MorrisonLow

Te Kaunihera-ā-Rohe o Ruapehu

Ruapehu District Council

Waste Assessment

December 2023

Document status

Job #	Version	Written	Reviewed	Approved	Report Date
2850	Draft, v1	Darren Tiddy	Alice Grace	Alice Grace	11 August 2023
2850	Final issued	Darren Tiddy	Alice Grace	Alice Grace	17 August 2023
2850	Attachments added	Darren Tiddy	Alice Grace	Alice Grace	6 December 2023

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1 Introduction

Territorial authorities are legally required to conduct a Waste Assessment and consider it in the review and preparation of their Waste Management and Minimisation Plans (WMMP). The Waste Minimisation Act 2008 (WMA) (s44) also requires that a Waste Assessment be notified with the draft WMMP for public consultation. This process is required every six years. This Waste Assessment is prepared for Ruapehu District Council (RDC).

The recently announced New Zealand Waste Strategy (NZWS) provides a clear national strategy and targets for territorial authorities to work towards (MfE, 2023a). This Waste Assessment provides a planning foundation for the updated WMMP draft prior to public consultation. RDC previously published a WMMP in November 2017 that will be updated based on this Waste Assessment, incorporate the NZWS and provide a clear waste management and minimisation plan going forward. The finalised WMMP will inform the development of the next Long Term Plan (LTP). This Waste Assessment was prepared as prescribed in section 51 of the WMA, including details of:

- Existing waste services and facilities provided in Ruapehu District Council,
- Waste quantities, composition, and flows,
- Identified waste issues,
- Forecast future demand,
- Councils' vision, goals, objectives and targets for waste management and minimisation,
- Assessment of options to address the identified waste issues (a statement of proposals).

1.1 The Ruapehu District

The Ruapehu District is in the Manawatū-Whanganui Region. It shares borders with Taupo, Waitomo Stratford Whanganui and Rangitikei District Councils. It falls within Horizons Regional Council's regional boundary. Local iwi and hapu have input into local decision making through the Māori Wards. It has an estimated residential population of 12,948 as of September 2021.

The district has three small urban areas; Taumarunui, Ohakune and Raetihi which represents approximately 57% of the population. Taumarunui and Raetihi have larger usually resident populations, whereas Ohakune and National Park have a larger proportion of holiday homes. This has an influence on waste volumes during peak visitor periods.

The district also has six rural settlements classified by StatsNZ, these are Ōhura, National Park, Raurimu, Ōwhango, Rangataua and Waiōuru. Waiōuru is adjacent to the New Zealand Defence Force (NZDF) base. The Karioi Pulpmill is centred between Waiōuru and Ohakune. Rural households account for around 43% of the population.

1.2 Data availability and accuracy

The tonnage information in this document was prepared using data gathered from Ruapehu District Council records, the recent Solid Waste Analysis Protocol (SWAP) reports and Council's 2018-2028 WMMP.

The data presented in this document does not represent all the waste and diverted materials generated in the district. The amount of waste and diverted material can only be determined from the data managed by the Council and its contracted waste services providers. Only limited data was available from the private and

commercial sector.

It is acknowledged a Waste Assessment is only a snapshot in time of the data collected for the purposes of future waste planning and preparation of the WMMP. Every effort has been made to provide a complete and accurate assessment. In some cases, data has been estimated or there are data gaps such as the volume and composition of privately collected rubbish. Details regarding any limiting factors in preparing the Waste Assessment that are deemed to have materially impacted on the completeness or accuracy of the data, forecasts, estimates or options assessment have been noted where appropriate.

The information contained in this Waste Assessment was considered appropriate when giving regard to:

- The significance of the information,
- The costs of, and difficulty in, obtaining the information,
- The extent of Councils resources,
- The possibility Councils may be directed under the Health Act 1956 to provide the services referred to in that Act.

1.3 Acronyms

Key Term/Acronym	Definition
AIP	Action and Investment Plan
CERF	Climate Emergency Response Fund
CRS	Container return scheme
ETS	Emissions Trading Scheme
LGA	Local Government Act
LTP	Long Term Plan
MfE	The Ministry for the Environment
MRF	Material Recovery Facility
NES	National Environmental Standards
NRC	Northland Regional Council
NZWS	New Zealand Waste Strategy 2023
PA	Per Annum
RDC	Ruapehu District Council
RMA	Resource Management Act 1991
RRP/RRC	Resource Recovery Park/Centre
RTS	Refuse Transfer Station
SWAP	Solid Waste Analysis Protocol (SWAP). Ministry for the Environment-led baseline programme to provide solid waste composition information

Key Term/Acronym	Definition
TA	Territorial Authority as defined in the Local Government Act 2002 as a city or district council
WA	Waste Assessment as defined by Section 51 of the Waste Minimisation Act 2008.
WMA	Waste Minimisation Act 2008
WMF	Waste Minimisation Fund
WMMP	Waste Management and Minimisation Plan as defined in Section 43 of the Waste Minimisation Act 2008

2 Legislative and Strategic Context

This section contains a short summary of the legislative and strategic context within which RDC will develop their Waste Assessment and WMMP.

2.1 Key legislation

The legal framework for waste management and minimisation in New Zealand is found in the combination of several Acts of Parliament. These Acts provide the legislative imperative and tools to support progress toward the high-level direction outlined in the NZWS. Therefore, careful attention is given to these in developing the Waste Assessment. The Acts that drive waste management and minimisation planning are:

- Waste Minimisation Act 2008.
- Climate Change Response Act 2002.
- Climate Change Response (Emissions Trading Reform) Amendment Act 2020.
- The Climate Change Response (Zero Carbon) Amendment Act 2019.
- Local Government Act 2002.
- Resource Management Act 1991 (RMA, as well as District and Regional Plans and designations and consents).
- Hazardous Substances and New Organisms Act 1996.
- Health Act 1956.
- Litter Act 1979.
- Health and Safety at Work Act 2015.

It is noted that the RMA, WMA, and Litter Act 1979 are currently being revised or replaced with new legislation. Appendix B provides links to the primary legislation for further information.

2.2 New Zealand Waste Strategy

Waste management and minimisation in New Zealand is underpinned by the Government's 2023 NZWS. The NZWS sets out the long-term policy priorities for waste management and minimisation and has a vision for 2050:

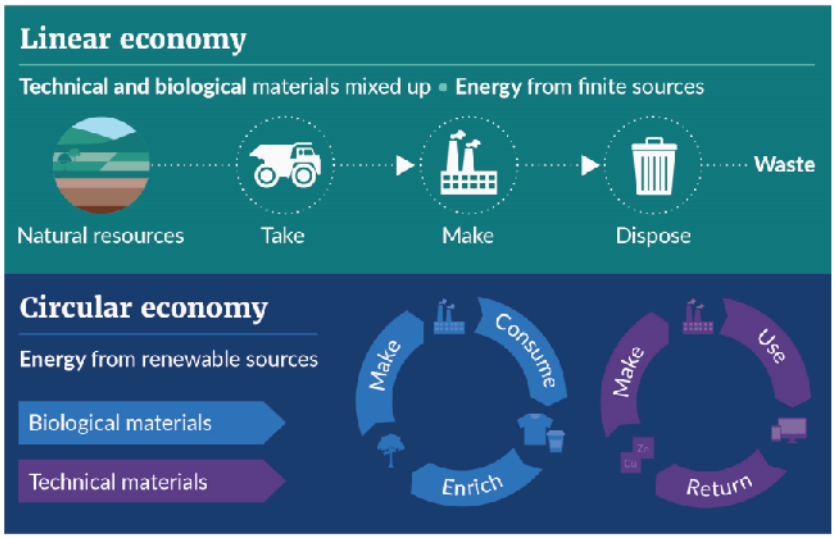
> By 2050, New Zealand is a low-emissions, low-waste circular economy.
> We cherish our inseparable connection with the natural environment and look after the planet's finite resources with care and responsibility.

When developing updated targets and WMMPs, Councils must take into account the targets set in the NZWS. These targets encompass both kerbside waste, which focuses on standardised recycling, and the broader waste streams. Together, these NZWS targets play a vital role in guiding local councils' waste management initiatives. They highlight the importance of waste reduction, recycling and diversion across both kerbside waste and the broader waste streams. Achieving these targets will contribute to a more sustainable and environmentally conscious waste management system that benefits both present and future generations.

2.2.1 Linear and circular economies

Taking natural resources, making them into something, using and then disposing of it – is referred to as a 'linear economy'. In contrast, a 'circular economy' is a system where extracted materials are used and reused for as long as possible. For technical or synthetic materials, the ideal scenario is that they are reused forever. Biological (organic) materials will eventually be returned to the soil to enrich it (see Figure 1).

Figure 1 Characteristics of linear and circular economies



The Ellen MacArthur Foundation has led international thinking on the circular economy since it was created in 2010. This is the Foundation's description of the circular economy:

> *The circular economy is based on three principles, driven by design:*
>
> - *Eliminate waste and pollution,*
> - *Circulate produce and materials (at their highest value),*
> - *Regenerate nature.*

It is underpinned by a transition to renewable energy and materials. A circular economy decouples economic activity from the consumption of finite resources. It is a resilient system that is good for business, people and the environment (Ellen MacArthur Foundation, n.d.)

Committing Aotearoa New Zealand to a circular economy means we stay in step with many of our major trading partners. We have already committed to developing a full circular economy and bioeconomy strategy in the emissions reduction plan. The NZWS is an essential first step. It builds on internationally recognised circular economy principles and adapts them for our context.

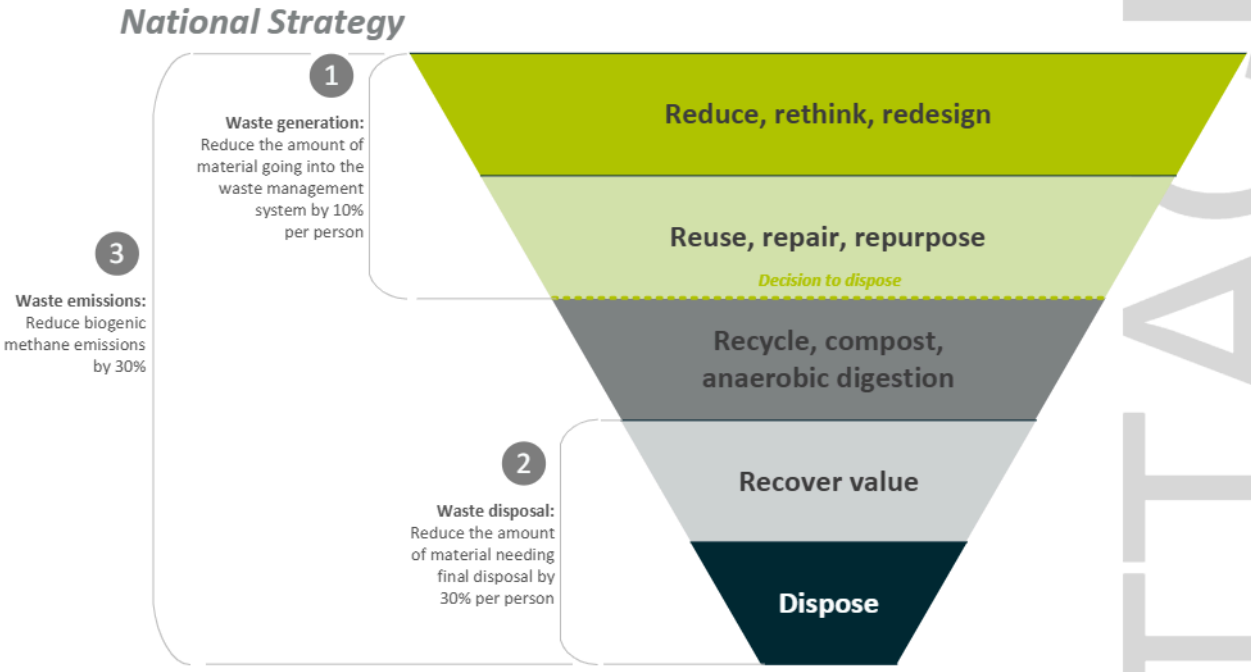
2.2.2 National targets

The NZWS sets three national targets to be achieved by 2030:

- Waste generation: reduce the amount of material entering the waste management system, by 10 per cent per person.
- Waste disposal: reduce the amount of material that needs final disposal, by 30 per cent per person.
- Waste emissions: reduce the biogenic methane emissions from waste, by at least 30 per cent.

The three goals above are illustrated in Figure 2 in relation to the waste hierarchy.

Figure 2 NZWS waste hierarchy with national targets



2.2.3 National goals

The NZWS has the following eight goals:

1. **Systems:**
   The Strategic planning, regulatory, investment and engagement systems are in place and operating to drive and support change.
2. **Infrastructure:**
   We have a comprehensive national network of facilities supporting the collection and circular management of products and materials.
3. **Responsibility and accountability:**
   We all take responsibility for how we produce, manage and dispose of things, and are accountable for our actions and their consequences.
4. **Using less:**
   We use fewer products and materials, and using them for longer, by making them more durable, and repairing, reusing, sharing and repurposing them.
5. **Resource recovery systems:**
   Resource recovery systems are operating effectively for core materials and across all regions.
6. **Recovering value:**
   We look for ways to recover any remaining value from residual waste, sustainably and without increasing emissions, before final disposal.
7. **Emissions:**
   Emissions from waste are reducing in line with our domestic and international commitments.
8. **Contaminated land:**
   Contaminated land is sustainably managed and remediated, to reduce waste and emissions and enhance the environment.

2.2.4 Local government actions

The NZWS includes the following actions for local government:

- Get involved in implementing the NZWS and the process to develop an action and investment plan (AIP). Use the NZWS as the starting point for their next WMMP.
- Look for opportunities to work with other councils on new, or expanded, facilities and services that will contribute to a national network for circular management of resources.
- Support local community groups and non-governmental organisations with their initiatives to reduce waste.
- Link with national behaviour change programmes to support and expand the reach of your local activity.
- Make sure that planning and consenting processes take account of the need for waste management infrastructure and services.
- Plan and resource the work needed to identify and manage vulnerable landfills and other contaminated sites.

Note that councils will need to align their next WMMPs with the NZWS. Once the AIP is developed, they will also need to align to it. As such, the AIP will inform later WMMP reviews e.g. 2029 for Ruapehu District Council. In the meantime, the government's early investment signals through the Waste Minimisation Fund (WMF) take priority.

2.3 National initiatives and regional collaboration

Many waste minimisation initiatives are more suitably implemented at a national level. Work here is needed with the national bodies, such as WasteMINZ and the Ministry for the Environment (MfE), to encourage ongoing support for and the implementation of national waste minimisation activities through a coordinated advocacy approach to government and industry. National initiatives include:

- Development of the government's first AIP 2024-2028.
- Government investment in diversion infrastructure via the Waste Minimisation Fund (WMF) and Climate Emergency Response Fund (CERF). The current WMF funding round focuses on organic waste diversion e.g. infrastructure for food waste collection for residents and businesses, processing facilities for food waste and other organics, and the sorting of construction and demolition (C&D) waste with a focus on timber.
- Standardisation of the kerbside collection system including:
  - Standardised list of materials collected.
  - Introduction of kerbside recycling collection in urban areas by 2027.
  - Introduction of kerbside organics collection by 2030.
  - Meeting minimum targets; including diversion of 50% of kerbside waste by 2030.
- Establishment of a Container Return Scheme (CRS) for beverage containers. This has been deferred but may be re-introduced following the 2023 national elections.
- Banning of specific grades of plastics for packaging and some single-use plastics.
- Introduction of priority product stewardship schemes e.g. tyres, agrichemicals, e-waste and plastic packaging.
- Ongoing implementation of increases to the Waste Disposal Levy and Emissions Trading Scheme costs, as well as expansion of the Levy application to Class 2-5 Landfills (e.g. construction and demolition, managed or controlled fill and cleanfill disposal facilities).
- Introduction of the mandatory reporting (transfer stations, collections) using an agreed National Waste Data Framework.

Regional collaboration exists in the form of the Central North Island Waste Group. This semi-formal working group has been established to share examples of good practice, share resources and seek opportunities for joint working arrangements.

2.4 Ruapehu District Council Strategic Plans and Regulations

In addition to national legislation, strategies, plans and initiatives, the district has local strategies, plans and regulations that govern waste management and minimisation. This includes the District's previous WMMP developed for the period 2018-2028 and its previous Long Term Plan (LTP) developed for the period 2021-2031. The district also manages solid waste assets in the Community, Property, Recreation and Facilities Asset Management Plan 2021-2031 (AMP).

Council is about to prepare its 2024-2034 LTP, which will be informed by the WMMP and an update to the AMP. Extracts from existing documents are provided below as an indication of the existing strategic direction on waste.

2.4.1 Long Term Plan

RDC's vision within its Long Term Plan (LTP) 2021-2031 is:

'Drive and support development of safe, prosperous rural communities that are able to thrive and capitalise on our agriculture, business and tourism sectors while sustaining our beautiful environment.'

The plan includes Council focus to 'Improve the well-being and quality of life for our communities by':

- Creating and retaining jobs,
- Growing incomes and opportunities,
- Increasing the ratepayer base,
- Providing sustainable infrastructure,
- Providing value for money in all we do,
- Ensuring the people who benefit from council spending contribute their fair share of the costs,
- Working with government and others to gain funding for key projects so as to reduce the financial burden on Ruapehu ratepayers,
- Creating collaborative partnerships with tangata whenua.

Council proposes an updated well-being framework which is being developed for the next LTP cycle. The values which support the well-being outcomes are listed below:

- Kaitiakitanga | Guardianship
- Environmental Stewardship
- Manaakitanga | Care for others
- Whanaungatanga | Upholding relationships
- Rangatiratanga | Enabling others
- Accountability

Further to the well-being framework, Council has also developed a list of roles they play in bringing about these benefits. Council promotes wellbeing in our district by serving in these roles:

- As partner – We work together to get the job done.
- Advocate and Influencer – We speak up for the things that matter.
- Service Provider – We provide services that make community life better.
- Connector – We put the right people in touch with each other.
- Funder – We make local money go further.
- Regulator – We keep our communities safe.

These roles above link with waste services, facilities, and the role of Council in bringing about change and will be further incorporated into the next WMMP.

2.4.2 Regulatory functions

In addition to managing waste facility assets and providing services, RDC also holds other regulatory

responsibilities and powers in relation to waste, including:

- Management of litter and combating illegal dumping, governed by the Litter Act 1979.
- Enforcement of trade waste requirements.
- Implementation of nuisance-related bylaws.

Whilst targeted education programmes are typically more effective in influencing residents and businesses to embrace desired behaviours, it is acknowledged that enforcement actions represent a requisite contingency when alternative strategies have been fully employed.

2.4.3 Solid Waste Bylaw

The WMA requires councils to review their waste bylaws at least every ten years. Waste-related bylaws must not be inconsistent with a council's WMMP, which is reviewed every six years. With a review of RDC's WMMP to be completed in 2023, Council will need to ensure that the existing waste bylaws remain fit for purpose. The Council's waste bylaws are included within the Ruapehu Bylaw 2022. A separate solid waste bylaw was proposed, but the adoption of this has been deferred until the 2024-2030 WMMP is published. Changes to the WMA may also require waste bylaws to be updated once the new legislation is passed, which MfE have indicated could be by 2025 (MfE, 2023). It is therefore proposed that a waste bylaw is not progressed further until after the new legislation has been introduced.

3 Existing Facilities and Services

This section includes a summary of information regarding waste management and minimisation services and facilities provided in the Ruapehu District. This includes Council services and private and commercial services, where known and applicable. An illustration of waste material sources, collection routes and transfer between council facilities, end markets and residual disposal is provided in Figure 3.

3.1 Council provided facilities and services

Council provides residential kerbside collections for refuse, recycling and food waste. The refuse collection service is user-pays through the sale of pink rubbish bags. These bags are collected at the kerbside from approximately 3,970 households in the three main urban centres, while rural residents can drop-off refuse bags at one of the six transfer stations. Residual waste is disposed of at Hampton Downs landfill in North Waikato.

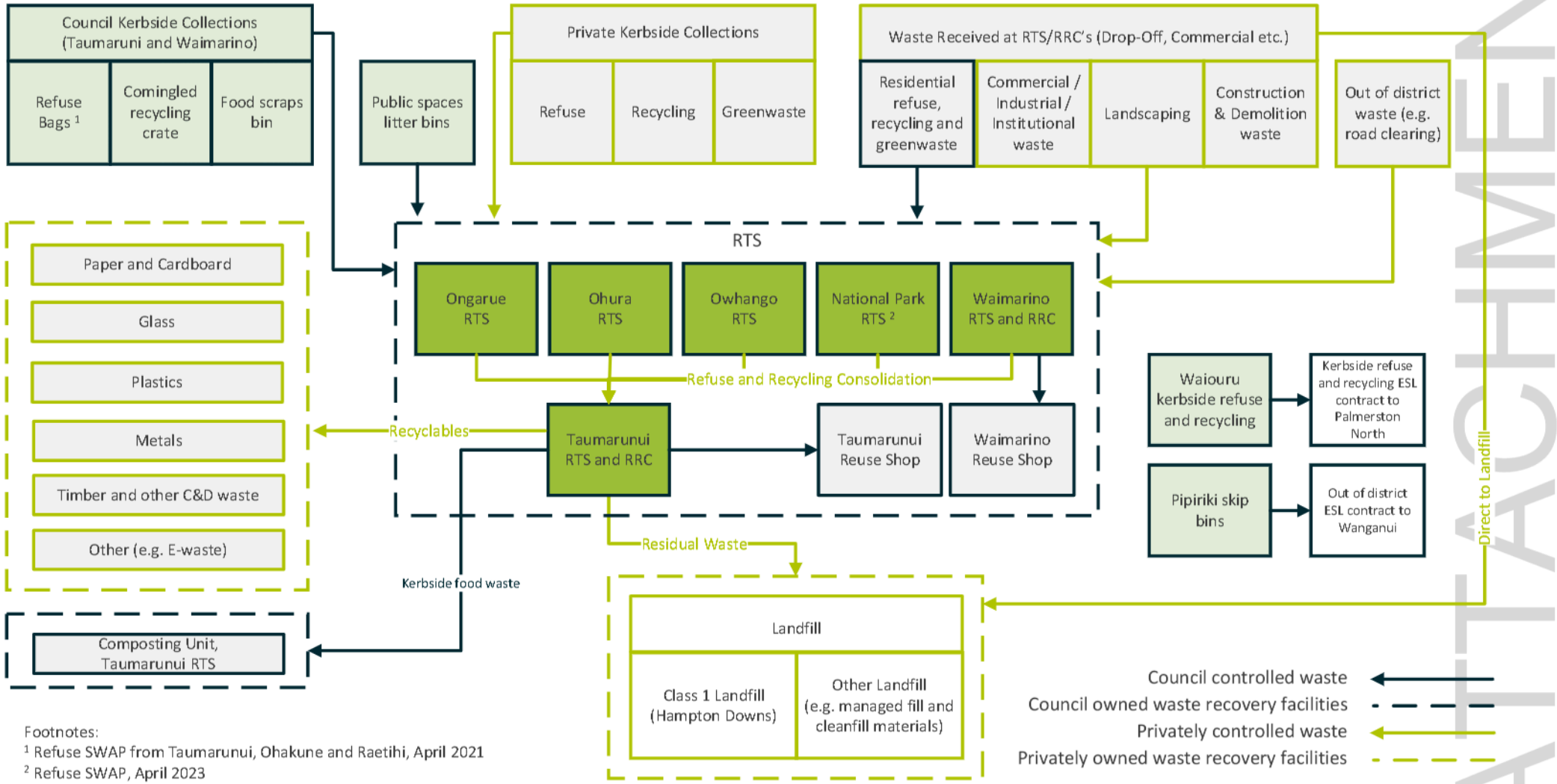
Ruapehu has two large resource recovery centres, one in Taumarunui and the other in Ohakune (Waimarino). Four smaller transfers station are provided at Ongarue, National Park, Ōhura, and Ōwhango which are open half day, four days a week. Waste streams from the smaller transfer stations are transported to Taumarunui for consolidation prior to transport out of the district for resource recovery or final disposal.

Organics from kerbside food waste collections in Taumarunui, Waimarino and Waiōuru are processed at the composting facility at Taumarunui, with around 110 - 140 tonnes of compost generated per year.

Kerbside collected recyclables, and recyclables and glass received at the RRC's, are sent to end-markets by the Council's waste contractors. Waimarino RRC is operated under contract by Ethical Waste Ltd, while the kerbside collections, Taumarunui RRC, four small transfer stations, and the composting unit are contracted to EnviroNZ.

A summary of Council provided facilities and services is provided in Table 1.

Figure 3 Source and destination of waste and diverted materials in Ruapehu District Council



Footnotes:
[1] Refuse SWAP from Taumarunui, Ohakune and Raetihi, April 2021
[2] Refuse SWAP, April 2023

Table 1 Council provided waste facilities and services

Service Type	Ruapehu District Council
Kerbside Collection	• Weekly kerbside collections in Taumarunui, Ohakune, Raetihi and Kakahi. This includes refuse (35L and 60L pink bags), comingled recycling (45L blue crate) and food waste (23L green bin). • Waiōuru has kerbside collections for recycling and food waste, which is consolidated at Waimarino RRC and transport to Taumarunui RRC. Refuse collections from Waiōuru are taken out of the District. • Kerbside organics collections implemented in October 2020 together with the communications (see Figure 4).
Transfer stations (Locations in Figure 5)	• Council operates six transfer stations. Four are small drop-off locations for refuse and recycling; located at Ongarue, Ōhura, National Park and Ōwhango. • Pink refuse bags purchased; no fee is charged for disposal at an RTS. Non-council bags are charged fees for disposal. • Most recyclable material is free to drop-off at one of the six RTS facilities, including plastics 1, 2 and 5, aluminium, scrap steel and wire, and most whiteware items (see Figure 6). • Consolidation takes place at the larger central facilities, the Taumarunui and Waimarino RRC's. Both facilities also operate Reuse Shops (see Figure 7) • Household quantities of hazardous waste including oils, fuels and batteries are free to dispose of at the RRC's. • Disposal fees are charged for other hazardous liquids (e.g. paints, herbicides and pesticides), fluorescent tubes, gas cylinders, tyres, some e-waste (e.g. TV's, printers and photocopiers), concrete rubble and other construction and demolition waste. • Transfer of refuse, recyclable and organic waste from smaller RTS' and Waimarino RRC are all consolidated at Taumarunui RRC by EnviroNZ. • EnviroNZ is contracted for haulage and disposal of waste to landfill, recyclables to further processing or end markets and to operate Taumarunui RTS and composting unit. • The composting unit receives food waste collections from Taumarunui, Waimarino (Ohakune and Raetihi), Waiōuru and Kakahi together with organic waste received at the Taumarunui RTS. • Contractor sets gate fees (following consultation with and approved by Council). Council retains revenue from gate fees and sale of recyclables. Some RRC revenue is retained by the operators. • Waste collection in Pipiriki is provided by Whanganui District Council.
RRC's and Reuse Shops (see Figure 6)	• Taumarunui RRC and composting unit operated by EnviroNZ under contract. The Reuse Shop is operated by Council staff. • Waimarino RRC and Reuse Shop operated by Ethical Waste Ltd under contract.
Litter bin services and Illegal dumping	• This includes emptying litter bins (including standard litter bins, Big Belly bins and recycling bins) and managing illegal dumping and abandoned vehicles. • Litterbins are provided by council. • Litter bin services are currently contracted to Recreational Services.
Class 1 landfills	• There are no operational class 1 landfills within the District. • Most residual waste is transported to Hampton Downs Landfill, with the remainder going to Bonny Glen Landfill.
Class 2-5 landfills	• A cleanfill (Class 5) is operating at the closed Taumarunui Landfill site. • There are no other known operational class 2-5 landfills in the District.
Closed landfill management	• Seven closed landfills are managed by Council. Taumarunui Class 1 Landfill closed in 2020, Whangaehu Valley Road, Ohakune, Ohura, Ongarue, Raetihi and Ōwhango Closed Landfills. Kariori has a closed landfill, but this is not managed by Council.
Waste education and behaviour change	• Council funds education programmes from general rates and waste levy funds. • Council promotes several waste minimisation events and workshops, some by Council staff and others by private/not-for-profit groups. • Waste education and behaviour change included in contracts with EnviroNZ and Ethical Waste. • Council supports zero waste education programmes in local primary schools delivered by Zero Waste Education Mātauranga Para Kore and Enviroschools.

Figure 4 Examples of kerbside food waste kit and media

Figure 5 Refuse Transfer Stations in Ruapehu

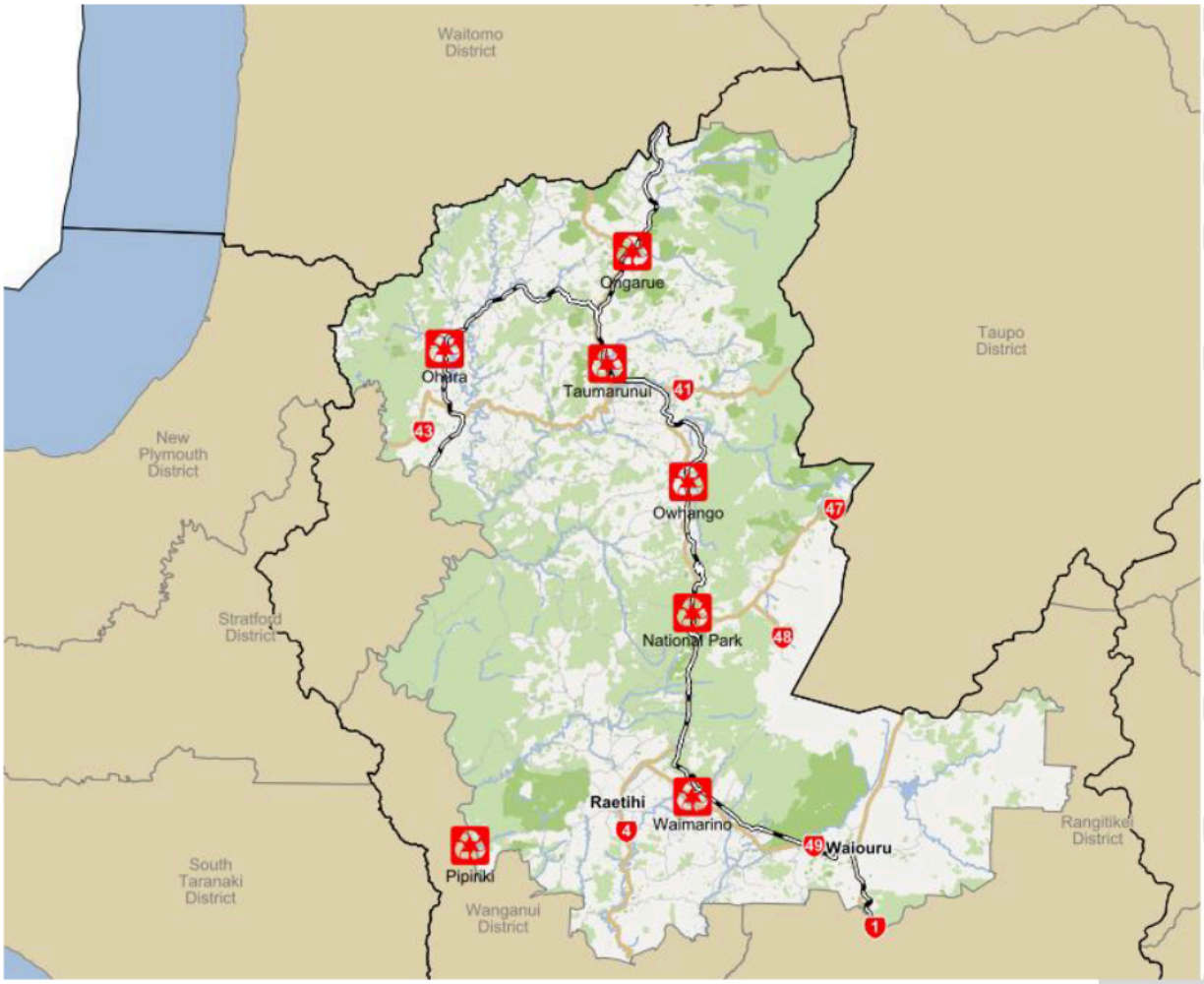


Figure 6 Taumarunui RTS recycling drop-off (top) and rural RTS drop-off facilities (bottom)

Figure 7 Taumarunui Reuse Shop (left) and Waimarino Reuse Shop in Ohakune (right).

3.2 Non-council facilities and services

Further to the kerbside services provided by Council, private operators offer user-pays kerbside refuse and greenwaste collections to residents in the district. Commercial waste operators provide waste and recycling services for most businesses in the Ruapehu District. Depending on the volume of waste generated, wheelie bins, skip bins, and front-loader bins are available. Some businesses transport their own waste and recycling out of the district using their own transport equipment.

The New Zealand Defence Force provide waste services at the Waiōuru Army Base and the Department of Conservation provide waste services in the Tongariro National Park. The extent of households that use private collections is not known.

Processing and disposal facilities, and end markets for recovered materials, are generally outside the district and privately owned. There are currently no registered operational landfills (Class 1-5) in the Ruapehu District. The majority of refuse from the District is transported out of the district to the privately-owned Hampton Downs and Bonny Glen landfills.

3.3 Product stewardship schemes

The government is focused on developing regulated schemes for six priority products: plastic packaging, tyres, e-waste including large batteries, agrichemicals and their containers, refrigerants and other synthetic greenhouse gases, and farm plastics. In addition, product stewardship schemes can register for accreditation with the government. A summary of the current product stewardship schemes that have either been accredited or regulated by the government under the WMA is outlined in Appendix D. Over time more product stewardship schemes are expected to be added to this list and some of the existing accredited schemes are moving towards becoming regulated schemes. Unregulated schemes are not included in this list.

4 Waste data

This section contains a summary of waste data available to Council. The collection and use of waste data is important for the Council to understand the quantity and composition of waste generated, collected and processed through its facilities and to ensure the services are being provided as intended. It also gives Council the ability to identify opportunities to reduce waste to landfill and measure progress against targeted improvements.

The availability of accurate and standardised waste data is crucial for monitoring progress, setting targets, and making informed decisions. Addressing the challenges of data quality and ensuring the inclusion of all waste streams will contribute to a more effective and comprehensive waste management approach. Table 2 summarises the waste streams relevant to the Ruapehu District and the availability of data to Council to enable waste management and minimisation planning. Further commentary on data accuracy was provided in Section 1.2.

Table 2 Overview of waste stream data and stakeholders for reporting

Waste Services and Facilities	Refuse	Recycling	Organics	Other
Council kerbside collections	Pink bags **** SWAP (Apr 2021)***	Crates	Food waste bins	N/A
Refuse Transfer Stations (bags, car and trailer loads)	Inbound weighed, outbound from Taumarunui RTS to Hampton Downs Landfill **** SWAP (Apr 2023)***	Inbound weighed, outbound from Taumarunui RTS to end-markets	Inbound from kerbside collections and Taumarunui RTS weighed, organics processed on site.	Drop-off areas for E-waste, scrap metal, whiteware, C&D, hazardous waste and reuse shops.
Private commercial collection services	Bags, bins or skips	Bins, crates or specialised bulk recycling (e.g. cardboard flat pack bins)	Landscaping services	Specialised company-specific services

Legend:

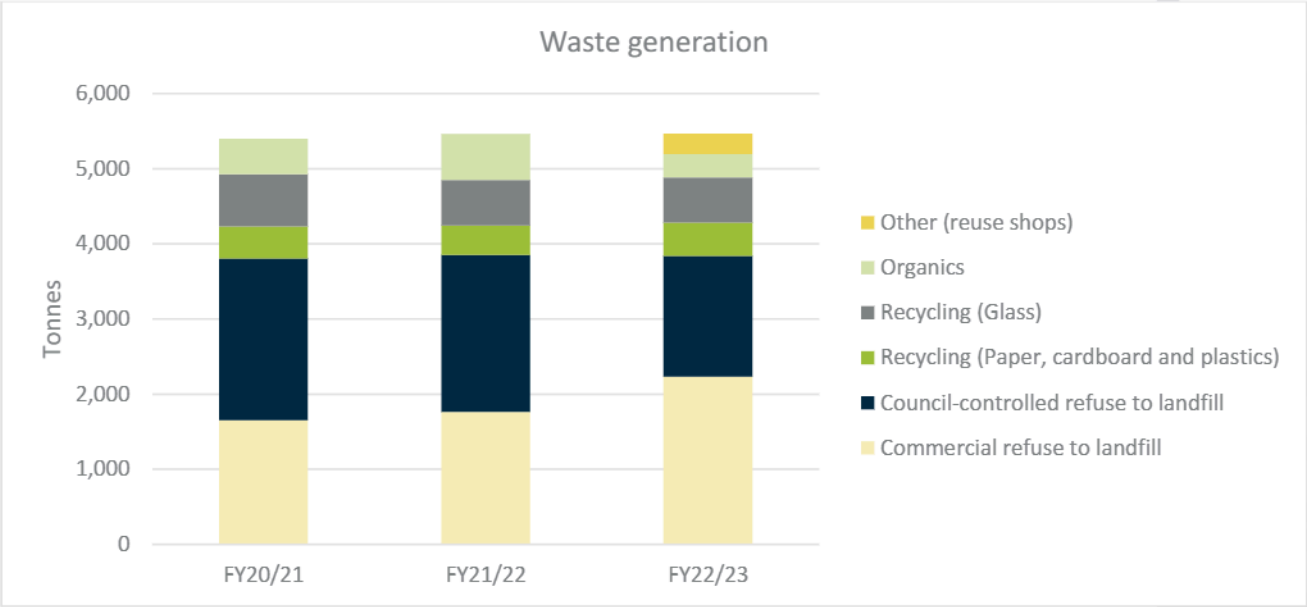
- Discrete data available to Council
- No current service or not applicable
- Private data not available to Council

* SWAP assessments conducted on kerbside refuse and National Park refuse in April 2021 and April 2023 respectively.

4.1 Overall waste generation

The amount of Council-controlled waste generated in the District over the previous three years is shown in Figure 8. This includes waste from kerbside collections and the RTS/RRCs, and includes both refuse to landfill and material streams diverted from landfill, such as recycling and organics. Recently, waste generation has remained consistent at around tonnes per annum. Based on a population of 12,948, waste generation is calculated at 422 kg per person for the District over the previous two years.

Figure 8 Waste generation (includes commercial and Council-controlled refuse, recycling and organics)

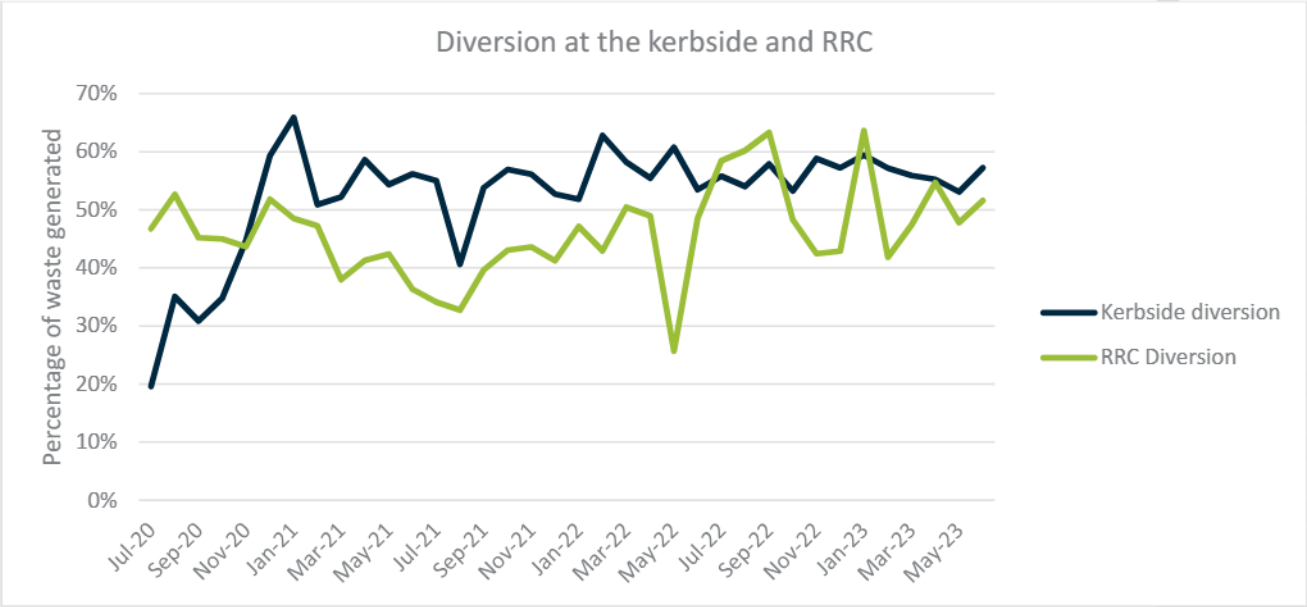


Waste diversion includes recyclable materials (such as paper, cardboard, plastics, and glass) and organics. Diversion activities occur at the kerbside, RTS' and RRCs. Organics make up 6-11% of total waste generated in the previous three years. Recyclable materials recovered represent approximately 18%-21% of the total waste generated in the previous three years.

The proportion of waste diverted from landfill has remained consistent over the last three years, at 30%. The proportion of glass in the recycling stream is high when compared to other recyclables. The volume of organics has fluctuated over the past three years. There was an increased when kerbside collection services commenced, but a downward trend since that time. These observations are discussed further in the following sections.

Comparing the kerbside and RTS/RRC diversion rates, Figure 9 illustrates waste diversion from kerbside and RRC/RTS streams per month for the financial years 2020/21 to 2022/23. Council achieved a diversion rate at the kerbside of 46%, 55% and 56% over this period. Diversion at the RTS/RRCs is more variable than kerbside, with peaks and troughs caused by fluctuations in refuse, greenwaste, glass and C&D volumes. Generally, the diversion rate has been in the range of 30% to 50% for Council-controlled waste streams.

Figure 9 Diversion rates at the kerbside and RRCs from FY20/21 to FY22/23



4.2 Volume of waste to landfill

Waste volumes from the Ruapehu District disposed to landfill over the previous fourteen years are shown in Figure 10. Previously, refuse data was combined for Council-controlled and commercial refuse volumes recorded at Taumarunui Landfill. Following the closure of the landfill in 2020, all refuse now leaves the District. Private collection data was not available for the 2022/23 period. Recycling collections in shopping bags were introduced in 2006, with a shift to recycling bins in 2010. Organics collections contribute further from 2020.

Waste disposed to landfill on a per capita basis has varied with an average of 260 kg per person per year over the period 2009/10-2015/16, to 314 kg per person from 2016/17-2020/24 and 295 kg per person from 2020/21-2022/23. Council-controlled refuse to landfill has decreased from 2,086 to 1,608 tonnes over the previous two years, with per capita contribution decreasing from 161 to 124 kg per person. Private-controlled refuse to landfill increased from 1,765 to 2,232 tonnes over the previous two years, contributing 172 kg per person in the District in the previous year.

The previous Waste Assessment calculated waste generation at 340 kg per person for 2016. This marked the start of a four year period (2016 to 2019) where disposal to landfill was particularly high, increasing by 20% from the previous seven years. This was followed by a 4% decrease over the previous three years. Figure 10 illustrates this increase and decrease over the previous fourteen years.

Figure 10 Council refuse to landfill with long-term averages[1]

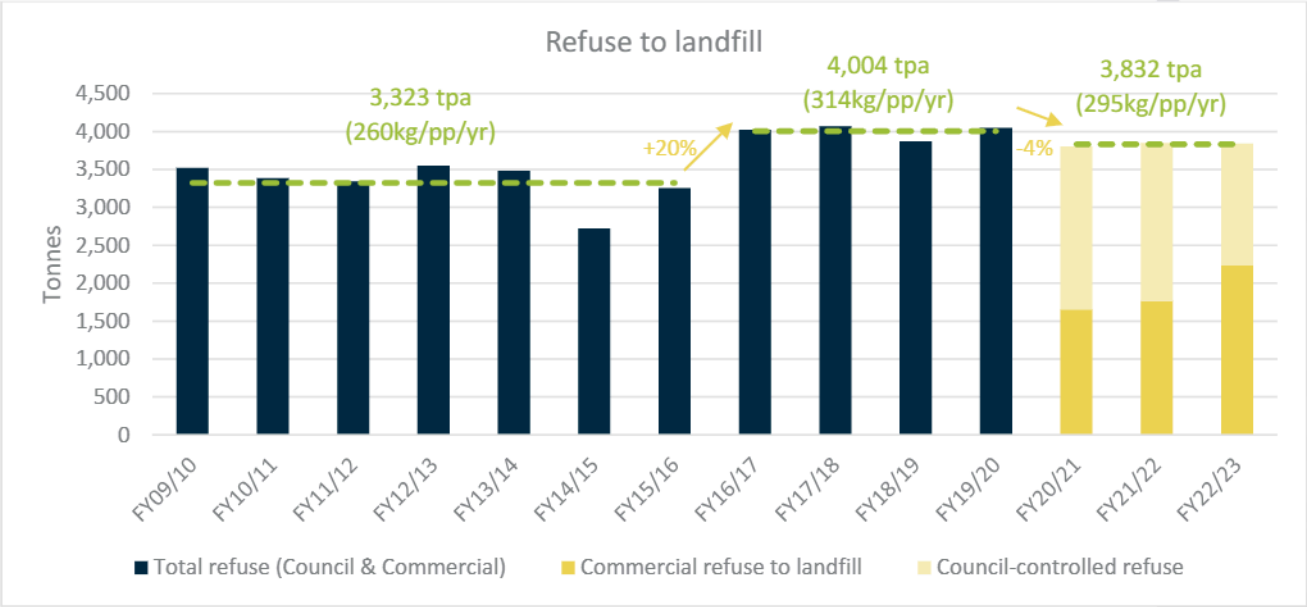
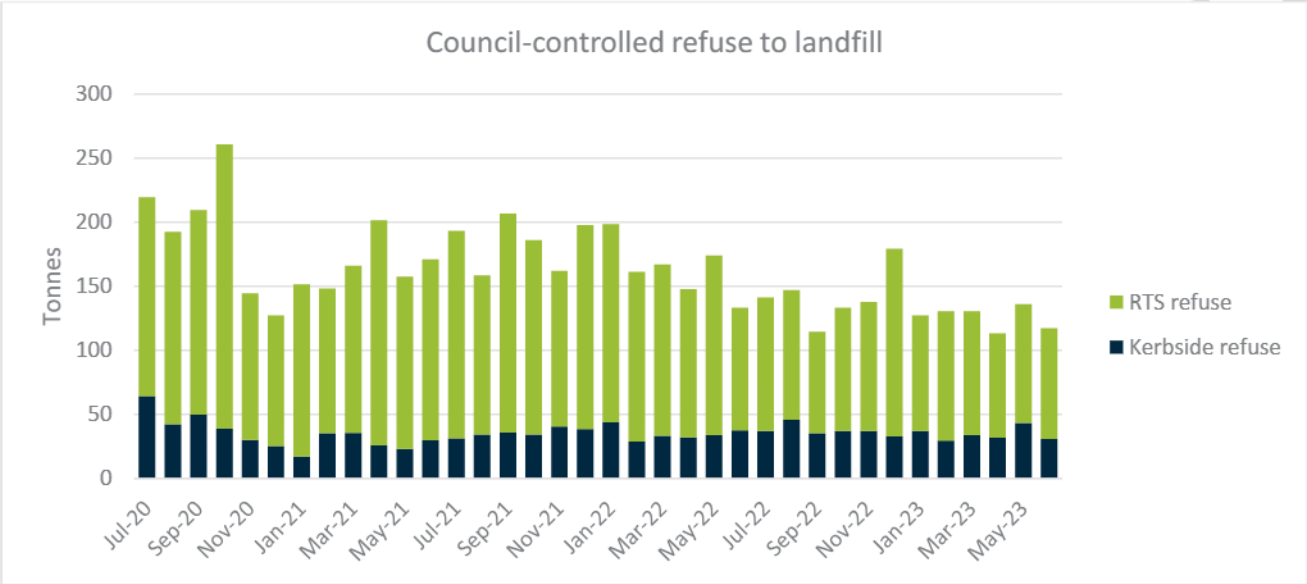


Figure 11 shows the volume of refuse to landfill from council-controlled sources (kerbside and RTS) for the period July 2021 to June 2023. Kerbside refuse volumes have remained consistent over this period. However, RTS refuse volumes have significantly reduced.

Figure 11 Comparison of refuse disposed to landfill by source



[1] Prior to FY2020/21 Council-controlled and commercial refuse were received at Taumarunui Landfill. Following the closure of this landfill, all refuse was taken out of the District, mostly to Hampton Downs Landfill.

4.3 Kerbside collections

Kerbside collection waste streams are shown in Figure 12. A food waste collection service was introduced in November 2020. After an initial peak in food waste collected, the volumes have steadily dropped. Around 13 tonnes per month were collected in the six months January to June 2021, dropping to less than 8 tonnes per month in the six months January to June 2023.

There was a sharp decrease in refuse collection when the food waste collection service was introduced, but the volume of kerbside collected refuse has steadily increased since then. Given the high proportion of holiday homes in the district, particularly in Ohakune, seasonal fluctuations in kerbside collection volumes are expected, with a peak in the winter ski season and a smaller peak in the summer holiday period. However, Covid lockdowns and border closures have impacted visitor numbers during this period, in turn impacting waste volumes and skewing the normally expected trends.

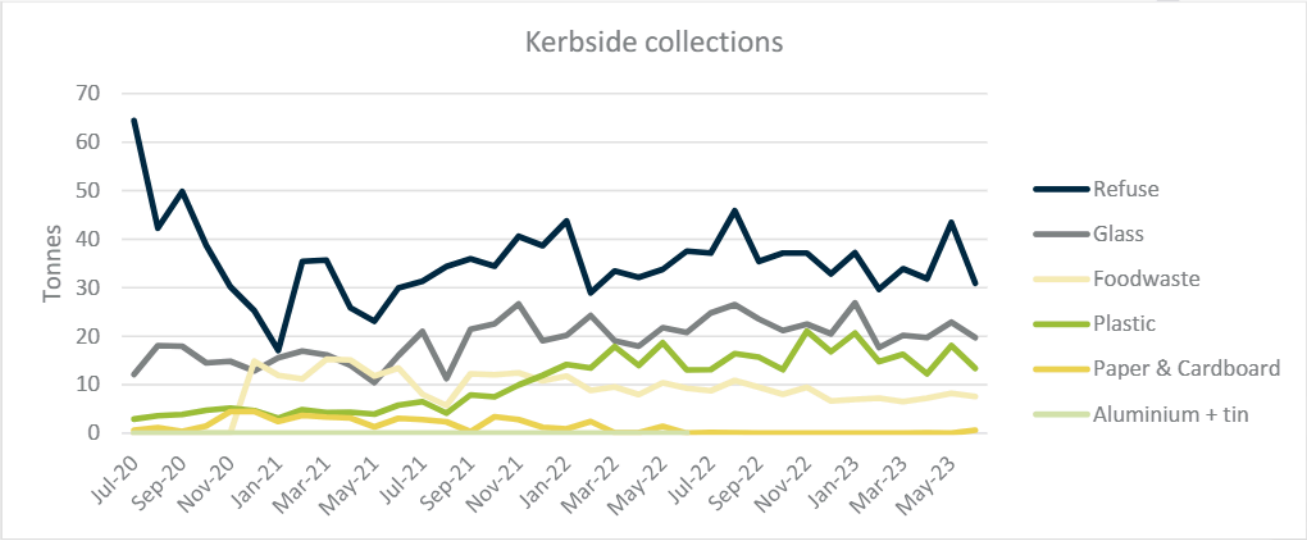
The high volumes of glass relative to the volumes of paper and cardboard collected kerbside are unusual, even for a rural district like Ruapehu. This may indicate that residents are preferentially using their recycling crate for glass. The limited volume of a crate, the difficulty using the crate for bulky paper and card, and a preference to use this material in domestic wood burners, could be contributing factors.

Kerbside waste from the urban population in the previous year, estimated at 7,370 people entitled to the service, totalled 990 tonnes, with 134 kg of kerbside waste generated per person. Refuse contributed the highest amount at 44%. Glass (27%) plastic (19%) and food waste (10%) account for most of the diverted materials, with kerbside diversion at 56%. Paper and cardboard diversion at the kerbside is very low (see Table 3). Overall, these volumes are low compared to national averages and compared to baseline volumes recorded in the 2018 WMMP.

Table 3 Kerbside waste generation by material for FY2022/23

Kerbside Collections	Tonnes	Kg per person	Percentage
Refuse	433	59	44%
Plastic	191	26	19%
Glass	266	36	27%
Paper and cardboard	1	<1	<1%
Food waste	97	13	10%
Total	988	134	100%

Figure 12 Kerbside collection waste streams

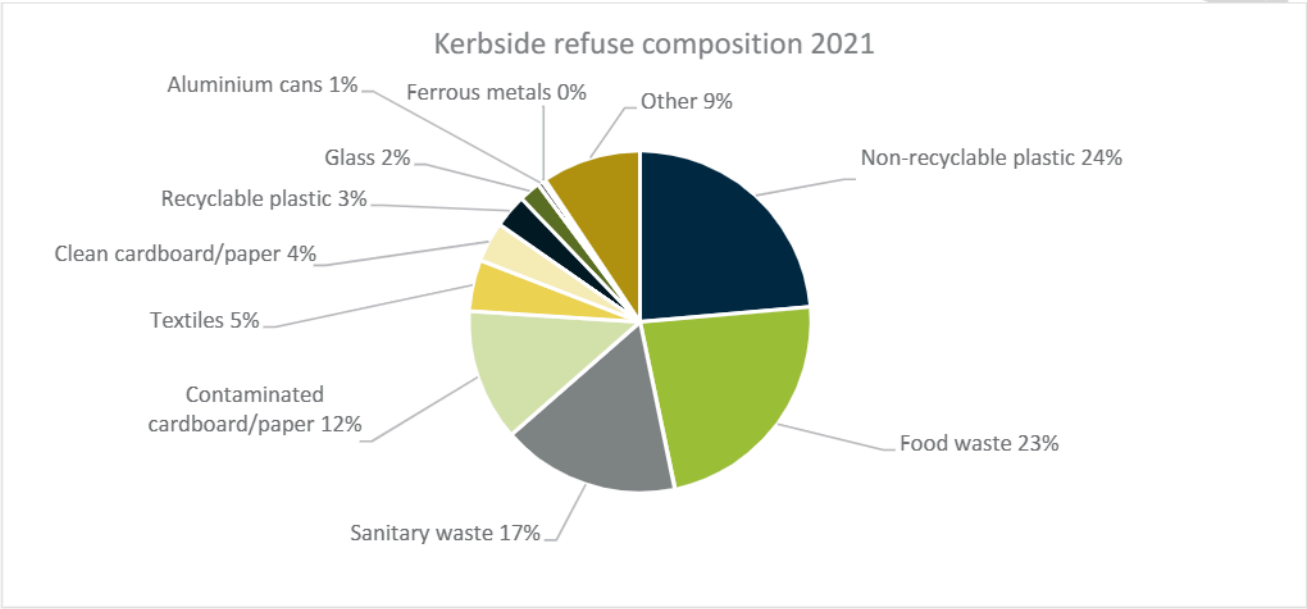


4.3.1 Kerbside SWAP

The Council requires that regular SWAPs are performed to understand waste stream compositions to inform waste minimisation and management services and facilities. The most recent assessment of kerbside refuse was completed in April 2021. This included kerbside refuse collections from the three urban areas; Taumarunui, Ohakune and Raetihi.

The combined kerbside refuse composition is shown in Figure 13. One third of this material is divertible, including food waste, clean paper and cardboard, recyclable plastics, glass, and metals. One quarter of kerbside refuse is non-recyclable plastics, either as soft plastics or plastic grades 3, 4, 6 or 7. The remaining 39% of the refuse sampled is made up of materials for which there are no recycling markets currently. These include sanitary wastes, textiles, contaminated paper and card and other non-recyclable material. Additional data from the SWAP is plotted in Appendix E.

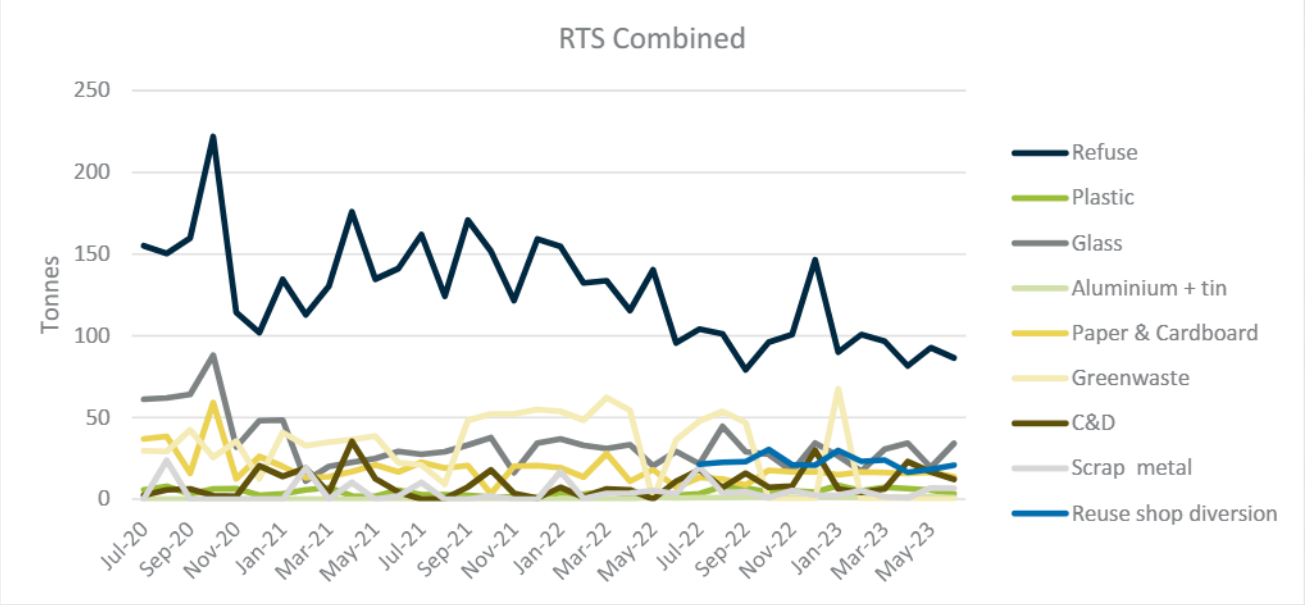
Figure 13 Kerbside refuse composition for the district, April 2021



4.4 Transfer Stations and Resource Recovery Centres

The district has data available for total divertible waste and total residual waste from its four RTS and two RRC facilities. Figure 14 illustrates the combined total refuse and diverted material from these facilities. A substantial decrease in refuse volume from more than 150 tonnes to less than 100 tonnes per month has been observed. It is not known whether this represents an increase in recycling or a shift to using private waste services. The drop in waste to landfill is not matched by an increase in diversion at the facilities, so it is more likely caused by a shift to private collection services. Greenwaste tends to peak during summer months. The trend seen with higher glass volumes than other recyclables in kerbside collections is also present at the RTS/RRC's, however at a lower proportion, 30%-50% in this instance. The reuse shops in Taumarunui and Ohakune also track their diversion volumes. The two shops reported a diversion of more than 270 tonnes in FY22/23.

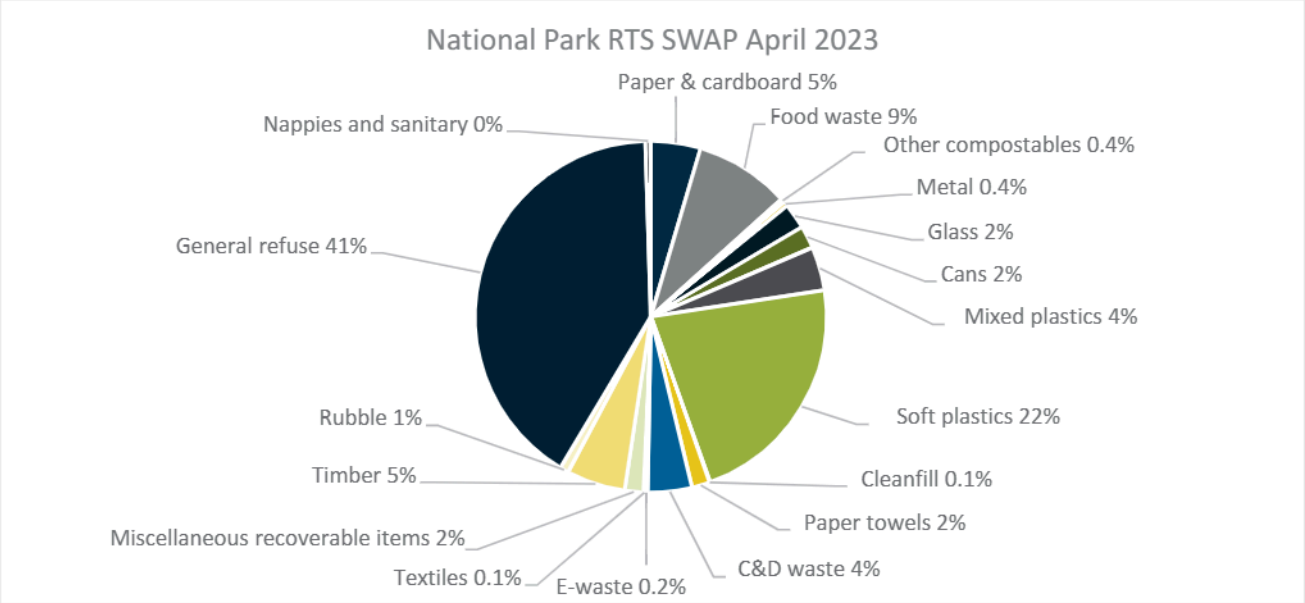
Figure 14 Combined waste streams from four RTS and two RRC facilities



4.4.1 National Park SWAP

A SWAP was conducted at National Park RTS in April 2023, illustrated in Figure 15. A higher diversion potential was observed than at the kerbside, with more than half the material received at National Park RTS divertible.

Figure 15 Refuse composition at National Park RTS April 2023



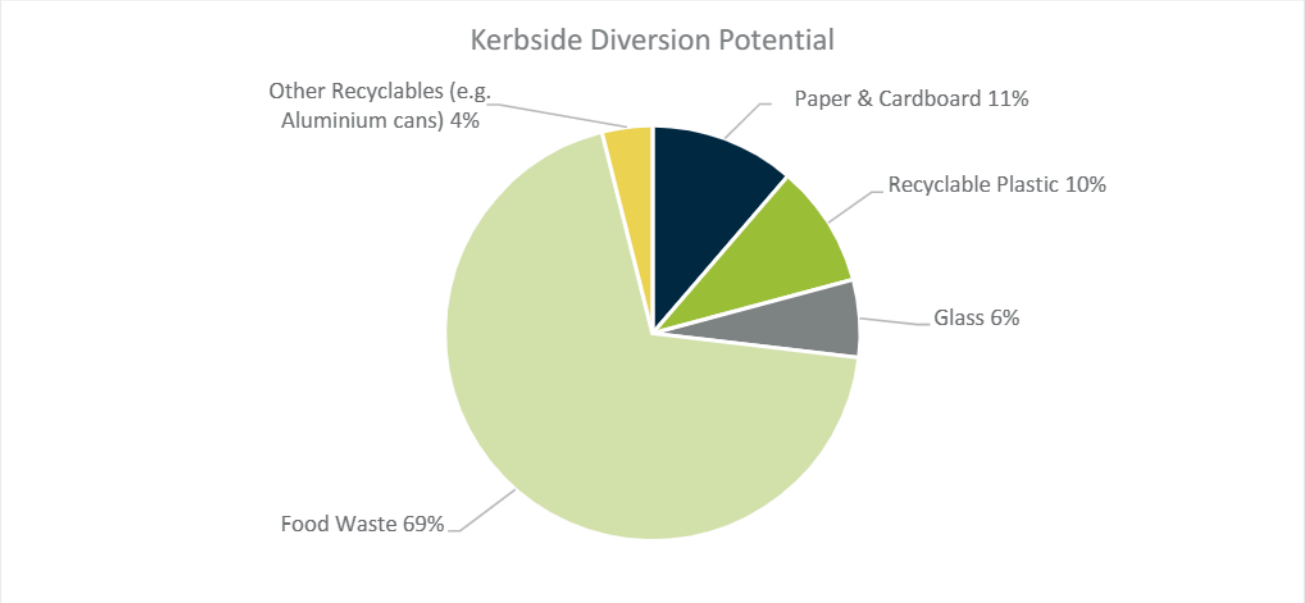
4.5 Farm waste

Ruapehu is a rural district. People can dispose of organics on site, but farm dumps or burning waste should not be used for refuse or recyclable materials.

4.6 Diversion potential

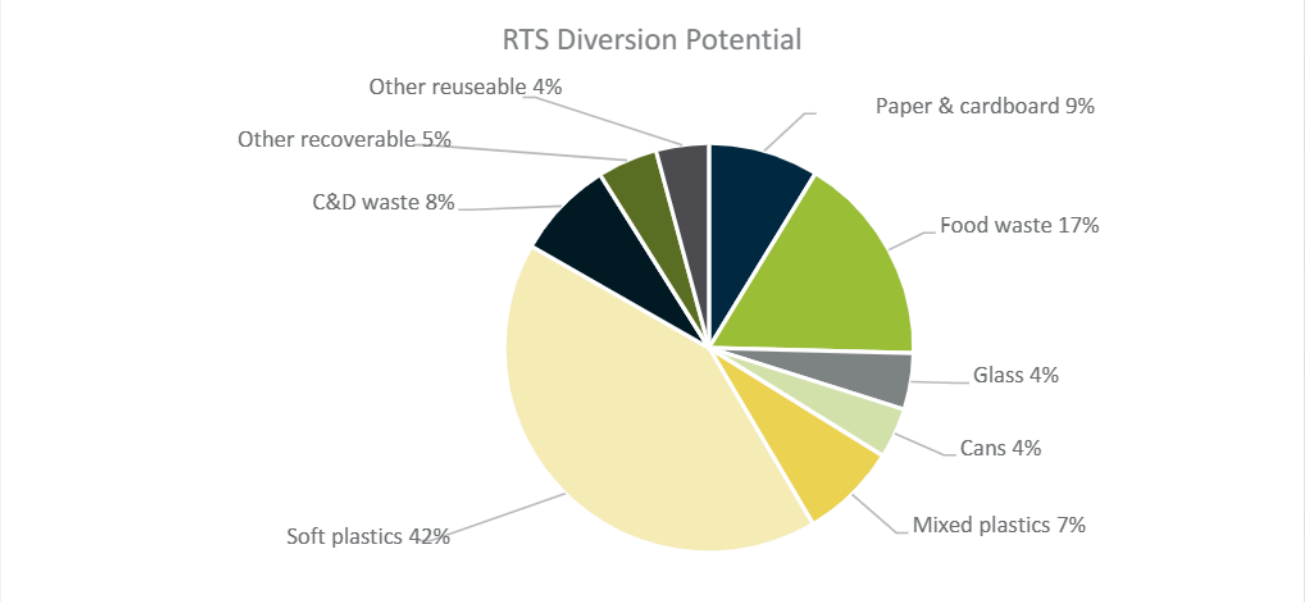
The SWAP audits completed for kerbside refuse and National Park RTS show there are opportunities to increase diversion and resource recovery in the Ruapehu district. The government has introduced mandatory diversion targets for councils, and by 2030 council need to demonstrate that at least 50% of their kerbside collected material is being diverted from landfill. Ruapehu District's current kerbside diversion rate is 56%. The SWAP audits have shown that there is potential for further diversion and for Council to maintain compliance against these mandatory diversion rates. Figures 16 and 17 provide a breakdown of potential diversion from the kerbside refuse collections and RTS. Food waste in kerbside refuse represents the greatest potential for increased diversion from this stream, while soft plastics represents the greatest potential at the National Park RTS.

Figure 16 Diversion potential from Council kerbside refuse collections 2021



The SWAP report lists soft plastics as recoverable, which is not currently available through Council services and since this stream makes up 42% of the recoverable materials it possibly skews the diversion potential higher than it otherwise may be. Without soft plastics, the diversion potential would be 31%.

Figure 17 Recoverable items based on the 2023 National Park SWAP of hook bins



4.7 Progress against the 2018-2028 WMMP

RDC prepared a WMMP for the period 2018-2028 which included six targets, with six objectives and twelve actions. The six targets are assessed in Table 4 below. An assessment of Council's progress against its goals is provided in Appendix C. Council completed or partially completed 11 out of 12 actions. The outstanding action was to consider options to mitigate the impact of user-pays rubbish collections on low income, larger families.

Table 4 Previous WMMP 2018-2038 targets

Objective	Target	2023 Assessment
Reduce waste to landfill	Reduce waste to landfills from 368kg to 175kg per person per annum by 2022.	**Achieved** Council controlled refuse to landfill was 124 kg per person in 2022/23.
Prioritise waste reduction, reuse and recovery & recycling initiatives	Increase diversion from 222 kg to 640 kg per person per annum by 2022.	**Not achieved** Total diversion was 126 kg per person in 2022/23.
	All waste initiatives and services implemented during the term of this WMMP.	**Completed or partially completed 11 of 12 actions** (See Appendix C)
	Three new initiatives implemented by 2020, focus on waste reduction, reuse or recovery/recycling.	**Achieved** Initiatives and facilities initiated.
Improve council access to information	By 2020, council-controlled waste contracts include clauses requiring contractor(s) provide data on all refuse and diverted materials.	**Achieved** Waste collection contracts renewed.
	By 2020, introduce a waste licensing system which includes a mechanism to collect waste data relating to council and privately collected waste.	**Not achieved** The NZWS is expected to develop more detail for waste licensing systems.

5 Future Growth and Demand for Waste Services

The future demand for waste services will be influenced by several key drivers including:

- Demographic change.
- Change in economic or tourism activity.
- Impact of waste flows from other districts.
- Customer expectation, consumption patterns and product quality.
- The occurrence of natural disaster events.
- National policy and legislation change (refer Section 2).

5.1 Demographic change

Ruapehu District has a resident population of 12,948 as of September 2021. The region has experienced almost no change in population over the previous five years. Current medium projection growth forecasts to 2032 by StatsNZ show a decline in population expected of -1.2% while the national population is expected to increase by 0.8% over the same period. The five subdivisions that make up Taumarunui and Waimarino are the only small urban areas in the district, but account for 57% of the resident population. The remaining five statistical areas are classified as rural which accounts for the remaining 43% of the population. These results are summarised in Table 5 below.

Table 5 Population across the District

Area	Population at September 2021	Estimated population growth by 2032
Aotearoa New Zealand [2]	**5,126,300**	**0.8%**
Ruapehu District [3]	**12,948**	**-1.2%**
Otangiwai-Ōhura	1,034	*Sub-regional growth estimates not available*
Ngapuke	1,285	
Taumarunui (North, Central, East)	4,840	
National Park	1,106	
Tangiwai	1,365	
Waimarino (Ohakune and Raetihi)	2,530	
Waiouru	788	

[2] From StatsNZ, available from: *https://www.stats.govt.nz/information-releases/national-population-estimates-at-30-september-2021-infoshare-tables/*

[3] Ruapehu District Council population numbers from Pūwhenua Ki Ruapehu | Living in Ruapehu dashboard, available from: *https://www.livinginruapehu.co.nz/* and growth rates from StatsNZ, available from: *https://www.stats.govt.nz/information-releases/subnational-population-projections-2018base2048-update/*

5.2 Economic activity

Economic activity is a determinative factor for changes in both waste volume and composition. Seasonal effects are expected in Ruapehu, primarily due to holiday periods. Economic growth in Ruapehu, measured as gross domestic product (GDP), was $811M in 2022, increasing by 3.3%, compared to 5.3% for the country. Ruapehu's economic activity is based firmly in the primary sector, primarily in agriculture, forestry and fishing. Public administration, construction, property, and manufacturing are the next largest economic sectors in the region. The tourism sector provides a large proportion of employment in the region, accounting for 15% of employment in the District in 2022, down from a pre-Covid high of 20% in 2019 (Infometrics, 2023). Since population growth is expected to be negative in the coming decade, private industry and tourism activity are considered more significant drivers for waste volumes going forward. Overall, waste generation would expect to be relatively constant going forward, without interventions to encourage greater resource recovery.

Non-economic factors such as seasonal variation can also have significant impacts on both waste generation and services. Seasonal peaks in visitor numbers during the ski season and the summer holiday period are observed in Ruapehu, including holiday homeowners using their properties more during these times.

5.3 Waste from other areas

The movement of waste from outside the District for disposal within the District is not a significant factor for Ruapehu. It is more common for some waste generated in the region to be transported to out-of-district waste and resource recovery facilities. As described previously, kerbside refuse and recycling from Waiōuru is collected through an EnviroNZ contract and taken out of the District, in this case to Palmerston North. Pipiriki is a small settlement on the Whanganui River which has a small quantity of waste that is collected by EnviroNZ and processed in Whanganui District. Commercial waste, handled by private waste companies, is more likely to be taken out of the district for disposal and processing that residential waste would be.

5.4 Community expectations and consumer behaviour

Ruapehu District Council performed a community survey in 2023. The results of which are summarised below and shown in Figure 18 and Figure 19.

Kerbside collection services:

- Refuse: Seventy-seven percent of respondents have Council kerbside rubbish collection available where they live. 22% are satisfied and 38% very satisfied with this service (Figure 18).
- Recycling: Seventy-nine percent of respondents indicate Council kerbside recycling is available where they live.23% are satisfied and 37% very satisfied with this service
- Food waste: Sixty-six percent of respondents have Council provided kerbside food waste collection available. 17% are satisfied and 29% very satisfied with this service.
- Dissatisfaction with all kerbside services is primarily due to no access to the service.

RTS facilities:

- 23% are satisfied and 44% very satisfied with transfer stations available (Figure 19).
- 25% are satisfied and 44% very satisfied with recycling options. 48% are dissatisfied due to the difficulty to recycle.
- Dissatisfaction at RTS facilities is primarily around opening hours.

Figure 18 Community survey results for rubbish collection services

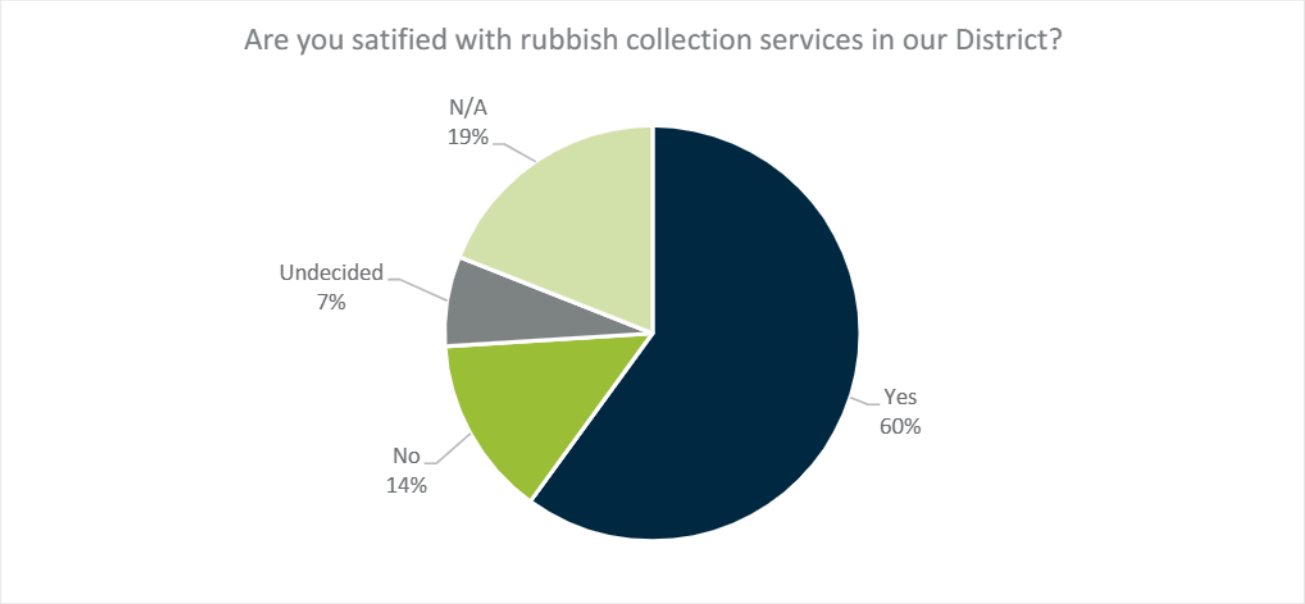
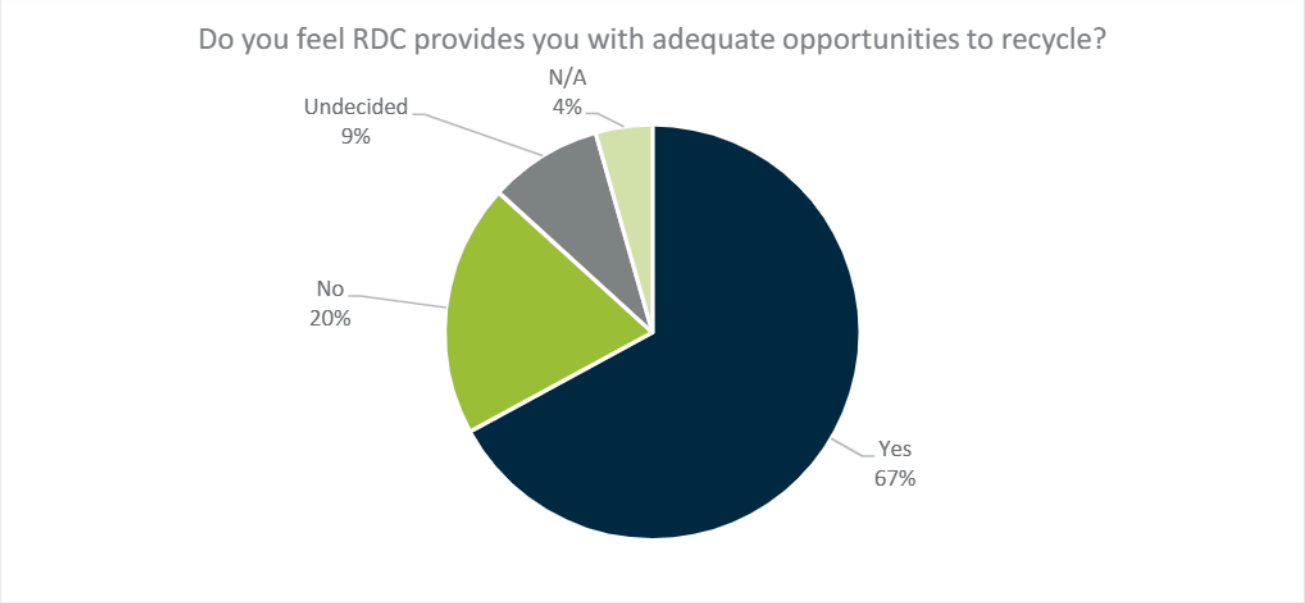


Figure 19 Community survey results for recycling opportunities



5.5 Natural and man-made disasters

Natural and man-made disasters apply a different pressure upon waste services and other inter-related services by potentially creating a significant volume of waste, which may be contaminated, in a very short timeframe. The earthquakes in Christchurch and Kaikoura, the Covid-19 pandemic, Cyclone Gabrielle and the Auckland floods re-emphasise the need for planning. Lessons can be learnt from these events to assist in preparing for future natural disaster events in Ruapehu such as the need to provide additional capacity at transfer stations and disposal facilities at short notice.

5.6 Future demand for waste facilities and services

The future demand for waste facilities and services is expected to be impacted by three factors. Firstly, a static or slightly reducing resident population. Secondly, economic growth is expected and with that generally comes increasing waste volumes. Lastly, changes in community expectations and behaviour is expected to impact future demand.

The demand for waste services is expected to remain high, or increase, from rural households. Another factor to consider is the effects of future waste levy increases which are expected to pass through to targeted rates for kerbside collections and general rates for RTS and RRC facilities. It will also impact on other waste streams in the coming years, such as C&D and cleanfill. Council will need to set achievable targets and focus on the changes required to enable those results. Not achieving targets is a risk to Council, as it could affect the retention of waste levy funding used for current and future services.

6 Future Planning Framework

This section considers the Councils' direction with regards to vision, goals, objectives, and targets for achieving waste reduction and for meeting the forecast demand for services in Ruapehu District Council. The vision and targets discussed in this Waste Assessment have been derived from performance against the 2018-2028 WMMP, and incorporates the NZWS vision, goals, objectives and targets. Additionally, Council is developing a new well-being framework which the WMMP will be aligned with (see Appendix F for the framework available at the time of writing this report).

6.1 Vision

Council's vision for waste management and minimisation is aligned with the NZWS:

> *"By 2050, Ruapehu District is a low-emissions, low-waste society built upon a circular economy".*

Council plans to consult with the community on the adoption of the vision above. Previously, the Council vision was for *"zero waste by 2040"* which had been well supported. The proposed vision is aligned with the NZWS vision.

6.2 Goals and objectives

The NZWS has goals defined for 2030, with further goals and objectives to be developed for the period 2030-2040 and 2040-2050.RDC has developed objectives that support the achievement of these NZWS goals. The NZWS states that "By 2030, our enabling systems are working well and behaviour is changing". The NZWS goals and RDC objectives are shown in Table 6.

Table 6 New Zealand Waste Strategy goals and RDC objectives

#	NZWS Goals	RDC Objective
1	**Systems** The strategic planning, regulatory, investment and engagement systems are in place and operating to drive and support change	• LTP and WMMPs provide long-term strategic planning and guidance. • Focus on services that enable staged goals for 2030, 2040 and 2050. • Support national and regional collaboration where required (e.g. AIP).
2	**Infrastructure** We have a comprehensive national network of facilities supporting the collection and circular management of products and materials	• Council and private facilities support collection and circular management of products and materials. • Local planning provisions support the circular economy.
3	**Responsibility and accountability** We all take responsibility for how we produce, manage and dispose of things, and are accountable for our actions and their consequences	• Deliver behaviour change programmes to increase awareness and accountability to better support waste minimisation.
4	**Using less** We use fewer products and materials, and use them for longer, by making them more durable, and repairing, reusing, sharing and repurposing them	• Support local redesign, repair, reuse, sharing and repurposing initiatives. • Education programs to raise awareness in the community.
5	**Resource recovery systems** Resource recovery systems are operating effectively for core materials and across all regions	• Kerbside services are supported by resource recovery for use in region (e.g. organics) or consolidation (glass and plastics) for out of region circular processing.
6	**Recovering value** We look for ways to recover any remaining value from residual waste, sustainably and without increasing emissions, before final disposal	• Look to recover any remaining value from residual waste prior to disposal to landfill.
7	**Emissions** Emissions from waste are reducing in line with our domestic and international commitments	• Reduce organic waste production and disposal from both residents and businesses.
8	**Contaminated land** Contaminated land is sustainably managed and remediated, to reduce waste and emissions and enhance the environment	• Identify and sustainably manage RDC's closed landfills.

6.3 Targets

Targets for Ruapehu District are outlined in Table 7. Councils' waste minimisation targets are aligned to the targets set out in the NZWS.

Table 7 Targets based on RDC objectives and alignment with NZWS

NZWS target	Description	Ruapehu District Council		
		FY21/22	FY22/23	2030 Target
10% reduction in waste generation per person by 2030	10% reduction in waste per person from all sources	422 kg/person/year (5,464 tonnes)	422 kg/person/year (5,468 tonnes)	380 kg/person/year (4,920 tonnes)
30% reduction in waste disposal per person by 2030	30% reduction in refuse from all sources	297 kg/person/year (3,851 tonnes)	297 kg/person/year (3,841 tonnes)	208 kg/person/year (2,696 tonnes)
	30% reduction in Council-controlled refuse	161 kg/person/year (2,086 tonnes)	124 kg/person/year (1,608 tonnes)	87 kg/person/year (1,126 tonnes)
% diversion kerbside collection	Staged diversion: 30% by 2026, 40% by 2028 and 50% by 2030	55%	56%	Maintain >55%
30% reduction in biogenic methane emissions by 2030	Putrescible content in kerbside refuse measured in annual SWAP	>20%	-	<20%

7 Options Assessment (Statement of Proposals)

This section identifies the waste minimisation issues and opportunities for Ruapehu District. It then presents the guiding principles that will be applied when considering intervention options. Finally, it presents an options assessment that considers practicable options to address future demand for waste management and minimisation services and programmes to address the opportunities that have been identified.

7.1 Waste issues and opportunities

Waste issues for Ruapehu District have been identified based on:

- A workshop with council staff in July 2023 (and confirmed via a workshop with elected members in August 2023)
- Composition and quantities of waste in council collection services and at council facilities
- Progress against the previous WMMP Action Plan.

The following were identified:

- Council has made significant improvements to its services since the last WMMP was prepared in 2018. While the building blocks are now in place to deliver waste reduction and higher diversion from landfill, ongoing work is needed to maximise their use and ensure sufficient capacity as demand for services increases.

- Recyclables and food waste continuing to be disposed in kerbside refuse. Food waste volumes in kerbside refuse remain high.
- Decreasing volume of food waste collected kerbside since collections commenced.
- Private waste collections account for half of refuse sent to landfill over the previous three years since Taumarunui Landfill closure.
- Low volume of kerbside recyclables compared to other districts, and high volume glass relative to paper and card in kerbside crates. Potential causes include lack of volume in crates (45L compared to 240L in typical recycling bins), difficulty placing bulky cardboard in crates, and the use of paper and card in wood burners instead of kerbside collections.
- Use of district's litter bins for refuse disposal and contamination in public place recycling bins.
- More than 43% of the district population are rural and not included in kerbside collections. Services for rural residents are less convenient as they need to bring their refuse and recyclables into town to drop off at RTS/RRC. Although on property solutions for food waste are available to rural residents (chickens, composting), it is suspected that some of their refuse and recyclables are burned or buried on site.
- Sorting comingled recyclables at the kerbside currently ensures low contamination levels but raises issues around health and safety.
- Waste volume fluctuations can be linked to peak tourist periods. There is a high proportion of holiday homes in the District. Ohakune is estimated to have 60% home ownership by owners that reside outside of the District.
- Although resource recovery is available at the RRCs in Taumarunui and Waimario, these services are not available at the remaining transfer stations. RRC facilities at Taumarunui and Waimarino have different operating models and the integration of the sites is limited. Recovery outcomes are therefore inconsistent.
- Health and safety concerns associated with manual handling of refuse bags, recycling crates and food waste bins. However, any changes to collection services would impact the resources used by the contractor for collection in eight years' time.
- RTS/RRC upgrades will increase both capital and operating costs, at a time when Council funding is stretched. Staff at RTS/RRC trained to interact with customers and encourage diversion help drive resource recovery and lower contamination rates in drop-off areas, however these resources come at an additional cost.

Based on the waste issued identified above, five areas of opportunity were identified for Ruapehu to help the district meet it waste generation and waste disposal reduction targets by 2030:

- Promote upstream waste hierarchy and local circular economy principles.
  - Opportunities include raising awareness in the community, showcasing local initiatives, supporting national product stewardship schemes at the local level.
- Divert more from kerbside collection services.
  - Opportunities to reduce the recyclables and food waste in refuse bins through greater communication with residents and considering changes to collection methods.
- Improve access to appropriate waste services for rural communities.
  - Opportunities include promotion of appropriate waste disposal practices, making drop-off facilities available closer to rural communities.
- Using the transfer station network to divert more from the overall waste stream.
  - Opportunities include upgrading transfer stations, changing operating models, introducing additional services.
- Improve waste diversion by visitors and tourists.
  - Opportunities include working with the accommodation, hospitality and tourism sectors to promote waste diversion and increasing awareness campaigns during peak visitor periods.

7.2 Projected waste volumes and impact on services and facilities

The drivers behind projected waste volumes and demand for waste facilities and services were introduced in Section 5. Without interventions to reduce waste, it is anticipated that waste generation in the Ruapehu District will remain stable at around 3,200 tonnes per annum, with waste disposal remaining around 1,600 tonnes per annum. F

In order to achieve the waste diversion targets outlined in the NZWS and adopted by Council, services and facilities will need to be in place to reduce waste generation by 300 tonnes per annum by 2030 and reduce waste disposal by 250 tonnes per annum. Kerbside services can be scaled up to meet this demand. Transfer stations will need to be upgraded to ensure appropriate services are available, efficient traffic flow and enough space to drop off material in recovery areas. and services.

These projections and targets are illustrated in Figure 20 and Figure 21 below.

Figure 20 Waste generation projections with 10% reduction target by 2030

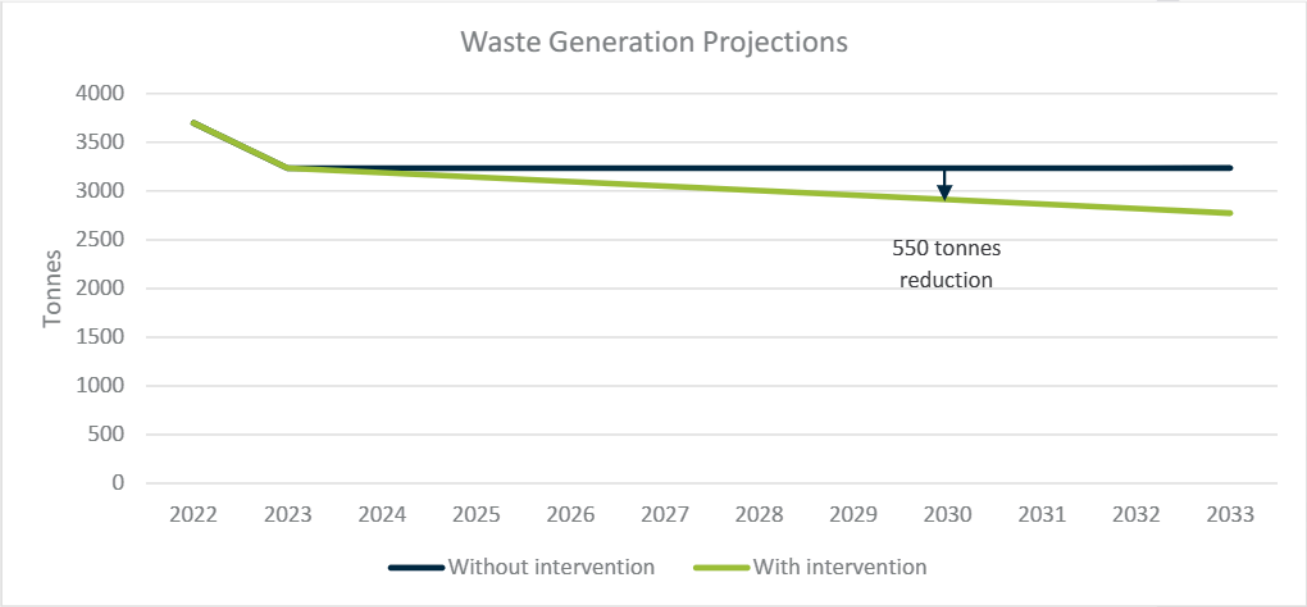
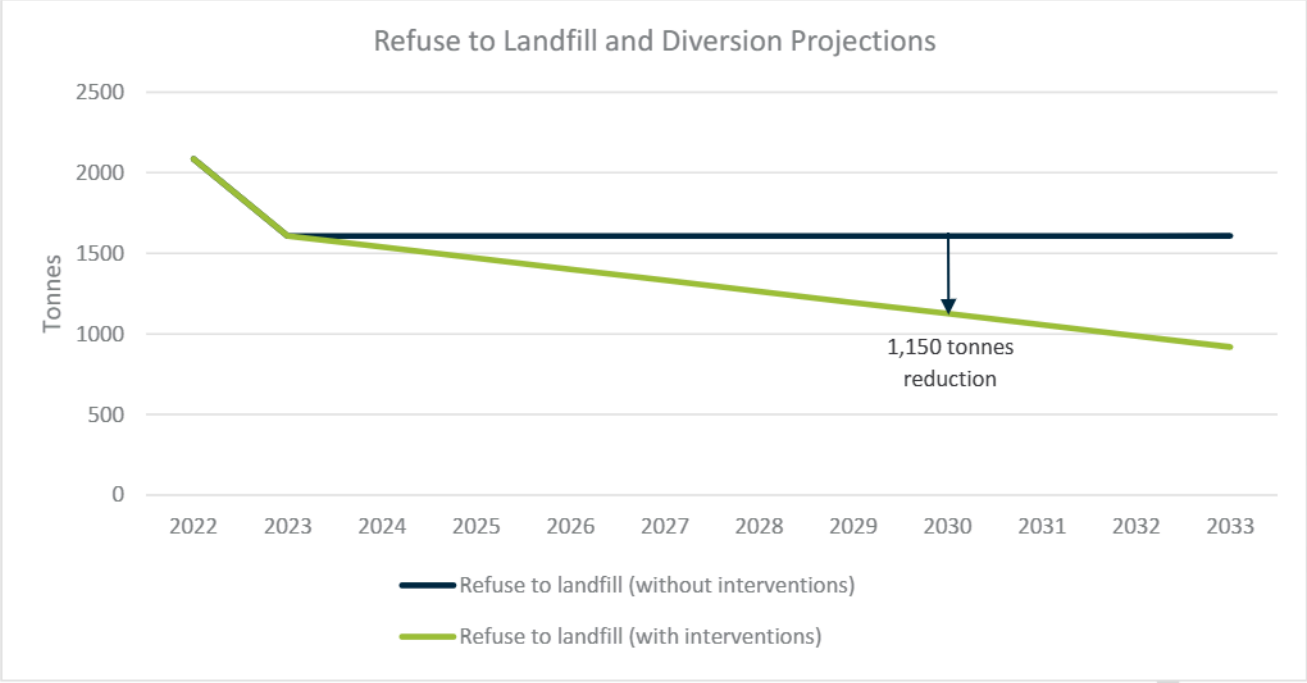


Figure 21 Refuse to landfill and diversion projections with 30% reduction target by 2030



7.3 Options Assessment

Options to deliver on the opportunities to reduce waste generation and disposal in the Ruapehu District are outlined in the table below. Council's role in meeting these targets can be to:

- provide more services or enhance its existing services
- support and enable actions by others
- encourage behaviour change that reduces waste

- regulate against behaviours that contribute to poor waste minimisation behaviour.

Note that regulation is usually a last resort once all other avenues have been exhausted, and generally national regulation is required to create consistency between districts. As part of supporting action by others, Council can advocate to central government for change.

In considering the options available for waste reduction and diversion, the potential diversion needs to be balanced against the cost of the intervention and the ease of implementation. This has been considered in the options table below.

7.4 Statement of public health protection

The wide range of waste services available in the Ruapehu District as provided by Council or private business (detailed in Section 3) will ensure that public health is adequately protected in the future. The Ruapehu District has access to safe and sanitary landfills that meet national legislative requirements. Services for achieving waste minimisation will be further improved on, and alternatives to landfill considered, and will be incorporated into the WMMP. There is adequate access to council and private refuse, hazardous waste and illegal dumping / litter collection services, although further service improvements and waste minimisation are achievable. The Medical Officers of Health for both the Waikato and Whanganui District Health Boards of Te Whatu Ora | Health New Zealand have been consulted in the development of the Waste Assessment and their review is included in Appendix A1 and A2.

Table 8 Options to address future opportunities for Ruapehu District

Opportunity	Approach	Options	Waste reduction	Cost	Ease of implementation	Recommended
Achieve 10% reduction in generation of waste						
Promote upstream waste hierarchy and local circular economy principles	Influence	Promote and advocate the concept of circular economy to businesses.	High	Medium	Relatively simple	Yes
	Influence	Continue to work with the Central North Island Waste Group on initiatives to further reduce waste to landfill and provide regional facilities.	High	Low	Medium	Yes
	Influence	Actively promote and participate in national product stewardship schemes as they are introduced, including use of RTS network as part of collection system.	High	Medium	Medium	Yes
	Influence	Advocate for national regulation and legislation that supports waste reduction and a move up the waste hierarchy.	Medium	Low	Medium	Yes
	Influence	Develop better partnerships and collaboration with community and Iwi/hapū initiatives, particularly around education and events.	Medium	Medium	Medium	Yes
Achieve 30% reduction in final disposal						
Divert more from kerbside collection services – recyclables	Influence	Increase frequency of marketing campaigns for the use of recycling services	High	Medium	Relatively simple	Yes
	Influence	Survey residents' habits when using household waste services to understand what they are using the recycling service for	Medium	Medium	Medium	Yes
	Service	Undertake optioneering of receptacles used for refuse (bags or bins), recycling (crate(s), bin or a combination) and organics (small food scraps bin or larger organics bin) to encourage greater diversion.	High	High	Relatively complex	Yes
	Service	Increase frequency of SWAP of kerbside materials to target low diversion	High	High	Relatively complex	Yes
Use transfer station network to divert more – resource recovery	Influence	Increase frequency of SWAP at RTS to target greater diversion	Medium	Medium	Relatively simple	Yes
	Service	Change operating model at RTS to increase interaction with customers and divert more	Medium	Low	Medium	Yes
	Service	Upgrade RTS and introduce RRC at National Park, to broaden services available and increase diversion	High	Medium	Medium	Yes
Improve access to appropriate waste services for rural communities	Influence	Provide information to rural residents on disposal and diversion services available.	Medium	Low	Relatively simple	Yes
	Service	Assess options for improving rural services e.g. extended kerbside collections, additional drop-off points, satellite transfer stations	Medium	High	Complex	Yes
	Service	Provide rural-specific services such as agrichemical and agricultural plastics drop off or collection	High	Medium	Relatively simple	Yes
Improve waste diversion by visitors and tourists	Service	Increased and targeted education during peak periods.	Medium	Medium	Relatively complex.	Yes
	Service	Assess options to provide additional peak period services in select urban locations	Medium	High	Medium	Yes
	Influence	Work with the tourism, hospitality and accommodation sector groups and DOC to promote better circular, reduction and diversion activities.	High	Low	Medium	Yes
Achieve 30% reduction in biogenic methane emissions						
Divert more from kerbside collection – organic material	Influence	Increase frequency of marketing campaigns for food waste service that reinforce the benefits of food waste recycling and how to overcome challenges to service use.	High	High	Simple	Yes
	Influence	Increase education programmes that promote home composting.	Low	Low	Simple	Yes
	Influence	Encourage uptake of food waste collections by businesses.	Medium	Low	Relatively complex	Yes
	Service	Assess options to increase organic diversion at kerbside, by changing organics collection from 23L food scraps only bins to larger organics bins (80L or larger) for food and garden waste	High	High	Complex	TBC
	Service	Assess options to restrict volume of kerbside refuse receptacles, both collection frequency and size of receptacles. May require change to bin collection services and consideration of rates-funded refuse collection.	High	Medium	Complex	TBC
	Regulate	Bylaw requiring all private waste operators to provide a separate collection of organics.	Medium	Medium	Medium	TBC
Use transfer station network to divert more – timber in C&D waste	Influence	Work with C&D sector to encourage separation of materials.	High	Low	Medium	Yes
	Service	Provide C&D diversion at transfer stations.	High	High	Relatively complex	Yes

Appendix A1 Letter from Medical Officer of Health - Waikato

Te Whatu Ora
Health New Zealand

31 October 2023

Anne-Marie Westcott
Environmental Manager
Ruapehu District Council
15 Queen St, Te Kuiti, 3910

Dear Anne-Marie,

Medical Officer of Health Review: Ruapehu District Council Waste Assessment

Thank you for the opportunity to review and comment upon the draft Ruapehu District Council Waste Assessment, dated August 2023, as part of the consultation process outlined in Section 51 of the Waste Minimisation Act 2008.

Effective waste management is critical for good public health outcomes. From a public health perspective appropriate disposal of waste is essential. Waste may otherwise present health hazard through physical injury, chemical poisoning, exposure to infectious materials, and by encouraging pests such as vermin, flies and mosquitoes. Waste can also block storm water systems, contaminate land or water, and create odours.

Waste management is an important role undertaken by councils to protect public health. The Waste Assessment provides a good basis for addressing public health issues. I am pleased to see Ruapehu District Council has made significant progress against their last Waste Management and Minimisation Plan. In regards to the draft Ruapehu District Council Waste Assessment 2023, I make the following comments and recommendations:

- The kerbside refuse collection service is currently user-pays through the sale of pink rubbish bags for the urban areas. I would encourage Council to revisit the outstanding action from the last Waste Management and Minimisation Plan to consider options to mitigate the impact of user-pays rubbish collections on low income, larger families. Changing to a rates-funded kerbside collection would reduce inequities for those who may struggle to pay for collection currently. Waste services have a district wide benefit, and services funded by the entire community, rather than an individual user pay system, protect the health of everyone.

- Rural residents are not included in the kerbside collection. The 43% of the district population who live rurally must drop-off refuse bags at their nearest refuse transfer station or resource recovery centre. It is suspected that some of the farm waste, and rural refuse is burned or buried on site. Poor management of farm waste can lead to contamination of the environment with hazardous waste.

  I recommend that Council engage with rural residents, private recycling and recovery services, and product stewardship schemes to ascertain more information and data on rural waste streams. I support the Council's proposed options that would improve access to appropriate waste services for rural communities. I would further encourage the Council to

support and promote home composting schemes for rural households that do not have access to kerbside collection.

- One third of the material in kerbside refuse is divertible, with food waste representing 23% of kerbside refuse. I commend Ruapehu District Council in implementing a food waste collection service in their kerbside collections since 2020. There was an initial peak in food waste collected when the service was first introduced, but the volumes have steadily dropped since. The cause of this decline is not clear. I support Council's proposed option to increase campaigns to promote the use of the organic waste service and promote behaviour change towards waste minimisation. I also support exploring the different receptacle options and sizes used for refuse, recycling, and organics, to encourage greater diversion.

- I'm pleased to see that household quantities of hazardous waste are able to be disposed of at resource recovery centres within the district. It would be useful to collect and present data on quantities and types of hazardous waste disposed of at drop off locations.

- I acknowledge that Council has had difficulty in obtaining private collection data. Ascertaining volume, composition and diversion potential in private collections will be important in the district's steps towards achieving a low-emissions, sustainable, low waste circular economy.

- I support the Council's proposed options in regards to working with the construction and demolition sector to encourage diversion of timber from this waste stream and providing construction and demolition waste diversion at transfer stations.

- Given waste volumes fluctuate with tourist periods, I commend Council for identifying opportunities to improve waste diversion by visitors and tourists. These include increasing awareness campaigns during peak visitor periods and working with the accommodation, hospitality and tourism sectors in the district.

- It's good that Council is giving consideration for planning of waste management in the event of disasters. Given natural disasters have been identified as significant waste generators, I would support the Council in planning for additional capacity at transfer stations and disposal facilities for disaster waste at short notice. Climate change and the resultant extreme weather events pose risks and threats to closed landfills. For the protection of public health, it is important that appropriate monitoring and care takes place for closed landfills for risks associated with leachate.

- The draft Waste Assessment does not mention domestic medical waste. I encourage the Council to define domestic medical waste and provide opportunities for more awareness and education and community initiatives that will support safe disposal of sharps. Inappropriate sharps disposal through general waste and recycling systems is an infectious disease safety concern. I encourage engagement and partnership with Taumarunui Hospital, Te Whatu Ora Waikato and other health related organisations regarding the management of medical waste.

- I strongly recommend that Ruapehu District Council continue to actively engage and partner with iwi and hapū to give effect to Maori perspectives on waste management, and to ensure that iwi views and aspirations are reflected in the final Waste Management and Minimisation Plan.

Te Whatu Ora
Health New Zealand

I hope that these comments will add to the value to the Waste Assessment and be helpful in further development of the Waste Management and Minimisation Plan.

Kind regards

Dr Richard Wall
Medical Officer of Health
Waikato

Appendix A2 Letter from Medical Officer of Health - Whanganui

Te Whatu Ora
Health New Zealand

14 September 2023

Ruapehu District Council
59-63 Huia St
Taumarunui

Dear Team

Re: Waste Assessment Consultation with Medical Officer of Health

Thank you for providing the Ruapehu District Council Waste Assessment August 2023, and for the opportunity to discuss this with Anne-Marie Westcott. As Medical Officer of Health for Whanganui I have particular responsibility for the Waimarino ward of Ruapehu District Council. My comments are:

1. This document is a good overview of waste categories and volumes in Ruapehu District Council;
2. There are some gaps, such as information about total waste taken out of the area, but of course this information is hard to find;
3. These gaps mean it is hard to know whether the goal of reducing total volumes of waste is being achieved; it appears Ruapehu District Council is making progress with the waste over which it has control, notably kerbside waste per person;
4. Ruapehu District has been ahead of most other councils in food waste collection; participation rates are quite low so this is an ongoing challenge;
5. Is there an explanation for the downward trend in volume for the food waste collection service? Are people creating less waste or disposing of it at home?
6. Kerbside recycling is in place and I understand there is to be some review as to whether the volume available is sufficient for many households
7. I note there is a collection system for residential quantities of hazardous waste; is there information regarding quantity of hazardous and noxious waste?
8. The document refers to values of the Long Term Plan, including kaitiakitanga, manaakitanga and rangatiratanga; at Public Health we encourage Ruapehu District Council to continue communication with local Iwi to ensure these values are applied to achieve appropriate waste management.

Overall this is a very useful document in providing information to guide future management decisions.

Yours sincerely

Patrick O'Connor
Medical Officer of Health, Whanganui

Public Health Service: Lambie Building, Whanganui Hospital, 100 Heads Road | Private Bag 3003, Whanganui 4500
Phone: 06 348 1775 | After hours: 06 348 1234

Appendix B Legislation

Waste Minimisation Act (WMA) 2008:
https://www.legislation.govt.nz/act/public/2008/0089/latest/DLM999802.html

Climate Change Response Act 2002 and amendments:
https://www.legislation.govt.nz/act/public/2002/0040/latest/versions.aspx

Local Government Act 2002 (LGA 2002):
https://www.legislation.govt.nz/act/public/2002/0084/latest/DLM170873.html

Resource Management Act 1991 (RMA):
https://www.legislation.govt.nz/act/public/1991/0069/latest/DLM230265.html

Other legislation

The following is a summary of other legislation that is to be considered with respect to waste management and minimisation planning.

Hazardous Substances and New Organisms Act 1996 (HSNO Act):
https://www.legislation.govt.nz/act/public/1996/0030/latest/DLM381222.html

Health Act 1956:
https://www.legislation.govt.nz/act/public/1956/0065/latest/whole.html

Litter Act 1979:
https://www.legislation.govt.nz/act/public/1979/0041/latest/DLM33082.html

Health and Safety at Work Act 2015 (HSWA):
https://www.legislation.govt.nz/act/public/1979/0041/latest/DLM33082.html

Urban Development and Building

Various pieces of policy and legislation in the development and construction sector will have an indirect impact on the management and impact of construction and demolition waste. The National Policy Statement on Urban Development 2020 has objectives and policy statements on sustainability, including reduction in greenhouse gases. Amendments to the Building Act (2019) and (2021) are designed to drive product stewardship, the recording of product information and support the use of new, innovative and efficient building methods.

Other legislation

Other legislation that relates to waste management and/or reduction of harm, or improved resource efficiency from waste products includes:

- Biosecurity Act 1993
- Radiation Protection Act 1965
- Ozone Layer Protection Act 1996
- Agricultural Chemicals and Veterinary Medicines Act 1997

Appendix C Progress towards 2018-2028 WMMP action plan

Reference & Title	Description	2023 Assessment
Collection Services		
Improve kerbside recycling	Improve existing services, by increasing capacity for the recycling collection and expanding the range of materials collected	COMPLETE
Introduce a food waste collection	Introduce a kerbside food waste collection	COMPLETE
Extend Resource Recovery Centres	Increase range of materials accepted at resource recovery centres and transfer station, potentially including reuse and farm waste	COMPLETE
Mitigating user-pays rubbish collections	Consider options to mitigate the impact of user-pays rubbish collections on low income, larger families	NOT COMPLETE
Infrastructure		
Alter Taumarunui site, and use an alternative disposal point	Allow Taumarunui landfill consent to expire and use an alternative disposal point, establishing a Class 4 (cleanfill) disposal site	PARTIALLY COMPLETE, Class 4 (cleanfill) landfill not established
Regulation		
Bylaws	Develop and implement a solid waste bylaw that is aligned to and supports any changed services or operations, following the expiry of the consent for Taumarunui landfill in 2020 and tendering services	PARTIALLY COMPLETE, public spaces bylaw was updated but separate solid waste bylaw not introduced.
Enforcement	Take enforcement action against those that dump rubbish illegally where possible	COMPLETE, compliance team
Monitoring and Measuring		
Develop a data strategy that is aligned with the national waste data framework	Develop a data strategy that is aligned with the national waste data framework will ensure that Council is collecting accurate and appropriate data to use in future waste assessments. This may involve carrying out 'SWAP' composition studies, and/or using a weighbridge to collect data on the quantity of wastes from kerbside rubbish and recycling collections.	COMPLETE
Education and Engagement		
Extended education and engagement	Extend education and engagement to provide additional information on existing services (particularly for visitors) and, in particular, about new services should these be introduced	COMPLETE
Home composting scheme	Provide subsidised home composting bins, along with targeted education and support to ensure these are used. Target households that would not have access to the kerbside collection system.	COMPLETE
Zero Waste Action group	Establish a community-led zero waste action group, supported by Council through coordination and some funding, to delivery project areas prioritised and planned by the community	COMPLETE
Leadership & Management		
Waiōuru Services	Collaborate with NZDF to develop a comprehensive service for Waiōuru.	COMPLETE

Appendix D Product Stewardship Schemes in New Zealand

Scheme or Programme	Regulated / accredited	Details
Agrecovery Foundation	Accredited scheme, working towards regulated status	Provides NZ farmers and growers with programmes for container recycling, drum recovery and collection of unwanted and/or expired chemicals. Also provides systems for return of shrink wrap and other farm plastics.
Envirocon	Accredited scheme, non-regulated	Waste concrete (including potentially harmful liquids) is diverted from landfill and upcycled into value-added precast concrete products for the Interbloc Modular Wall System.
Filter disposal services	Accredited scheme, non-regulated	Take back scheme for used oil filters from vehicles.
Glass Packaging Forum	Accredited scheme, non-regulated	The forum connects businesses that sell glass-packaged consumer goods with those that collect and recycle glass. This helps to improve the quality and quantity of glass recycled. The aim is zero container glass to landfill.
Interface ReEntry Programme	Accredited scheme, non-regulated	The scheme recycles used Interface carpet tiles into new carpet tiles and other products. PVC backed carpet tiles beyond their usable life are sent back to the original manufacturer in the US where they are stripped and remanufactured.
Large batteries	Currently in design phase for regulated scheme	Managed by the Battery Industry Group, covering batteries greater than 5kg, excluding lead-acid batteries.
Plastic packaging	Currently in design phase for regulated scheme	The Packaging Forum and New Zealand Food and Grocery Council are leading the two-year co-design process on plastic packaging.
Refrigerant recovery scheme	Accredited scheme, currently in design phase for regulated scheme	The Trust for the Destruction of Synthetic Refrigerants, also known as RECOVERY collects and responsibly disposes of refrigerants used in the refrigeration and air conditioning industries.
Resene Paintwise	Accredited scheme, non-regulated	Take-back of paint and paint receptacles. User pays for non-Resene branded paint and paint receptacles.
Recovery Oil Saves the Environment (ROSE)	Accredited scheme, non-regulated	The used-oil recovery programme enables users, oil producers and regulators to responsibly collect, transport, use and dispose of used oil.
Soft Plastic Recycling Scheme	Accredited scheme, non-regulated	Soft plastic packaging is collected from participating stores and delivered to two NZ processors – Future Post in Waiuku and Second Life Plastics in Levin. The soft plastics are made into new products such as plastic fence posts, cable covers & garden edging.
Sharp Comprehensive Recycling and Waste Reduction Scheme	Accredited scheme, non-regulated	Sharp New Zealand aims to reuse and recycle 100% of its packaging materials, electronic products, equipment and obsolete and used parts.
Synthetic refrigerant scheme	Design phase for regulated scheme	End of life refrigerant management scheme.
TechCollect	Design phase for regulated scheme	End of life e-waste scheme.
Tyrewise	Regulated scheme	New Zealand's first regulated product stewardship scheme covering the management of tyres.

Appendix E Additional Waste Data

Figure 22 Kerbside refuse composition in 2021 by region

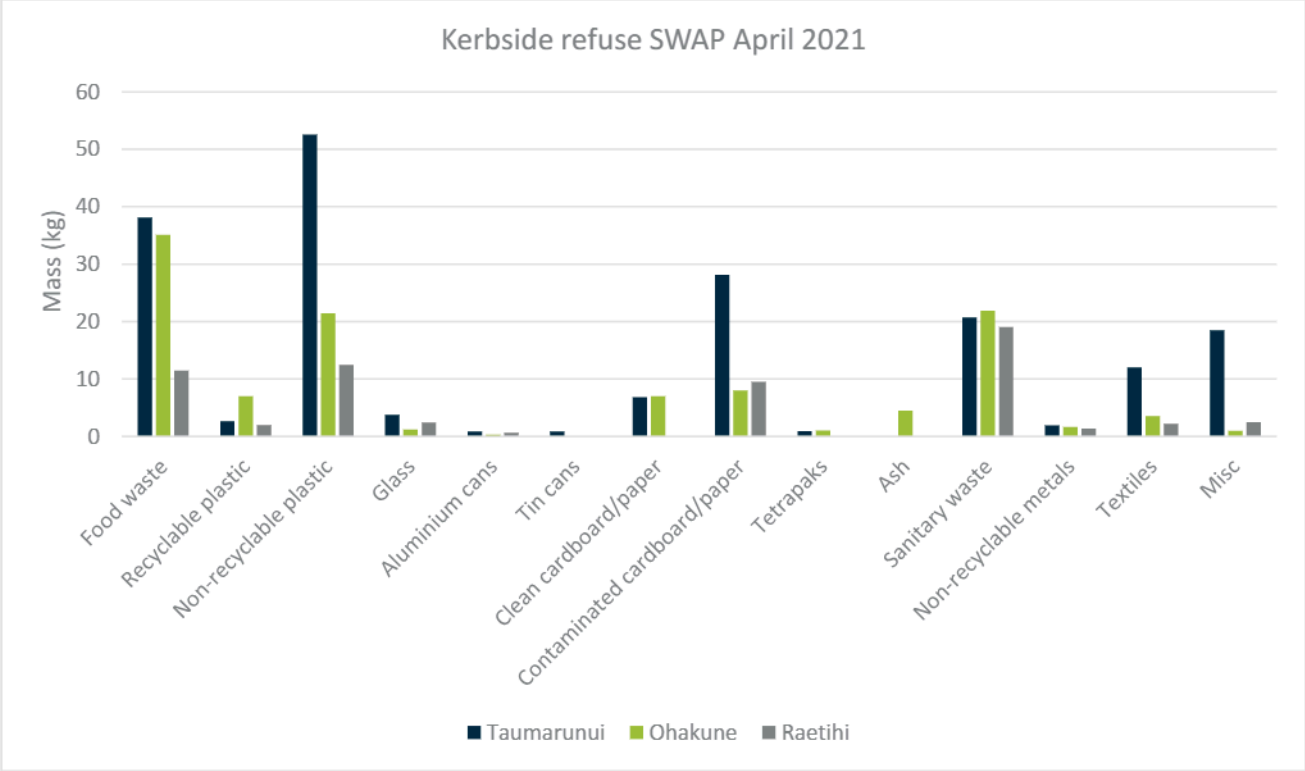


Figure 23 Kerbside refuse composition from figure above, normalised to 100% for comparison