MANAWATU DISTRICT COUNCIL

Waste Assessment

2022

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CLEAN UP NZ WEEK

Contents

Introduction

This Manawatū District Council Waste Assessment 2022 has been prepared by Council in accordance with the Waste Minimisation Act 2008 (WMA 2008).

Purpose of a Waste Assessment

A waste assessment provides an insight into the current waste situation in the Manawatū District based on the tonnages collected and managed via the Council's Solid Waste Activity. The process to prepare a waste assessment builds a foundation of understanding that will allow Council to prepare its Waste Management and Minimisation Plan (WMMP), and to consider new or improved initiatives for the Solid Waste Activity in order to deliver on the environmental, social, economic and cultural benefits encouraged by Section 3 of the WMA 2008.

Scope of this Assessment

This assessment discusses solid waste within the Manawatū District, whilst complying with all statutory obligations set out in the WMA 2008 and other relevant statutes such as the Local Government Act (LGA) 2002. To understand the District's waste situation, an analysis has been done on waste outputs that Council is responsible for, Council's Solid Waste services and Council-owned infrastructure.

Understanding and gathering a stocktake of this information is vital in planning to review our WMMP as we can target our objectives and goals towards the key issues discovered. Forecasting demands is also important in planning for the WMMP, and determining how we as a council plan to overcome them. If Council plans for the future as much as possible, we are able to mitigate issues more effectively and efficiently. This assessment will provide Council with a fundamental baseline in order to review its WMMP successfully.

Legislative Context

Section 50 of the WMA 2008 sets out that before a Council reviews its WMMP, they must first undertake a waste assessment. The waste assessment must contain the following:

a. a description of the collection, recycling, recovery, treatment, and disposal services provided within the territorial authority's district

b. a forecast of future demands for collection, recycling, recovery, treatment, and disposal services within the district

c. a statement of options available to meet the forecast demands of the district with an assessment of the suitability of each option

d. a statement of the territorial authority's intended role in meeting the forecast demands

e. a statement of the territorial authority's proposals for meeting the forecast demands, including proposals for new or replacement infrastructure

f. a statement about the extent to which the proposals will;

- ensure that public health is adequately protected
- promote effective and efficient waste management and minimisation.

In preparation of this Waste Assessment, Council have made a number of assumptions based on data from other regions in New Zealand (NZ). This is to avoid significant administrative and data collection costs, and is allowed for by the WMA 2008 by Section 51.

Strategic Context

New Zealand Waste Strategy

The purpose of the NZ Waste Strategy is to guide the use of the tools available to provide an adaptive and flexible approach to managing and minimising waste in NZ. In order to achieve this vision, the Ministry for the Environment (MfE) has two key goals within the strategy:

1. Reducing the harmful effects of waste
2. Improving the efficiency of resource use.

Section 44 (c) of the WMA 2008 states that Council must have regard to the NZ Waste Strategy, however the nature of the strategy allows for councils to create a plan that is designed to the specific needs of the District rather than a nationwide template.

The New Zealand Waste Strategy is currently being reviewed by MfE. There is a proposed vision for a low-waste Aotearoa and a plan to get there. Furthermore, the strategy will direct New Zealand's journey towards a circular economy for waste. The final strategy is expected to be presented to Cabinet in the first half of 2022, with a release later in the year.

The next review of MDC's WMMP would need to accommodate any changes to the NZ Waste Strategy.

Manawatū District Council's 10 Year Plan 2021-31

In May 2020, the Manawatū District Council adopted a refreshed strategic framework for 2021-31, including a new vision statement and six strategic priorities.

The Council's vision for 2021-31 is:

'Proudly provincial. A great place to land. Wehi nā te kāinga taurikura nei ki tuawhenua.'

MDC has come up with six priorities that will help carry out this vision statement:

- A place to belong and grow. Ka ora.
- A future planned together. Ka whakamahere.
- An environment to be proud of. Ka rauhī.
- Infrastructure fit for future. Ka tūwhena.
- A prosperous resilient economy. Ka tōnui.
- Value for money and excellence in local government. Ka kairangi.

Effective and innovative waste management and minimisation contributes all six of Council's priorities.

International Conventions

New Zealand has implemented a number of international conventions in the area of waste management and minimisation. Due the nation's commitment to these conventions, it is important for Council to consider these as part of the waste assessment:

- The Stockholm Convention of Persistent Organic Pollutants ensures that government aims to protect human health and the environment by reducing and potentially eliminating the production and environmental releases of specific Persistent Organic Pollutants (POPs)
- The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal aims to achieve environmentally sound management of hazardous wastes through regulation of hazardous waste movement between nations
- The Convention to Ban the Importation into Forum Island Countries of Hazardous Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific provides additional commitment to effectively dealing with hazardous wastes.

Summary of Review of the 2016 Waste Management and Minimisation Plan

MDC's previous WMMP was adopted in 2016. The vision statement in this plan was for Council to:

"Provide sustainable waste management practises that protect the urban and rural environment for present and future generations by vigorously promoting waste management and minimisation activities to a reasonable waste reduction target".

Our objectives in the previous plan were:

- For the community to have access to waste management services;
- To have access to waste education programmes to encourage recycling; and
- Having cost effective solid waste services.

Council also had three projected targets for the next ten years. Within six years, Council has confidently met all three. These are:

- 90% of rural residents have convenient refuse bag drop-off points less than 10 kms from their homes;
- 100% mobile recycling centres are conveniently located within identified villages; and
- Two waste education programmes are delivered per annum.

Following consultation with the community on the draft WMMP 2016, Council decided to introduce two new initiatives. These were:

- Additional MRC's in Halcombe and Āpiti
- Off farm waste disposal.

MRC's have since been provided in Halcombe and Āpiti, and the community use both sites regularly.

Off farm waste disposal opportunities have been explored, however further work is required on implementation planning involving the private Agri-Waste industry.

Data

In the 2016 WMMP, there was discussion around annual tonnages of waste and diverted materials in the District from 2012-2016, as well as a Solid Waste Analysis Protocol Audit. From the combination of this data, organic and green waste made up the largest portion of overall waste in the blue bags (38%).

In response to this finding, Council proposed a kerbside organic waste collection. However, after receiving submissions from the community, it was clear that this service was not desired – mostly due to the required increase in rates.

Key Issues

Proposed Initiatives and Community Responses

In preparing the 2016 WMMP, council proposed four initiatives. During consultation, there was clear direction given by the community.

There was a strong disagreement with implementing both a organic waste kerbside collection service and a kerbside recycling service for rural areas and villages. Both initiatives required a rates increase, which the community was not willing to pay for. Therefore, these proposals were not included in the final plan.

There was a positive reaction from the community towards implementing MRC's in Āpiti and Halcombe, especially from the village residents. Council was required to remove glass bins at the Halcombe MRC, and will continue to explore alternative options for glass collection in this community.

There was limited community response to the off farm waste disposal initiative.

Key Issues to be Addressed in the 2022 Review

Timing

The 2016 WMMP was consulted on with the community at the time of the Annual Plan. From this process, Council concluded that it would be better to separate the two consultations as to not confuse the community and to encourage specific response to the WMMP.

COVID-19

COVID-19 has had a range of impacts on the community, including in the solid waste activity. The increased use of single use items such as face masks and gloves has led to an increase in waste that is ultimately unrecyclable and ends up in the landfill. During Covid-19 Alert Level 4, recyclable waste unfortunately went into landfill due to Health and Safety requirements for waste collection personnel.

Fly Tipping

The current budget provided within the solid waste activity to deal with fly tipping waste disposal to landfill is currently adequate to address the complaints received. Fly tipping was not addressed within the 2016 WMMP, and perhaps should be considered in the 2022 review. Management of fly tipping going forward should be considered as part of the education promotion activities proposed, e.g. advertising drop off locations for different waste streams.

Climate Change

Climate change is a current global issue. All initiatives and decisions made by council need to consider effects on the climate. It is recommended that MDC make a conscious effort to better consider climate change in the review of the WMMP in 2022.

MDC do not currently have a Environmental or Climate Change strategy. Should Council adopt such a strategy, future reviews of the WMMP will need to align with any new strategic direction.

Measuring and Monitoring

Table 1: Proposed Waste Initiatives and Performance

What Council said we would do?	Did we do it?
MRC's in Āpiti and Halcombe	Yes - full MRC installed in Āpiti, Co-mingle shipping container installed in Halcombe.
Off farm waste disposal	Further work is required on implementation planning involving the private Agri-Waste industry.
Trial organic waste collection	No - due to COVID-19 and other delays no trial was undertaken.
90% of rural residents have a convenient refuse bag drop off point less than 10 km from their homes	Yes - Figure 4 demonstrates achievement of this target.
100% mobile recycling centres are conveniently located within identified villages	Yes- MRC's are located in: - Āpiti - Halcombe - Hīmatangi - Kimbolton - Pōhangina - Rongotea - Sanson - Tangimoana
Two waste education programmes per annum	Yes - Enviroschools and Zero Waste Education are delivered in the District (as well as Paper for Trees which is run through Zero Waste Education).

Public Health Issues

Public health is a key consideration when dealing with waste, and is a fundamental priority of the involvement of local authorities in waste management.

A number of legislative provisions outline the need for local authorities to ensure public health is prioritised when creating strategic plans such as the WMMP.

Waste Minimisation Act 2008

Under Section 51 of the WMA 2008, waste assessment proposals must ensure that public health is adequately protected.

Local Government Act 2002

The Local Government Act gives consideration to the role of territorial authorities in protecting public health through various provisions.

NZ Waste Strategy 2010

One of the key goals under the waste strategy is to reduce the harmful effects of waste, including to public health. The strategy outlines a role for Councils in assessing the risk of harm from waste to human health, and to identify and take action on the most significant concerns.

Health Act 1956

Section 29 (n) of the Health Act discusses the nuisance of burning waste material, rubbish, or refuse or other undertaking produces smoke in such quantity, or of such nature, or in such manner, as to be offensive or likely to be injurious to health. This provision highlights the serious health risk of burning rubbish.

Our District

This section explains key aspects of the Manawatū District's geography, population and economy. These key features of the District are highlighted as they heavily influence the types and quantities of waste produced, and need to be factored into any decisions made about waste management and minimisation.

Geography of District

The Manawatū District stretches from the Pacific Coast in the west to the Ruahine Range in the east. To the south, it shares a boundary with Palmerston North City. It is bound to the north and south by two major rivers – the Rangitīkei and the Manawatū.

The District boasts a diversity of geographic features, including hill country to the north and east and extensive flood plains to the west. Further to the west lies the broadest band of dunefields anywhere in the country. The Ōroua River runs from the Ruahine Range to the northeast of the District, skirting around Feilding before making its way through the floodplains and then converging with the Manawatū River at Rangiotū.

Population

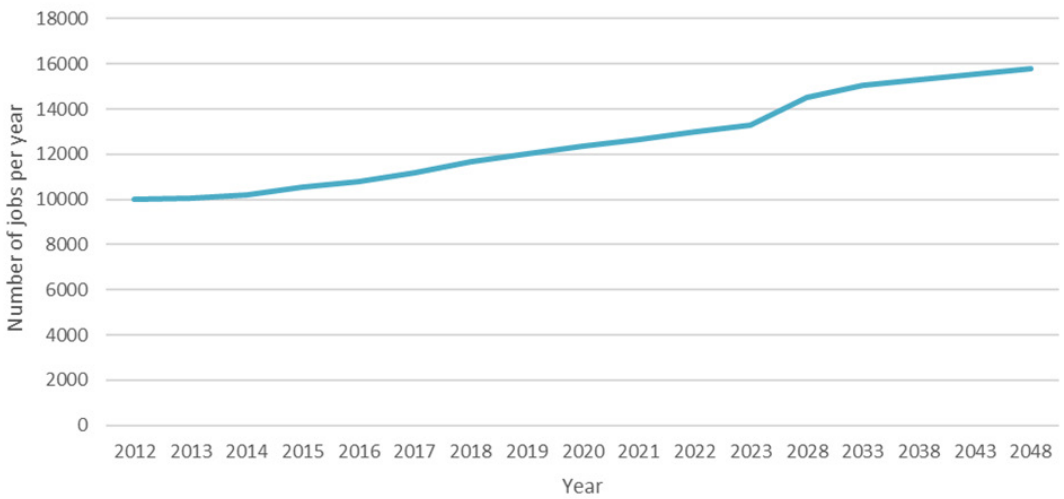
As of June 2020, the population of the District was at 32,100. Approximately 55% were living in urban Feilding, while the remainder live in the Districts rural and village areas. Between now and 2051, the population is projected to increase by 34.5% to a total of 43,935 people.

About 16% of the District's community identify as Māori (compared to about 89% who identify as New Zealand European. Some people identify as more than one ethnicity). Residents that identify as other ethnicities make up less than 3% of the population. The District has a rich cultural past associated with the iwi that have ahi kā (a history of continuous occupation) here. Ngāti Kauwhata, Ngāti Raukawa, Ngāti Tūwharetoa, Ngāti Maniapoto and Rangitāne ki Manawatū all have marae in the District, while other iwi also have an organisational presence.

Economy

The Manawatū District economy is driven by our dominance in primary production and value added manufacturing, galvanised by the continuation of strong global demand and solid commodity prices. Our strong defence force sector is also supporting household income. Population growth and elevated levels of Central Government investment in the District are further increasing local economic activity.

Figure 1: Project Employment Rate in the Manawatū District



The Waste Situation

District Waste Quantity Estimates and Composition

This section reflects on the current output of waste across the District in urban and rural areas. Under this section we have drawn on research from other Councils in NZ to help us make assumptions on our waste situation.

Council considers that the assumptions made to estimate urban, rural domestic and farm waste composition and quantities are appropriate due to the significant cost associated with collecting accurate field data. These assumptions are allowed for under Section 51 of the WMA 2008.

Urban Waste Yearly Estimates

Our urban waste estimates have been prepared based on data collected from the Feilding Transfer Station (now the Manawatū Resource Recovery Centre), from the Palmerston North City Council (PNCC) Waste Assessment 2018, and completion of a pro-rata calculation to project this to the Feilding population.

The table below shows an estimated breakdown of waste generated from households in the Manawatū District. The PNCC data captures domestic Mobile Garbage Bin (MGB) waste from Feilding which is currently disposed of through the Matthews Avenue transfer station in Palmerston North. This waste is commercially collected by private contractors. The Feilding Transfer Station (now the Manawatū Resource Recovery Centre) data is directly provided to Council by its Solid Waste Contractor, Smart Environmental. Council currently have data on record from Smart Environmental from 2015 through to the time that this Waste Assessment was prepared.

Table 2: Estimated Total Urban Domestic Waste Data – Sorted by Highest to Lowest Quantity

Yearly Urban Waste (Summarised)	
Waste Type	**Quantity (T)**
Organics	2111
Plastics	677
Paper	651
Nappies & Sanitary	389
Textiles	237
Glass	155
Ferrous Metals	124
Non Ferrous Metals	89
Rubble & Concrete	89
Timber	86
Potentially Hazardous	39
Rubber	30
Total	**4676**

Interpretation of Urban Waste Estimates

The organic composition of the District's waste stream is significantly larger in proportion to other waste streams. Typically in blue bags, organics are in the form of food waste whereas MGBs contain more garden waste.

Potentially recyclable material (e.g. paper, plastic and glass) are also quite predominant in urban waste streams.

Rural Domestic Waste Yearly Estimates

Our rural domestic waste estimates have been prepared based on data collected from the Feilding Transfer Station (now the Manawatū Resource Recovery Centre), from the Palmerston North City Council (PNCC) Waste Assessment 2018, and completion of a pro-rata calculation to project this to Manawatū District rural and village household numbers.

The number of rural domestic households has been derived from the total number of rural households in the District, less the number of farms. A farm waste assessment has been completed separately.

Table 3: Estimated Total Rural Waste Data - Sorted by Highest to Lowest Quantity

Yearly Rural Domestic Waste (Summarised)	
Waste Type	**Quantity (T)**
Organics	946
Plastics	303
Paper	292
Nappies & Sanitary	174
Textiles	106
Glass	69
Ferrous Metals	56
Non-ferrous Metals	40
Rubble & Concrete	40
Timber	38
Potentially Hazardous	17
Rubber	14
Total	**2096**

Interpretation of Rural Domestic Waste Estimates

As rural domestic waste estimates have been prepared using the same assumptions as our urban waste estimates, we can see a corresponding high quantity of organics and potentially recyclable materials in the waste stream.

Rural Farm Waste Yearly Estimates

These estimates were derived from a 2014 study undertaken by the Regional Councils of Waikato and Bay of Plenty who measured waste volumes generated on different farms types (i.e. sheep and beef, dairy). This study reviewed the waste being collected on farms which is most often disposed of on-site.

This data was then projected to the farm types and numbers in the Manawatū District community. Farm type data in the Manawatū was derived from Statistics New Zealand 2019.

Farm waste data also includes provision for domestic waste generated on farm.

Table 4: Estimated Total Rural Waste Data - Sorted by Highest to Lowest Quantity

Yearly Rural Farm Waste (Summarised)	
Waste Type	**Quantity (T)**
Organics	7258
Plastics	6801
Timber	5382
Ferrous Metals	1707
Household Domestic	971
Rubble and Concrete	417
Potentially Hazardous	301
Rubber	66
Paper	39
Textiles	18
Glass	0.219
Total	**16843**

Interpretation of Rural Farm Waste Estimates

Organic wastes in the rural context are made up of animal wastes (excluding slinky and bobby calf counts) and bedding material. Bedding is mostly ploughed back into the earth as a nutrient enrichment media, and some was used to aid composting and breakdown of dead animals.

Timber waste in the rural context includes CCA treated timber, untreated timber offcuts, old fence posts and pallets. There is a high content of timber within rural waste due to the range of agricultural activities that utilise this material (i.e. fencing and building maintenance).

Farm plastics are used to support agricultural activity and often include containers, drums, silage wrap, netting, mulch film and crop cover. These materials are often burnt or buried on farm.

Smart Environmental Data 2015 – 2020

Smart Environmental is Council's provider of all Solid Waste and Recycling collection services. As part of delivery of these services, Smart Environmental provide Council with regular data reporting.

It is important to note that Council does not manage all of the District's waste, and that waste managed by private enterprise is not reflected in Smart Environmental data.

Recycling and Waste Diversion

The table below demonstrates the materials collected at the transfer stations in the District in 2020 as reported by Smart Environmental.

Table 5: Materials Collected at Transfer Stations in the District

Materials from Transfer Station and Resource Recovery Centre		
Materials	**Tonnes per year (2020)**	**Reuse Destination**
MRF-Paper	655	Exported
Plastics - Plastics sold - Plastics milk - Plastics clear - Plastics Mixed 1-7	39	Exported
MRF Waste	92	Recyclables that cannot be processed as recycling- sent to Bonny Glen landfill
Green Waste	560	Composting initiatives
Glass	1553	Exported
- Metal - Aluminium cans -Lead batteries -Tyres -E-Waste	560	Exported
Waste to landfill - Blue bags - Public drop-off - Commercial waste	6602	Bonny Glen Landfill

Interpretation of Materials Collected at Transfer Stations

Table 5 demonstrates that the majority of recyclable materials collected at transfer stations have an export destination. This is optimal as it reduces the waste that ends up being sent to the landfill.

However, the data tell us that the majority of materials collected at transfer stations still end up in the Bonny Glen landfill (Waste to Landfill and MRF Waste).

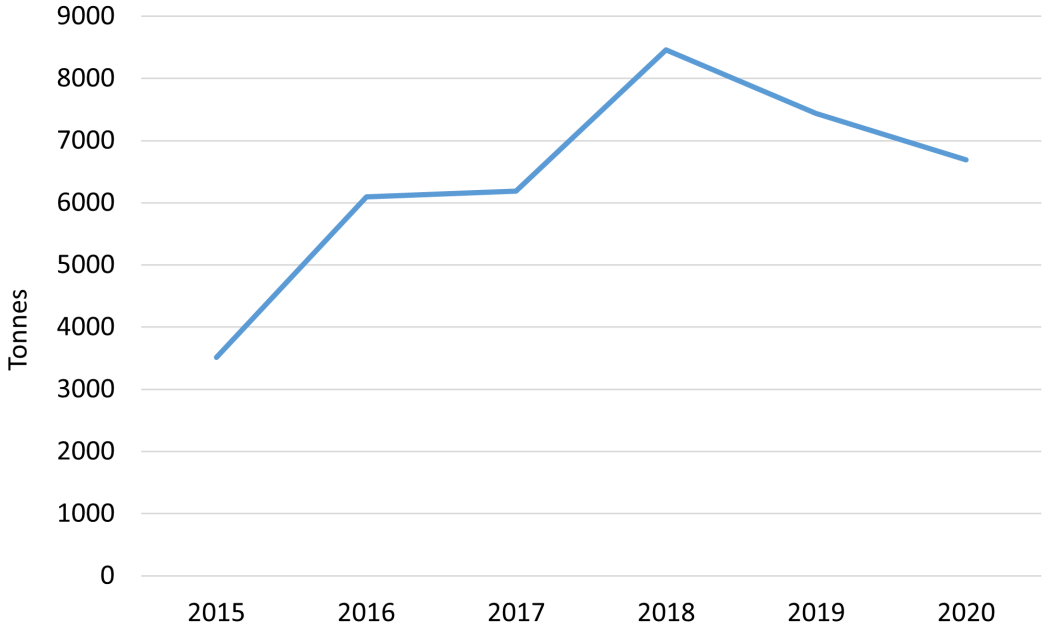
Refuse to Bonny Glen Landfill

The data provided from Smart Environmental for refuse to landfill in Figure 2 above generally shows an increasing trend in the amount of waste being sent to Bonny Glen Landfill.

The reduction in refuse to landfill demonstrated in 2020 is attributed to the increase in popularity of privately contracted Mobile Garbage Bins in the District, which are emptied at Palmerston North (not at the Manawatū Resource Recovery Centre). These tonnages are therefore not reflected in the Smart Environmental Data.

The reduction in tonnages sent to landfill in 2020 is also likely to reflect the impact of the 2020 Covid-19 lockdown on commercial waste generation in the District.

Figure 2: Smart Environmental Data for Refuse to Bonny Glen Landfill 2015 – 2020



Other Waste Quantities

Within the District, there are various private companies that collect different materials such as green waste, clean fill, construction waste and general refuse. These materials are not included within the data contained in this report as the waste is deposited at various sites. Furthermore, council does not have access to private industry's monitoring data.

Table 6: Private Waste Companies Operating in the Manawatū District

Company	What they collect- Households
Waste Management	General refuse Recycling Green waste Clean fill material
Low Cost Bins	General refuse Recycling
Lucy's Bins	General refuse
Envirowaste	General refuse
Central Demolition	Construction material Clean fill

Waste Services and Infrastructure

Collection

Smart Environmental

Smart Environmental is Council's provider of all Solid Waste and Recycling collection services. This includes kerbside pickup and emptying of Mobile Recycling Centres (MRCs). Every month, council receives a report from Smart Environmental showing the amounts of waste and recycling collected from kerbside collection and MRC's.

Kerbside Collection

Council offers kerbside collection for both refuse and recycling depending on the area.

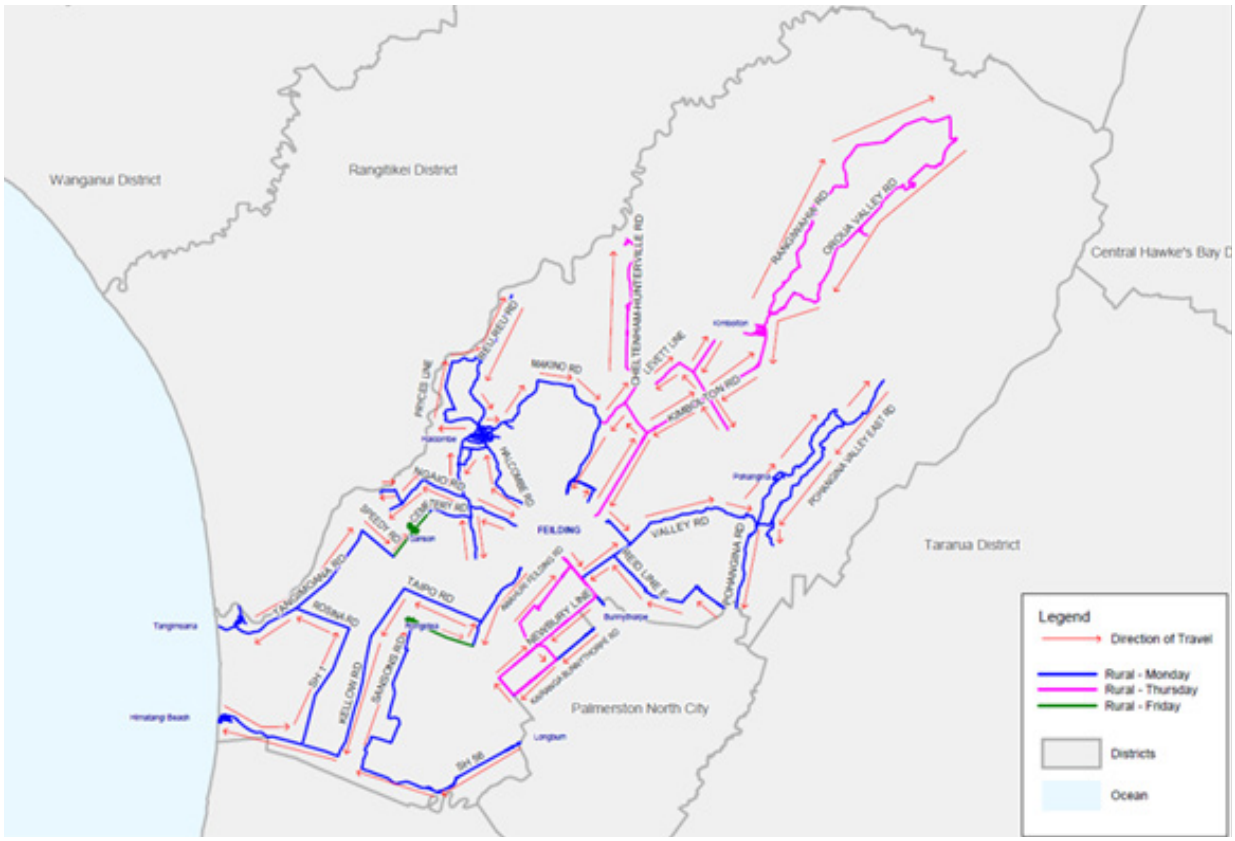
Feilding urban residents have access to weekly rubbish collection and fortnightly recycling collection. Rubbish is collected in MDC blue bags which are available for residents to purchase at supermarkets in Palmerston North and Feilding, as well as stores located throughout the District. Blue bags are also available at council's Feilding office.

Council provided kerbside refuse collection services are available to 80% of households in the District.

Recycling is collected in 240L wheelie bins, and black crates for glass.

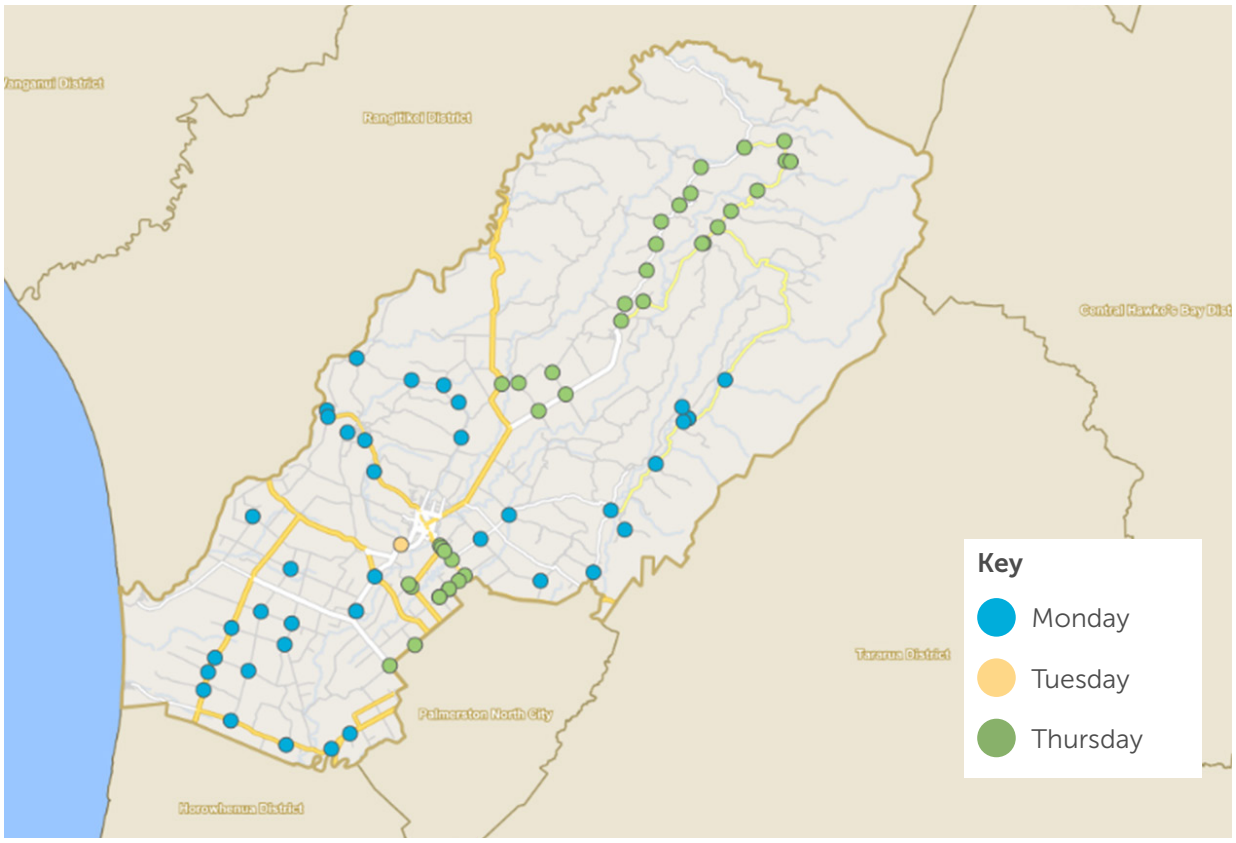
Some rural residents have access to kerbside pickup for rubbish. Figure 3 below displays these areas.

Figure 3: Access of Rural Residents to Kerbside Rubbish Collection.



If rural residents do not have access to kerbside rubbish collection, there are rural drop off points displayed in Figure 4 below.

Figure 4: Access of Rural Residents to Rubbish Drop-off Points.



Licencing arrangements

Within the MDC Solid Waste Bylaw 2019, Section 13 sets out licencing of the Collection or Transportation of Waste and Donated Goods Containers. To apply for this license, the applicant must go through the steps set out in Section 14 of the bylaw.

Mobile Recycling Centres (MRC)

There are eight MRCs located in rural villages throughout the District. MRC's consist of a shipping container for paper, cardboard and cans and three separate bins for green, brown and clear glass.

Predominantly, the container stays in place, and contractors from Smart Environmental empty the bins inside the container. However, the glass bins are replaced by empty bins when full. At limited sites there is also a blue bag drop off at which Smart Environmental collect the bins and swap them out for empty ones.

Table 7: Details of Mobile Recycling Centres in the District

Name	Location	Materials accepted	Materials accepted
Āpiti MRC	Watsons Road, Āpiti	Plastics, Cans, Paper, Cardboard, Clear glass, Green glass, Brown glass	
Halcombe MRC	Willoughby Street, Halcombe	Plastics, Cans, Paper, Cardboard	(Glass was provided but removed until a more suitable location is found)
Hīmatangi Beach MRC	Koputara Road, Hīmatangi beach	Plastics, Cans, Paper, Cardboard, Clear glass, Green glass, Brown glass	
Kimbolton MRC	London Street, Kimbolton	Plastics, Cans, Paper Cardboard, Clear glass, Green glass, Brown glass	Blue bag bin
Pōhangina MRC	Finnis Road, Pōhangina	Plastics, Cans, Paper, Cardboard, Clear glass, Green glass, Brown glass	
Rongotea MRC	Wear Street, Rongotea	Plastics, Cans, Paper, Cardboard, Clear glass, Green glass, Brown glass	Blue bag bin
Sanson MRC	Dundas Road	Plastics, Cans, Paper, Cardboard, Clear glass, Green glass, Brown glass	
Tangimoana MRC	Tangimoana Beach Road	Plastics, Cans, Paper, Cardboard, Clear glass, Green glass, Brown glass	Green waste collection

Figure 5: Apiti Mobile Recycling Centre

Figure 6: Sanson Mobile Recycling Centre

Recycling and Recovery

Council provides a number of facilities to enable recycling and recovery.

Materials Recycling Facility (MRF)

The current MRF is located at the Manawatū Resource Recovery Centre and handles paper/cardboard, plastics 1-6, tins and cans and glass bottles. It is designed with a cardboard sorter, magnets and an eddy current to sort the aluminium and tin cans. Furthermore, there is a main sort line of two to three staff for hand-sorting the plastics and paper. Glass bottles are sorted by colour. The MRF also contains a press for plastics, paper and cardboard, and tin cans. There is no washing or pelletising/flaking.

From the MRF, the following reuse opportunities are undertaken:

- Tins and cans are sent to a local metal scrap dealer in the Manawatū
- Plastic is sent to Asian markets, except for HDPE and PET. HDPE is sent to Palmerston North, and PET plastics are sent to Flight Packaging in Lower Hutt
- Paper and cardboard are sent to Visy Recycling in Auckland
- Glass bottles are sent to Visy Recycling, then to O-I New Zealand in Auckland.

Transfer Stations

There are two transfer stations in the Manawatū District. The Manawatū Resource Recovery Centre on Kawakawa Road, and the Southern Transfer Station in Rongotea. Currently, all general refuse collected at the transfer stations is sent to Bonny Glen landfill.

Green Waste

There are currently two drop off points for green waste in the District. There is one at the Manawatū Resource Recovery Centre as well as one in Tangimoana, located behind the MRC. The green waste dropped off at these points is then transported to the Manawatū Wastewater Treatment Plant (WWTP). From this, the green waste is mulched.

Council intends to further explore composting opportunities for this mulch as part of Council's sludge management plan for the Feilding Waste Water Treatment Plant.

Figure 7: Tangimoana Green Waste Collection Site

Construction Materials

Central Demolition deals with construction materials within the District. Over the past 2 ½ years, Central Demolition has prevented more than 100,000 cubic meters of construction material from going to the landfill.

Council assisted Central Demolition with site identification and with an application to Central Government for a Waste Minimisation Levy grant. In August 2021, Central Government gave Central Demolition $750,000 from the levy fund to allow for expansion and future growth in recovery services.

Central Demolition plans to open a new facility in 2022. This facility will be able to process approximately 80,000 tonnes of waste each year and furthermore create up to 15 full time jobs.

Energy from Waste

Council has been approached by a private sector company who wishes to convert waste to energy via a Pyrolysis Plant on the Manawatū Resource Recovery Park site in Feilding. Conversations are ongoing in regards to this venture.

Extraction

The opening of the new Manawatū Resource Recovery Centre in November 2021 allows for ease of diversion of recyclable materials from waste deposited by the community.

Treatment

Currently, there is only a few types of treatment to materials within the waste stream managed by Council. Refrigerators are degassed before heading to landfill, and tires are washed. These activities occur at the new Manawatū Resource Recovery Centre in Feilding.

Disposal

Waste that cannot be recycled or recovered goes to the Bonny Glen Landfill in the Rangitīkei District. This is a Class 1 Municipal Solid Waste landfill as per the Technical Guidelines for Disposal to Land 2019 (the guidelines). All classes of landfill are described below per the guidelines:

Class 1: Municipal Solid Waste landfills

A site that accepts municipal solid waste. Generally also accepts construction and some industrial waste as well as contaminated soils. Often use clean fill as a daily cover. Defined as a 'disposal facility' in the WMA 2008.

Class 2: C&D Landfills

A site that accepts non-putrescible wastes including construction and demolition wastes, inert industrial wastes, managed fill material, controlled fill and clean fill material.

Class 3: Landfill- Managed Fill

Comprises predominantly of clean fill and controlled fill which may also contain material with contaminant concentrations in excess of controlled fill limits

Class 4: Landfill- Controlled Fill

These comprise predominantly clean fill materials, but may also include other inert materials and soils with chemical contaminants at concentrations greater than local natural background concentrations, but with specified maximum total concentrations.

Class 5: Landfill- Clean Fill

These only accept clean fill material. Clean fill material is generally collected from construction projects that can be repurposed for future projects. It can contain soil, cement, gravel, brick, top soil, sand and rubble. This material can also be used as a daily cover for Class 1 landfills. A daily cover reduces odour and air emissions, as well as controlling disease vectors such as birds and rodents.

Bonny Glen Landfill

Bonny Glen landfill is a joint venture of EnviroNZ and Waste Management NZ Ltd. It accepts non-hazardous residential, commercial and industrial waste from many territorial authorities within the region. The consent for Bonny Glen was extended in 2013 and the landfill was expanded in 2015. Bonny Glen Landfill it is expected to accept the region's waste until 2055.

All general refuse from the Manawatū Resource Recovery Centre is currently deposited at Bonny Glen. Due to the lack of national regulation and consenting requirements in the solid waste industry, information on the use of the other classes of landfill (2-5) is not readily available.

Closed Landfills

Closed landfills are grounds which once operated as functioning landfills, however have reached capacity and have since closed. Within the District, there are three closed landfills that Council maintains:

Tangimoana Landfill

There is currently lots of vegetation growing over the cap, and this is dominated by exotic species. It is unknown when Tangimoana Landfill first started operating, however this landfill closed in 1997.

Kimbolton Landfill

Kimbolton landfill is well fenced with entrances closed off by large concrete blocks. Vegetation has become well established on the landfill cap. Kimbolton Landfill opened in the 1960s and closed in 1987.

Feilding Landfill

Feilding Landfill was closed in 2006 after operating since the 1950's. The intention was to close the landfill and then use it as a clean fill site for 15 years. Area A closed in 1992, and was then covered with soil and grazed by sheep. Area B didn't close until 2006. Currently Feilding Landfill has a consent to deposit clean fill material on top of the landfill until 2025.

Clean Fills

There are currently no consented clean fills within the District. However, data may become available in the future if landfill levies become applicable to clean fill sites.

Facilities for Specific Waste Disposal

Plasback

Plasback is a user pays service accredited by MfE. They collect and discard of a variety of waste plastics such as bale wrap, feed bags, twine, high density polyethylene drums.

3R

3R is co-funded by user pays as well as annual subsidisations from Council. The public can drop off various banned agrichemicals such as DDT and Dieldrin, Lindane, Chlordane. Other specific unwanted chemicals (including hazardous waste) can be collected by 3R for a fee.

Agrecovery

Agrecovery is a not-for-profit charitable trust, funded by brand owners of agrichemical, animal health and dairy hygiene products. Some chemicals are free for disposal and collection, others are subsidised.

Fly Tipping

The cost to remove illegally dumped rubbish is an additional one to rate payers. Most of the items found within the rubbish by Council's compliance team can easily be disposed of for free such as bottles, cans and paper.

Fly tipping compliance measures are included in the MDC Solid Waste Bylaw 2019.

If fly tipping is spotted, the community is urged to record details and contact Council so we can investigate and arrange for the rubbish to be removed.

Waste Education Services

Enviroschools

Enviroschools is run by Horizons Regional Council. Facilitators go into schools to teach students about the environment, as well as providing advice, guidance, support and motivation to schools. Some projects are small scale within the school, while others involve multiple schools and hundreds of people working across a whole community.

Horizons Regional Council organise and run regular workshops, wānanga and hui which aim to inform and inspire teachers and students, and allow them to share ideas and projects.

The following schools in the Manawatū District are involved with Enviroschools:

Āpiti School

Gail's Childcare

Kimbolton School

Manchester School

Mount Biggs School

Newbury School

Puddleducks Nursery and Preschool

Sanson School

Makino Kindergarten

The Secret Garden Childcare

Tangimoana School

Hiwinui School

Bainesse School

Glen Ōroua School

Puddleducks Gladstone Street

Feilding Kindergarten

Kimbolton Early Learning Centre

Zero waste Education

Zero Waste educates students from preschool through to year eight about sustainable resource use. This programme is funded through the national waste levy fund. Zero Waste enables children to investigate the link between natural resources, earth and the effects on the environment.

The following schools in the Manawatū District are Zero Waste Education Schools:

Bainesse School

Glen Ōroua School

Manchester Street School

Sanson School

Tangimoana School

Colyton School

Kopane School

Newbury School

St Josephs School

Paper for Trees

Paper for Trees is a rewards based programme set up by Zero Waste Education. They supply schools with paper recycling bins and then reward them with native trees if they recycle. Currently 4179 schools and preschools are signed up nationwide.

Thanks to Paper for Trees in the Manawatū District, there have been 235 Native trees planted, 66 tonnes of paper and cardboard recycled, 532 m2 of landfill space saved and 359 tonnes of CO2 not produced in landfills.

The following schools or education facilities in the Manawatū District participate in Paper for Trees:

Awahou School

Bainesse School

Bunnythorpe School

Colyton School

Feilding High School

Glen Ōroua School

Feilding Intermediate

Halcombe Primary School

Hiwinui School

Feilding Kindergarten

Feilding Playcentre

Makino Kindergarten

Puddleducks Gladstone Street

Puddleducks Nursery and Preschool

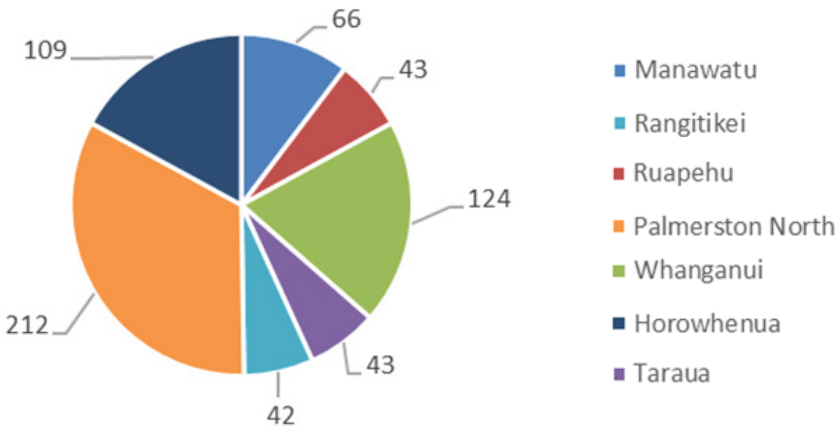
Puddleducks Nursery and Preschool- Haggitt Street

Te Kawau Playcentre

The Secret Garden Childcare Ltd

Kimbolton School

Figure 8: A Comparison of Paper Recycled through Paper for Trees Among Districts in the Manawatū-Whanganui Region.



Para Kore

Para Kore is a free educational programme for whānau, hapu, iwi, marae, kura, wananga and community organisations across New Zealand. They work closely with these communities for the urgent collective goal of zero waste, carbon neutral future for Aotearoa.

In 2019, three marae from the Manawatū had signed a Memorandum of Understanding with Para Kore - 26 in total in the Manawatū-Whanganui region. Marae within the region divert approximately 60.4% of their waste thanks to Para Kore.

Funding for Council Services

Waste Disposal Levy

The waste disposal levy was introduced under the WMA 2008, and currently sits at $20 per tonne for all Class 1 landfills. The purpose of the levy is to create revenue to promote waste minimisation as well as recognising that disposal to landfill negatively effects not only the environment, but also society and the economy. On an individual basis, the levy encourages people to take responsibility for the waste they produce and to find effective ways of encouraging the make, use, return principles.

Half of the total waste levy generated goes to Councils, of which MDC receives a portion. MDC then uses funds to help promote waste minimisation in the District. The other half of the levy goes towards the Waste Minimisation Fund.

Waste Minimisation Fund

This fund receives half of the total waste disposal levy and goes towards supporting different projects nationwide that increase the reuse, reduce and recycling of materials.

MDC traditionally utilises the funds to support educational programmes in the District. The accumulated surplus has been used for the Manawatū Resource Recovery Centre.

MDC do not currently spend all of the funding received, so there is considerable scope to extend the range of waste minimisation activities that Council undertake that can be funded by the levy.

Rates

Rates are a crucial funding stream in order to deliver the most effective and efficient waste management and minimisation services and infrastructure. Council have two types of rates charges in order to maintain these services. Uniform Annual General Charges (UAGC) are paid by all rate payers to support services such as the MRC's and Transfer Stations. Targeted rates are specifically for members of the community who have access to services that others do not, for example kerbside refuse collection. Most rural residents do not have access to kerbside refuse collection, therefore they do not pay for this through their rates.

Council's 10 Year Plan 2021-31 shows how the Solid Waste activity is funded. A summary of this is set out below:

- 35-45% is publicly funded through the UAGC
- 65-55% is privately funded through user fees and charges. These include blue bag sales at MDC reception or shops around the District, Transfer Station gate takings and fines.

Kerbside recycling collections:

- Kerbside collection is funded through a target rate to people who have access to this service therefore it is 100% publicly funded.

Table 8: Breakdown of Rates Funding of Solid Waste Services

Activity	Uniform Annual General Charge	Targeted Rates	User Pays
Feilding kerbside recycling		✓	
MRC's	✓		
Transfer Stations	✓		
Green waste processing	✓		
Disposal to landfill	✓		
Feilding kerbside refuse		✓	✓
Bulk collection costs	✓	✓	
District bag collection	✓		
Waste collector licencing	✓		
Shop bins	✓		

Performance Measurement

This section provides a comparison with two other territorial authorities of similar size and characteristic as MDC. The aim of comparing data with other councils is to gain an understanding of Council's performance in waste management and minimisation. The two comparison Councils are: Whanganui District Council and South Taranaki District Council.

The Whanganui District is located within the Manawatū-Whanganui Region, with a population of 48,100 residents. Like the Manawatū, most of its residents are centred around an urban area, in Whanganui, at the mouth of the Whanganui River. However, there are also rural areas spread around the District.

The South Taranaki District shares a border with Whanganui District and is home to approximately 28,000 residents. South Taranaki consists of seven small rural towns, with farmland connecting them. Current Performance Measurement

Rubbish Collected Per Capita

Table 9: Performance Comparison Between Regions – Rubbish Collected Per Capita

Council	Tonnes per capita
Manawatū District Council 2021	0.213
South Taranaki District Council 2018	0.305
Whanganui District Council	0.483

Recycling Collected Per Capita

Table 10: Performance Comparison Between Regions – Recycling Collected Per Capita

Council	Tonnes per capita
Manawatū District Council 2021	0.073
South Taranaki District Council	0.194
Whanganui District Council	0.043

Green/Organic Waste Collected Per Capita

Table 11: Performance Comparison Between Regions – Green/Organic Waste Collected Per Capita

Council	Tonnes per capita
Manawatū District Council 2021	0.022
South Taranaki District Council	0.081
Whanganui District Council	Data not collected

Interpretation of Performance Measurement

Performance data measured against South Taranaki District Council shows that MDC are not collecting as much rubbish and recyclable material. The difference is likely due to the frequency and range of the services provided in South Taranaki. South Taranaki also provide a voluntary user pays collection service for green waste and organics, and are therefore performing higher than MDC.

Comparison with Whanganui District shows the difference between a local authority providing a service (MDC) and leaving service delivery to the private sector (Whanganui). Whanganui District Council provides 10% of waste collection services by volume, and the remainder is left to private waste collection companies.

Forecast of Future Demands

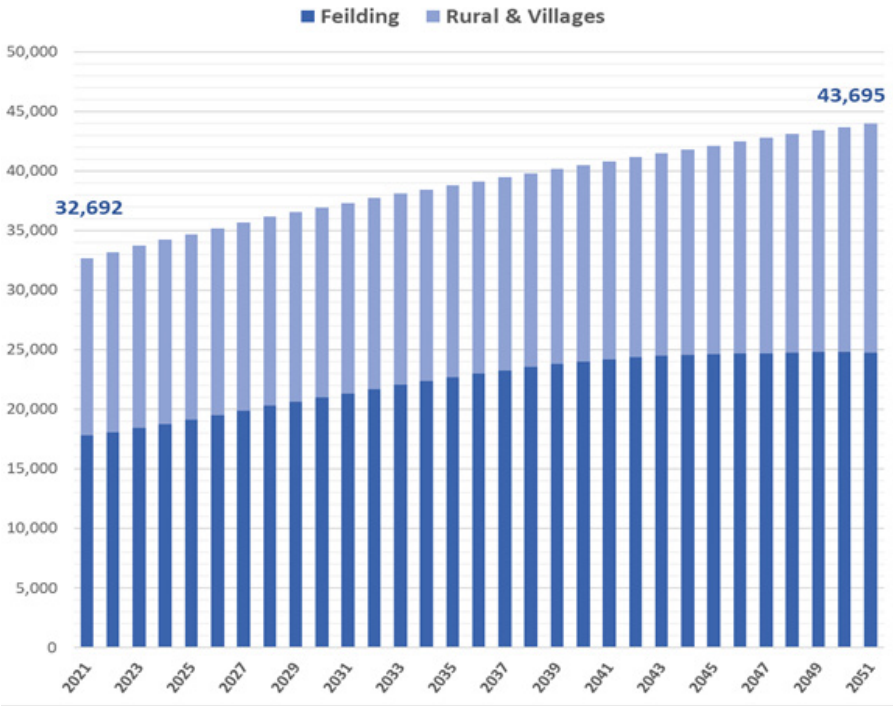
Looking to the future, there are a wide range of factors likely to impact the future demand for waste management and minimisation.

Population Increase

It is assumed that the population of the Manawatū District will increase from 32,692 residents in 2021 to 43,695 in 2051. The population is expected to grow by 1.4% over the year to June 2022, followed by 1.7% growth over the year to June 2023.

Moderate population growth of between 1.1% and 1.4% per annum is anticipated between 2024 and 2031 with annual population growth decreasing to between 0.7% to 1.0% over the period 2032 to 2051.

Figure 9: Population Growth in the District from 2021 to 2051

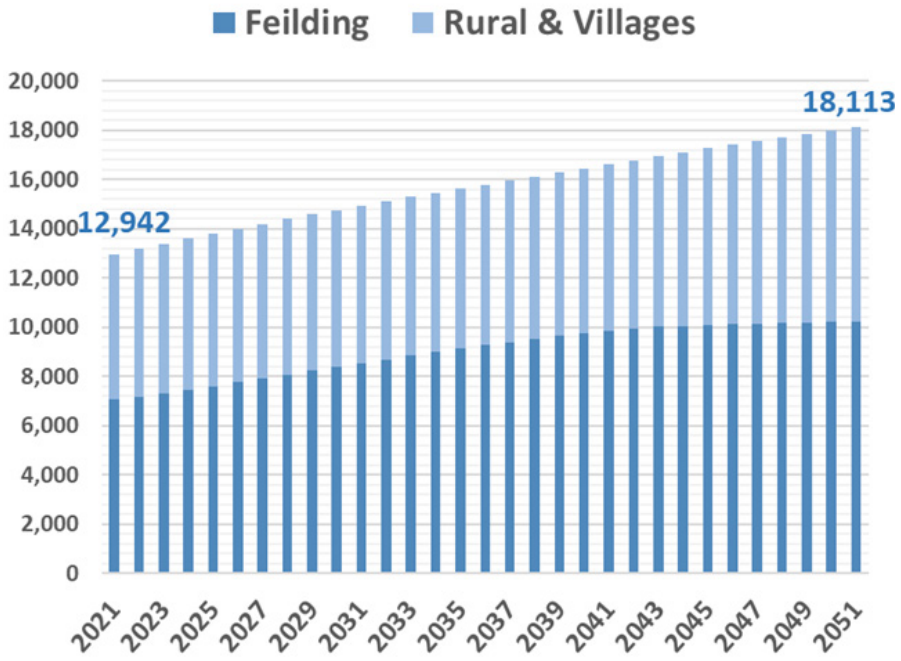


Council has made the assumption based on statistics commissioned from Infometrics in 2020 that the number of households in the Manawatū District will increase from 12,942 in 2021 to 18,113 in 2051 as illustrated in Figure 10 below.

The number of households in the District are forecast to increase by 1.7% per annum over the first two-years of the 10-Year Plan, declining to 1.5% growth per annum between 2024 and 2026 and 1.2% - 1.4% per annum over the reminder of the 10 Year Plan period.

Household growth is estimated to range between 0.7% - 1.2% per annum over the period 2032 to 2051.

Figure 10: Household Growth in the District from 2021 to 2051



Based on the projected population growth, Council would expect a corresponding increase in a number and quantity of waste streams.

Rural Land Use Projections

It is projected that over the period of Council's 10 Year Plan 2021-31, there will be some diversification of land use from agricultural activities towards forestry and other low emissions land uses and innovation. Council would also expect technology to reduce on farm emissions from livestock farming to meet NZ's obligations under the Climate Change Response (Zero Carbon) Amendment Act 2019, the Paris Agreement 2016 and Carbon Offset Credits.

It is also anticipated that there will be increasing constraints on expansion of agricultural activities due to more stringent discharge requirements within the Horizons Regional Council One Plan and Central Government Policy, including the National Policy Statement for Freshwater Management 2020.

Due to the projected diversification of land use to different agricultural activities, we could expect increased volumes in some types of waste streams, e.g. green waste from forestry activity.

Changes in Lifestyle and Consumption

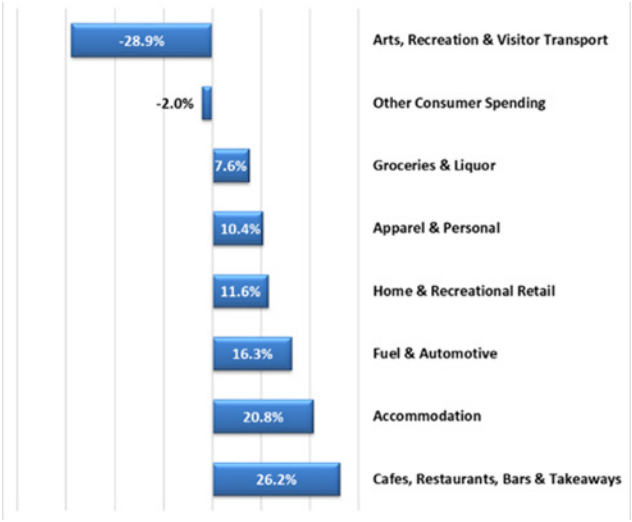
Increase in Retail Spending

The value of retail spending in the District over the 2021 year to September increased by 11.7% compared with the previous year. In contrast, national retail spending increased by 6.0% over the year. Retail spending in Palmerston North grew by 9.0%, bringing the increase in retail spending for the Manawatū Region to 9.4%. The strong performance of local industries alongside solid jobs and earnings growth has supported local retail spending relative to the national average.

As observed across the country, expenditure on Arts, Recreation and Visitor Transport has declined as a result of intermittent restrictions placed on economic activity over the year to September 2021 . Overall, growth in retail spending in the District indicates relative confidence in the local economy.

With an increase in spending in many of the retail sectors outlined in Figure 11 below, Council would expect to see an increase in waste streams associated with these activities (particularly with an increase in online shopping), e.g. plastic and cardboard retail packaging.

Figure 11: Retail Spending Year End September 2021 vs Year End 2020



Changes in Central Government Policy and Legislation

There are a number of emerging changes in Central Government policy that will influence how MDC manages and minimises waste. Council is already actively investing in infrastructure and initiatives required to enable a circular economy as reflected in Central Government policy.

Namely, Council is currently considering partnership with an energy to waste provider, and has developed a proposal for a Plastics Recycling and Reuse Facility for Central Government Funding. In addition, the new Manawatū Resource Recovery Centre has considerably more capacity than the previous site, enabling larger volumes of waste to be processed and more materials to be diverted from landfill.

A number of Central Government policy changes are outlined on the following page.

NZ Waste Strategy

The proposed new NZ Waste Strategy emphasises a transition to a circular economy for NZ via the philosophy of 'Make, Use, Return'. MfE describes that a circular economy will aid the transition from an extractive, economic model to one that is more regenerative and equitable. This will include less of a reliance on imported materials, and bolster the resilience of the economy.

Perhaps the most important value of a circular economy for New Zealand's waste is the alignment with the te ao Māori world view and Māori principles such as rangatiratanga and kaitiakitanga. This ideology is vital for sustainable and equitable use of our natural resources. The MfE Emissions Reduction Plan Discussion Document describes a circular economy as merging together matauranga Māori and an ideal way forward for New Zealand's waste problem.

Product Stewardship

Product Stewardship is discussed under Part 2 of the WMA 2008. The concept is also developing further due to the national review of waste in Aotearoa. The purpose of product stewardship according to the WMA 2008 is to encourage people and organisations involved in the life of the product to share the responsibility for effective reduction, reuse, recycling or recovery and to manage any environmental harm arising from the product.

Under Section 9 of the WMA 2008, the Minister for the Environment can declare a product to be a priority product. So far, there are six priority products identified by MfE:

- Tyres;
- Plastic Packaging;
- Electrical and electronic products;
- Agrichemicals and their containers;
- Refrigerators; and
- Farm plastics.

WMA 2008 and the Litter Act

Central Government is proposing new and more comprehensive legislation on waste to replace the Waste Minimisation Act 2008 and the Litter Act 1979.

The new legislation is proposed to create the tools to deliver the NZ Waste Strategy and to ensure Central Government make good use of funds generated by the expanded waste disposal levy.

The new legislation will reset the purposes, governance arrangements, and roles and responsibilities, and strengthen and clarify regulatory and enforcement powers.

Changes to the WMA 2008 includes a proposal to make the Waste Management and Minimisation Plan a part of a Council's Infrastructure Strategy or their 10 Year Plan.

Resource Management Act (RMA)

The RMA is also currently under review by MfE. The aim of the review is to improve environmental outcomes and to better enable urban and other development within environmental limits. The one RMA is likely to be separated into three legislative documents:

- The Natural and Built Environments Act to provide for land use and environmental regulation;
- The Strategic Planning Act to integrate with other legislation relevant to development, and require ling term regional spatial strategies; and
- The Climate Change Adaption Act to address complex issues associated with managed retreat and finding and financial adaption.

Future reviews of the MDC WMMP will need to be in accordance with this new legislation.

Options Available to Meet Future Demands

There are a number of ways Council could meet the anticipated future demands for waste management and minimisation.

Increase in Education and Communication

MDC will maintain current relationships with the three education programmes; Enviroschools, Zero Waste Education and Paper for Trees. Council views these education programmes as essential to pass on knowledge regarding sustainability and the negative impacts of waste to our tamariki.

Within the review of the Waste Management and Minimisation Plan, Council will explore additional opportunities to deliver waste education to the community, including through its own communication channels.

Investment in Infrastructure

MDC has recently invested $4 million into a Resource Recovery Centre on Kawakawa Road in Feilding which opened in November 2021.

As part of the concept planning for the Resource Recovery Centre, initial investigation was undertaken on a community recycling centre and a dedicated green waste drop-off facility. These initiatives will be explored further within the Waste Management and Minimisation Plan.

MDC also continues to explore funding opportunities for a Plastics Recycling and Reuse Centre to recover and process plastic so it can be reused, hereby taking a large proportion of waste out of landfills across New Zealand. It has been calculated, that in order for this facility to be self-sufficient, it would require 14,000 tonnes of plastic annually. In order to make this happen, it requires an investment in infrastructure from MDC, as well as an co-investment from Central Government and other funding partners.

Council has provided land at the Feilding Waste Water Treatment Plant for construction and demolition waste to be recycled, and also has an area available for a large scale composting facility.

Co-location of resource recovery initiatives at the Manawatū Resource Recovery Park means that the Council is in a favourable position to actively explore opportunities and partnerships in waste management and minimisation.

Increase in Levels of Service

Through Smart Environmental, MDC currently offers:

- Kerbside pickup of refuse and recycling for urban residents
- Some rural refuse kerbside pickup, rural refuse drop off point pick up
- Care and collection of the MRC's.

Within its Waste Management and Minimisation Plan, Council should explore the settings required for an increase in level of service to assist with quantities of recyclables and organic waste.

An increased level of advertising and promotion of the waste minimisation services already provided by Council should also be considered.

Councils Intended Role to Meet Demands

Statutory Obligations and Powers

Councils have a number of statutory obligations and powers for waste management and minimisation.

Waste Minimisation Act 2008

As the primary piece of legislation for a WMMP, the WMA 2008 focuses on minimising waste produced as well as managing the current volumes of waste within the District. The WMA 2008 contains a few key provisions that MDC is obligated to follow when reviewing a WMMP in order to meet the future demands of the District.

Section 42 states that territorial authorities must promote effective and efficient waste management and minimisation within its District. This section is alerting MDC to the obligation to have processes in place to minimise and manage waste.

Section 43 states that territorial authorities must adopt a WMMP in order to assist their efforts in promoting effective and efficient waste management and minimisation. Furthermore, it provides the criteria MDC must include within the WMMP. It also gives MDC the powers to amend or revoke and substitute a new plan.

Section 52 gives power to a territorial authority to contract any waste management and minimisation service, facility or activity. Furthermore, MDC must charge fees to users associated with the service, facility or activity.

Section 54 states that if a territorial authority provides a service that collects waste, they must do so promptly, efficiently and at regular intervals.

Resource Management Act 1991

The purpose of the RMA is to promote sustainable management of natural and physical resources. This relates to waste management and minimisation as Central and Local Government want to protect and preserve the environment and its resources. While not discussing nor defining waste specifically under Section 2, the RMA can be interpreted widely to extend to waste management and minimisation, as this is a way of mitigating adverse effects on natural and physical resources.

Section 31 gives powers to territorial authorities for certain functions within their District. For waste management and minimisation, these powers include establishing, implementing and review of objectives and plans discussing the mitigation of adverse effects on natural and physical resources.

Furthermore, in Part 5, the Governor-General may make specific regulations called National Environmental Standards (NES). The NES relevant to waste management and minimisation is Resource Management (National Environmental Standards for Air Quality) Regulations 2004. Regulation 6 states that the lighting of fires and burning of waste at landfills are prohibited unless it is to control gas formed at the landfill. Regulation 26 states that discharging of gas to the air from a landfill is prohibited unless there is a specific system in place to collect the gas.

Local Government Act

The Local Government Act ensures a democratic and effective local government that recognises the diversity of communities and provides a framework for local authorities to decide on the activities they undertake and the manner they undertake them in. The Act is important to waste management and minimisation as it provides MDC with decision making powers and furthermore ensures appropriate democratic processes are followed.

Part 6 of the Act discusses the decision making requirements to ensure accountability between MDC, the community, local iwi, people affected and interested. This part is relevant to the WMMP as it requires MDC to undertake engagement with the District community to inform and receive feedback from specific groups and people.

Section 286 furthermore states that a territorial authority needs a WMMP.

Overall Strategic Direction and Role

Having different strategies in place at either a District, regional or national level can provide MDC with the direction it needs to carry out its role in implementing initiatives to help manage and minimise waste.

Identification of Priority Products

MfE has declared six priority products for regulated product stewardship under the WMA 2008. This is part of a wider plan to reduce the amount of rubbish ending up in landfills.

These priority products need to be considered in Council's plans and strategies, and methods identified to mitigate the adverse effects from each of these products. It is fundamental for Council to consider how the circular economy principles of make, use, return can be incorporated into these mitigation methods.

Table 12: Ministry for the Environment Identified Priority Products and Potential Mitigation of Effects

Product	Environmental harm they are causing	How MDC is going to mitigate the adverse effects
Tyres	Tyres can be separated into three material types: rubber, steel and textiles, however other components such as carbon black, zinc oxide, sulphur and additives combined into the rubber are released during decomposition into the environment, these can have negative impacts on soil, air and water.	About 1500 tonnes of rubber is recycled in NZ every year. The output of this process is to make Tyre Derived Fuel (TDF) for use in cement manufacture in NZ. International markets are available for crumbed rubber, but as with all recycled commodities, prices are highly variable, and require to be shipped. It is possible to reused crumbed rubber in roading construction but the use of this is in its infancy in NZ. A crumbing plant at scale has been estimated to cost $5-10M. Pyrolysis could also provide a viable option for tyre disposal. Such a facility could accept several thousands of tonnes of product and produce biochar, biogas, and biofuel for reuse. The funding mechanism for these types of initiatives would need to be external funding and/or user pays. Council currently receives tyres of various types for a gate charge. Council could provide land designated for this purpose.
Plastic packaging	Plastic is not biodegradable, therefore every piece of plastic ever made is still on this planet. The MfE estimate 525,000 tonnes of plastic is imported into NZ every year. Plastic uses up a large portion of landfill volume as it is lightweight, and the escape of various types and forms of plastic into the global environment is well documented. The single use of plastics in developed economies such as NZ means that opportunities exist to recycle and reuse plastics.	Council has produced a Better Business Case for the large scale reprocessing of recycled plastic. The output of the re-processing is to produce plastic flakes and pellets pure enough to be reused in the manufacture of new plastic products. This project was submitted to the Provincial Growth Fund for funding in 2018, but funding approval was delayed due to the COVID-19 Pandemic. Council continues to actively explore funding opportunities for this initiative. Alternatives to recycling and reuse of plastic is pyrolysis, and/or to develop small scale decontamination facilities for plastics for recycled commodity products that are of lesser value. The development of small scale decontamination facilities for low value plastics requires scoping and cost analysis. The scale required would be in the order of 1000 tonnes per year. Funding for this type of initiative could come from gate charges, rates, and the Waste Minimisation Levy money received by Council.
Electrical and electronic products	E-waste contains a multitude of materials that have toxic chemicals that have adverse effects, not only on the environment but also to human health.	Council currently receives a range of e-waste to its Manawatū Resource Recovery Centre for a user pays gate charge. This initiative could be better publicised to obtain a higher volume of e-waste. However, the limiting factor for e-waste recycling is the extra cost to store the materials until reuse opportunities arise.

Product	Environmental harm they are causing	How MDC is going to mitigate the adverse effects
Agrichemicals and their containers	Agrichemicals affect local waterways via run-off into streams and rivers, and leaching into groundwater sources. These chemicals have increased the contamination of waterways and furthermore, depleted freshwater ecosystems.	Generally agrichemicals are in the form of unused residues in the containers that they were purchased in. In order to minimise the amount of these chemicals being disposed of, on-farm drop-off facilities could be developed at the existing MRCs and the new Manawatū Resource Recovery Centre. This would need to be supported by a system to decant and manage the containers. Should external funding be gained by Council for the provision of a plastics recycling and reuse facility, this could enable the processing of agrichemical containers. Funding could come from rates or the Waste Minimisation Levy money received by Council.
Refrigerators	Refrigerators release CO2 emissions, contributing to overall global warming.	Council currently receives refrigerators to the Manawatū Resource Recovery Centre for a gate charge. This charge includes degassing. This initiative could be better publicised to obtain more volume. However, the limiting factor for receiving refrigerators is the extra cost to store the materials until reuse opportunities arise.
Farm plastics	Farm plastics include seed, feed and fertiliser bags, as well as crop packaging films. When these plastics come to the end of their useful life, farmers are likely to burn or bury the products. This increases the speed in which the harmful toxins these products contain are released into the air, soil and/or water. It is estimated that 423 tonnes of farm plastics are generated within the District annually.	Some commercial services are already available in the Manawatū District rural sector, such as Agrecovery. These existing activities could be supported by developing a Agrecovery drop-off area at the new Manawatū Resource Recovery Centre. Should external funding be gained by Council for the provision of a plastics recycling and reuse facility, farm plastics would be able to be processed into new reusable plastic. Funding could come from rates, and the Waste Minimisation Levy money received by Council.

Biosolids and Compost

Biosolids are a by-product of municipal wastewater treatment and have been stabilised to the point where they can be beneficially used, including being applied to land for nutrient purposes. Currently, the majority of biosolids across the country end up in landfills. With an aim to reduce waste in landfills, MDC wants to find a way to mitigate sludge produced at the Manawatū WWTP ending up in the landfill.

MDC have been working on options to compost biosolids with ordinary green waste. This would be beneficial to the Manawatū District as green waste is currently our largest contributor to landfill.

Council are also required to consider community perception constraints. A lot of people do not like the idea of biosolids being used for private purposes as it is treated wastewater, and this influences the commercial viability of biosolids. Therefore, as opposed to relying on private commercial markets, MDC would most likely have to undertake bulk spreading, or form commercial partnerships for the repurposing of the biosolids. There may be opportunities to provide biosolid compost to commercial farms across the Manawatū District, and some to the Native Plant Nursery run by MDC.

Note: A biosolid produced under the New Zealand Biosolid Guidelines can be disposed onto the irrigable land at the Feilding Wastewater Treatment Plant as a permitted activity under the Horizons One Plan.

Organic Collection

During consultation on the draft WMMP 2017, there was a strong response from the community on the proposal for kerbside organic waste collection. The community were opposed to the proposal based on:

- Lack of appetite towards to required rates increase
- Response from ratepayers that they have personal composting systems in place such as worm farms, or already pay for contractors to collect their green waste
- Some community members expressing they did not have a household size that would produce enough organic waste to be collected at the kerbside
- Feedback that some would prefer an education programme to be implemented for people to learn how to effectively compost on their own organic waste.

In 2017, kerbside collection for organic waste was not common in other Districts across New Zealand. However, in 2022, the initiative is becoming increasingly widespread and often includes green waste. Due to such a large proportion of both urban and rural waste being organic and green waste, Council is obliged to reconsider options to mitigate such a large tonnage going to landfill.

Key learnings can be taken from other Territorial Authorities across New Zealand when considering Council's role in reducing the amount of organics to landfill. Key options include:

- Re-consulting with the community on kerbside organics collection (including green waste);
- User pays service rather than rates paid;
- A collection point at the new Resource Recovery Centre for people to drop off their green waste could be introduced so all rural residents can be included in this initiative.

Statement of Proposal to Meet Demands

This section sets out a long list of options available to the council to address the key issues that have identified through this waste assessment. Council will further explore and prioritise these opportunities, and consult on the most appropriate action plan through its WMMP 2021.

Key:

 Contributes to ensuring public health is adequately protected

 Promotes effective/efficient waste management and minimisation

Table 13: Options Available to Council to Address Key Waste Issues Identified

Category	Potential Solutions		Impact
Refuse Collections	Increase rural blue bag drop off points		Would provide rural members of the community with more accessible waste drop off points.
	Provision of rates funded wheelie bin to Feilding urban and rural village communities		Will increase waste collection and landfill disposal at the expense of waste diversion. Improved health and safety for collection officers. Minimises the accumulation of rubbish on properties. Will negatively impact private waste collection industry.
Recycling Collections	Provide rates funded kerbside recycling collection to rural village communities		Will increase volumes of recyclables processed at the Manawatū Resource Recovery Centre. Increased level of service would have a rates impact.
Recycling and Reuse	Provide new facilities for reuse of recyclable materials within the District, e.g. plastic shredding, soft plastic recycling.		Supports make, use, return principles. Allows for a wider range of materials to be diverted from landfill. There are significant capital costs required to create these types of facilities.
	Partner with private industry to locate waste reduction facilities on Council's Resource Recovery Park		Providing a suitable location for private waste reduction facilities will better enable their feasibility and likelihood.
	Promote both Council and private recycling and reuse services in our District		Raises awareness of private sector initiatives. Reduces waste to landfill. Can fund through Waste Minimisation Levy so no cost to ratepayers.
	Recover material from waste delivered to Manawatū Resource Recovery Centre.		The Manawatū Resource Recovery Centre is designed to enable recovery of selected materials via a flatform pit. Some FTE is required to support this initiative.

Category	Potential Solutions		Impact
Recycling and Reuse	Extend MRC services to additional rural communities.		Will increase the amount of recycling collected across the District. Stakeholder issues in location of these facilities. Viability of these facilities needs to be balanced between use and cost. Remote facilities can attract vandalism and illegal dumping.
	Rates funded kerbside collection of food waste in Feilding urban community and rural village communities.		This will take a large proportion of food waste produced by the community out of the landfill. Potential commercial or Wastewater Treatment Plant composting opportunities. Puts MDC in favourable position should methane fees be put in place at Bonny Glen Landfill. Rating impact across those receiving the service.
	User pays (opt-in) kerbside collection of food waste in Feilding urban community and rural village communities.		This will take a proportion of food waste produced by the community out of the landfill. If tonnages are low due to opt-in nature of initiative, unit cost per tonne becomes higher.
	User pays collection of commercial food waste and recycling from Feilding.		This will take a proportion of waste produced by the commercial sector out of the landfill. More cost effective due to the targeted nature of this initiative.
	Dedicated drop off facility at Manawatū Resource Recovery Centre for food waste at lower cost to general waste drop off.		Takes a step to address the major issue in the amount of food waste going to landfill. Risk exists in the extra effort for users to separate food waste from general rubbish, and only minor gate price incentive. Initiative also unlikely to attract kerbside customers.
Priority Product scheme	Partner with private industry on community collection events for farm waste.		Will help to reduce burying and burning waste on farms. Will aim to recover farm plastics and agrichemicals which have been classed as priority products. Helps to advertise the availability of existing circular farm waste opportunities. Increases the scale of collections by holding events. Increases Council's involvement in rural waste management.
	Explore opportunities for collection schemes of priority products.		Will enable Council to supportproduct stewardship initiatives identified by Central Government.

Category	Potential Solutions		Impact
Regulation	Re-review the Solid Waste Bylaw to support the Waste Management and Minimisation Plan		This will improve the consistency between documents and ensure that the bylaw supports the strategic direction of the WMMP. Resourcing will be required to re-review the bylaw if required.
Data	Increase data collection on waste services and infrastructure.		This may be the range of waste data and the frequency of reporting. Increased data collection would provide MDC with more up to date monitoring on waste produced and diversion efforts. This data would help Council to understand if its strategic direction identified within the WMMP is being achieved. Improved data reporting would be built into Council's contract with its Solid Waste provider.
Infrastructure	Explore and facilitate alternative mechanisms to minimise disposal to landfill.		This will help to target specific waste streams, and prevent them from going to the landfill, e.g. extending composting facilities.
Education	Provide more regular Council-led communications in regards to Waste Management and Minimisation		Council can produce more regular communications to the community to help improve issues such as contamination of recycling.
	Create an application process for the allocation of Waste Levy Funding for the community or waste management assistance.		Creates an opportunity for Council to promote and support waste management and minimisation within the community. Encourages innovation & partnership by individuals, community groups & organisations. Many other Councils already offer this type of application process for funding.
	Increase the funding available for waste education programmes		More funding will mean more education services will become available to the community.
Engagement	Maintain existing levels of engagement with key stakeholders, and at the councils discretion, increase engagement where necessary.		Engagement with the community and local iwi is an important part of the democratic process that council is responsible for. Engagement ensures that the community is informed about decisions and policy that may affect them. It also allows for constructive feedback to help council improve their plans before implementation.
Resourcing	A role within Council to focus on promoting and coordinating waste management and minimisation initiatives, oversee monitoring and reporting requirements, and form and maintain relationships with community stakeholders.		Allocation of specific resources for this purpose will help to ensure the WMMP is successfully implemented. This role would help to support Council's vision outlined within its WMMP.

Medical Officer of Health Statement

I, Dr. Rob Weir, Medical Officer of Health (MOoH) for the MidCentral Public Health Service make the following comments on the Manawatu District Council (MDC) Waste Assessment pursuant to Section 51(5) of the Waste Minimisation Act 2008 (the Act). I note the Act requires that a Territorial Authority must consult with the MOoH on the Waste Assessment.

I recognise that effective waste management is critical for good public health outcomes. The purpose of the Waste Minimisation Act (WMA) 2008 is to encourage waste minimisation and a decrease in waste disposal to protect the environment (including people and communities) from harm and to provide environmental, social, economic, and cultural benefits. The WMA requires that a Waste Assessment must state the extent to which public health is adequately protected.

The protection of public health includes ensuring that the impact of waste management and minimisation does not create or increase inequalities between different groups within the community. It would be important that the decisions around waste management consider unintended consequences for vulnerable groups (e.g. the elderly, people with disabilities, low socioeconomic households) prior to implementation. The approach should be reflected in the Waste Management and Minimisation Plan (WMMP), e.g. by ensuring collection systems are accessible and affordable for all; incentivising and supporting waste minimisation activities in addition to the use of penalties for incorrect waste management.

The Manawatu Waste Assessment 2022 identifies several waste streams that require special management:

- Tyres (decomposing tyres).
- Electrical and electronic products (e-waste including large batteries).
- Agrichemicals and their containers.

I recommend measures are taken to limit the release of carbon, zinc and sulphur into the environment from decomposing tyres. Particularly if tyres are stored long than anticipated. I understand that a tyre crumbing plant is no longer part of the Manawatu Resource Recovery Centre (MRC) plan.

Storage of decomposing tyres that release hazardous substances into environment is concerning.

I support further investigations for the re-use of e-waste items and stewardship schemes. If e-waste is being exported we assume it is being stored in a safe way. E-waste contains potentially harmful components such as lead. With the increasing quantity of electronic devices, e-waste management and planning will become increasingly important. We would encourage increasing publicity of the e-waste service at the recycle centre to ensure e-waste is being disposed of safely.

I support the provision for good information regarding hazardous substance disposal being provided to the community to minimise associated health risks. This is particularly important with regard to agrichemicals.

I support investment into Off-farm Waste Disposal being provided at the MRC (as in the WMMP 2016). Farm waste can negatively affect the environment, land, air and water. It is concerning that; farmers may burn or bury farm waste. A disposable facility that provides this service must be secure and clean (tamper-proof and clean from spillage). Safety and security should be considered in the planning stage should the initiative go ahead. I support an emphasis on Māori perspectives that align with the circular economy and recognition of Kaitiakitanga giving effect to Te Tiriti o Waitangi. I encourage ongoing engagement and involvement with local Iwi regarding WMMP.

I encourage school education programmes and initiatives that support waste minimisation. Schools in the area are involved in the waste minimisation programmes. I would encourage involvement of local Māori schools such as Hato Pāora College.

I advise MDC to educate their staff around any risks working with contaminated waste. This is particular important with respect to Covid-19 pandemic waste. With the advent of RAT testing in people's homes I envisage there will be a marked increase in potential contaminated domestic waste.

I support community ownership of waste minimisation programmes and promoting recycling initiatives in the community. Innovative ways of reducing waste would be best developed by working alongside the community.

I support programmes that encourage whanau to reduce food waste e.g. repurposing waste food or stock food. Improving food security for those on low or fixed incomes.

I support the Container Return Scheme as a strategy for reducing waste and

litter. This scheme is currently undergoing public consultation with a view to

being implemented in 2025. This scheme would involve returning beverage

containers for a refund. The intended audience is consumers and businesses.

In summary, I make the following comments:

- I recommend measures are taken to limit the release of carbon, zinc and sulphur into the environment particularly from decomposing tyres.
- I support further investigations for the re-use of e-waste items and stewardship schemes.
- I support the provision of good information regarding hazardous substance disposal be provided to the community.
- I support investment into Off-farm Waste Disposal being available at MRC facilitates.
- I support an emphasis on Māori perspectives that align with the circular economy and recognition of Kaitiakitanga giving effect to Te Tiriti o Waitangi.
- I encourage school education programmes and initiatives that support waste minimisation.
- I advise MDC to educate their staff around any risks working with contaminated waste.
- I support community ownership of waste minimisation programmes and promoting recycling programmes in the community.
- I support programmes that encourage reduced food wastage e.g. repurposing waste food or stock food.
- I support the Container Return Scheme as a strategy for reducing waste and litter.

Glossary

Agrichemicals	A chemical used in agriculture, such as a pesticide or fertilizer.
Annual Plan	Year-to-year budgets in Council which are prepared in each of the financial years between the 10 Year Plan reviews.
Blue bags	The vessel MDC provides for rubbish collection around the District.
Circular Economy	A circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems.
Co-mingle material	A system which all paper, plastic and metals are mixed into a single collection.
Construction waste	Waste generated from the site of construction or demolition of a building including the preparation or clearance of the property. This excludes materials such as clay, soil and rock.
Dispose	Final deposit of waste into or onto land, or incineration.
Diverted material	Any solid waste salvaged or otherwise directed from a disposal facility for salvage or processing.
E-Waste	E-Waste or electronic waste refers to any item with a plug, battery or cord that is no longer working or wanted.
Ferrous Metals	Any metal that is primarily composed of iron and has magnetic properties.
Fly tipping	The practise of leaving waste somewhere illegally.
Food waste	Any food scraps.
Green waste	Waste largely from the garden, including hedge and/or tree clippings and/or lawn clippings.
Hapū	Section of a large kinship group and the primary political unit in traditional Māori society.
Hazardous waste	Waste that can cause harm or damage to people or the environment like strong chemicals.
International Convention	A treaty or agreement between countries.
Iwi	Refers to a large group of people descended from a common ancestor and associated with a distinct territory.
Kaitiakitanga	Kaitiakitanga means guardianship and protection. It is a way of managing the environment, based on the te ao Māori world view.
Kitchen waste	Waste left over from cooking such as food scraps, vegetable peelings and coffee grinds.
Kura	School, education.
LGA 2002	Local Government Act 2002.
MRF	Materials Recycling Facility
MRC	Mobile Recycling Centre: Converted shipping container located in rural communities for the acceptance of recyclables.
New Zealand Waste Strategy	A document produced by the Ministry for the Environment that sets out the Governments long term priorities for waste management and minimisation.

Non-Ferrous metals	Metals that do not have significant levels of iron.
Organic waste	Plant based material and other bio-degradable material that can be recovered through composting, digestion or other similar processes.
Para Kore	Zero Waste.
Product stewardship	Product stewardship is the responsible management of the environmental impact of a product, including cost. It aims to reduce the impact of manufactured products at all stages of the product life cycle.
Rangatiratanga	Chieftainship, right to exercise authority, chiefly autonomy, chiefly authority.
Recovery	Process to produce a new substance, product or components that can be used.
Recycle	To process so the material can be used again in the same cycle, including composting.
Refuse	Waste or rubbish that currently has little other management options other than disposal to landfill.
Resource Recovery Centre	A centre designed to sort and process discarded materials using a variety of mechanical and biological technologies.
Reuse	Further use of materials in its existing form.
RMA	Resource Management Act 1991.
Rubbish	Waste, that currently has little other management options other than disposal to landfill.
Tangata whenua	Local people, hosts, indigenous people - people born of the whenua.
Te Ao Māori	The Māori world.
Tonne	(Metric) one thousand kilograms.
Treatment	Process to ensure no harm to the environment.
Waste	Anything we no longer want.
Waste Hierarchy	Internationally accepted waste reductions in descending order of importance.
Whānau	Family.
WMA 2008	Waste Minimisation Act 2008
WMMP	Waste Management and Minimisation Plan.
WWTP	Wastewater Treatment Plant.
10 Year Plan	Every three years, Councils must adopt a 10 Year Plan to strategically plan and budget for investment in infrastructure and services over the next 10 years.

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