. However, on the basis that recyclable materials are diverted from landfill, this may improve outcomes relating to lifecycle emissions for recycled materials i.e. their lifecycle is extended

[16] Timaru District Council
[17] Auckland Council

through recycling vs being landfilled. The option will require a new service to be established, necessitating new fleet and additional vehicle movements.

The wider environmental outcomes have been evaluated as *poor* for Option 1.2.

A2.1.4 Statutory Obligations

Option 1.2 positions RDC to meet the requirement to provide recycling collections to households in urban areas of 1,000 people or more by 2027. However, without diverting organic materials from landfill it is unlikely that RDC will meet the signalled diversion targets. The community is also not positioned to respond on potential bans of organic materials to landfill This option puts RDC in a better position to protect public health (additional capacity is provided to store materials safely), and contribute positively towards environmental and social wellbeing under the Local Government Act 2002.

The statutory obligations have been evaluated as *fine* for Option 1.2.

A2.1.5 Equity

Households in urban centres have access to a rubbish and recycling collection. Access to additional diversion opportunities (organics) is largely determined by the resources available to each household i.e. where a household has time, transport and the knowledge to access the transfer stations or has the means to manage organic materials at a household level (home composting etc.)

Equity has been evaluated as *fine* for Option 1.2.

A2.1.6 Flexibility

The reliance on recycling markets bears some risk for flexibility e.g. the 2018 China National Sword. The option better provides an ability to respond to shifts in population or household waste generation e.g. if population increases constrain landfill capacity materials can be diverted away from landfill at the kerbside. The option also provides improved resilience to extreme weather. By providing a recycling and rubbish collection, clean recyclable materials can be safely stockpiled, reducing the total volume of mixed waste needing to be stored.

The flexibility for Option 1.1.1 has been evaluated as *fine.*

A3 Option 1.3 – Organics & rubbish

A3.1.1 Cost to user

Households will pay for rubbish collections and an organics collection. Providing an organics collection will require new fleet and additional resourcing for the service provider, costs that may be passed on the service user. Where households are not currently managing organic materials e.g. composting or using the transfer station network, there will be a new cost, however, this may be offset by requiring a decreased rubbish capacity i.e. organic materials that were being disposed of to landfill, and therefore paid for as waste, will be diverted from landfill at a lower disposal cost. Benchmarking from other councils across Aotearoa indicate that organic collections range from $72.90[18] to $190.00[19]

The cost to user has been evaluated as *fine* for Option 1.3.

[18] Tauranga City Council, Food only

[19] Selwyn District Council, food and garden combined.

A3.1.2 Diversion

Option 1.3 provides a new avenue/new capacity for diversion from landfill. It is assumed that the status quo will continue, including the operation of transfer stations. Based on this approach, diversion opportunities are more accessible to households, and there is an avenue to easily divert organic material at a household level. This is likely to create new diversion, as food scraps can be diverted where previously there was no collection available (kerbside or at transfer stations).

Diversion has been evaluated as *fine* for Option 1.3.

A3.1.3 Wider environmental outcomes

Option 1.3 provides an opportunity to divert organic materials from landfill, a key source of emissions generated by landfills. Some recyclable material may continue to be disposed of to landfill by households who do not have the means or motivation to utilise the transfer station network, limiting circular economy outcomes.

The wider environmental outcomes have been evaluated as *fine* for Option 1.3.

A3.1.4 Statutory Obligations

Option 1.2 positions RDC to meet the requirement to provide food scraps (or food and garden waste) collections to households in urban areas of 1,000 people or more by 2030. Without providing recycling collections alongside the organic materials collection, RDC may struggle to meet the signalled diversion targets. This option puts RDC in a better position to protect public health (additional capacity is provided to store materials safely), and contribute positively towards environmental and social wellbeing under the Local Government Act 2002.

The statutory obligations have been evaluated as *fine* for Option 1.3.

A3.1.5 Equity

Households in urban centres have access to a rubbish and organic materials collection, and can access recycling via the transfer station network. While accessing the transfer stations is still largely dependent on resources available to the household, this option is considered more equitable than providing recycling only. This is given that it is more likely that households could transport small volumes of recycling to the transfer station, than they could transport a trailer of green materials.

Equity has been evaluated as *fine* for Option 1.3.

A3.1.6 Flexibility

The reliance on processing infrastructure, and demand for processed materials bears some risk for flexibility e.g. if there is a surplus of material collected there may not be nearby processing capacity and the service provider may need to transport heavy and high volume materials far distances. The option better provides an ability to respond to shifts in population or household waste generation e.g. if population increases constrain landfill capacity, materials can be diverted away from landfill at the kerbside.

The flexibility for Option 1.3 has been evaluated as *poor.*

A4 Option 1.4 – Recycling, organics & rubbish

A4.1.1 Cost to user

Households will pay for rubbish collections and an organics and recycling collection. Providing recycling and organics will both be new services to the district, and each require bespoke vehicles i.e. a truck for recycling and a truck for organics will need to be purchased. The costs of new fleet and additional resourcing may be passed on to the service user. The collection services will be new costs seen by households, however, it is likely that they are already bearing some costs e.g. if households are using the transfer station they are paying some transport costs, if households are disposing of organics to landfill, they are already paying for a service, however this is hidden in the costs they pay for rubbish. Overall, the total costs borne by households are likely to decrease.

The total cost to households for a recycling and organics collection could range from $170.00 to $250.00 annually in addition to any rubbish disposal costs (estimated to be $520.00 - $564.00, refer to Table 2.1).

The cost to user has been evaluated as *bad* for Option 1.4.

A4.1.2 Diversion

Option 1.4 provides accessible diversion opportunities for common recyclables and organic materials. It is assumed that these will be available to urban households, where more rural households may be expected to continue using the transfer station network. Based on this approach, diversion opportunities are more accessible to households, and there is an avenue to easily divert organic and recyclable material at a household level. This is likely to create new diversion, as food scraps can be diverted where previously there was no collection available (kerbside or at transfer stations), and capture of recyclable materials is likely to improve.

Diversion has been evaluated as *fine* for Option 1.4.

A4.1.3 Wider environmental outcomes

Option 1.4 provides an opportunity to divert organic materials from landfill, a key source of emissions generated by landfills. Recyclable materials can also be diverted, improving circular economy outcomes and conserving valuable landfill capacity. There will be new collection vehicles required and additional vehicle movements, contributing to embodied and transport emissions.

The wider environmental outcomes have been evaluated as *fine* for Option 1.4.

A4.1.4 Statutory Obligations

Option 1.4 positions RDC to meet the requirement to provide food scraps (or food and garden waste) collections to households in urban areas of 1,000 people or more by 2030 and provide recycling collections to households in urban areas of 1,000 people or more by 2027. RDC is better positioned to meet the signalled diversion targets. Households may opt to continue to purchase significant capacity for rubbish, negatively impacting on the overall diversion achieved. This option puts RDC in a better position to protect public health (additional capacity is provided to store materials safely), and contribute positively towards environmental and social wellbeing under the Local Government Act 2002.

The statutory obligations have been evaluated as *fine* for Option 1.4.

A4.1.5 Equity

Households in urban centres have access to a rubbish, recycling and organic materials collection. It is likely that rural households will continue to utilise the transfer station network, however innovative drop-off points could be used to provide an equivalent level of service, e.g. food scraps drop-offs at schools, small rural recycling stations in more remote areas.

Equity has been evaluated as *good* for Option 1.4.

A4.1.6 Flexibility

The reliance on processing infrastructure, and demand for processed materials bears some risk for flexibility e.g. if there is a surplus of material collected there may not be nearby processing capacity and the service provider may need to transport heavy and high volume materials far distances. The option best provides an ability to respond to shifts in population or household waste generation e.g. if population increases constrain landfill capacity, materials can be diverted away from landfill at the kerbside.

The flexibility for Option 1.4 has been evaluated as *fine.*

A5 Option 1.5 – Full suite - Recycling, organics & rubbish

A5.1.1 Cost to user

Households will pay one charge for kerbside waste collections. Providing recycling and organics will both be new services to the district, and each require bespoke vehicles i.e. a truck for recycling and a truck for organics will need to be purchased. The costs of new fleet and additional resourcing may be passed on to the service user. The collection services will be new costs seen by households, however, it is likely that they are already bearing some costs e.g. if households are using the transfer station they are paying some transport costs, if households are disposing of organics to landfill, they are already paying for a service, however this is hidden in the costs they pay for rubbish. The integrated nature of the service may allow for cost savings to be shared e.g. if the market for recycling or organic materials returns a profit to the service provider, this could subsidise the cost of collections. Overall, the total costs borne by households are likely to decrease.

The total cost to households for a rubbish, recycling and organics collection could range from $240.00 to $360.00 annually.

The cost to user has been evaluated as *poor* for Option 1.5.

A5.1.2 Diversion

Option 1.5 provides accessible diversion opportunities for common recyclables and organic materials. It is assumed that these will be available to urban households, where more rural households may be expected to continue using the transfer station network. Based on this approach, diversion opportunities are more accessible to households, and there is an avenue to easily divert organic and recyclable material at a household level. With one service provider managing all materials there is an opportunity to constrain capacity for rubbish to incentivise increased diversion into other bins i.e. when rubbish capacity is less, households are more likely to need to use the recycling and organics bin to contain materials.

Diversion has been evaluated as *good* for Option 1.5.

A5.1.3 Wider environmental outcomes

Option 1.5 provides an opportunity to divert organic materials from landfill, a key source of emissions generated by landfills. Recyclable materials can also be diverted, improving circular

economy outcomes and conserving valuable landfill capacity. There will be new collection vehicles required and additional vehicle movements, contributing to embodied and transport emissions. There may be transport efficiencies established by coordinating the collections of materials that cannot be possible for other options.

The wider environmental outcomes have been evaluated as *good* for Option 1.5.

A5.1.4 Statutory Obligations

Option 1.5 best positions RDC to meet the requirement to provide food scraps (or food and garden waste) collections to households in urban areas of 1,000 people or more by 2030 and provide recycling collections to households in urban areas of 1,000 people or more by 2027. RDC is better positioned to meet the signalled diversion targets given the ability of the service provider to constrain rubbish capacity and drive diversion. However, households may opt to continue to purchase significant capacity for rubbish from the private sector, negatively impacting on the overall diversion achieved in the district. This option puts RDC in a better position to protect public health (additional capacity is provided to store materials safely) and contribute positively towards environmental and social wellbeing under the Local Government Act 2002.

The statutory obligations have been evaluated as *good* for Option 1.5.

A5.1.5 Equity

Households in urban centres have access to a rubbish, recycling and organic materials collection. It is likely that rural households will continue to utilise the transfer station network, however innovative drop-off points could be used to provide an equivalent level of service, e.g. food scraps drop-offs at schools, small rural recycling stations in more remote areas.

Equity has been evaluated as *good* for Option 1.5.

A5.1.6 Flexibility

The reliance on processing infrastructure, and demand for processed materials bears some risk for flexibility e.g. if there is a surplus of material collected there may not be nearby processing capacity and the service provider may need to transport heavy and high volume materials far distances. The option best provides an ability to respond to shifts in population or household waste generation e.g. if population increases constrain landfill capacity, materials can be diverted away from landfill at the kerbside.

The flexibility for Option 1.4 has been evaluated as *fine.*

Appendix B Part one stage two - Options analysis

B1 Option 2.1 – No Council Involvement (status quo)

B1.1.1 Impact on rates

Option 2.1 will have no impact on rates charged to households given that RDC is not the provider of kerbside waste, recycling or organic material collections.

The impact on rates has been evaluated as *good* for Option 2.1.

B1.1.2 Cost to user

Option 2.1 does not offer cost efficiencies to the user of kerbside collection services. Under the status quo, households are charged a rate per SUIP of $160.00 to access RDC transfer stations, with an additional cost per kerbside collection paid to the private sector (approx. $520.00 - $564.00 annually). Hidden costs including transportation to the transfer stations, and time foregone to access these services are also included in the cost to user. Noting that the private sector has acknowledged it is relatively uneconomical to service the district there is a risk that a private sector provider may withdraw from the region, limiting competition and allowing for significant pricing power i.e. households pay an inflated price.

The cost to user has been evaluated as *bad* for Option 2.1.

B1.1.3 Wider environmental outcomes

Under the status quo, emissions are produced via transporting materials to the transfer station network by individuals, as well as heavy vehicle movements to transport materials from the transfer stations to end markets. Emissions from private sector vehicle movements are unknown. Limited opportunities to divert organics from landfill are a consideration, as well as disposal of other recoverable materials in landfill. Noting that the status quo does not provide a service to all households, there may be an impact for ongoing illegal dumping, giving rise to pollution issues for public spaces and water ways.

Wider environmental outcomes have been evaluated as *poor* for Option 2.1.

B1.1.4 Statutory Obligations

Option 2.1 does not position RDC to deliver a recycling service and kerbside organics collection. Given that RDC cannot influence the available services, it is unlikely that RDC will meet the diversion requirements. Option 2.1 also risks RDC not meeting their obligations under the WMA, LGA, and WMMP.

The statutory obligations for Option 2.1 have been evaluated as *poor.*

B1.1.5 Equity

Private collectors are not obligated to provide kerbside collection for all geographic areas in Option 2.1, compromising equity. Specifically, urban areas are prioritised over rural. People living in urbanised areas can access some private collection services, while the rural demographic relies on transporting materials to transfer stations. This increases inequity across the district, specifically in rural areas. Equity has been evaluated as *poor* for Option 2.1.

B1.1.6 Flexibility

Given RDC cannot influence the collection service, Option 2.1 does not position RDC to:

- Provide kerbside collections by the 2027 or 2030 timeline.
- Achieve the signalled diversion targets.
- Fulfil their requirements under the LGA, WMA and Health Act.

By not meeting the signalled requirements, RDC risks their access to the increasing waste levy funds. However, if signalled direction changes, and RDC are not subject to diversion targets and the kerbside requirements, this option means that RDC are not tied to a collection contract. Flexibility for Option 2.1 has been evaluated as *fine*.

B2 Option 2.2 – Regulated by Council

B2.1.1 Impact on rates

Option 2.2 will have no impact on rates given that the RDC is not the provider of the service. It is assumed that the solid waste disposal charge will therefore not be impacted by this option. The initial cost to establish a bylaw is considered to be manageable noting the ability to draw on standard bylaws across Aotearoa. The initial implementation and ongoing monitoring enforcement is also manageable for RDC, both requiring less than 1 FTE.

The impact on rates has been evaluated as *good* for Option 2.2.

B2.1.2 Cost to user

In Option 2.2, households will continue to pay $160 (charged as a rate per SUIP) to access RDC transfer stations. In this option it is assumed that the private sector will be required to service households in urban areas with a recycling and organic materials collection service. Therefore, there may be an additional/increased cost from the status quo. However, this may be offset when assessing value for money i.e. the additional charge provides additional services, and there will be a reduced need to travel to the transfer stations, reducing transportation costs and travel time.

The cost to user has been evaluated as *poor* for Option 2.2.

B2.1.3 Wider environmental outcomes

New vehicles will be required to separate waste into recycling, rubbish, and organic material. This will result in increased emissions relative to the status quo. Private collectors will need to either:

a Modify existing fleet to collect and contain recyclable and organic materials (embodied emissions).

b Provide additional vehicles to collect and contain recyclable and organic materials (embodied emissions and increased travel emissions).

However, by providing increased opportunities for diversion, emissions generated from materials disposed of to landfill will be reduced. The wider environmental outcomes have been evaluated as *fine* for Option 2.2.

B2.1.4 Statutory Obligations

At a minimum, Option 2.2 will require the separation of waste into rubbish, recycling and organic material for collection under the bylaw. This positions RDC to provide for kerbside collections as set out by MfE. Without additional controls, RDC will have limited influence to achieve the diversion targets, but are better positioned to work towards the targets than under the status quo.

The statutory obligations for Option 2.2 have been evaluated as *fine.*

B2.1.5 Equity

Based on a bylaw only providing controls to require the separation of waste into rubbish, recycling and organic material for collection, it is unlikely that Option 2.2 will provide equitable outcomes. This is given that private collectors are not obligated to provide kerbside collection for all geographic areas, compromising equity. People living in urbanised areas will have access to all kerbside collection services, whereas rural communities continue to rely on transporting materials to transfer stations.

Equity has been evaluated as *fine* for Option 2.2.

B2.1.6 Flexibility

To effectively implement the bylaw, RDC will need to provide ongoing resourcing for communications and engagement, and enforcement. Establishing the bylaw provides RDC with a base to implement further controls and regulations, for example, a licensing regime, providing flexibility into the future. RDC could utilise different tools e.g. an operational control when establishing the bylaw, enabling some improved flexibility. While RDC is not tied to a collection contract, RDC are committed to upholding the bylaw and would need to reengage the review process to update or change the bylaw.

Flexibility has been evaluated as *poor* for Option 2.2.

B3 Option 2.3 – Outsourced to Contractor

B3.1.1 Impact on rates

Under Option 2.3, there is a new rate for waste collection in addition to the existing solid waste disposal charge. Based on benchmarking against other councils this is likely to be in order of $140.00-$400.00 representing a potential 150% increase to the solid waste charge. There may be an opportunity for RDC to subsidise collection services using waste levy funding, offering a discount that is not available to the private sector.

The impact on rates has been evaluated as *poor* for Option 2.3.

B3.1.2 Cost to user

Households will continue to pay $160.00 (rate per SUIP) to access RDC transfer stations, in addition to a new/increased rate. This option would increase the cost to users, either there will be a new charge for recycling/organic materials collections on top of existing rubbish collection costs. Alternatively, the current cost for rubbish collections $520.00-$564.00 will be replaced by the cost for a full suite service 9rubbish, recycling and organics).

The cost to user has been evaluated as *fine* for Option 2.3.

B3.1.3 Wider environmental outcomes

Option 1.3 is likely to require new fleet when engaging a contractor to deliver the kerbside collection. Therefore, embodied emissions will be high. The private sector may also still provide collection services, which could result in duplications of heavy vehicle movements, increasing total emissions. There will be a considerable reduction in biogenic methane emissions by diverting organic materials from landfill. The wider environmental outcomes have been evaluated as *good* for Option 2.3.

B3.1.4 Statutory Obligations

RDC will be entered into a contract with a provider and may have control/ influence over the contract administration, enabling RDC to negotiate terms that position them to meet signalled requirements. For example, RDC may include a clause relating to reporting, enabling officers to meet reporting requirements set by MfE. RDC may also set performance targets for the contractors including number of recycling and organics bins serviced, improving the likelihood of achieving the signalled diversion targets. By actively providing a service to contain materials, RDC are better positioned to meet their obligations under the WMA, LGA, and WMMP.

RDC may also consider implementing a bylaw in addition to the contract to ensure there is best practice for collection of waste throughout the district.

The statutory obligations have been evaluated as *good* for Option 2.3.

B3.1.5 Equity

For this option it is assumed that all households in urban areas will be provided with a recycling and organic materials collection service. Households outside of urban centres have been assumed to continue to access an equivalent service/diversion opportunities via the transfer station network. However, RDC may be more inclined to service settlements between urban centres.

Diversion has been evaluated as *good* for Option 2.3.

B3.1.6 Flexibility

Engaging a contractor for kerbside collection services will require considerable resourcing to plan, budget for, and approve. Noting current market conditions and demand for equipment, planning for mobilisation is likely to take upwards of 12-months from Council approval to roll out. Given this, RDC's decision to engage a contractor will generate a considerable forward workload for officers, with additional resourcing required for the contract roll-out and ongoing servicing. Acknowledging this, it is considered unlikely that RDC would step away from a recently established contract for service, even if signalled government direction changes.

Flexibility has been evaluated as *fine* for Option 2.3.

B4 Option 2.4 – Operated by Council

B4.1.1 Impact on rates

Option 2.4 will see a new rate for waste collection in addition to the existing solid waste disposal charge. Based on benchmarking against other councils this is likely to be in order of $140.00->$400.00 representing a potential 150% increase to the solid waste charge paid to RDC by households. There may be an opportunity for RDC to subsidise collection services using waste levy funding, offering a discount that is not available to the private sector. Owning fleet and employing staff means that RDC is unable to share risks including cost fluctuations with the contractor, and therefore, changes in the market may need to be reflected in the rate charged to households. There may be potential to subsidise collections using a portion of levy funding.

The impact on rates has been evaluated as *poor* for Option 2.4.

B4.1.2 Cost to user

Households will continue to pay $160.00 (charged as a rate per SUIP) to access RDC transfer stations, in addition to a new/increased rate. Households diverting organic material via composting or similar, or who utilise the transfer station network will experience a large cost increase relative to the

improved level of service they receive. The use of the kerbside collection system may reduce the need for drop offs to the transfer stations, decreasing travel time and costs. Relative to using a contractor, cost fluctuations may have a greater impact on the cost to households.

The cost to user has been evaluated as *poor* for Option 2.4.

B4.1.3 Wider environmental outcomes

Option 2.4 is likely to require new fleet and equipment to deliver the kerbside collection. Therefore, embodied emissions will be high. The private sector may also still provide collection services, which could result in duplications of heavy vehicle movements, increasing total emissions. There will be a considerable reduction in biogenic methane emissions by diverting organic materials from landfill.

The wider environmental outcomes have been evaluated as *good* for Option 2.4.

B4.1.4 Statutory Obligations

Under Option 2.4, RDC will own and operate equipment and control delivery of the service. RDC can more readily implement changes to the service and behaviour change interventions to increase participation, set out rates and reduce contamination when compared to working with a contractor. This may positively impact RDC's ability to achieve the signalled diversion targets. By controlling the delivery of the service RDC have the greatest agency to meet their obligations under the WMA, LGA, and WMMP. However, acknowledging the resourcing constraints that exist for a small council like RDC, considerable planning and resourcing for the implementation and management of the kerbside service will be required to realise these outcomes.

The statutory obligations have been evaluated as *good* for Option 2.4.

B4.1.5 Equity

For Option 2.4 it is assumed that all households in urban areas will be provided with a recycling and organic materials collection service. Households outside of urban centres have been assumed to continue to access an equivalent service/diversion opportunities via the transfer station network. However, RDC may be more inclined to service settlements between urban areas.

Equity has been evaluated as *good* for Option 2.4.

B4.1.6 Flexibility

Under Option 2.4, considerable resourcing by RDC will need to be dedicated to the delivery of the service. Noting that RDC will own the plant and employ staff required to deliver the service, there is some risk that if RDC moves forward with the delivery of the service and signalled policy direction changes it will be challenging to sell equipment and disestablish roles. RDC will also need to factor in maintenance, depreciation and resourcing into long term planning, which may limit RDC's capacity to deliver other work programmes or adapt to other emerging policy direction.

The flexibility for Option 2.4 has been evaluated as *good.*

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