Waipa
DISTRICT COUNCIL

Waste Assessment

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Prepared by:

Sandra Murray & Kate Lowe, Gary Kelk and Matthew Luxon

Zenzic Consulting | Envision New Zealand

sandra@zenzic.nz | matthew@envision-nz.com

Mobile: 021 890 629 | Phone: (09) 303 4746

Approved by:

Cedric Crow

Road Maintenance Team Leader

Waipa District Council

Cedric.Crow@Waipadc.govt.nz

Phone: 07 8720030 Ext. 7136

Preface to the Waipa Waste Assessment

The Waste Assessment is a technical document. The key purpose of the WA is to present as clear a picture as possible of what happens with waste in the Waipa area, what forces are driving current behaviours and outcomes, and from that to highlight the key issues and the basic options for addressing those issues.

This document is based on the Waste Assessment Template developed for the Councils of the Waikato and Bay of Plenty regions, and includes reference material from a number of sources. WDC undertook a Waste Services Report in 2015 and, in order to avoid repeating work, has been taken as the basis of this Waste Assessment. Zenzic have assumed that information provided in the Waste Services Report is accurate, and utilised or built upon this information as requested by WDC.

Issue		Author	Reviewer	Date
1	Version 1	Sandra Murray	Medical Officer of Health	01/02/2017
2	Version 2	Sandra Murray	WDC Cedric Crow & Justine Kennedy	02/03/2017
3	Version 3	Sandra Murray	WDC Executive	16/03/2017
4	Final	Sandra Murray	SP&P Committee	04/04/2017

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PART 1 - EXECUTIVE SUMMARY

Waipa District produces an estimated 22,000 tonnes of waste to landfill each year - an average of 0.5 tonnes (500kg) per person every year. The introduction of a kerbside recycling service in 2012 has made a measurable impact on the volume of material diverted into recycling, with 3,411 tonne of recyclables collected in the 2015-2016 year. This equates to 195kg per household per year.

While the volume of refuse to landfill is average compared to other councils, refuse volumes appear to be increasing compared to 2011 volumes, despite the introduction of kerbside recycling. It is difficult to identify if this is due to changes in private refuse services (e.g. a move to larger sized MGB bins), changes in resident behaviour, economic activity or if there was simply insufficient information in 2011 to correctly identify a baseline volume of refuse to landfill with which to judge the impact of initiatives.

While private refuse services are currently meeting the needs of Waipa's residents, Waipa District Council has little direct control over waste streams, as council neither provide a refuse service nor own a transfer station or landfill in the District. This lack of control makes it difficult for council to obtain accurate data on waste flows.

Key opportunities for Waipa are to:

- Introduce cost effective waste minimisation by supporting community based resource recovery activities and Community Recycling Centres.
- Introduce of a waste operator and facility licencing system to increase Councils access to waste flow information, and provide some measure of control over waste flows within the District.
- Work with other councils in the region to introduce education programmes, investigate regional facilities and share services (where appropriate)

Without improving access to waste information, and increasing the level of influence council has over waste flows, it is unlikely that Waipa District Council will meet future demand.

In addition, council will find it difficult to meet the requirements and intent of the Waste Minimisation Act or give regard to the New Zealand Waste Strategy

The Government's waste policy, *The New Zealand Waste Strategy – Reducing harm, improving efficiency* (NZWS), sets out the Government's long-term priorities for waste management and minimisation. The Strategy's two goals provide direction to local government, businesses, and communities on where to focus their efforts in order to deliver environmental, social and economic benefits to all New Zealanders. The goals are:

- Reducing the harmful effects of waste
- Improving the efficiency of resource use.

The Waste Minimisation Act (WMA) 2008 provides the legislative imperative and tools to support progress toward the goals outlined in the NZWS. One tool is a waste disposal levy, half of which is allocated to Territorial Authorities (TAs) on a population basis. Waipa District Council receives approximately $178,000 p.a. from the Waste Levy each year to help fund waste minimisation initiatives.

The WMA delegates responsibility to TAs, who "must promote effective and efficient waste management and minimisation within their districts". TAs must also prepare a Waste Assessment and a Waste Management and Minimisation Plan (WMMP).

This Waste Assessment has been prepared for Waipa District Council (WDC) in accordance with the requirements of the Waste Minimisation Act 2008.

The document details existing services and facilities, presents waste data, makes a forecast of future demand, and provides an assessment of options to meet future demands and what the Councils' roles would be in these options.

As well as the Waste Minimisation Act 2008, this Waste Assessment takes into consideration a number of other Acts and amendments and a range of national, regional and local strategies, policies and projects.

PART 2 - INTRODUCTION

2.1 What is the purpose of the Waste Assessment?

The development of a Waste Assessment is a legislative requirement under Section 50 of the Waste Minimisation Act 2008 (WMA).

This Waste Assessment provides an initial step towards the development of a Waste Management and Minimisation Plan (WMMP) for 2017 – 2023 and sets out the information necessary to identify the key issues and priority actions that will be included in the WMMP.

Section 51 of the WMA outlines the requirements of a waste assessment, which must include:

- a description of the collection, recycling, recovery, treatment, and disposal services provided within the territorial authority's district
- a forecast of future demands
- a statement of options
- a statement of the territorial authority's intended role in meeting demands
- a statement of the territorial authority's proposals for meeting the forecast demands
- a statement about the extent to which the proposals will protect public health, and promote effective and efficient waste management and minimisation.

2.2 Legislative Context

The principal solid waste legislation in New Zealand is the Waste Minimisation Act 2008 (WMA).

The stated purpose of the WMA is to:

"encourage waste minimisation and a decrease in waste disposal in order to

(a) protect the environment from harm; and

(b) provide environmental, social, economic, and cultural benefits".

To further its aims, the WMA requires Territorial Authorities (TAs) to promote effective and efficient waste management and minimisation within their district. To achieve this, all TAs are required by the legislation to adopt a WMMP.

The WMA requires every TA to complete a formal review of its existing waste management and minimisation plan at least every six years. The review must be consistent with WMA sections 50 and 51.

Section 50 of the WMA also requires all TAs to prepare a 'waste assessment' prior to reviewing its existing plan. This document has been prepared in fulfilment of that requirement. The Council's existing Waste Assessment was written in November 2010 and the WMMP was adopted on 25 October 2011.

Further detail on key waste-related legislation is contained in Appendix 3.0.

2.2.1 Public Health Issues

Protecting public health is one of the original reasons for local authority involvement in waste management.

The New Zealand Waste Strategy 2010 contains the twin high-level goals of "reducing the harmful effects of waste", and "improving the efficiency of resource use".

In terms of addressing waste management in a strategic context, protection of public health can be considered one of the components entailed in "reducing harm".

Protection of public health is currently addressed by a number of legislative enactments. Discussion of the implications of the legislation is contained in Appendix A.3.0.

2.2.2 Key Waste Management Public Health Issues

Key issues that are likely to be of concern in terms of public health include the following:

- Population health profile and characteristics
- Meeting the requirements of the Health Act 1956
- Management of putrescible wastes
- Management of nappy and sanitary wastes
- Potential for dog/seagull/vermin strike
- Timely collection of material
- Locations of waste activities
- Management of spillage
- Litter and illegal dumping
- Medical waste from households and healthcare operators
- Storage of wastes
- Management of biosolids/sludges from WWTP
- Management of hazardous wastes (including asbestos, e-waste, etc.)
- Private on-site management of wastes (i.e. burning, burying)
- Closed landfill management including air and water discharges, odours and vermin
- Health and safety considerations relating to collection and handling

2.2.3 Management of Public Health Issues

From a strategic perspective, the public health issues listed above are likely to apply to a greater or lesser extent to virtually all options under consideration. For example, illegal dumping tends to take place irrespective of whatever waste collection and transfer station systems are in place.

Some systems may exacerbate the problem, such as infrequent collection, user-charges, inconveniently located facilities etc. However, in most cases, public health issues will be able to be addressed through setting appropriate performance standards for waste services. It is also important to ensure performance is monitored and reported on and that there are appropriate structures for addressing issues that arise.

The Health & Safety At Work (Regulations) 2016 provide added emphasis on workplace health and safety under the Health and Safety at Work Act 2015. This legislation and the associated regulations impact on the choice of collection methodologies and working practices and the design of waste facilities.

Management of waste in the Waipa district will give consideration to public health impacts, with particular consideration of the potential effects on vulnerable groups. Where identified, planning will aim to anticipate, avoid or mitigate issues.

2.3 Scope

2.3.1 General

As well as fulfilling the statutory requirements of the WMA, a key function of the Waste Assessment is to form a clear picture of waste flows and management options in the district. It will provide the foundation for Council to update its WMMP in an informed and effective manner.

The WMA requires that a waste assessment must contain:

"A description of the collection, recycling, recovery, treatment, and disposal services provided within the territorial authority's district (whether by the territorial authority or otherwise)".

This means that the Waste Assessment must take into consideration all waste and recycling services carried out by private waste operators as well as Waipa District Council services.

While Council has reliable data on the waste flows that it controls, data on services provided by private industry is limited. Reliable, regular data on waste flows is important to allow Waipa District Council to include waste reduction targets in their WMMP. Without data, targets cannot be readily measured.

In preparing this document, reference has also been made to the Ministry for the Environment's 'Waste Management and Minimisation Planning: Guidance for Territorial Authorities'.

2.3.2 Period of Waste Assessment

The WMA requires WMMPs to be reviewed at least every six years, but it is considered prudent to take a longer-term view. Therefore Waipa District Council intend to develop an 18 year Waste Strategy, which will guide three consecutive WMMP's.

Each WMMP, and the Strategy overall, will be based on Waste Assessments carried out prior to each WMMP being developed. The assessments will provide the feedback on progress against each preceding WMMP and against the Strategy as a whole, while guiding the next WMMP and actions required to meet the objectives of the strategy.

Figure 1 Inter-relationship between the 18-year Waste Strategy, WMMP's and Waste Assessments

2.3.3 Consideration of Solid, Liquid and Gaseous Wastes

In line with the Council's previous WMMP, this Waste Assessment is focused on solid waste that is disposed of to land or diverted from land disposal.

The guidance provided by the Ministry for the Environment on preparing Waste Management and Minimisation Plans states that Councils need to determine the scope of their WMMP in terms of which wastes and diverted materials are to be considered within the plan.

The guidance further suggests that liquid or gaseous wastes that are directly managed by a TA, or are disposed of to landfill, should be considered for inclusion in a WMMP.

Other wastes that could potentially be within the scope of the WMMP includes the management of biosolids from wastewater treatment plant (WWTP) processes.

Where biosolids from WTTP processes are disposed of at a Class 1 landfill it is reasonable to consider them in the context of this assessment. However, in the Waipa district, biosolids produced at the Te Awamutu and Cambridge WWTP's are dewatered and stored in old pond areas on site whilst a re-use/disposal route is developed[1].

Waipa District Council has entered into a joint-project with NIWA to build an enhanced pond system which will be operated and monitored at the Cambridge Wastewater Treatment Plant.

Work to facilitate the pond system is underway and the $24 million staged upgrade of the plant has been included in the council's 10-Year Plan. The council also plans to seek a 35 year discharge consent for the new plant which would achieve full compliance and meet the future needs of the Waipa District.

Therefore, apart from some liquid hazardous wastes that are managed through solid waste facilities, this Waste Assessment and the subsequent WMMP will focus primarily on solid waste.

2.4 Strategic Context – National

The following national and international strategies, projects and plans have been taken into consideration in the preparation of this Waste Assessment.

2.4.1 New Zealand Waste Strategy

The 2010 *New Zealand Waste Strategy: Reducing Harm, Improving Efficiency* (NZWS) is the Government's core policy document concerning waste management and minimisation in New Zealand.

The two goals of the NZWS are:

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

The NZWS provides high-level, flexible direction to guide the use of the legislation, regulation and conventions that relate to the management and minimisation of waste in New Zealand. These conventions are set out in Section A.4.0.

The flexible nature of the NZWS means that councils are able to decide on solutions to waste management and minimisation that are relevant and appropriate to local situations and desired community outcomes.

However, section 44 of the WMA also requires councils to have regard to the NZWS when preparing their WMMP. For the purpose of this Waste Assessment, the council has given regard to the NZWS and the current WMMP.

2.4.2 International Commitments

New Zealand is party to the following key international agreements:

1. Montreal Protocol – to protect the ozone layer by phasing out the production of numerous substances
2. Basel Convention – to reduce the movement of hazardous wastes between nations

[1] Waipā 2050- Wastewater Profile Statement

3. Stockholm Convention – to eliminate or restrict the production and use of persistent organic pollutants
4. Waigani Convention – bans export of hazardous or radioactive waste to Pacific Islands Forum countries

2.4.3 National Projects

A number of national projects are underway, aimed at assisting TAs, business and the public to adopt waste management and minimisation principles in a consistent fashion.

(a) National Waste Data Framework Project

The National Waste Data Framework (NWDF) project, led by WasteMINZ[2] sets out a consistent methodology for the collection and categorisation of waste data.

The first stage of the Framework includes data on waste disposed of at levied disposal sites (Class 1 landfills) and information on waste services and infrastructure as well as other areas where practicable. Subsequent stages of the Framework will include more detailed data on diverted materials and waste disposed of at non-levied disposal sites. The Framework will only be successful if it is widely adopted and correctly applied. The implementation report clearly sets out a range of options to move the Framework forwards.

The Council intends to be a part of the implementation of the NWDF by using the categories and terminology of the Framework in the Waste Assessment and the forthcoming WMMP.

(b) National Standardisation of Colours for Bins

Until recently, councils and businesses in New Zealand had used a variety of colours to indicate what waste streams can be placed in what bins. This had the potential to create confusion among residents and increase the likelihood of contamination.

In October 2015 WasteMINZ, the Glass Packaging Forum, and councils around New Zealand agreed on a standardised set of colours for mobile recycling and rubbish bins, crates and internal office bins. Companies implementing nationwide recycling schemes are strongly encouraged to use these colours both for their bins and also on their signage. This will ensure that the colours used are consistent with both public place recycling and household recycling.

The recommended colours are:

Bin bodies	For 240 litre and 120 litre wheeled bins, black or dark green should be used. These colours maximise the amount of recycled content used in the production of the bins.
Red	rubbish
Yellow	commingled recycling (glass, plastic, metal and paper combined)
Lime green	food waste and food waste/garden (referring to green) waste combined
Dark Green	garden waste
Light Blue	commingled glass collections (white, brown, green glass combined)
Grey	paper and cardboard recycling

Table 1 Recommended bin and bin lid colours for MGB's

[2] WasteMinz is the largest representative body of the waste, resource recovery and contaminated land sectors in New Zealand

It is intended that any services provided or funded by Waipa District Council will comply with this National Standard.

2.5 Local and regional context – what it means for Waipa

The actions and objectives identified in this Waste Assessment reflect, intersect with, and are expressed through other Waipa District Council and regional planning documents.

Key planning documents and waste-related goals and objectives that have been taken into consideration include:

2.5.1 Future Proof

Future Proof is a growth strategy specific to the Hamilton, Waipa, and Waikato sub-region and has been developed jointly by Hamilton City Council, Waikato Regional Council, and Waipa and Waikato District Councils, as well as Tangata Whenua, the NZ Transport Agency (NZTA) and Matamata-Piako District Council.

The Future Proof growth strategy aims to manage growth in a collaborative way for the benefit of the Future Proof sub-region both from a community and a physical perspective. The growth strategy provides a framework for ongoing co-operation and implementation. This will ensure the costs and resources required to fund and manage infrastructure such as transport, wastewater, stormwater, recreation and cultural facilities are provided for.

2.5.2 Long Term Plan (LTP): 10 Year Plan – 2015-2015

A key part of the LTP is the vision that has been set for the Council. Our vision is:

Waipa : Home of Champions - Building the Future Together.

<u>Key Principles</u>

The key principles from the LTP, which have been reflected in this Waste Assessment, are:

- **Investing for future wellbeing** – Being strategic with funding decisions, prioritising expenditure to suit need and investing to support staged development of the district.
- **Building on what we have** – Maintaining core infrastructure and service levels, and maximising the value from the investment already made in infrastructure and services.
- **Collaboration** – Working with our partners to achieve desired outcomes while minimising rate impacts, and pursuing opportunities for efficiencies by working with other councils.
- **Financial prudence** – Maximising non-rate revenue to support operations, looking at new business models for efficient and effective service delivery and building financial reserves to manage rating peaks.
- **Leadership** – Being a good corporate citizen, and engaging with our stakeholders on key issues.

<u>Key LTP projects/actions</u>

Key projects in the LTP are to renew and upgrade infrastructural assets, maintain levels of service, provide for increased environmental and health standards and to support growth and development. Most are essential and failing to do them would compromise levels of service, community safety and wellbeing, or put Council at odds with statutory responsibilities.

Assessment and improvement of waste management services is one of the key projects planned for the next 10 years and will be guided by this Waste Assessment, the subsequent 18 Year Waste Strategy and 2017-2022 WMMP.

2.5.3 Waipa 2050 Project

The District has adopted a growth management direction and vision in the Waipa District Growth Strategy that implements Future Proof. The Environment Strategy 2009, Town Concept Plans 2010 and the District Plan provide further direction on how the agreed growth management direction can be achieved.

2.5.4 Waipa District Plan

This Waste Assessment includes considerations of District Plan objectives around:

- Settlement pattern
- Planned and integrated development
- Tāngata whenua
- Environmental and heritage protection and recreation values
- Implementation of the Waikato River Vision and Strategy
- Energy and resource efficiency, design, character and amenity

2.5.5 Waipa Environment Strategy

Council's District Plan review process includes development of an Environment Strategy. This strategy includes a section on waste.

The stated goal for waste is that 'the District's zero waste philosophy will be fully implemented'. The supporting objective states that 'the waste minimisation philosophy needs to be embraced District wide and supported with mechanisms and incentives that encourage good practise'.

The Environment Strategy 2009 provides guidance on how environmental issues and features should be managed. The Environment Strategy:

(a) Promotes a vision for improving environmental management in the Waipa District; and

(b) Sets goals that will achieve and sustain the vision over time; and

(c) Identifies the issues that need to be managed; and

(d) Identifies current actions and likely solutions; and

(e) Prioritises issues.

2.5.6 Growth Strategy

The Growth Strategy imagines a more sustainable future that will change the way that the urban and rural environments of the District are managed.

The Growth Strategy has a vision of:

Uniting the People of Waipa for Progress while Sustaining the Environment

The Growth Strategy prescribes a land use and settlement pattern for the District until 2050. The strategy identifies future growth areas, their sequencing and timing, and infrastructure requirements necessary to enable new and more intensive development.

The future settlement pattern allocates population growth targets to settlements. Large proportions of the projected population are directed to Cambridge (~40%), Te Awamutu and Kihikihi (~30%) and to the rural villages (~18%). The overall aim is to encourage 80% of future growth to be in urban areas.

2.5.7 Hingakaka-Ngaroto Iwi Management Plan

The iwi management plan identifies and outlines the views and aspirations of tangata whenua, as ahi kaa, and kaitiaki, regarding the management of the Hingakaka Battle area in the Ngaroto area, north of Te Awamutu.

Tangata whenua, ahi ka, hapü, and iwi in the Ngaroto-Hingakaka region hold kaitiaki status over the Hingakaka and surrounding regions.

As kaitiaki of the Ngaroto-Hingakaka area, tangata whenua, ahi kaa, hapü and iwi of Nga Iwi Toopu O Waipa accepts responsibility for the protection of the Hingakaka Battle area to ensure that customary, cultural, and spiritual significance are preserved for future generations.

2.5.8 Waikato-Tainui Environmental Plan

The overarching purpose of the Plan is to provide a map or pathway that will return the Waikato-Tainui rohe to the modern day equivalent of the environmental state that it was in when Kiingi Taawhiao composed his maimai aroha.

The key strategic objectives are tribal identity and integrity including, “to grow our tribal estate and manage our natural resources”.

The plan notes Waikato-tainui have continually expressed concern about the manner of waste discharge into and onto land, and directly into water bodies.

Within the plan, policy 26.3.3.1 – liquid, solid and hazardous waste is “to ensure that liquid, solid and hazardous waste management is best practice and manages social, cultural, spiritual, economic, and environmental effects”.

The plan sets out a comprehensive method for achieving this policy including:

- The full life cycle of waste from generation to assimilation/disposal is considered in developing waste management strategies
- Manage waste including solid, liquid, gas, and sludge waste, according to the waste hierarchy
- Providing education programmes and partnerships with the community and Waikato-tainui, promoting the concept of waste minimisation a 'no waste' society, and a hierarchy of waste management
- All waste management facilities shall be sited, designed, constructed, operated, and managed to best avoid adverse environmental impacts. Facilities shall be designed and constructed according to best environmental practice and shall be sited away from water bodies, estuaries, or the coast
- The release of environmentally persistent hazardous chemicals, or hazardous chemicals that could bioaccumulate to a level to have chronic toxic effects on biota is opposed

2.5.9 Solid Waste Bylaw 2012

The Waipa District Council Solid Waste Bylaw 2012 relates to refuse collection and disposal and was adopted in 2012.

The purpose of the Bylaw is to:

a) protect the health and safety of the public and persons involved in the collection and disposal of waste and/or diverted materials;
b) ensure that any Bylaw provisions relating to the collection and disposal of waste and/or diverted materials are consistent with Council’s Waste Management and Minimisation Plan 2011-17;
c) ensure that any nuisances created from the collection and disposal of waste and/or diverted materials are minimal;

d) maintain the visual amenity of the District;
e) provide for the appropriate collection, transportation and disposal of waste and/or diverted materials.

The Bylaw is due for review in 2022 but could be updated to reflect the Waipa Waste Strategy and WMMP 2017-2023. The Bylaw is discussed further in Section 2.8.

2.5.10 Waikato Waste and Resource Efficiency Strategy 2015-18 (WRES)

The Waste and Resource Efficiency Strategy (WRES) describes how Waikato Regional Council will work with key stakeholders to achieve collective regional waste minimisation objectives.

The Strategy has a vision of: *"working together towards a zero waste region".*

Two key goals of the strategy are to:

- protect our communities, land, water and air from harmful and hazardous wastes; and
- encourage resource efficiency and beneficial reuse that creates sustainable, economic growth.

The Strategy also contains ten strategic guiding principles:

1. Prioritising waste prevention and reduction
2. Exploring onshore and sustainable solutions
3. Closed loop or cyclical solutions
4. Recognising kaitiakitanga (stewardship)
5. Keeping the big issues in front of decision makers
6. Supporting the valuable role of community enterprise
7. Working collaboratively with others to share responsibilities
8. Advocating for product stewardship
9. Getting the most from external funding
10. Exploring how to lower barriers to waste minimisation

A Waste Strategy Advisory Group (WSAG) was established and includes representation from industry, local authorities, community enterprises, Auckland Council, Bay of Plenty Regional Council, and the Ministry for the Environment.

The role of the WSAG is to monitor and review the effectiveness of the strategy, provide feedback, advice, and recommend changes, and to report back to their respective organisations. The group also investigates opportunities for joint working at a regional or sub-regional level.

2.5.11 Cross-regional collaboration

The Bay of Plenty and Waikato regional councils are working together on a number of pan-regional collaborative projects that have been identified as priority actions by the constituent councils.

The areas of collaborative work include:

1. Waste assessments and waste management and minimisation planning
2. Solid waste bylaws, licensing and data
3. Education and communication
4. Procurement
5. Rural waste

Projects are currently under way for the first two of these priorities and there is also ongoing collaborative work among the constituent councils of the two regions on rural waste, tyres and education and communication.

2.6 International considerations

While they do not immediately impact on Waipa's waste flows, it is worth noting the potential impact of international activities on New Zealand's waste industry.

Much of the recycling collected in NZ is exported to Asia, particularly China. China has in recent year's tightened measures around the acceptance of recycled materials. The most recent initiative, translated into English as "National Sword 2017," targets "foreign waste," including plastics, industrial waste, electronics and other household waste materials[3]. It comes four years after China initiated its Operation Green Fence, an imports-enforcement campaign that required a higher standard of recycled product in order to gain approval for import into China.

Restrictions on the acceptance of recyclable material will mean changes to collection and sorting methodologies in order to achieve export standards. This may impact the costs associated with recycling.

Also of concern is the potential for climate change and rising instability to cause unrest in many countries. International conflict and unrest has the potential to disrupt recycling supply chains. As New Zealand has few processing facilities for kerbside recyclables, we are potentially vulnerable should export markets be disrupted.

2.7 General data limitations, completeness and assumptions

This waste assessment compiles and analyses available information on waste and diverted materials being generated in Waipa District. It considers the future demand for waste facilities and services. It then considers reasonably practicable options available to meet that future demand while achieving Council's objectives including waste management and minimisation objectives.

The options are considered in this waste assessment and will be incorporated into Council's draft WMMP for public consultation, prior to formal adoption and implementation.

This document was prepared between October 2016 and March 2017 using information gathered from a variety of sources. While every effort has been made to achieve a reasonable degree of accuracy in this assessment, it should be noted that there have been limitations due to the low level of data available.

The information obtained 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 the Council's resources; and
- the possibility that the Council may be directed under the Health Act 1956 to provide the services referred to in that Act.

2.8 Solid Waste Bylaw

Waipa District Council adopted the current solid waste bylaw in September 2012. The bylaw includes sections relating to licensing and data collection, hazardous waste, kerbside collection

[3] https://resource-recycling.com/recycling/2017/02/21/china-announces-sword-crackdown-illegal-recyclable-material-imports/

services, multiunit properties, and event waste management. The section on licensing of waste operators and facilities has not been enacted since the Bylaw was adopted.

2.8.1 Licensing

Section 4 of the current Waste Bylaw covers the licensing of waste collectors and waste operators. Clause 4.1 states that a license from the Council is required when a person or organisation is engaged in the collection, transport or processing of any waste and/or diverted materials; or operates a Waste Management Facility.

However, the licencing aspects of the Waste Bylaw have not been enacted by Waipa District Council. This is similar to a large number of other councils who have solid waste bylaws which include a provision for licensing, but are not actively implementing licencing systems.

Auckland, Christchurch, Taupo, New Plymouth, Kapiti Coast, Waimakariri and Far North have licensing requirements and the fees charged range from $30 in New Plymouth to $435 plus $88 per vehicle in Auckland[4].

Since the enactment of the Waipa Waste Bylaw, two issues have arisen which provide a compelling case for an amendment of the Waste Bylaw and enactment of licensing provisions.

Firstly, the Waikato and Bay of Plenty areas have experienced a number of issues regarding tyre collection and disposal which have resulted in some councils facing expensive 'clean-ups' of tyre piles, and have seen tyre piles moved from one council area to another. Concerns have been raised that tyre piles are likely to gravitate to the council area with the least effective regulation for this problematic waste stream.

A lack of control over waste collectors has resulted in a poor understanding of the volume or location of tyre piles. In addition, a lack of central government action on tyre product stewardship increases the likelihood of councils having to deal with any abandoned tyre piles on public land.

Secondly, despite councils having a legislative obligation to promote effective and efficient waste management and minimisation within its district, the Waste Minimisation Act 2008 does not provide councils with the ability to obtain data about the volume or composition of waste being collected, transported, processed or disposed of via private waste operators or facilities.

In order to address these two issues, the councils of the Waikato and Bay of Plenty have worked together to develop regionally aligned Waste Bylaw clauses to:

- Assist councils to offer similar levels of control of waste in their regions, while avoiding any one council becoming the 'weak link' – resulting in waste material moving to that area to take advantage of weaker waste regulations. The Bylaw clauses take into account the Auckland Council's Waste Bylaw, in order to avoid Waikato / Bay of Plenty becoming an attractive dumping ground for Auckland's problematic waste.
- Ensure councils can obtain waste volume and composition information from private operators and facilities in a manner which minimises administrative difficulties for the operator or facility. For example, by having similar reporting requirements, categories of waste, frequency of reporting etc.

The template bylaw clauses also provide the opportunity for councils to work together to provide licensing administration. Options for working together include funding a single

[4] WDC Waste Services report 2015

administrator who manages the licencing systems for all participating councils or offering a single licence which covers multiple council areas.

Such co-operation is likely to reduce the administrative burden on waste operators and facilities.

Working together on waste licencing is also in alignment with the direction being taken by the Waikato Local Authority Shared Services Ltd (Waikato – LASS) and may result in a reduced costs associated with enacting a licencing system.

The Waipa Waste Bylaw is due for review in 2022. However, an earlier review and adoption of the regionally aligned Waste Bylaw clauses would reduce the opportunity for Waipa to become the "weak link" in the region; and also provide an opportunity to enact a regionally aligned licencing system, potentially in co-operation with other Waikato councils.

PART 3 - THE WASTE PROBLEM

3.1 How much waste is going to land in the Waipa District?

Disposal of solid waste to land occurs through three separate mechanisms:

- waste to landfills,
- farm waste disposed of onsite, and
- waste to land from wastewater sludge

The identified volumes of waste disposed of to land in Waipa district is summarised in Table 2.

Waste disposed of to land	Tonnes	% of total	Tonnes/ capita/ annum[5]
General waste to landfill	22,000	25%	0.5
Sludge - currently stockpiled	6,000[6]	7%	0.1
Farm waste disposed of on-site	59,000	68%	1.3
TOTAL	**87,000**	**100%**	**1.9**

Table 2 Estimated waste disposed of to land in Waipa District

An estimated total of 87,000 tonnes of solid waste were disposed of to land in the Waipa district in the 2015-2016 year.

Waste disposed of to landfills comprised 25% of the total, and was equivalent to approximately 0.5 tonne per person in the 2015-2016 year. Farm waste disposed of on-site is approximately 68% of the total waste to land in the District.

The reliability of the estimates for different types of waste varies.

- Waste to landfill data comes unverified from waste operators with a combined estimated 75% market share in the District[7]. This data was extrapolated to provide an estimate of tonnage from the remaining 25% of the market.
- Sludge tonnages have been provided by the wastewater team at WDC.

[5] Based on 2013 Census information (46,668 people in the Waipā District)
[6] Based on volume of sludge wastewater facilities in the District are consented to discharge to land.

[7] Based on operator estimates of their market share

- Farm waste has been determined from research undertaken by regional councils in the Waikato, Bay of Plenty and Canterbury (see section 3.1.2).

3.1.1 Waste to landfills

WDC does not own or control any landfills that receive waste from the Waipa District. Data and information on the volume and composition of waste being received by landfills is provided at the discretion of the landfill owner.

Table 2 above provides an estimate of the volume of refuse going to landfill in the District (22,214). An estimate of the total volume of waste to landfill in the Waikato region is provided in the 2013 report, Bay of Plenty and Waikato Regions *Waste Stocktake; Report for Bay of Plenty and Waikato Regional Councils* summarised in Table 3 below.

Waste Stream	Bay of Plenty	Waikato	Total	% of Overall waste stream
Kerbside refuse	48,192	78,929	127,121 t/annum	35.9%
C&D waste	8,644	16,629	40,578 t/annum	11.5%
ICI waste	26,997	51,937	126,735 t/annum	35.8%
Landscaping waste	4,680	9,004	21,971 t/annum	6.2%
Residential waste	6,657	12,806	31,248 t/annum	8.8%
Subtotal – General Waste	75,427	145,105	220,532 t/annum	62.3%
Special Waste	3,574	2,853	6,427	1.8%
Total	**127,193**	**226,887**	**354,080 t/annum**	**100%**
Other Land Disposal Sites – Bay of Plenty and Waikato Regions Combined				
Other diverted materials	T/annum		T/capita/annum	
All waste to other land disposal sites	787,000		1.13 tonnes	
Waste other than natural, virgin, excavated material	411,300		0.59 tonnes	

Table 3 Tonnage of waste to landfill from Waikato and Bay of Plenty[8]

Bay of Plenty and Waikato Regions Waste 2013 Stocktake estimates a total of 354,080 tonnes of waste are disposed of to landfill annually from Bay of Plenty and Waikato Regions. As the tonnage data has been taken from a number of different sources, no specific year has been attached to the figure.

Of the total amount disposed of to landfill, just over one third (35.9%) was kerbside refuse, and a further third was Industrial, Commercial & Institutional (ICI). Construction & Demolition (C&D) waste made up nearly 12% while less than 2% was special waste. The figure for special waste,

[8] Source: Bay of Plenty and Waikato Regions Waste Stocktake; Report for Bay of Plenty and Waikato Regional Councils; April 2013

which primarily includes biosolids, is the least reliable, as the smallest dataset was used for its calculation.

The stocktake report also estimates that 787,000 tonnes of material is disposed of at other land disposal sites annually. This is more than twice as much as is disposed of to landfills. Slightly more than half of this waste is other than natural, virgin, excavated materials.

The Bay of Plenty and Waikato Regions Waste Stocktake is due to be updated by mid 2017.

3.1.2 Organic waste[9]

In February 2014, Sustainable Cambridge received funding from WDC Waste Minimisation Community Fund to undertake an assessment of domestic food waste disposed of through kerbside refuse collections in Waipa District.

Based on the results of the audit, the average household in Waipa District was estimated to set out 9.22 kg of domestic kerbside refuse per week, of which 2.41 kg (26.1%) was food waste. This equates to 479 kg of refuse per household per annum, of which 125 kg is food waste.

The report estimated that 8,400 tonnes of refuse was collected through domestic kerbside refuse collections annually, of which 2,193 tonnes was food waste.

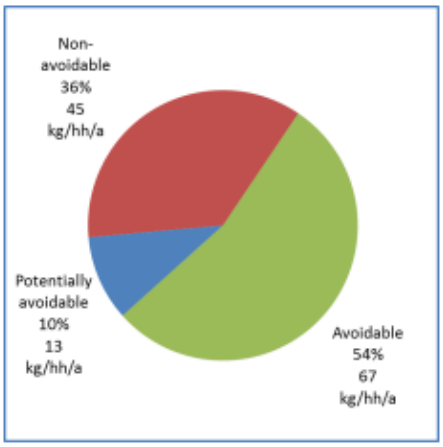


Figure 2 54% of food waste in kerbside refuse is avoidable

Of the 2.41 kg of food waste per household per week, 54% was categorised as 'avoidable' food waste, 10% as 'potentially avoidable' food waste, and 36% as 'non-avoidable' food waste.

The audit categorised all food waste into 16 food groups. Figure 3 below shows the composition of food waste in Waipa District by food group.

The largest group of food waste is fresh fruits, at 28% of all food waste (10% of avoidable food waste). Fresh vegetables is the next largest category, at 24%, (10% of avoidable food waste). Meat and fish comprises 13% of the waste, over half of which is non-avoidable (mostly bones and seafood shells).

Eight per cent of all food waste is avoidable bakery items, and 8% is avoidable homemade food (leftovers). The non-avoidable portion of the dairy food group is egg shells (2% of all food waste), and the non-avoidable portion of the drinks food group is tea bags (4% of all food waste). The 'Other foods' food group includes baby food, pet food, and 'gunge', a food type that is categorised as potentially avoidable food waste.

[9] Waipa District Food Waste Audits, Dec 2014, Prepared for Waipa District Council and Sustainable Cambridge

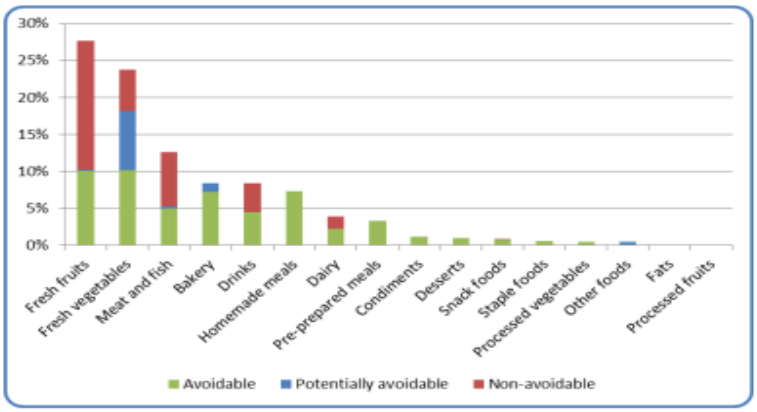


Figure 3 Composition of food waste by food group, by avoid-ability

The report included a survey of households, which identified information about waste behaviours. Analysis of household behaviour indicates households that compost or worm farm dispose of 1.2 kg of food waste per week compared to 2.2 kg from households that only dispose of their food waste to the domestic kerbside collection. Households that claimed to feed food waste to animals or dispose of food waste to an in-sink disposal unit did not have significantly lower levels of food waste in their domestic kerbside refuse.

3.1.3 Farm waste disposed of to land

Waipa District Council has a responsibility to consider all waste generated in the district when planning waste infrastructure and services. This includes farm waste.

The farm waste stream includes materials such as scrap metal, treated timber, fence posts, plastic wraps and ties, crop netting, glass, batteries, and construction and demolition wastes.

The 2014 *Rural Waste Surveys Data Analysis: Waikato & Bay of Plenty* indicated that over two-thirds of rural waste is organic materials, which the survey found to include animal carcasses and crop residues. The survey identified the three most commonplace rural waste management practices as burning, burial, or bulk storage for an indefinite time[10].

A comparison of the Waikato/BoP survey with a similar survey carried out in Canterbury indicates data for average tonnages of rural waste is substantially higher in the Waikato / BoP.

Waste Stream	Waikato / BoP survey (tonnes)	Canterbury survey (tonnes)
Average rural waste	31.9	9.3
Average organic/animal waste	3.9	14.0
Average household domestic waste	1.3	0.5

Table 4 Waste generation per farm surveyed in Waikato/BoP and Canterbury[11]

As different farm types create different volumes of waste, NZ Statistics data on farm types specific to the Waipa District, along with average waste volumes for farm type from the national *Rural waste risk assessment and waste prioritisation report* have been used as the basis for identifying the volume of farm waste in the Waipa District (Table 5 below).

[10] GHD Rural waste surveys data analysis Waikato & Bay of Plenty July 2014
[11] WDC 2015 Waste Services report

	Dairy		Livestock		Arable		Horticulture	
Number of Farms	633		642		216		72	
	Average (t)	Total (t)	Average (t)	Total (t)	Average (t)	Total (t)	Average (t)	Total (t)
Inorganic	1.7	1,082.4	6.0	3,826.3	1.8	388.8	3.3	239.0
Organic	1.2	740.6	17.1	10,965.4	0.8	172.8	17.8	1,283.0
Hazardous	6.7	4,266.4	49.6	31,836.8	3.4	738.7	21.9	1,578.2
Domestic	1.6	1,012.8	0.8	513.6	1.0	216.0	0.7	50.4
Sub-Total (t/farm/annum)	11.2	7,102.3	73.4	47,142.1	7.0	1,516.3	43.8	3,150.7
Total (t/Waipa District)	59,046.8							

Table 5 Farm waste tonnages for the Waipa District

The 1,563 farms in the District[12] (excluding forestry) are estimated to generated approximately 59,047 tonnes of waste per annum

This is an average of 37.8t waste per farm across the District. However, Table 5 above clearly shows that some farming types create larger volumes of waste than others. For example, livestock farming creates an average of 73.4t per farm of waste, while arable farming creates an average of 7t per farm.

The national report indicates that within the livestock category, there is also considerable variation, with piggeries and poultry farming creating considerably more waste than sheep, beef or deer farming (Table 6 below). The high level of hazardous waste for beekeeping is due to a high level of batteries. Piggeries and poultry returned high levels of chemical and fuel waste.

This information may assist in any targeted education messages to the farming community.

	Inorganic	Organic	Hazardous
Beef cattle (incl. young stock)	0.08	0.2	1.03
Beekeeping	0.63	2.17	15.47
Piggery	1.14	3.16	13.07
Poultry	4.03	11.19	18.8
Sheep	0.06	0.2	0.87
Deer	0.02	0.16	0.35

Table 6 Volumes of waste by waste and farm type

[12] NZ Statistics Agricultural Survey 2012

It is not currently known how farm waste is being disposed of in the Waipa District. The *Rural Waste Surveys Data Analysis: Waikato & Bay of Plenty* indicates that 80% of farms use a farm dump. Farmers typically burn off a lot of materials in the dump to reduce the volume within the dump and to extend the lifespan of the dump.

In addition, 91% of farms in the Waikato region admitted to having a burn pile, or some form of brazier for waste disposal. All farmers surveyed that used burning had an annual burn off, and at least 50% had two or more burn piles a year (usually coinciding with a change in farming season). All of the farms surveyed also used bulk storage practices.

National comparison:

The national report *Rural waste risk assessment and waste prioritisation report* prepared for Environment Canterbury in August 2015 assessed waste volumes by farm activity in TA areas to establish average volumes per waste material.

Waipa's rural waste average volumes can be seen in Table 7 below, which indicates that Waipa has higher than average volumes of plastics, agricultural chemicals and other waste compared to national averages, on a per farm basis.

Farm activity	Plastics	Hazardous containers	Packaging	Wood	Scrap metals	Chemicals	Other waste	Organic Waste
Kg per Ha								
Matamata-Piako	1.445	0.333	4.048	40.853	8.780	0.342	8.211	32.041
Waikato	3.308	1.162	2.686	4.899	1.063	0.505	7.542	25.409
Waipa	3.497	0.440	2.807	7.762	5.396	0.295	10.236	18.500
Opotiki	2.822	0.203	0.422	151.360	5.400	0.205	20.765	13.619
Thames-Coromandel	1.935	0.338	8.685	3.870	3.535	0.796	16.388	12.279
Whakatane	2.257	0.686	7.378	137.165	3.912	0.312	20.559	25.924
Western BoP	2.041	0.294	1.306	718.516	5.908	0.547	13.673	19.169
Kaikoura	1.927	0.218	0.943	5.573	0.324	0.000	1.024	9.941
Ashburton	0.320	0.083	0.048	0.149	0.240	0.001	0.083	6.086
Hurunui	0.382	0.542	0.012	18.271	4.815	0.000	0.140	23.568
Selwyn	2.870	0.657	32.728	28.612	1.813	0.029	3.814	82.113
Timaru	3.728	0.359	7.188	1.317	4.171	0.000	0.315	26.345
Waimakariri	7.167	0.869	1.179	0.460	6.083	0.000	8.012	26.963
Waimate	1.609	0.503	0.733	1.415	2.516	0.028	3.945	146.038
Ratio with all farm average								
Matamata-Piako	1.00	1.00	0.94	1.08	1.17	**2.93**	1.98	1.57
Waikato	**2.30**	**3.48**	0.62	0.13	0.14	**4.33**	1.82	1.24
Waipa	**2.43**	1.32	0.65	0.21	0.72	**2.53**	**2.47**	0.91
Opotiki	1.96	0.61	0.10	**4.02**	0.72	1.76	**5.01**	0.67
Thames-Coromandel	1.34	1.01	**2.01**	0.10	0.47	**6.83**	**3.95**	0.60
Whakatane	1.57	**2.05**	1.71	3.64	0.52	**2.68**	**4.96**	1.27
Western BoP	1.42	0.88	0.30	19.08	0.78	**4.69**	**3.30**	0.94
Kaikoura	1.34	0.65	0.22	0.15	0.04	0.00	0.25	0.49
Ashburton	0.22	0.25	0.01	0.00	0.03	0.00	0.02	0.30
Hurunui	0.27	1.62	0.00	0.49	0.64	0.00	0.03	1.15
Selwyn	1.99	1.96	**7.58**	0.76	0.24	0.25	0.92	**4.02**
Timaru	**2.59**	1.07	1.66	0.03	0.55	0.00	0.08	1.29
Waimakariri	**4.98**	**2.60**	0.27	0.01	0.81	0.00	1.93	1.32
Waimate	1.12	1.51	0.17	0.04	0.33	0.24	0.95	**7.14**

Table 7 Reported waste on farmland by farm activity[13]

[13] Source: Rural waste risk assessment and waste prioritisation report, SLR Consulting, August 2015

3.2 Recyclable and other materials

3.2.1 Council kerbside recycling service

The Waipa District Council kerbside recycling service collects an average of 195kg per household per annum – a total of 3,411 tonne in the 2015-2016 year. This is comparable to similar councils in the Waikato region despite variable collection frequency and receptacle type. A comparison of the amounts of recyclable material collected compared to similar councils is shown in Table 8:

	Kg of recyclable material collected via kerbside services per household per annum
Hauraki	181 kg
Waipa	**195 kg**
Matamata Piako	200 kg
Thames Coromandel	250 kg

Table 8 Recyclable materials per household per annum

Data provided by the Council kerbside recycling contractor indicates recycling tonnages are steady (Figure 4 below). While a steady decline in paper/cardboard is noted, this is offset by an increase in plastics/tins (Figure 5).

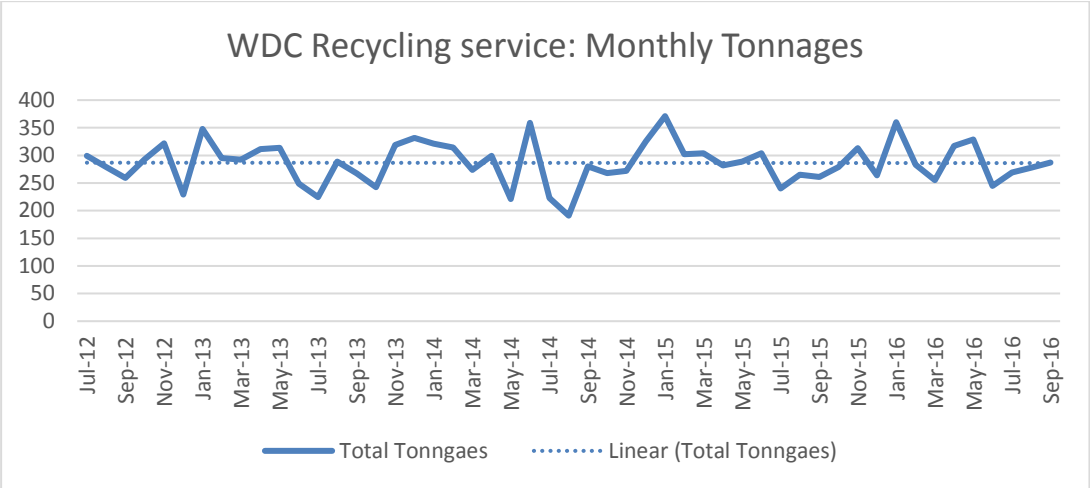


Figure 4 WDC monthly recycling tonnages

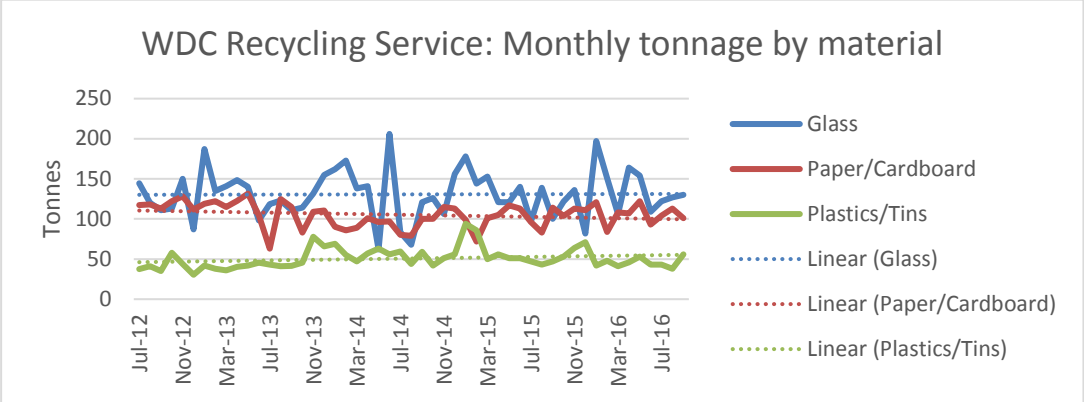


Figure 5 Monthly kerbside tonnages by material stream

The decline in the quantity of paper/cardboard reflects a national trend related to the decline in newsprint. In New Zealand the production of newsprint has been in decline since 2005, when it hit a peak of 377,000 tonnes, falling to 276,000 tonnes in 2011[14].

The increase in the tonnage of plastic and cans has occurred since November 2013 and may be linked to the use of Smart Environmental's MRF at Kopu or reflect changes in consumption.

3.2.2 Composition of Kerbside Recycling

Data provided by the WDC recycling contractor indicates glass bottles and jars represent that largest part of materials collected in kerbside recycling services (46%) followed by paper/cardboard (37%).

Composition of kerbside recycling – 2015-2016	% of total	Tonnes/ annum
Glass bottles & jars	46%	**1,557**
Paper / cardboard	37%	**1,256**
Plastic / tins	17%	**598**
TOTAL	**100%**	**3,411**

Table 9 Composition of Kerbside recycling in District

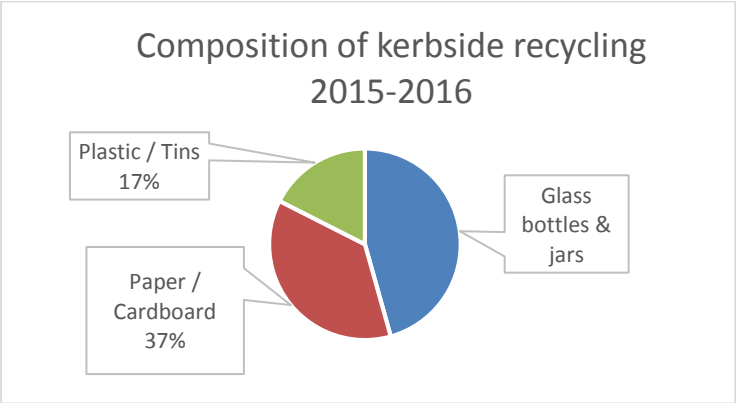


Figure 6 Composition of kerbside recycling

The capacity available for households to present cans, plastic and glass is restricted by the volume of the crate. Although it is possible to purchase additional crates it is unknown how many residents regularly use multiple crates.

A comparison of the composition of recyclable material collected in Waipa with that collected in Thames Coromandel, Hauraki and Matamata Piako Districts is shown in Figure 7 below.

The comparison districts provide a wheeled bin and separate crate for glass. The fact that glass and plastics/metals are relatively high proportion of the recyclables stream may indicate that there is a significant amount of paper that is currently not being captured in Waipa.

[14] http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=10833117

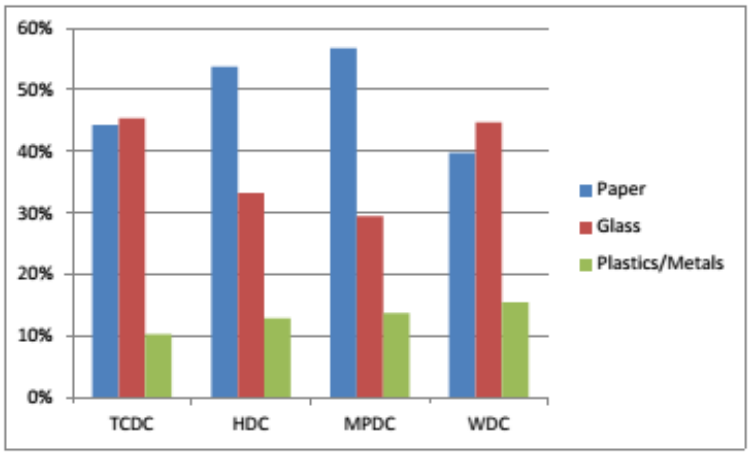


Figure 7 Comparison council service recycling composition[15]

3.2.3 Commercially-collected recyclable materials and greenwaste

Private waste collectors and facilities have been unable to provide detailed information on the volume or composition of recyclable material, primarily due to issues with the recording of information within their systems. Private operators do not always record the council area waste is collected or received from. A truck may collect from two or more council areas in a single trip – making it difficult to attribute volumes to a particular council area.

Based on the limited information provided, an indicative 440 tonnes of recyclable material and 580 tonnes of greenwaste are handled via private operator facilities in the Waipa District.

No information is available on additional recyclable material and greenwaste tonnages transported directly to facilities in other areas such as Hamilton, Otorohanga, Thames and Auckland. Therefore the above estimates will be lower than the actual tonnages for the District.

3.2.4 Hazardous material

No data is available to identify the volumes of hazardous waste disposed of from the Waipa District. Types of hazardous waste collected from the District for disposal include:

- Used oil and oil filters from automotive repairers
- Agricultural chemicals and their containers collected via the Agrecovery chemical and container scheme
- Commercial hazardous materials disposed of via the private sector
- Hazardous materials collected by NZTA contractors as part of roadside maintenance

3.2.5 Medical Waste

As hospitals continue to shorten patients' lengths of stay, home health care is increasingly relied upon to address the needs of patients at home. From one point of view, health care in the home environment is more comfortable for patients, offers less risk of infection, saves health care dollars, and lends itself to the promotion of ongoing strategies to improve patients' quality of life.

However, health care produces medical waste which may require specialist treatment and disposal. In the hospital environment medical waste is treated and disposed of appropriately; while for the home healthcare patient, medical waste is problematic.

[15] WDC Service review 2015

In most cases, medical waste is prohibited in both the refuse and recycling streams. Some medical waste includes sharp items (e.g. syringes) or bodily fluids – both of which pose risks to waste handlers either during collection or processing of waste.

In addition, medical waste packaging, not being a household item, is sometimes unable to be processed in MRF facilities. For example – hemodialysis may involve containers of saline which are too large to be processed by the largest MRF (Visy). In many cases, the volume of waste created by home healthcare is greater than the normal capacity of kerbside waste receptacles.

Ideally, home healthcare providers will provide waste solutions for the medical waste created. However, barriers to provider responsibility include:

- Lack of awareness of the issue
- Cost
- A belief that council will provide appropriate waste services

An ageing population and healthcare policy indicate home healthcare will increase, and the associated waste problems will become more prevalent.

While council is not responsible for home healthcare waste, there is likely to be an increase in queries from home healthcare patients regarding waste services. Working proactively with home heathcare providers and DHB's to assist the establishment of heathcare waste take-back programs may be a suitable solution to the issue.

For non-home healthcare related waste issues, the Pharmacy Practice Handbook[16] sets out guidelines for appropriate disposal of medical waste:

> *4.1.16 Disposal of Unused, Returned or Expired Medicines*
>
> *Members of the public should be encouraged to return unused and expired medicines to their local pharmacy for disposal. Medicines, and devices such as diabetic needles and syringes, should not be disposed of as part of normal household refuse because of the potential for misuse and because municipal waste disposal in landfills is not the disposal method of choice for many pharmaceutical types. Handling and disposal should comply with the guidelines in NZ Standard 4304:2002 – Management of Healthcare Waste.*

PART 4 - WASTE INFRASTRUCTURE

There are no legally operating waste landfills in Waipa district. Of the five regional landfills, the main repositories for waste from Waipa district are the North Waikato Regional Landfill and Tirohia landfills. Both landfills also accept waste from Hamilton City and other parts of the Waikato and Auckland Regions.

There are three privately owned and operated refuse transfer stations (RTS) in Waipa District - one in Cambridge and two in Te Awamutu. Most forms of waste can be disposed of at the RTS and they also have facilities for recyclables.

The number of private operators collecting waste in the district, and the lack of accurate data, makes it difficult to assess the exact quantities of waste sent to landfill from Waipa.

Based on information from operators, an estimated 22,000 tonnes of waste is sent to landfill from households and RTS each year. Recyclables collected from the kerbside and RTS were approximately 3,849 tonnes for the 2014-2015 year.

[16] https://nzpharmacy.wordpress.com/2009/06/09/disposal-of-unwanted-medicines/

This does not represent all the waste and diverted materials generated in the District as an unknown volume of material is currently re-used, recovered, recycled or disposed of through other means or via facilities out of the District.

Figure 8 below shows the locations of current landfill and transfer stations facilities relative to the Waipa District.

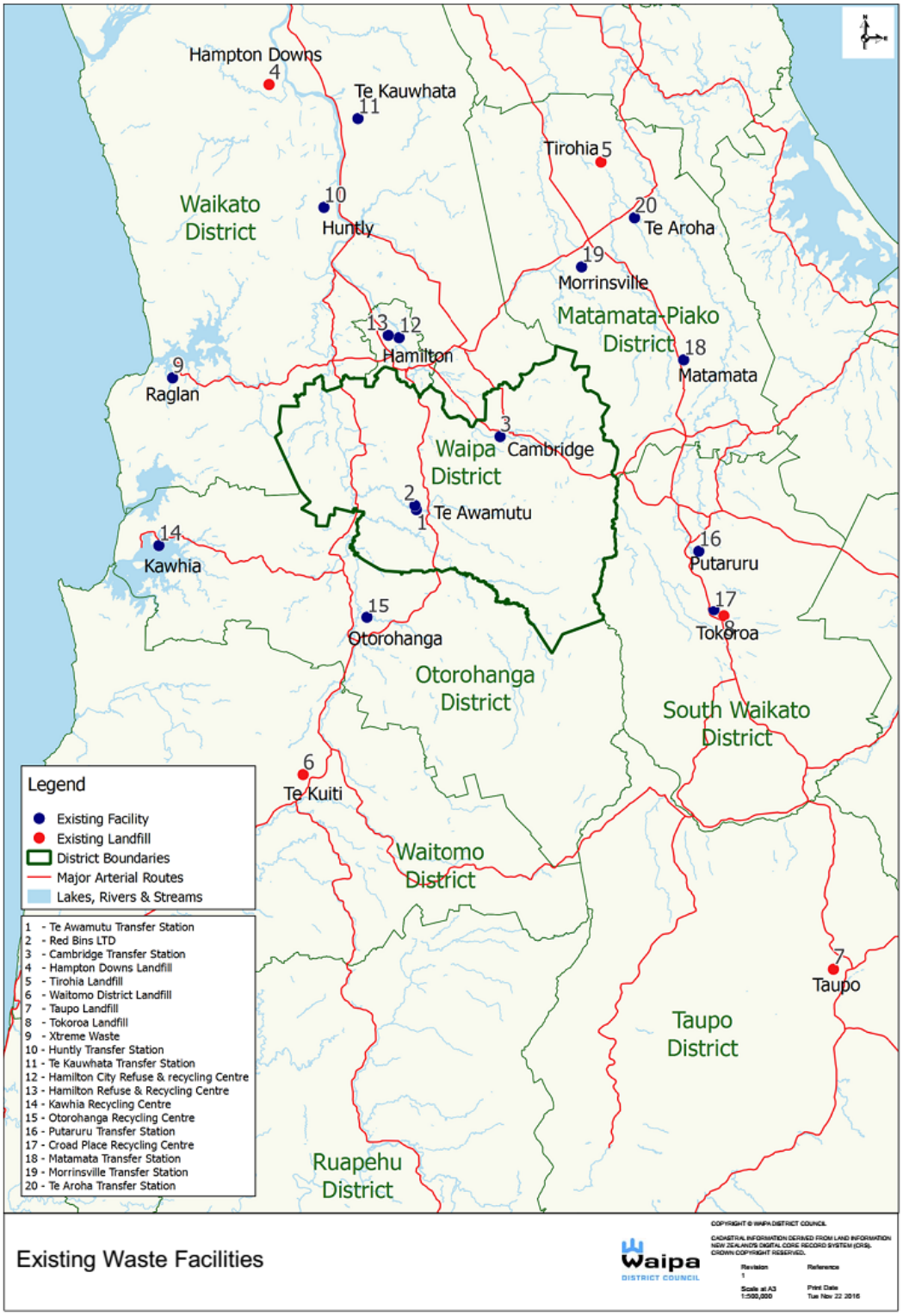


Figure 8 Map of existing landfills and facilities servicing the Waipa District

4.1 Landfills

There are no landfill sites in the district; however there are 5 landfill disposal options within 100 km. The majority of residual waste from Waipa is understood to go to the North Waikato Regional Landfill which has capacity for at least 20 years.

The table below lists the landfills that are known to currently receive municipal waste from Waipa District.

Name & Owner/Operator	Accepts	Location	Capacity and Consent
North Waikato Regional Landfill (EnviroWaste Services Ltd)	Non-hazardous residential, commercial and industrial solid waste, including special wastes. Sludges with less than 20% solid by weight are prohibited.	Hampton Downs, Waikato District	Consented to 2030
Rotorua District Landfill (Owned:Rotorua District Council; Managed: Waste Management)	Non-hazardous residential, commercial and industrial waste, including special wastes (although bylaw may be reviewed to exclude these in future). Rotorua Landfill does not accept waste from outside the district.	Atiamuri SH30, Rotorua District	Consented to 2030
Tirohia Landfill (Waste Management)	Non-hazardous residential, commercial and industrial solid waste, including special wastes. Sludges with less than 20% solid by weight are prohibited. Compostable material is also processed on site.	Tirohia, Hauraki District	Consented to accept 4 million m^3 - approximately 2035
Tokoroa Landfill (South Waikato District Council)	Non-hazardous residential, commercial and industrial solid waste, including special wastes.	Newell Road, Tokoroa	Consented to 30 October 2020
Whitford Landfill (Waste Disposal Services - joint venture b/w Auckland Council and Waste Management NZ Ltd)	Non-hazardous residential, commercial and industrial solid waste, primarily from south Auckland.	Whitford, south-east Auckland	Remaining capacity 6.5M tonnes. Resource consent allows no more than 200,000 tpa.

Table 10 Class 1 landfills accessible from Waipa District

A high proportion of refuse is transported from Waipa District to Tirohia and North Waikato Regional landfills. While these facilities are some distance from Waipa District, the material is bulked and consolidated for transport at nearby transfer station facilities both in the District and close by.

There does not appear to be a need for a council owned landfill within the District. While some longer term planning may be required to ensure the region as a whole has suitable landfill capacity in the 20-50 year term, this is considered to be a discussion that is more suitable as a joint council or a private initiative.

4.1.1 Closed Landfills

Council has four closed landfill sites; these are located in Cambridge, Te Awamutu, Kihikihi and Pirongia. The sites have all been capped and are used for non-invasive activities. The Te Awamutu and Pirongia sites are used for grazing light animals; the other two are mown as passive reserve and dog exercise areas.

- Cambridge closed landfill site, capped and in pasture. Part of the site is used for a dog activity area.
- Te Awamutu - closed landfill site, capped and in pasture. A soft grazing lease in place.
- Kihikihi - closed landfill site, capped and in pasture. Managed as a passive reserve and regularly mown.
- Pirongia - closed landfill site, capped and in pasture. A soft grazing lease in place.

All four of the sites have Waikato Regional Council Resource Consents for the discharge of leachate into the ground and for the discharge of contaminants into the air, and require monitoring six monthly or quarterly. The consents outline the frequency of testing which is monitored by the Shared Services group and Consultants.

Currently the caps on each site are functioning in accordance with the Waikato Regional Council consents, and regular monitoring will pick up any issues which may arise in accordance with those requirements.

4.1.2 Cleanfills

In a 2011 report the MfE[17] found that there are two significant cleanfill sites in Waipa; however it is unknown how much or what type of material they take. Cleanfill sites accepting less than 2500m3 per annum are permitted under the Waikato Regional Council rules and are not required to provide information to the Council on volumes or composition of accepted material. Monitoring of cleanfills is a responsibility of the Waikato Regional Council.

4.2 Transfer Stations

Refuse Transfer Stations (RTS) provide for those that can't or choose not to make the journey to an out-of-region landfill. Waste can be dropped off at these sites by the public and commercial collectors after paying a gate fee, and the waste is subsequently compacted before transport to a landfill.

Waipa District Council is the only council in the Waikato Region that does not own a Refuse Transfer Station.

There are three recycling/transfer stations in Waipa district, one in Cambridge and two in Te Awamutu. These stations act as central collection points, where recyclable and reusable materials are separated out from waste prior to transfer to landfill.

The resource recovery facilities at the transfer stations accept a range of materials for recycling. Accepted materials are plastic numbers 1 and 2, paper/cardboard, ferrous and non-ferrous metals, clear, green and brown glass, textiles, car batteries and whiteware. The stations also accept greenwaste for a fee which is transferred to composting facilities.

[17] MfE report, Consented Non-levied Cleanfills and Landfills in New Zealand

Facility Description	Operation	Hours	Materials accepted
Te Awamutu Refuse Transfer Station (Daphne St) 	Waste Management NZ	Mon-Sat 8am-4pm Sunday CLOSED	There are facilities to collect recyclable materials at the site including separate collection of garden waste and e-waste.
Red Bins Ltd (Te Awamutu) 	Waste Management NZ	Mon- Fri 8.30am to 4.30pm Sat - 8.30am till 12pm Sunday and public holidays- closed	Provides under-cover tipping of refuse and greenwaste for the general public, with a wide tip face to allow numerous cars and trailers access at the same time. There are also designated areas for recycling, (glass bottles, cardboard, paper, tin cans, aluminium cans, and grade 1 to 5 plastics), cleanfill, gas bottles, clothing and batteries.
Cambridge Refuse Transfer Station 	Envirowaste, subsidised by Waipa District Council	Monday - 9am to 12pm Fri to Sun - 9am to 4pm	A range of materials are accepted for recycling. These include: • Metals • Aluminium cans • Cardboard • Paper • Colour separated glass • Green garden waste • Plastics type 1 and 2

Table 11 Transfer Stations in Waipa District

4.2.1 Evaluation of Council Subsidy on Cambridge RTS

The Cambridge transfer station is operated by Envirowaste Services Limited (ESL). The site used to be owned by Council but was sold to ESL in 2007. ESL maintain the facility principally as a bulking depot for their own operations, and provide public access in conjunction with WDC.

Data from 2014-2015 indicates that 54% of the waste collected at the Cambridge RTS is sourced from cars and trailers (predominantly householders) as seen in Figure 9. This suggests that the RTS is well used by local residents.

Waipa District Council currently makes an annual payment of $28,000 to Envirowaste to ensure the Cambridge Transfer Station is open to

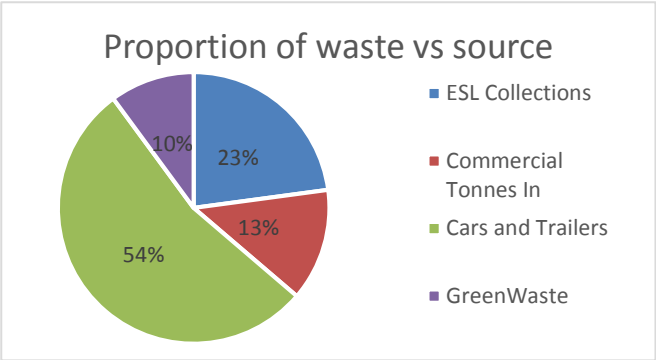


Figure 9 Cambridge RTS waste sources

the public for 24 hours per week. This is funded by a targeted rate for Leamington and Cambridge ratepayers. Residents were consulted on the subsidy as part of the 10 year plan 2009-19 and has not been reviewed since.

ESL consider the subsidy to be insufficient to offset their costs. They have indicated they are keeping the operation open to the public out of good-will and would be interested in reviewing the rate and the arrangement.

Any subsidy discussions could include increasing levels of service at the site in exchange for increased levels of subsidy, such as by including hazardous waste, a wider range of plastics or e-waste facilities.

Figure 10 Envirowaste Ltd transfer station in Matos Segedin Drive, Cambridge

If the site was to open for longer or the volume of material collected were to increase, additional land may need to be developed.
The transfer station operates on the hard stand area designated by the red outline in Figure 10. ESL also owns the area to the left designated by the green outline which would enable the site to be expanded. ESL are likely to seek a financial contribution from council for any development of the site to provide additional services to the public.

However, the issue of profitability may be related to ESL's business strategy as the Cambridge site operates primarily as a depot and bulking site, while ESL's main transfer station is in Te Awamutu and also operates public recycling drop off facilities i.e. it is uneconomic to maintain two sites in such close proximity.

Options for a long term solution include:

- Increase the subsidy to ESL, allowing the public hours of operation to increase and potentially adding e-waste or other material streams to the recyclables collected
- Develop a Cambridge recycling centre managed by a community partner, which would continue to require council funding but could meet multiple council objectives

The risk matrix below provides a brief evaluation of the key risks that could arise if the subsidy is discontinued.

Risk Assessment – Discontinuing Cambridge RTS subsidy				
Risk	Likelihood	Severity	Score	Mitigation measures
Provider reduces opening hours or closes site, resulting in potential for illegal dumping	3	3	9	No practical measures
Provider increases gate fee	2	2	4	No practical measures
Site assets decline / site is not optimised for resource recovery	2	2	4	No practical measures

Table 12 Risk assessment of discontinuing Cambridge RTS subsidy[18]

[18] WDC 2015 Waste Services report

4.3 Recycling and Reprocessing Facilities

In Waipa, recycling is bulked prior to being transported to MRF's in Hamilton, Kopu or Auckland for processing. Bulking occurs either at transfer stations or at waste provider's yards.

Location	Facility	Description
Auckland	O-I NZ Ltd	Process colour-sorted glass
Hamilton	CHH Fullcircle	Fibre bulking and baling facility (20,000t/yr)
Hamilton	Waste management	Recyclable commodities bulking and baling
Auckland	SIMS Pacific	Ferrous metals recycling
	MetalCo	Scrap metals recycling
	Oji Fibre Solutions	Paper and some card
Kawerau	EcoCast	Vermicomposting of industrial, council and some post-consumer organic wastes
South Waikato	MyNoke Ltd	Vermicomposting of industrial, council and some post-consumer organic wastes in Kinleith
Tauranga	Resene PaintWise Collection (Waihi Road, Tauranga)	Accept unwanted paint and paint containers, with a small charge for non-Resene product. No automotive or marine paint. Material is reused, recycled, or processed as appropriate.
	Agrecovery	Accept unwanted agrichemicals and empty containers. Collection from properties (some charges apply)
	Various retail outlets (Pak'n Save, Warehouse, New World)	Soft plastic recovery scheme (includes plastic shopping bags)
Huntly	Metrowaste	Initial processing and baling of recyclables
Auckland	Reclaim	Plastics grade 1 and 2, baled cardboard
Taupo	Envirowaste	Commodities MRF
Kopu	Smart Environmental	Commodities MRF
Raglan	X-treme Waste	Initial processing of recyclables

Table 13 Recycling and reprocessing facilities- out of District

The term 'recyclables processing facilities' includes:

- Material recovery facilities (MRFs). At a MRF, dry recyclables/commodities are sorted and bulked for transport to recycling facilities outside the region for processing; and
- Organic material facilities e.g. composting facilities.

In general, the collection and processing of dry recyclables/commodities from commercial premises is a mature market, with limited opportunity for expansion. The Waikato region has a

particularly wide range of recovered materials processing facilities, particularly for scrap metal, organic wastes, including wood wastes, and to a lesser extent, C&D materials such as concrete.

While there are no facilities for recycling or reprocessing in Waipa, access to such facilities is sufficient.

4.4 Hazardous Waste Facilities

Hazardous waste comprises both liquid and solid wastes that, in general, require further treatment before conventional disposal methods can be used. The most common types of hazardous waste include:

- Organic liquids, such as those removed from septic tanks and industrial cesspits
- Fuel, solvents and oils, particularly those containing volatile organic compounds
- Hydrocarbon-containing wastes, such as inks, glues and greases
- Contaminated soils (lightly contaminated soils may not require treatment prior to landfill disposal)
- Chemical wastes, such as pesticides and agricultural chemicals
- Household hazardous waste such as garden or kitchen chemicals, bleaches and glues
- Medical and quarantine wastes
- Wastes containing heavy metals, such as timber preservatives
- Contaminated packaging associated with these wastes.

A range of treatment processes are used before hazardous wastes can be safely disposed.

Most disposal is either to landfill or through the trade waste system. Some of these treatments result in trans-media effects, with liquid wastes being disposed of as solids after treatment.

A small proportion of hazardous wastes are 'intractable', and require exporting for treatment. These include polychlorinated biphenyls, pesticides, and persistent organic pollutants.

The Waipa District does not have permanent facilities for the collection or disposal of hazardous materials requiring treatment (e.g. agricultural chemicals, household hazardous waste or petroleum oil). On occasion, Waipa participates in a regional Hazmobile collection (event based household hazardous waste service). In addition, some voluntary and private waste collection services are available as shown in Table 14 below. However, improved facilities for households may be appropriate.

Hazardous waste	Name	Location	Household / Commercial
Paint	Paintwise	Cambridge Resene ColorShop Te Awamutu Resene ColorShop	Household paint
Agricultural chemicals, POP's, other hazardous waste	HazTec WM Technical Services Chemwaste	North Island	Household and commercial
Used Oil	Multiple	Waikato	Commercial
LPG bottles	Multiple	Waikato	Household and commercial

Table 14 Hazardous Waste Operators

4.4.1 Used Oil

In a report undertaken by the Waikato Regional Council in 2016[19], it was identified that while there were private used oil collections available in the District for commercial used oil; there were no facilities available for the disposal of household use oil i.e. home mechanics.

The report noted that Cambridge and Te Awamutu were under-serviced in this regard and recommended provision of used oil drop off facilities. Opportunities to encourage Repco and Supercheap Auto to extend their industry provided used oil recovery service (R.O.S.E) to stores in Cambridge and Te Awamutu could be explored.

In addition an uptake in the use of unconsented used oil burners in the Waikato region was highlighted in the report. Burning used oil in an unfiltered burner on rural properties is likely to release toxins into the environment.

The report recommended Regional Council work with industry bodies to investigate the uptake of used oil furnaces in the horticultural, timber mill and rural sectors including their efficiency and emissions levels. Any investigation should also identify the scale of use, any issues or concerns, and whether regulation for the control of used oil furnaces was required.

4.4.2 Agrecovery Rural Recycling programme

Agrecovery currently provides a nationwide programmes for the recovery of:

- **Chemicals** - the disposal of unwanted and expired agricultural chemicals
- **Containers** - the recovery of agrichemical, animal health and dairy hygiene plastic containers, drums and IBCs

This voluntary product stewardship scheme provides New Zealand's primary sector with limited access to collection and disposal services for unwanted agricultural chemicals (and their containers). As the scheme is voluntary, it applies only to agricultural chemicals from participating companies and brands. Other (non-participating) brands incur a collection and disposal fee.

Waipa District Council supports the Agrecovery program, which is promoted through the council's website.

4.5 Options for social benefit and community involvement in waste issues

4.5.1 Benefits of community involvement in waste issues

As part of this waste assessment, Envision New Zealand was contracted to identify the potential for community-led resource recovery initiatives in the Waipa district.

One of the key reasons that community led resource recovery activities are positive for the local economy is employment creation. More labour intensive activities such as prevention, waste minimisation and re-use create (on average) 6 – 8 jobs compared to one created through sending waste to a landfill.

Table 15 below illustrates job growth at five community recycling centres around New Zealand that were previously typical transfer stations.

[19] Management and disposal of used engine oil in the Waikato region: Scoping report; Zenzic; August 2016 for Waikato Regional Council

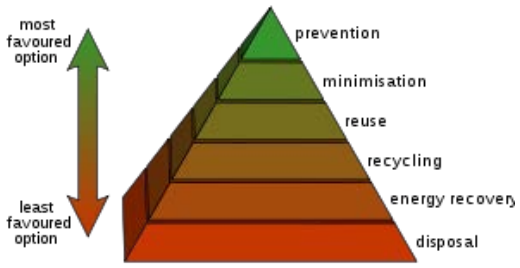
Employment before and after the development of Community Recycling Centres at various sites in NZ		
	Before	**After**
Waiuku	1 part time	5 full time
Wanaka	0	16 full time
Kaikoura	1-2 full time	13 full time
Raglan	2 full time	17 full time, 23 part time
Kaitaia	2 full time	18 full time, 16 part time

Table 15 Employment before and after CRC development

Community or social enterprises tend to prioritise employment creation when compared to privately owned waste companies. Social enterprises create a multiplier effect - meaning that the impact of this additional employment to the local economy is larger than their take home pay might suggest.

Calculating the exact amount of return to local economies via staff spending is difficult however one study suggests that for every $1 spent on staff wages, local economic activity increases by $2.80 due to local staff spending[20]. This compares favorably to organisations which, because of their structure and methodology, take money out of communities – for example by making returns to foreign shareholders.

(a) The waste hierarchy



The waste hierarchy is an internationally agreed model for optimising the reduction and management of waste. Rethinking consumption to prevent waste from occurring in the first place is the preferred option, with disposal in landfill the least preferred. The higher up the waste hierarchy the action is, the greater the benefits are, including: climate change mitigation, energy savings and job creation. The higher up the waste hierarchy that Waipa District Council manages the regions waste directly and indirectly, the better the long term environmental, community and economic benefits will be.

4.5.2 Methodology of community engagement for Waipa District Council's waste assessment

Thirty seven local and sub-regional community organisations with a potential interest in resource recovery were identified. Once identified, each community organisation was emailed or phoned to invite them to a workshop to discuss community-led resource recovery in Waipa. Each recipient was also invited to complete an online survey. Thirteen organisations completed this survey.

[20] Valuing Recycling Town – Measuring which bucket has the most leaks : 2009 : Gary Kelk : Ministry for the Environment : New Zealand

Several interviews were held with key community organisations to get a more in depth understanding of their activities and capacity requirements.

In addition, a workshop was held for community organisations and council staff to explore community led resource recovery. Approximately 20 people attended the workshop.

Mana whenua were offered a tailored engagement to suit their needs, however Nga Iwi Tōpū O Waipa' (WDC'S tangata whenua representative group) was unable to engage directly within the project timeframe. However the WDC Iwi Liaison officer attended the community workshop and identified a potential alignment of values between Iwi and this resource recovery initiatives.

4.5.3 Community oriented waste activities in the Waipa District Council area.

The communities of Waipa are well served by charity stores and second hand dealers. These operations provide an outlet for residents to dispose of some of their household reusable materials, and the kerbside collection allows for disposal of some recyclable commodities. However, there is a wide variety of reusable and recyclable material unsuitable for disposal through these services, for example; e-waste, building and renovation items, scrap metal, plastic wrap, green waste and items requiring repair and textiles.

Residents are also able to access a range of educational programs that promote sustainability and the reduction of waste at school, home and in the community. For more information on education programs available in the area, see Sections 5.1.3 and 6.4.

The following table identifies enterprises involved in recycling, recovery and waste minimisation activities within the Waipa District Council area.

Community oriented recycling, recovery and waste minimisation initiatives within the Waipa District Council area			
Type of business	**Name**	**Activities**	**Location**
Charity stores	Habitat for Humanity Restore	Selling of re-usable, second hand household items – relies on volunteers.	Te Awamutu – national organisation.
	Hospice Shop	Selling of re-usable, second hand household items – relies on volunteers.	Cambridge and Te Awamutu – national organisation.
	Red Cross	Selling of re-usable, second hand household items – relies on volunteers.	Cambridge and Te Awamutu – national organisation.
	Salvation Army	Selling of re-usable, second hand household items – relies on volunteers.	Cambridge and Te Awamutu – national organisation.
	Union Parish	Selling of re-usable, second hand household items – relies on volunteers.	Cambridge – national organisation
Social enterprise / community group	Ecomailbox	To reduce waste from unwanted circulars, they provide free, durable 'No Ad Mail' mailbox stickers.	Auckland based – local profile.
	Xtreme Zero Waste	Community recycling centre and educator. Joint venture with Waiuku Community Recycling Centre.	Raglan based – works regionally.

	Lions Club	Selling of re-usable, second hand household items at pop up shop and market – relies on volunteers.	Cambridge – national organisation.
	Para Kore	Supports marae to reduce waste.	Various marae in region – national organisation.
	South Waikato Achievement Trust	Several enterprises resource recovery based, including e-waste, wood waste and recycling at transfer station	Tokoroa based – works regionally.
	Waikato Environment Centre`	Centre is an e-waste drop off point in Hamilton. Also, run Kaivolution food rescue which collects edible but not saleable food redistribute it to people in need in Hamilton and the Waikato.	Hamilton based – works regionally.
Educational groups	Environmental Education for Resource Sustainability		National organisation – local profile.
	Enviroschools		Waikato based – national organisation.
	Mainstream Green		Cambridge based – works regionally.
	Project Litefoot Trust		Various sports clubs in region - national organisation.
	The Nappy Lady		National organisation.
	Waste Education NZ		National organisation.

Table 16 Community recycling, recovery and waste minimisation initiatives

The most notable conclusion from the community engagement process, was the absence of local groups who are actively involved in resource recovery initiatives. Mainstream Green as the only local group, limited to education activities.

4.5.4 Future state waste activities community groups would like to be involved in

Organisations who were invited to the workshop were asked what other resource recovery opportunities could be pursued. Responses indicated a strong interest in expanding existing operations and starting new resource recovery initiatives in the Waipa area. However, these organisations were predominately regional and national rather than local.

Activities suggested by participants included:

- **Kate Meads (The Nappy Lady)** who runs 'zero waste parenting' and 'love food, hate waste' workshops in the community, would like to see these education activities be promoted more and collaborate with other educators.
- **Mainstream Green** would like to collaborate with other educators and jointly promote a common 'brand' to raise the profile of this work.
- **Mighty River Domain** would like to see timber and mattresses kept away from landfill through recycling.

- **South Waikato Achievement Trust** would like to expand e-waste collections and operate a transfer station.
- **Salvation Army** would like to replicate a community recycling centre like Xtreme Zero Waste locally.
- **Te Awamutu Museum** – a representative from the museum would like to collaborate with other educators and see leaders in the community be supported to spread the message about zero waste like Tamaki WRAP project in Auckland
- **Waikato Environment Centre** would like to extend their Kaivolution food rescue program and e-waste collection further into Waipa.
- **Waste Education NZ** would like to formalise the waste minimisation education they have delivered in schools and the community.
- **Workbridge** would like to support the development of resource recovery initiatives that could create employment for his clients.
- **Xtreme Zero Waste** would like to be involved in more resource recovery activity in Waipa and support Waipa DC to transition to zero waste.

4.5.5 Key issues and barriers related to community involvement in waste issues

Organisations were asked what additional support they would require to expand or start new resource recovery activities. Their feedback highlighted some barriers that would need to be addressed to enable community initiatives to flourish.

The Salvation Army, for example, recycles up to 75% of donated items but the remaining 25% goes to landfill at a significant cost. Education around what can be reused or recycled, and what can and cannot be accepted by a reuse centre is a significant hurdle for such facilities to overcome.

The range of waste issues and barriers to resource recovery in Waipa reflect global trends of:

- overconsumption
- undervaluing of resources
- resource recovery options unavailable for many materials, and
- a lack of an integration and awareness across the whole of community to maximise resource recovery and social benefits.

Issues and barriers to new resource recovery activities include:

- **Venue costs:** Commercial leases paid by organisations are expensive and increase regularly. This can contribute to some initiatives becoming financially marginal.
- **Access to processing**: A lack of local processing options means it is uneconomic to provide recycling services for some materials. While facilities do exist regionally, for example e-waste recycling, additional funding would be required to expand into Waipa.
- **Operational capacity**: Managing a recycling facility requires operational skills and an understanding of waste markets and waste issues. This capacity is not currently available within community groups in the Waipa District, nor does council have the internal capacity or institutional knowledge of resource recovery to upskill community groups in these areas. In addition, waste is not seen as strategically important within Council.

- **Leadership:** There is a need for greater leadership in fostering collaboration and integration within council and across community to generate resource recovery and local economic development. Such leadership would be in alignment with the key principles of the Waipa District Council Long Term Plan (see section 2.5.1).
- **Council procurement**: Waipa District Council's procurement approach is traditional and favours large businesses. Community organisations would like to see a partnership approach to procurement that recognises the social, economic and environmental benefits of 'buying local'. See section 8.3.2(c) for more information on social procurement.

4.5.6 Profiles of two regional community groups actively involved in resource recovery

One of the outcomes from the community engagement process was to identify local community organisations with the capacity to operate a community recycling centre. However, the engagement process identified insufficient experience and capacity within local groups precluding any immediate ability to operate a community recycling centre.

There is interest and capacity within two regional organisations; South Waikato Achievement Trust (SWAT) and Xtreme Zero Waste Ltd (XZW); who are willing to operate or partner locally to develop a community recycling centre.

Many of the regional and national organisations listed in Table 16 above are also interested in being involved. Table 17 and Table 18 below provide a more detailed of each organisation.

South Waikato Achievement Trust (SWAT)	
Location	Based in Tokoroa. Has initiatives in areas across central north island.
Key Contact	Gary Olney, Business Development Manager
Organisations Involved	Councils: Gisborne, Central Hawkes Bay, Napier, Rotorua, Western Bay, Tauranga, Hamilton, Waikato District, Waikato Regional, Waipa, Otorohanga and Ruapehu. Government: Ministry of Social Development and Ministry of Health. Industry: Waste Management, Smart Environmental, Enviro Waste, ISL (vet group), Foodstuffs and Solid Energy. Community organisations: Waikato Environment Centre.
Vision	"Personal growth, self-esteem and respect results when people are able to be contributing members of their local communities". SWAT sees employment as critical to wellbeing and aims to create employment and job opportunities for people who are disadvantaged or disabled in the community.
Background	Formed in the 1970's as a social service for accident victims and people with disabilities.
Current Activities	SWAT operates four business units: residential accommodation, disability support services, e-waste recovery and South Waikato District Transfer Station. Employs 90 disadvantaged FTE and 150 staff FTE
Potential for resource recovery	Significant potential to expand resource recovery operations, currently: • processes 60 tonne per month of e-waste • diverts re-usables and recyclables from landfill at the South Waikato District Transfer Station • diverts industrial waste wood into a firewood enterprise

Support required:	Would like to see Waipa District Council: • Adopt a social procurement model, recognising the social and local economic benefits of procuring goods and services from community organisations and social enterprise. • Work in partnership with community organisations and facilitate collaboration and integration between community, business and council. • Provide funding to do a feasibility study on the expansion of e-waste services into Waipa.

Table 17 Summary- South Waikato Achievement Trust (SWAT)

Xtreme Zero Waste Ltd (XZW)	
Location	Primary resource recovery site in Raglan. Also, operates a joint venture to manage Waiuku Community Recycling Centre.
Key Contact	Rick Thorpe, Relationship Manager
Organisations Involved	Councils: Auckland, Waikato District, Waikato Regional, Waipa District Community Organisations: Community Recycling Network, Para Kore, Seagull Trust, (Thames), Arapuni Recycle drop off centre.
Vision	XZW is a community enterprise, using business as a tool to meet the needs of their community. Their mission is 'working together to achieve Zero Waste'.
Background	Closure of local landfill in 1998 which was leaching toxics into the waterways, led locals to seek out an alternative to landfilling.
Current Activities	Resource recovery sites at Raglan and Waiuku, school and community education, kerbside and business collections, zero waste events and a range of consultancy services. Employs 28 staff.
Potential for resource recovery	Significant potential to expand resource recovery operations: • Committed to zero waste. • Strong community development approach to resource recovery. • Diverts 173, 833kgs of waste from landfills each month. • Has provided mentoring to 46 community groups on the establishment of recycling and waste minimisation initiatives.
Support required:	Would like to work in partnership with Council, Mana whenua and community to support a transition to zero waste.

Table 18 Summary - Xtreme Zero Waste Ltd (XZW)

4.6 Assessment of infrastructure and council role

Waipa District Council does not own any waste facilities. This reduces the Councils ability to control or manage waste in the district. Without ownership or control of the waste stream, Council is dependent on the decisions of private operators whose commercial objectives do not necessarily align with Council's waste minimisation objectives.

Where a council owns a transfer station or landfill, direct action to reduce waste can be taken to promote waste mimisation efforts. These include regulatory measures such as banning the

disposal of particular material, differential pricing to encourage separation of recoverable materials, improving the facility layout to encourage material separation, and establishing operating contracts that incentivise waste reduction by the contractor.

However, where there is competition in the transfer station or landfill market, such measures can simply drive customers to the competing facility where no price control exists for residual material.

There is the potential for council to partner with a community enterprise to establish waste recovery / reuse centres such as Xtreme Waste in Raglan, the Seagull Centre in Thames, and the CREW Reuse Centre in Whakatane. Council involvement can enable these, commercially marginal, activities to be provided within the district.

Key issues related to waste infrastructure in the Waipa District include:

- A need for a long term solution for recycling facilities in Cambridge
- A lack of household hazardous waste and used oil disposal facilities in the District
- Identifying opportunities to increase recycling and reuse options and facilities in the District, in order to increase recycling rates
- A need for leadership to develop operational capacity within the community i.e. guidance and support for community groups to develop an understanding of waste issues, and improve operational ability to effectively manage a community resource recovery facility.

PART 5 - WASTE SERVICES

5.1 Council-provided waste services

Waipa District Council does not provide a council-managed refuse service. However, a kerbside recycling service was introduced in 2006. The current processes in the district for managing refuse, recyclables and other materials diverted from landfill are summarised in Table 22 below.

Waste Stream	How these are currently managed
Household refuse	Kerbside private refuse collection (bags or MGB) Refuse transfer station drop-off
Household recyclables	Kerbside recycling collection and refuse transfer station drop-off for recyclables Mixed glass is taken to various processors for reproducing into new glass products Plastics and cans are currently processed and sold to appropriate markets Cardboard and paper are recycled into cardboard products
Aluminium, steel, car batteries, LPG cylinders	Processed at refuse transfer stations and then on sold to markets or to scrap dealers
Organic waste	Refuse transfer station drop-off Private kerbside collection to compost Private sector processing of green waste collected at the refuse transfer stations Home composting, feeding to animals etc
Construction and Demolition waste	Refuse transfer station drop-off

	From refuse transfer station either diverted to landfill or used to fuel boiler to generate hot water on-site. Recycled concrete crushed and substituted for quarry rock or sent to cleanfill. Waste wood is reused for other purposes or taken to landfill
E-waste	Refuse transfer station drop-off Electrical goods received at refuse transfer stations are sent to Hamilton for recycling or stripped on- site and parts on-sold
Litter and illegal dumping	Council provided litterbin servicing and removal of illegally dumped waste, which is taken to refuse transfer stations then on to landfill
Inorganic waste	Refuse transfer station drop-off
Hazardous waste	Refuse transfer station drop-off. Compact fluorescent light bulbs are disposed of by Red Bins in Te Awamutu and the Union Parish Office in Cambridge. Agrecovery collects unwanted farm chemicals No facilities accept used motor oil in the Waipa District
Biosolids	Dried biosolids spread on land or buried at Wastewater Treatment Plants
Cleanfill materials	Disposed of at various cleanfill sites
Commercial waste and diverted materials (recyclables)	Private collections (MGB's, skip bins etc) Refuse transfer station drop-off Commercial recyclable materials sent out of region for processing Refuse sent to landfill disposal

Table 19 Current processes in the district for managing waste and diverted materials streams

Key issues related to waste services in the Waipa District include:

- Council does not control the refuse service or waste infrastructure in the district, making waste minimisation initiatives by Council more difficult to implement
- Higher cost and reduced options for refuse and recycling collection in lowly populated rural areas
- Difficulties in obtaining data from private operators
- Level of service (kerbside receptacle size, frequency of collection) not controlled by Council or standardised

5.1.1 Council kerbside recycling collection service

WDC provides a kerbside recycling service for urban and most rural residents. The entire district is covered by the service although the collection routes do not include roads which are unsuitable for collection vehicles.

Schools are also able to participate in the council provided recycling service. While a business recycling service investigated 2015, it was determined that a service was not required. The service is rates funded and approximately 195 kg is collected per household per annum via the recycling service.

Kerbside collection service summary	
Receptacle	60L crate; Paper and cardboard (folded) may be presented in separate bundles/boxes or bags
Frequency	Urban recycling is collected weekly in Cambridge, Te Awamutu, Kihikihi, Pirongia, Ohaupo, Ngahinapouri, Rukahia and Karapiro. Most rural residents are provided with two recycling crates and recycling is collected fortnightly.
Accepts	• Cans (food and drink) • Plastic containers and bottles (plastic type 1-7) • Container glass • Paper and cardboard
Sorting method	Materials are sorted at the kerbside and then taken to the Smart Environmental depot in Cambridge for bulking • Glass is then taken to Visy in Auckland • Paper and card is taken to Full Circle in Auckland • Cans and plastics are taken to Smart's Material Recovery Facility (MRF) in Kopu for further sorting and baling
Replacement crates	Additional or replacement recycling crates can be purchased from Council offices in Te Awamutu and Cambridge and the cost is $22.50 per bin. Damaged bins are swapped at no charge

Table 20 Summary of council provided kerbside recycling service

Recycling revenue

The targeted rate is a fixed amount of $53 plus GST is charged for each separately used or inhabited part of a rating unit.

	2015/2016 (actual*)	2016/2017 (forecast)
Recycling revenue (Targeted rate)	($901,000)	($886,447)
Income	($195,662)	(154,620)
Expenditure	$971,642	$1,095,860

Table 21 Rates revenue[21] vs operating and capital costs

Expenditure includes Grants and Donations via the Community Grant scheme ($26,698 in 2015/2016). The largest expense is Waste Disposal, at $730,689.19 for 2015/2016, indicating the recycling service is not self-funding through revenue from materials on-sold.

Public support for recycling service

As part of the community consultation for the 2012-2022 Long Term Plan it was found that there was support for the status quo, with council continuing to provide (via a contractor) a rates funded kerbside recycling service across the district and no rates funding provided for refuse collection. There was also support from the Cambridge community for a $28,000 annual subsidy paid to maintain public access to the Cambridge Transfer Station.

[21] Source: WDC Annual report 2016

Residents survey

The 2016 Residents Survey (Key Research, 2016) does not include questions related to waste management (unlike earlier surveys). However, unprompted responses related to rubbish collection / disposal / recycling is the 10th listed area that residents believe needs addressing (2% of responses).

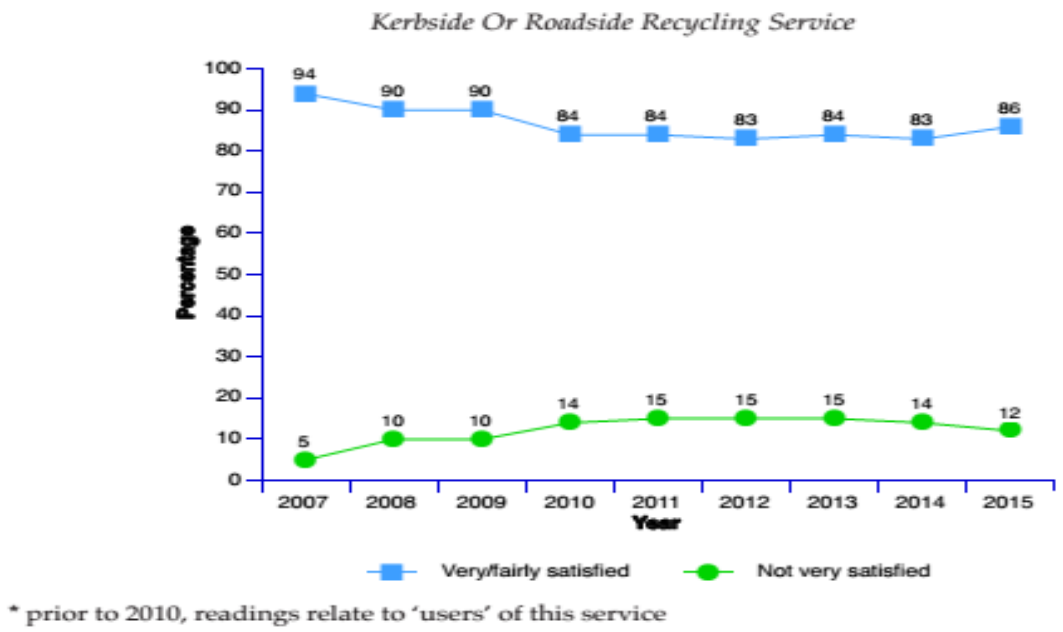


Figure 11 Satisfaction Measures for kerbside recycling services 2007-2015

The 2015 Communitrak Survey (National Research Bureau Ltd, 2015) was the last to specifically include questions related to waste management and indicated Waipa District performs on par with the National and Peer Group Averages for community perceptions of waste management performance.

The 2016 Residents Survey provided a strong indication having a good sense of community is an important aspect of living in Waipa. This suggests that future waste management initiatives that foster a sense of community are likely to be in keeping with public expectations.

5.1.2 Litter control and enforcement

Public place bin emptying and litter collection services are provided under contract. The contract also covers road sweepings, which amount to approximately 5,922 tonnes per annum[Error! Bookmark not defined.].

	Per year	Measure
Litter bins	168	tonne
General Litter (rubbish on berms)	36	tonne
Detritus	4,425	m3
Footpath Washing	300	m3
Catchpit Cleaning	324	m3
Kerb, channel and carriageway cleaning in urban areas	576	m3
Leaf Fall Removal	21,600	m3

Table 22 Volumes collected annually from litter and street cleaning

Illegal dumping is removed by either of two contractors. Council currently pays $166,000 per year to contractors to pick up and dispose of illegally dumped waste throughout the district.

In general the literature suggests that the factors that lead to illegal dumping are relatively complex and inter-related, and that it is likely to take a convergence of factors before illegal dumping becomes a significant issue.

These factors include:

- Weak formal controls over waste management;
- High costs of legal disposal options (e.g. transfer stations)
- Other incentives to avoid legal disposal (e.g. distance to disposal sites)
- 'Suitable' sites to tip illegally (including ease of access, ability to not be observed)
- It is easy to hide the identity of vehicles and their owners; and
- The risk of getting caught is small.

The limited opening hours of the RTS operation in Cambridge may be a contributing factor in the illegal dumping of waste on roadsides in the district. However the proximity to Hamilton and the high number of vehicles which transit through Waipa are more likely contributors. Further study of the patterns of illegal dumping in the district may help to reveal the common causes and offenders.

International evidence indicates people look for familiar branding when seeing a litter bin. If they are out of their home region, they may not recognise a litter bin in different branding. Therefore regional or sub-regional standardisation of litter bins, signs and branding may assist in reinforcing litter messaging and could be investigated further.

5.1.3 Waste education and minimisation programmes

Waipa District Council provides education on waste minimisation and funding support to the EnviroSchools programme, with the highest participation rate of any area in the country.

While there are good education programs targeted at schools, there is an opportunity to also provide targeted education and messaging for key groups within the District. For example the national rural waste reports have highlighted a need for targeted farm waste education; and demographic trends indicate a potential need for targeted education focusing on older people.

In general councils are best placed to deliver education programmes, although these functions may be contracted by the council to specialist education and promotional providers. In some cases, councils' regulatory role may limit their effectiveness in the area of education and promotion. For example farmers may be unwilling to participate in council provided farm education programmes due to regulatory concerns, but may be willing if a third part educator or consultant deliver the programme.

Partnerships with community groups may also be beneficial if they have networks, contacts and low-cost structures for achieving maximum community involvement for council education and promotion.

Education and minimisation programs are an area where joint working with other councils has the potential to deliver significant benefits. Opportunities include:

- Regional or sub regional education programs for target groups such as farmers
- Regional messaging / branding for litter to account for cross District travel and reinforce litter messages
- Working towards consistent enforcement of illegal dumping

5.1.4 Assessment of council-provided solid waste services

WDC provides minimal service levels for waste compared to many other councils, providing kerbside recycling, litter and illegal dumping and subsidised Cambridge transfer station services. Refuse services are not provided by council. In general, services are sufficient to meet current demand from residents, but do not achieve significant waste minimisation in the District. It is also likely to be insufficient to meet future demand as the population increases.

The crate based kerbside recycling service has been successful and well received by residents. However, larger capacity bins (such as MGB's) and a wider range of materials accepted would increase diversion rates and could be considered as the population grows.

There is a low level of infrastructure for reuse, recycling or disposal of materials such as hazardous waste, C&D waste, organics and e-waste. While some facilities are available in nearby Districts, it is likely that local access to public facilities will be expected by residents in the future.

Waipa has a good record of providing waste education to schools, with all schools in the District being part of Enviroschools. There is additional potential for Waipa to be a proactive leader in the education area, particularly around local or regional initiatives targeted education to farms, businesses and older people.

A key concern is the lack of waste volume and composition data being collected within the District. Without such information, it is difficult to assess the current situation, plan initiatives to minimise waste or monitor the effectiveness of any initiatives implemented. More detailed collection of information on litter and illegal dumping would also assist in policy and planning.

5.1.5 Funding for council-provided services

All council-provided services are funded out of rates revenue or Waste Levy funding from the Ministry for the Environment. The waste levy funding received by Council has not been fully spent and a reasonable sum has accumulated. This provides an opportunity to invest in infrastructure and or subsidy/provision of ongoing services that will promote or achieve waste minimisation.

5.2 Non-Council Services

There are a number of non-Council waste and recycling service providers operating in the district.

5.2.1 Private refuse and recycling services

Commercial refuse and recycling is collected by a relatively large number of companies who offer a range of services including front end load (FEL) bins, skip bins, hook bins, compactors, and wheeled bins. Private operators include:

- Envirowaste - Hook / FEL / Skip / MGB / Recycle / Farm

- Waste Management - Hook / FEL / Skip / MGB / Recycle / Farm
- Cambridge Hire Bins - Skip / MGB / Farm
- Hookbins - Hookbins
- Vanders Bins - Skip / MGB
- Wheelie Bin Services - MGB
- Fullcircle - Skip / MGB

(a) Refuse services

Council do not operate a district rubbish collection service. The main refuse service providers in the area include:

- Envirowaste
- Waste Management
- Cambridge Hire Bins

There are a range of services offered by the waste collection companies and prices depend on the bin size and frequency of collection.

(b) Private greenwaste services

Companies providing garden waste collection services in the Waipa district include:

- Greenfingers
- Red Lid Bins
- Waikato Garden Bags
- Daisy Garden Bags
- Cambridge Hire Bins

5.2.2 Farm waste

A 2014 study into farm waste management practices in the Waikato and Bay of Plenty found that most number of farms used at least one of the 'three B' methods of waste management – bury, burn, or bulk storage on property.

Farmers generally agreed that the 'three B' methods are not ideal and indicate interest in access to better options. However the 'three Bs' are perceived to have 'no cost' compared to the alternatives.

Discussions with waste service providers indicates that there is an increasing uptake of privately provided farm waste services. In most cases, skip bins are provided 'at the wool shed' for the disposal of farm waste. This is in addition to private refuse services provided for farm households.

Indications are farm waste services are dependent on economic conditions (when times are hard the service is cancelled) but that overall uptake is increasing and there are now private waste services targeted the rural community.

As the Waipa District has a high volume of farm waste being disposed of to land (approximately 59,047 tonnes of waste per annum), Council could facilitate the uptake of private farm waste services by providing targeted education and messaging, and working with the farming industry to identify and remove barriers to uptake.

5.2.3 Private reuse organisations

A number of alternatives for the disposal and sale of reusable items are available in the Waipa District such as Salvation Army and other charity stores, The Cambridge Trash' n 'Treasure

market and second hand clothing stores.
Detail on the private / community reuse market is discussed in more detail in section 4.5.3.

5.2.4 E-Waste

There are currently no separate e-waste disposal options available in Waipa, however the Council has committed funding to South Waikato Achievement Trust (SWAT) to develop an e-waste collection site in Te Awamutu.

E-Waste is discussed in more detail in Section 7.3.2(d).

5.2.5 Assessment of non-council services

There are a range of services offered by waste collection operators with prices depending on bin size and frequency of collection.

Interviews with service operators indicates the Waipa market for refuse collection services is dominated by ESL. This has enabled them to have sufficient economy of scale to provide a competitively priced service that (for refuse) is comparable to or slightly higher than council-contracted user pays services in other districts[22].

A higher cost of refuse collection discourages waste generation by providing a financial incentive to use a smaller bin or a less frequent collection service, although in Waipa this price signal is limited due to competition between service providers. Where a householder has chosen to pay for a large bin or a frequent collection service there is potential for them to try to fill the bin at each collection to “get their money’s worth”.

The 2015 WDC Service Review report indicates there has been a significant move from refuse bags to 240 L wheeled bins for residential refuse collection over the last few years. A switch to 240 L bins may result in an increase in the volume of waste created – mainly through garden waste being disposed of in bins and less recycling. However, some service providers specifically ask customers to separate greenwaste from refuse for ease of service management.

Overall, the current provision of private kerbside refuse services is sufficient to meet the needs of householders in the District. The main areas of concern relate to:

- Lack of visibility around the volume or composition of refuse collected via private services; and
- Lack of control over the refuse stream i.e. a lack of ability to use pricing or other mechanisms to encourage a change in householder behaviour

It is debatable whether a council-provided service would greatly over-come these issues as private services would continue to compete with any council-provided service – potentially undermining pricing mechanisms as a method of behaviour change.

Other mechanisms for obtaining information on volume and composition (such as the introduction of waste licencing and behaviour change programs) may be as or more effective as the introduction of a council-provided refuse service.

It should be noted that the Waipa District includes local service operators who hold a significant share of the waste service market. Smaller, local service operators are not in a position to provide the whole-of-district services that would be required under a council-contracted service. The introduction of a council-provided refuse service would adversely impact local service

[22] WDC 2015 Waste Services report

operators, resulting in the removal of locally provided services in favour of the two or three large (nationwide) service operators.

Given the Waipa District Councils strong emphasis on creating communities and supporting local businesses in the LTP, the introduction of a council-provided service may be detrimental to the long term aims of council as a whole.

The balance between Councils legislative obligations to minimise waste to landfill (which requires access to volume and composition data) vs Councils objectives of supporting local businesses may need to be reviewed again in the future.

If Council introduce a licencing system or other mechanism which enables access to the required data, there may be insufficient benefit to introducing a council refuse service. However if data does not become available for the development of the next Waste Assessment, Council should consider gaining full control over the refuse stream via a rates funded service.

5.3 WDC procurement process

The WDC Procurement Policy V2 (2013) sets out the way procurement of contracts must be approached including meeting legislative and regulatory requirements to:

- act in an open, transparent and democratically accountable manner;
- act effectively and efficiently;
- undertake commercial transactions in accordance with sound business; and
- ensure service delivery is made in a way that is most cost effective for households and businesses.

The policy sets out clear procurement limits and directs staff to develop a procurement plan for contracts over $100,000 (whole-of-life purchase value).

Value	WDC procurement method
<$10,000	One verbal or written quote
$10,000 - $100,000	Three written quotes. If the risk is assessed as high consider issuing an invited or open tender.
>$100,000	Must undertake a public tender unless there are exceptional circumstances.

Table 23 WDC procurement methods

The recycling and street cleaning contracts fall in the third category (>$100,000) and are procured via public tender.

WDC are also able to participate in All of Government (AoG) and Syndicated contracts. These save resources by avoiding the normal tender process and benefits from the buying leverage through the group consolidated spend.

- AoG contracts establish a supply agreement between the Crown and approved suppliers, for the supply of selected common goods and services.
- Syndicated procurement involves a 'cluster' of agencies aggregating their needs and collectively going to market for common services and pricing.

As a rule of thumb, Council contracts should always aim to produce outcomes that meet or exceed the expectations of the community. A number of points should be considered by council when identifying their service objectives prior to procurement. These include[23]:

- the expectations of the community and the outcomes of the waste management plan
- the overall objectives (e.g., diversion from landfill, providing local employment opportunities etc)
- funding for services is clearly determined (rates, user pays or both)
- flexibility of services is maintained to accommodate the introduction of additional products (e.g. degradable plastics) or additional materials as markets grow (e.g. organics)
- minimum standards for the quality of recovered materials are specified so they are acceptable for the identified reprocessing market (e.g. local, national, overseas)
- ownership of recovered materials is considered, particularly if changes in legislation/ policy may have an impact (e.g. product stewardship)
- contract components are separated or structured in a way that allows for greater financial transparency
- health and safety issues are adequately addressed
- the ability of the contractor to deliver the proposed services has been assessed
- competition within the industry is maintained
- statutory and legal obligations are met
- equity of services to ratepayers across the area.

5.3.1 WDC contract types

For waste contracts, WDC usually use standard contracts 3910:2013 for general contracts and 3917:2013 for long term contracts (maintenance).

For future waste contracts, the kerbside waste specific contract developed by Local Government New Zealand (LGNZ) may be more appropriate. Although still in draft format, the contract *Conditions of Contract for Kerbside Collection Services V1* may offer more tailored approach to waste service contracting, with subsequent reduced risk.

[23] Guidance Principles: Best Practice for Recycling and Waste Management Contracts (MfE) 2007

PART 6 - REVIEW OF THE 2011-2017 WASTE MANAGEMENT AND MINIMISATION PLAN

The 2011-2017 Waste Management & Minimisation Plan (WMMP) was the first plan developed under the Waste Minimisation Act 2008. A comparison between this first WMMP and the information in this Waste Assessment indicates moderate progress has been made against the actions set out in the WMMP, but that volumes of waste to landfill have probably risen.

The number of operators collecting waste in the district, and the lack of accurate data, makes it difficult to assess the exact quantities of waste sent to landfill from Waipa – both during the development of the first WMMP and the development of this Waste Assessment.

Indications are that refuse volumes have increased since 2001 at a rate greater than anticipated given the rate of population increase.

Recyclable material volumes appear to have increased in alignment with population increases, leading to no change in the tonnes / capita / annum. The lack of a more substantial change in recycling volumes, despite the introduction of a recycling service, may be due to behaviour change (kerbside volumes offset by a reduction in RTS recyclable volumes) or changes to waste operator practise (private waste operators taking recyclables directly out of the District). Access to more robust data on recyclables collected by private operators would assist council to identify trends in recycling with greater accuracy.

The volumes of refuse and recyclable material for the two periods can be seen in Table 27 below:

Material	Tonnes		Tonnes/ capita/ annum[24]	
	2009-2010	**2015-2016**	**2009-2010[25]**	**2015-2016**
General waste to landfill	12,000	22,214	0.3	**0.5**
Recyclables (kerbside + RTS)	4,156	4,431	0.1	**0.1**

Table 24 Comparison of volumes of refuse and recyclables: 2011-2017 WMMP to 2017 WA

6.1 Objectives of 2011-2017 WMMP

The objectives of the 2011-2017 WMMP were:

- To promote and encourage cost effective, efficient and sustainable waste management practices within the Waipa district.
- To minimise the quantity of waste being generated and disposed of within the Waipa district by providing strategies and tactics to encourage waste reduction, reuse, recycling, and recovery before residual disposal.

6.2 Key Issues of 2011-2017 WMMP

Key issues identified in the 2011-2017 WMMP, related to waste management in the Waipa District, included the need to:

- address the large amount of waste going to landfill that could be recycled or composted;

[24] Based on 2013 Census information (46,668 people in the Waipā District)

[25] Population estimate of 43,000 for 2009 based on NZ Statistics Census 2003

- revisit the current policy of subsidising the Cambridge Refuse Transfer Station $28,000 per year to enable it to operate and to address concerns about the ongoing cost to ratepayers and the restricted hours of operation;
- address the problem of illegal dumping of household waste on roadsides (fly tipping), particularly in rural areas. This costs Council $166,000 per year to clean up;
- review the current recycling service for effectiveness/efficiency
- obtain accurate data and information around the amount of waste generated in Waipa and what happens to it, to be able to measure progress towards waste minimisation goals.
- encourage recycling at events; and
- address the hazardous waste stream more efficiently

These issues continue to be relevant and further action is required to address them. Additional issues identified within this Waste Assessment include:

- Farm waste is a significant issue within the Waipa District, with an estimated 69% of waste in the District being farm waste. The farming industry are becoming more aware of farm waste practices, and private sector waste collectors are beginning to tailor services to this sector. This change could be supported by a small research project into Waipa's farm waste requirements or supporting an education campaign to encourage and promote improved farm waste management practices.
- Waipa's aging population, along with the identified differences in waste behaviour for this demographic group, suggested targeted waste education campaigns aimed at older households may be effective. This could include targeted information on composting and work farming, as this demographic group is likely to be receptive to such messages.
- Continued inability to obtain data on waste flows, in order to undertake robust planning for future demand

6.3 New Guidance

New Guidance from MfE on Waste Management and Minimisation Planning was released during the development of this Waste Assessment. The 2012 WA and WMMP, while consistent with the guidance at the time they were written, do not fully align with the new (2015) MfE Guidance.

The new guidance places more emphasis on funding of plans, inclusion of targets and how actions are monitored and reported. In addition, the 2011 documents did not provide for data to be collected accordance with the National Waste Data Framework, as suggested by the new guidance.

6.4 Review of Actions

The 2011-2017 WMMP Action Plan set out Council's proposals for managing waste in the district, stating Councils intention to continue providing the following waste services in the district through rates funding:

- kerbside recycling collection
- litterbin servicing
- collection and disposal of fly tipping (illegal dumping)
- ongoing monitoring of three closed landfills to ensure that resource consent conditions continue to be met
- some waste minimisation promotion and education.

2011-2017 WMMP initiatives shown alongside an assessment of progress in Table 28 below.

Review of WMMP Policy Initiatives 2011-2017

Objective	Specific Action		Review of Action
Council's primary role is to encourage and support waste minimisation	Investigate options for the future procurement and delivery of waste services – and that these be signalled in Council's draft Long-Term Plan for public consideration and feedback	✓	Initial investigation included within this Waste Assessment
	Investigate provision of organic waste collection	✓	Initial investigation in Services report 2015 and discussed at Council meeting. Also under investigation as part of regional initiatives.
	Review Refuse Collection and Disposal Bylaw to investigate licensing requirements re data provision; and investigate requiring waste management plans for Council approved events	✓	Bylaw was reviewed in 2012, however the licencing provision in the Bylaw have not been implemented. Implementation is under development.
	Review Council's Waste Management and Minimisation Plan 2011-17 as required	✓	Completed
	Lead by example through Council's Waste Champions internal waste minimisation project	✓	Undertook in house waste audits and waste minimisation activities which reduced internal waste
	Appoint a Waste Minimisation Officer to lead waste projects, proactively provide waste minimisation advice to the community, manage licenses, and undertake other waste related tasks	✓	Completed
	Develop overarching Council sustainability and/or procurement policies to promote efficient use of resources and waste minimisation	✘	Not completed
Communicate and Educate			
Objective	**Specific Action**		**Review of Action**
To promote and support environmental education and waste minimisation initiatives in the	Support environmental education programmes and courses that promote waste minimisation (e.g. Enviroschools, Para Kore etc)	✓	Both Enviroschools and Para Kore supported by WDC
	Promote, educate and incentivise home composting to reduce green and food waste (e.g. subsidise home compost bins, provide composting information on Council website)	✓	Education campaigns supported include Love Food, Hate Waste; Worm Composting Workshops (which included a worm composting kit); and information provided on the council website

district and region	Promote, educate and incentivise recycling and other waste minimisation initiatives as required	✓	Information provided on the council website, support for Sustainable Cambridge
	Investigate and provide (if appropriate) promotional support for commercial waste minimisation programmes (e.g. Agrecovery, Plasbak)	✓	Agrecovery collections promoted, including on the council website.
	Investigate implementing an annual Waste Minimisation Award and Recognition Programme for waste minimisation/reduction initiatives	✓	Worked with the Te Awamutu Chamber of Commerce and Waikato Regional Council to deliver Te Awamutu Sustainability Champions Awards (monthly awards) and two workshops to inspire businesses to introduce sustainability practices.
	Develop performance measures to show increased diversion of materials from landfill to include in Long Term Plan/Annual Plan	✘	Not completed
	Undertake monitoring and reporting of trends regarding waste minimisation based on data from waste operators	✘	Not completed
	Staff to attend waste educational opportunities as appropriate	✓	Staff attended the WasteMinz conference
Recycling / Diversion			
Objective	**Specific Action**		**Review of Action**
To encourage recycling of material and diversion from landfill where possible	Investigate extending recycling contract to include other groups (e.g. commercial, schools, large function venues, schools (Karapiro etc))	✓	Services review (2015) included a full survey of applicability to commercial businesses in the District (found not required). Schools are now offered the recycling service.
	A review be undertaken of the need for continued Council subsidisation of the Cambridge RTS	✓	Review included in Waste Services Review (2015)
	Investigate options re: provision of weekly collection service for food waste	✓	Under investigation as part of regional initiatives
	Investigate providing a wheelie bin option for recycling collection	✓	Review included in Waste Services Review (2015)
	Investigate options to increase recycling in CBD (e.g. recycling bins in CBD and high profile areas)	✓	Initial review undertaken as part of Waste Services Review (2015)

	Investigate the provision of free drop- off of large household inorganic items (e.g. whiteware) to a Refuse Transfer Station (RTS) in collaboration with RTS operators	✓	Investigations are ongoing
	Investigate and implement options to target specific waste streams e.g. hazardous waste, e-waste	✓	Initial review undertaken as part of Waste Services Review (2015)
Collaboration			
Objective	**Specific Action**		**Review of Action**
To identify and support activities where economies of scale and efficiencies can be obtained	Continue to build partnerships with other local councils and regional council	✓	Participated in Regional Waste Forum joint initiatives e.g. regional Waste Strategy; bylaw clauses (2016); and standard templates for WMMPs and Waste Assessments (2016)
	Support regional appeals to central government for waste minimisation initiatives as appropriate, on product stewardship	✓	Supported the LGNZ remit in support of the introduction of a beverage container deposit system
	Support regional education and promotion on what hazardous wastes are and how to deal with them	✓	Undertaken as part of support for regional activities
	Support and participate in regional initiatives to reduce/reuse greenwaste	✘	No regional greenwaste initiatives occurred
	Support and participate in regional initiatives to assist Waikato businesses to reduce waste and integrate sustainable practices into their operations through the Sustainabiz programme	✓	Supported Sustainable Cambridge to expand into Sustainable Waipa
	Support and participate in regional initiatives to reduce/reuse construction and demolition waste (e.g. Waste Exchange)	✓	Supported and participated in the NZ Waste Exchange
	Support any regional council hazardous waste initiatives proposed for the District	✓	Participated in TV TakeBack
	Support and participate in the regional council development of educational and promotional resources.	✓	Supported Enviroschools

Table 25 Review of Action Plan from 2011-2017 WMMP

6.5 Progress

Overall, Waipa District has made moderate progress in relation to the 2011-2017 WMMP Action Plan. However, a lack of access to waste data has hindered progress on reducing waste to landfill. It is also apparent that significant reductions in waste to landfill will take longer than one WMMP cycle to achieve.

Therefore, this Waste Assessment is intended to assist in the development of an overarching 18 year Waste Strategy which will guide Council over the course of three WMMP's.

6.6 Performance Comparison with Other Territorial Authorities

This section provides comparisons of several waste metrics between Waipa District and other territorial authorities.

6.6.1 Per Capita Waste to Landfill

The total quantity of waste disposed of to landfill in a given area is related to a number of factors, including:

- the size and levels of affluence of the population
- the extent and nature of waste collection and disposal activities and services
- the extent and nature of resource recovery activities and services
- the level and types of economic activity
- the relationship between the costs of landfill disposal and the value of recovered materials
- the availability and cost of disposal alternatives, such as lower grade landfills or cleanfills
- seasonal fluctuations in population (including tourism).

The Waipa district per capita per annum waste to landfill in 2014-2015 is calculated by combining Statistics NZ population estimates and the landfill waste data from section 3.1 as per Table 29 below. The estimate excludes special wastes and unlevied cleanfill materials.

Calculation of per capita waste to landfills	
Population (Stats NZ 2013 year estimate)	**46,668**
Total waste to landfill (tonnes 2015-2016 year)	**22,214**
Tonnes/capita/annum of waste to landfill	**0.5**

Table 26 Per capita annum waste to landfill – Waipa District

When compared against similar Districts; Waipa District can be seen to have an average per capita waste to landfill. However, the data on waste volumes for Waipa is of low quality and excludes volumes of waste that are transported directly to facilities out of District. It is likely that (if suitable data was available) Waipa's per capita annum rate would be higher.

Overall waste to landfill (excluding cleanfill and cover materials)	Tonnes per capita per annum
Gisborne District 2010	0.305
Waimakariri District 2012	0.311
Ashburton District 2014-15	0.366
Napier/Hastings 2012	0.483

Waipa District Council	**0.5**
Taupo District 2013	0.528
Kāpiti Coast District 2015	0.584
Hamilton City	0.668
Queenstown Lakes District 2012	0.735
Rotorua District 2009	0.736

Table 27 Per capita waste to landfill compared to other Districts

Districts with the lowest per capita waste generation tend to be rural areas or urban areas with relatively low levels of manufacturing activity. The areas with the highest per capita waste generation are those with significant primary manufacturing activity or with large numbers of tourists.

6.6.2 Per Capita Domestic Kerbside Refuse to Landfill

The per capita domestic kerbside refuse cannot be calculated for Waipa District due to a lack of data. In general the most important factor determining the per capita quantity of kerbside refuse is the proportion of households that use private wheelie bin collection services. Households that use private wheelie bins (particularly larger, 240-litre wheelie bins) tend to set out greater quantities of refuse than households that use refuse bags. As a result, in general terms the higher the proportion of households that use private wheelie bins in a given area, the greater the per capita quantity of kerbside refuse generated.

Other options that are available to households for the disposal of household refuse include burning, burying, or delivery direct to a disposal facility. The effect of these on per capita disposal rates varies between areas, with residents of rural areas being more likely to use at least one of these options.

6.6.3 Per Capita Kerbside Recycling

Per capita recycling rates for Waipa District are set out in Table 31 below.

Kerbside recycling	2015-2016
Kerbside recycling (kg)	**3,411,000**
Population	**46,668**
Kg/capita/annum	**73kg**

Table 28 Per Capita Kerbside Recycling – Kg/Capita/Annum

A comparison of the per capita kerbside recycling rates of Waipa against similar council in Table 32 below indicates that Waipa District collects an average volume of recyclable material in the kerbside collection. This takes into account the difference between urban and rural collections. Receptacle type and frequency of collection are not reliable indicators of recycling volumes, however co-mingled MGB collections generally collect higher volumes than bags or crates.

District	Kg/capita/ annum	System type
Napier City Council	52 kg	Fortnightly bags or crates
Ashburton District	62 kg	Weekly bags or crates depending on area
Waipa District	**73 kg**	**Weekly/Fortnightly 55-litre crate, separate paper collection**
Waikato District	74 kg	Weekly 55-litre crate, separate paper collection
Horowhenua District	81 kg	Weekly crate
Waimakariri District Council	85 kg	Fortnightly 240-litre wheeled bin, commingled

Table 29 Per Capita Kerbside Recycling – Kg/Capita/Annum

Note: While data on kerbside recycling collections is readily available, accurate and reliable data relating to the total quantity of recycled materials in the District, which includes commercial recycling, is not available for most districts.

PART 7 - FUTURE DEMAND AND GAP ANALYSIS

7.1 The Waipa District

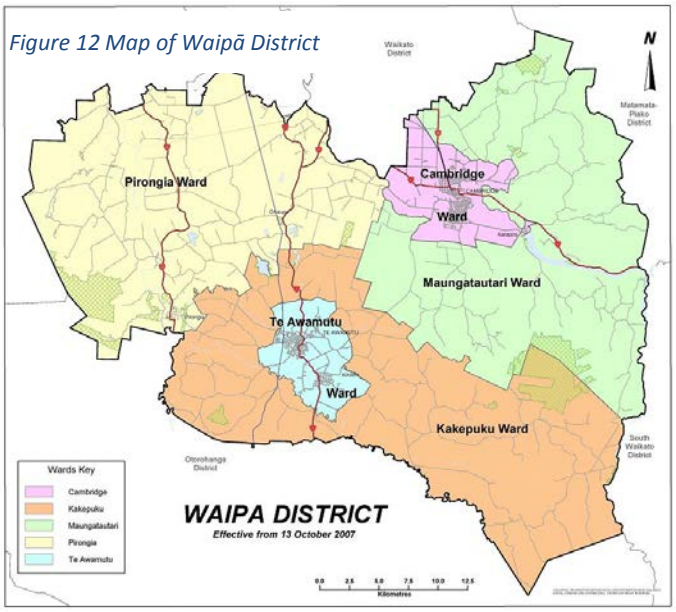


Figure 12 Map of Waipā District

Waipa is a predominantly rural district with a land area of 1,473.47 km² dotted with volcanic features such as Pirongia Mountain; Maungatautari and Kakepuku.

The main population centres are Te Awamutu, Cambridge, Pirongia, Kihikihi, Ohaupo, Karapiro; and the district borders with Hamilton City.

Waipa has several areas of advantage within the central Waikato economic region. These include:

- Highly productive soils
- Research and innovation
- Visitor/tourist attractions
- Location (within the golden triangle of Auckland, Tauranga and Hamilton)
- Regional industry (several industries of significance)

Waipa's economic strengths are around bloodstock, dairy farming and airport / related services. However, major events such as Waka Ama Sprint Nationals, Maadi Cup rowing, Kihikihi International Horse trials, National Agricultural Fieldays and the UCI Track Cycling World Cup are providing significant economic return in recent years.

7.2 Future Demand

The factors likely to impact future demand for waste minimisation and management vary over time and location and therefore create inherent uncertainties with any predictions.

Factors which influence future demand include:

- Overall population growth
- Economic activity
- Changes in lifestyle and consumption
- Changes in waste management approaches

In general, the factors that have the greatest influence on potential demand for waste and resource recovery services are population and household growth, construction and demolition activity, economic growth, and changes in the collection service or recovery of materials.

Waipa District's population is expected to include an additional 27,000 people by the year 2050, with more than 30% of the population over the age of 65. The development of a plan for managing and minimising waste will need to take into account this increasing and aging population.

In addition, Tāngata whenua are a key partner in establishing the strategic direction of the District. The relationship tāngata whenua have with the environment is unique and must be reflected in the way waste is managed within the District.

Economic wealth and prosperity in the District is largely derived from the land, particularly dairying, dry stock farming and the equine industries. However tourism is becoming an increasingly important part of the economy, driven by major events and nationally significant ecological projects. Rural waste is a significant proportion of waste created within the District, and the appropriate disposal of this waste will ensure that other aspects of the economy are not inadvertently impacted e.g. by spoiling waterways or vistas.

Appropriate disposal of waste is also important as the land, the water and the air support Waipa residents and businesses. For example, lowland lakes and water bodies are a traditional source of food for tāngata whenua, wetlands store and filter flood waters which improves water quality, and reserves provide passive and active recreation and educational opportunities.

7.2.1 Population Growth

Waikato population projections were published in 2014. The long term demographic trends are an important consideration when planning investment in solid waste infrastructure.

Key points that may impact on waste infrastructure include:

- The population of the Waipa District is projected to experience steady growth from 46,400 in 2013 to 55,384 by 2033 (+19.4 per cent), but peaking around 2040 and then gradually declining to 51,758 by 2063 (+11.5 per cent over 2013-2033; -6.5 per cent over 2033-2063)[26].
- The 2013 Census indicates that there are 17,667 occupied dwellings in Waipa, an 11.6% increase since the previous census. There are a further 1,170 unoccupied dwellings.
- The number of people aged over 65 in Waipa District is forecast to more than double between 2006 and 2031 from 6,200 (14.2%) to 13,400 (25.7%). The District figure is currently 7,545 (16.2%).

The majority of the population lives in the main centres around Cambridge and Te Awamutu as seen in Table 33 below.

[26] Jackson, N.O., Cameron, M. and Cochrane, B, 2014 Review of Demographic, Households and Labour Force Projections for the Waikato Region for the Period 2013 - 2063

	Population	% of Total	Occupied Dwellings	% of Total
Total Waipa District	46,668	100%	17,667	100%
Cambridge and Leamington total	15,324	32.8%	6,387	36.2%
Te Awamutu and Kahikihi total	13,062	28.0%	5,178	29.3%

Table 30 2013 Census data - population[27]

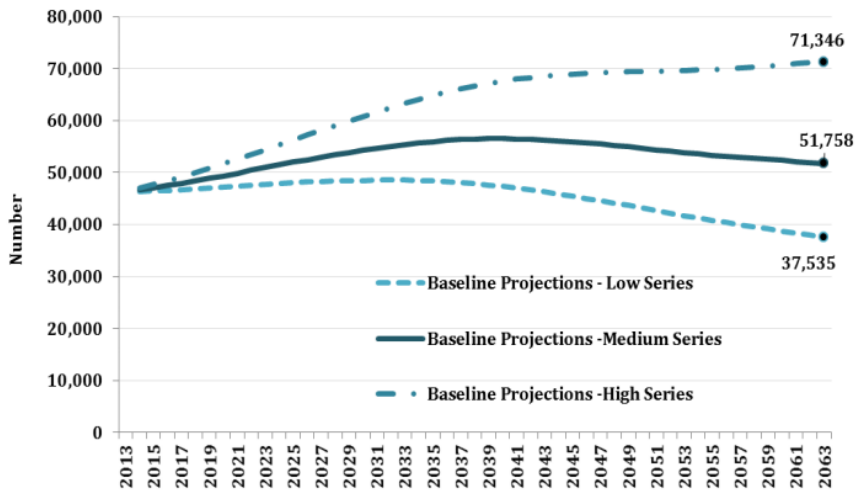


Figure 13 Projected high, medium and low baseline population, Waipa District. Source: (Jackson, 2014)

The Future Proof Growth Strategy[28] indicates that household growth will be focused within urban areas (40% in Cambridge, 30% in Te Awamutu/Kihikihi, and 10% to other existing villages).

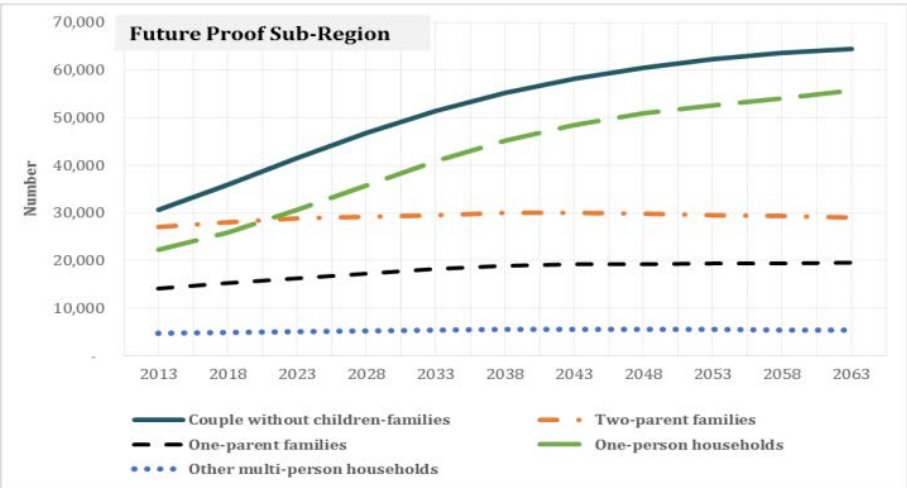


Figure 14 Future Proof sub-region projected number of households by type, 2013-2063

[27] WDC 2015 Waste Services report
[28] http://www.futureproof.org.nz/

Household projections for Waipa District indicate that two parent households will decline throughout the projection period. Overall household numbers peak in 2042, increasing by 6,815.

Households with fewer people tend to produce less waste than larger households, setting out waste less frequently or using smaller receptacles. They may also arrange to share a waste collection service with neighbours in order to save money.

In addition, the age profile of residents is changing with Waipa District having one of the fastest rates of population ageing in the Waikato region. In 2013, 17% of the population is aged 65 years and over, and this is projected to increase to 34% in 2033 and 43% in 2063.

Analysis carried out by WRAP (UK) in 2007 found older people generated approximately 25% less food waste than other age groups, when household size was controlled for[29]. Further research carried out by WRAP[30] has found that those over 65 years old are also more likely to home compost.

Taking the aging population into account, it may be appropriate to tailor waste minimisation communication campaigns and waste reduction initiatives to an older age group.

Another issue that may emerge as the population ages is an increase in healthcare-related waste generated in the home as healthcare services are increasing pushed to home based healthcare.

7.2.2 Economic Activity

Research from the UK[31] and USA[32] suggests that underlying the longer-term pattern of household waste growth is an increase in the quantity of materials consumed by the average household and that this in turn is driven by rising levels of household expenditure.

The relationship between population, GDP, and waste seems intuitively sound, as an increased number of people will generate increased quantities of waste and greater economic activity is linked to the production and consumption of goods which, in turn, generates waste. Figure 15 below shows the relationship between growth in municipal waste in the OECD plotted against GDP and population.

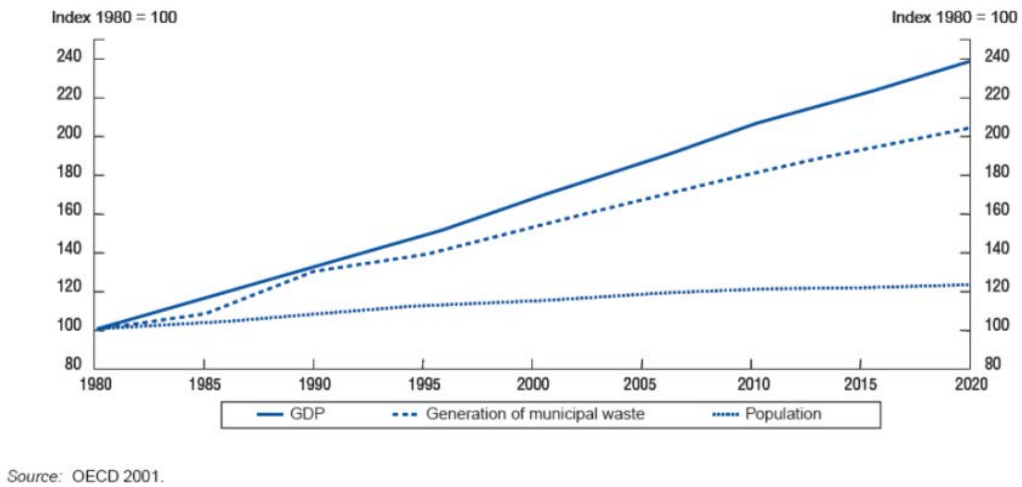


Figure 15 Municipal waste generation, GDP and population in OECD 1980 – 2020[33]

[29] WRAP "Spaghetti Soup: The Complex World of Food Waste Behaviours" October 2013
[30] WRAP "Household food and drink waste: A people focus" October 2014
[31] Eunomia (2007), *Household Waste Prevention Policy Side Research Programme*, Final Report for Defra, London, England
[32] EPA, 1999. National Source Reduction Characterisation Report For Municipal Solid Waste in the United States
[33] Eunomia (2007), Household Waste Prevention Policy Side Research Programme, Final Report for Defra, London, England

Total GDP is also a useful measure as it takes account of the effects of population growth as well as changes in economic activity. In general, municipal solid waste growth tracks above population growth but below GDP. The exact relationship between GDP, population, and waste growth will vary according to local economic, demographic, and social factors.

In effect as a country becomes richer, the volume and composition of its waste changes. With more money comes more packaging, imports, electronic waste, toys and appliances. Solid waste can thus be used as a proxy for the environmental impact of urbanization.

As Waipa's population is anticipated to experience a steady growth, increasing 19.4% by 2033, it is likely that the District will experience an approximate 19 - 22% increase in waste generated within that time period. This does not include farm waste.

7.2.3 Changes in Lifestyle and Consumption

Community expectations relating to recycling and waste minimisation are anticipated to lead to increased demand for recycling services. This will include raised expectations for services based on migration and travel.

Consumption habits will affect the generation of waste and recyclables. For example, there has been a national decline in newsprint. In New Zealand, the production of newsprint has been in decline since 2005, when it hit a peak of 377,000 tonnes, falling to 276,000 tonnes in 2011[34].

Conversely, growth in the consumption of electronic products has led to a rapidly increasing problem with electronic waste.

7.2.4 Changes in Waste Management Approaches[35]

It is anticipated that the methods and priorities for waste management will continue to evolve, with an increasing emphasis on diversion of waste from landfill and recovery of material value. These drivers include:

- The statutory requirement in the Waste Minimisation Act 2008 to encourage waste minimisation and decrease waste disposal – with a specific duty for TAs to promote effective and efficient waste management and minimisation and to consider the waste hierarchy in formulating their WMMPs.
- A requirement in the current New Zealand Waste Strategy 2010 to reduce harm from waste and increase the efficiency of resource use.
- Increased costs of disposing of waste to landfill. Landfill costs have risen in the past due to higher environmental standards under the RMA, the introduction of the Waste Disposal Levy (currently $10 per tonne) and the New Zealand Emissions Trading Scheme. While these have not been strong drivers to date, there remains the potential for their values to be increased and to incentivise diversion from landfill
- A general trend to introduce more convenient collection systems. In brief, more convenient systems encourage more material recovered. For example, more convenient recycling systems with more capacity help drive an increase in the amount of recycling recovered.
- The waste industry is changing to reflect a greater emphasis on recovery and developing models and ways of working that will help enable effective waste minimisation in cost-effective ways.
- Local policy drivers, including actions and targets in the WMMP, bylaws, and licensing.

[34] http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=10833117
[35] WDC 2015 Waste Services report

- Recovery of materials from the waste stream for recycling and reuse is heavily dependent on the recovered materials having an economic value, particularly for recovery of materials by the private sector. Markets for recycled commodities are influenced by prevailing economic conditions and most significantly by commodity prices for the equivalent virgin materials. The risk is linked to the wider global economy through international markets.

7.2.5 Projections of Future Demand

The analysis of factors driving demand for waste services in the future suggests that changes in demand will occur over time but that no dramatic shifts are expected. If new waste management approaches are introduced, this could shift material between disposal and recovery management.

Population and economic growth are likely to drive moderate increases in the waste generated. The biggest change in demand is likely to come through changes within the industry, with economic and policy drivers leading to increased waste diversion and waste minimisation.

7.3 Gap Analysis - Future Demand

The aim of waste planning at a territorial authority level is to achieve effective and efficient waste management and minimisation. The following 'gaps' have been identified:

- Significant gaps in waste data for all waste flows, with a resulting adverse impact on Councils ability to plan for future demand
- Insufficient systems in place for obtaining waste data from private operators in the District
- A low level of operational capacity both within council and in the community, in relation to understanding waste minimisation in order to implement initiatives
- A lack of facilities for the disposal of household hazardous waste including used oil
- Potential gaps in information for farms and elderly residents to enable them to minimise waste
- A potential future gap in resource recovery infrastructure in the Cambridge area

7.3.1 Waste Streams

Priority waste streams that could be targeted to further reduce waste to landfill could include:

- Recyclables both from residential and commercial properties
- Farm waste - increased awareness of the problems associated with improper disposal is driving demand for access to services. The issues related to farm waste are discussed further in Section 3.1.2.
- Waste tyres and E-Waste are national issues are best managed via a national product stewardship scheme. WDC, in conjunction with other councils, has the ability to continue to advocate for the introduction of national schemes to assist in the management of these waste streams.
- Although little information is available on the volumes of Construction & Demolition waste in the District, this may be a waste stream which, if addressed, could significantly reduce the volumes of waste being sent to landfill from the District.

Infrastructure to manage increased quantities and new waste streams may be required.

7.3.2 Hazardous Wastes

(a) Household hazardous waste

The Waipa district does not have permanent facilities for the collection or disposal of hazardous materials requiring treatment (e.g. agricultural chemicals, household hazardous waste or petroleum oil).

The provision of a council service for household hazardous waste and used oil is likely to be of benefit for the District. A fixed point or event based household hazardous waste service would reduce the volume of hazardous material in the home, reducing the potential for harm.

Anecdotally, a significant driver for the disposal of household hazardous waste relates to elderly residents moving or disposing of long-held homes. 'Grandads shed' is likely to contain a range of hazardous substances, including a number of harmful chemicals which are no longer available such as DDT, 2,4,5,T, Dialdrin and mercury. Waipa's aging population may indicate a significant waste disposal problem related to hazardous materials.

(b) Used oil

The 2016 Waikato Regional Council report *Management and disposal of used engine oil in the Waikato region*[36], identified a lack of facilities available for the disposal of household use oil (i.e. home mechanics) in the Waipa District.

The report noted that Cambridge and Te Awamutu were under-serviced in this regard and recommended provision of used oil drop off facilities. Opportunities to encourage Repco and Supercheap Auto to extend their industry provided used oil recovery service (R.O.S.E) to stores in Cambridge and Te Awamutu could be explored.

In addition, the report highlighted an uptake in the use of unconsented, unfiltered used oil burners in the Waikato region. Burning used oil in an unfiltered burner releases toxins into the environment.

The report recommended Waikato Regional Council work with industry bodies to investigate the uptake of used oil furnaces in the horticultural, timber mill and rural sectors including their efficiency and emissions levels. Any investigation should also identify the scale of use, any issues or concerns, and whether regulation for the control of used oil furnaces was required.

(c) Medical Waste

The emerging waste problem associated with home healthcare is discussed in section 3.2.5.

In summary, while council is not responsible for home healthcare waste, there is likely to be an increase in queries from home healthcare patients regarding waste services. Working proactively with home heathcare providers and DHB's to assist the establishment of heathcare waste take-back programs may be a suitable solution to the issue.

(d) E-waste

Without a national product stewardship scheme, the e-waste treatment and collection system will continue to provide limited opportunities for resource recovery. Currently, companies tend to cherry-pick the more valuable items, such as computers and mobile phones while products that incur a cost to recycle are sent to landfill unless the product owner is willing to pay for

[36] Management and disposal of used engine oil in the Waikato region: Scoping report; Zenzic; August 2016 for Waikato Regional Council

recycling. As a result, the more difficult or expensive items to treat, such as CRT TVs and domestic batteries, will often still be sent to landfill.

The 2015 report *E-Waste Product Stewardship: Framework for New Zealand* commissioned by the Ministry for the Environment, concluded that although priority product status (for mandatory products stewardship) was supported by a number of stakeholders, there was insufficient data to satisfactorily prove the current management of e-waste caused significant environmental harm; and therefore they could not recommend priority product status.

Improving the framework for capturing data on waste flows has therefore been shown to be a critical factor in the implementation of nationwide waste management schemes.

Importantly, WDC collects no data on e-waste and therefore is unable to determine whether e-waste disposal is a problem in the District.

Introducing a data capture system, such as a waste licencing system under the Waste Bylaw, would assist WDC to identify problematic waste streams, plan for future management, support regional and national initiatives and develop waste management systems for problematic waste streams.

PART 8 - OPTIONS

This section sets out the range of options available to the Council to address the key issues that have been identified in this Waste Assessment. Options presented in this section would need to be fully researched, and the cost implications understood before being implemented.

8.1 Key issues to be addressed by the 2017 – 2023 WMMP

Issues identified during the development of this Waste Assessment are:

- Data quality and management of data, including a lack of baseline data to measure minimisation efforts against. It is likely that there is an increasing quantity of waste to landfill, however this needs to be verified.
- Low level of operational capacity within the community to allow the introduction of community partnerships for waste minimisation
- High volume of rural waste
- Waipa District's aging population requires a different focus for waste minimisation
- Limited household hazardous waste disposal options
- Recycling performance static
- Potential for greater joint working in Council service delivery.

8.2 Options: Data & regulation

8.2.1 Data

Throughout this Waste Assessment, the issue of data availability has been raised as a concern. Issues include:

- Inability to identify waste volumes, composition or source for all waste streams
- Inability to identify if waste issues are improving or worsening under current waste management strategies
- Difficulty planning for future demand due to a lack of knowledge about the status quo
- Inability to support regional or national initiatives to establish nationwide waste management systems by providing data on District waste flows.

In terms of future planning for waste minimisation, in order to meet Council's obligations under the Waste Minimisation Act 2008, the first and most important step is to collect sufficient information to understand the waste situation.

8.2.2 Solid Waste Bylaw

The WDC Waste Bylaw is due for review in 2017. As part of this review, Council should seek to liaise with other councils and Waikato-LASS to ensure regulatory consistency across regions. A regionally consistent Bylaw could help reduce unnecessary administrative burden for private operators, and the unintended consequences of less well-regulated District becoming a target for undesirable practices, such as cleanfilling, tyre dumping and poorly managed waste facilities.

The Waste Bylaw is also provides an opportunity for WDC to enact licensing systems to obtain waste data from the private sector, in order to plan, implement and evaluate waste minimisation initiatives.

Ref	Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Councils' Role
DR1	Maintain existing bylaw regime	Maintaining bylaw status quo would not have a positive effect on any the key issues.	*Social/Cultural:* uneven understanding of waste flows in the district *Environmental*: minimal ability to guard against environmental degradation through illegal disposal. Minimal ability to require environmental performance standards are met (e.g. recyclable material is separated)	A lack reliable information to monitor and plan for waste management in the region A lack of data and controls on private operators limits Councils' ability to effectively manage waste in the region. This constrains ability to plan for and respond to future demand	Council would implement and enforce existing bylaws Minor changes will be required to align with the National Waste Data Framework

			Continued inability to understand waste flows in the District *Economic:* No change to current systems. *Health*: Limited ability to monitor and enforce actions of current providers and ensure public health is protected		
DR2	Review Solid Waste Bylaws and implement Regional Solid Waste Bylaw The regional bylaw would look to provide consistency and provide a wider range of regulatory powers.	Data quality and management of data	*Social/Cultural:* better understanding of the waste flows in the district *Environmental:* would increase diversion from landfill and information about disposal practices and could potentially guard against environmental harm through illegal disposal *Economic:* small increased cost for operators; additional resources will be required to monitor and enforce the regulatory system *Health:* greater monitoring of providers to ensure no adverse health risks occur	Improved bylaws would, as a minimum, require reporting of waste material quantities. Collecting waste data is imperative to planning how to increase waste minimisation across Council provided services and commercial waste streams The bylaw could also be used to require minimum performance standards. This could be a key mechanism for addressing waste streams currently controlled by the private sector and how they provide their collection services	Councils would develop and enforce the bylaw; monitor and report on waste quantities and outcomes
DR3	Audit waste stream at transfer stations and kerbside every 4-6 years and before and after significant service changes	Data quality and management of data	*Social/Cultural*: Identifying material streams for recovery could lead to job creation *Environmental*: Ability to identify materials and waste streams for potential recovery and reduction *Economic*: Operational costs of implementation Ability to identify materials and waste streams for potential recovery and reduction, giving rise to new business opportunities and reduction of disposal costs *Health*: Potential for improved data on hazardous and harmful wastes	Better information will inform council planning to meet future demand	Plan for and action a SWAP analysis every three years

			A better understanding of the waste problem will highlight key areas for action to improve health outcomes		
DR4	Implement National Waste Data Framework and regional collation of data	Data quality and management of data	*Social/Cultural:* improved knowledge of waste flows and better information available to the public on waste and recovery performance *Environmental*: Improved ability to monitor and manage waste collection and disposal information and make appropriate planning and management decisions *Economic:* improved understanding of waste flows resulting in better targeted waste and recovery services and facilities *Health*. Potential for improved data on hazardous and harmful wastes	The Waste Data Framework would enhance the ability to share and collate information improving overall knowledge of waste flows. It currently only covers material to disposal however	Councils would implement the Waste Data Framework by putting standard protocols in place for the gathering and collation of data. This would enable sharing and consolidation of data at a regional level

Table 31 Options: data and Regulation

8.3 Options: Collection services

Collection service options have been developed based on information in Part 5 - Waste Services. Options for collection services includes the option for additional services to be provided by council (refuse and organic waste). Therefore detail has been provided around service and operational models, procurement and contracts to assist in understanding the issues related to additional service provision.

8.3.1 Options for the provision of waste services

(a) Council provided services

A council provided service can be provided either in-house (i.e. council staff, vehicles, plant and equipment) or via a contracted service (where council manages a contractor who delivers a service).

Since the 1980's, most councils have contracted waste services to private collectors in order to access expertise, leverage off the contractors available plant and staff, and bring competitive pricing to the tender process. There has been an expectation that the private sector will provide a more cost effective and efficient service than Council could deliver.

There is a recent international trend to bring waste collections 'in-house' again. Councils choosing to provide services themselves (as opposed to contracting services out) cite lack of flexibility, performance management issues and a failure to deliver cost savings as reasons to bring services back under full council control.

However, most councils in New Zealand continue to contract services out.

(b) Privately provided services

Currently the private sector provides all refuse service in the Waipa area. Under this model, the only way council can meet its waste minimisation objectives would be to introduce licences to waste operators, as is currently allowed for under the Waipa Waste Bylaw.

Licences would allow operators to operate in Waipa with specific criteria which could include provision of data to Council, limits on the percentage of waste allowed to landfill, the charges made to residential properties and the services provided. Licensing would allow Council to establish some degree of regulatory control over private sector waste collections, obtain waste data and enable Council to meet its obligations under the Waste Minimisation Act 2008.

(c) Council vs private services: key issues:

1. Private services run counter to council's legislatively obligated waste minimisation aims as private operators place no limitations on volume or what can be placed inside a bag / bin and may also offer bulk rates, discouraging waste minimisation.
2. Private operators are able to offer cost effective services as:
   i) The cost of council services includes the cost to provide public-good waste services (such as illegal dumping and litter collection) whereas private operators are not obligated to contribute to these services.
   ii) Councils are obligated to ensure services are provided to all areas, whereas private operators can 'cherry pick' profitable areas to provide services while council are obligated to provide services in less profitable rural and isolated areas.
3. If a householder does not like council waste minimisation initiatives such as reduction in receptacle size, collection frequency or price, they are able to change to a private collector.

4. Council requires waste data (volume, composition, source and destination) in order to monitor waste minimisation efforts and meet its reporting and planning obligations under the Waste Minimisation Act 2008. Private collectors are under no obligation to provide such information unless under a licencing system.
5. Council will receive customer enquiries and complaints regarding waste services whether it provides a service or not. Managing residents' concerns represents a cost to council.
6. Looking at broader environmental effects, such as greenhouse gas emissions, traffic congestion, and wear and tear on roads, the effects of several vehicles collecting kerbside waste from households are much greater than for a single vehicle doing the same job.

	Benefits	Risks
'In-house'	Full control over costs Flexibility in response to disaster, emergencies or changes in policy e.g. climate change policy No procurement costs and risks (e.g. performance management issues) Avoid duplication of some resources (executives, lawyers, and accountants) Coordination between support teams e.g. service delivery and waste minimisation teams Improved quality control Improved ability to implement or change policies e.g. local procurement or climate change	Substantial investment required (staff, vehicles, bins etc) Require in-house expertise Increased recruitment and staff management
Contracted out	Can share or reduce risk and investment costs Do not need to develop expertise Initial cheaper price (but may not be cheaper in the long run) Concentrating on core process rather than the supporting ones Reduced operational and recruitment cost	Less flexibility to respond to disaster, emergencies and policy changes without significant additional cost (via variations to contract) Require contract managers; duplication of some resources Procurement costs and risks, hidden costs Performance management issues, leading to customer dissatisfaction (less focus on the customer) Separation of service delivery from waste minimisation teams

Table 32 Council service provision models: Do it yourself vs contracting out

8.3.2 Procurement of contracted services: elements to consider

When procuring waste services, the management of the waste stream in its entirety must be considered in the scope of services i.e. collection, processing and end market/ disposal. Contract combinations for each element can impact cost, staff levels and risk to council.

To obtain the best possible contract result, it is important to have a full understanding of the council objectives, type of procurement method proposed, and the trade-offs that may be necessary. Examples of trade-offs that require consideration include[37]:

- the recycling product market risk, and sharing this risk with the contractor
- ownership of the waste stream
- the cost of recycling materials versus landfill disposal
- the term of the contract, and the effect of new technology that may become available during the term of the contract
- the cost of different service options.

(a) Allocation of risk[38]

In general, risk should be allocated to the party who is in the best position to manage that risk and the contract terms and price will reflect this allocation. Partnering and joint working are a way of sharing risks. Areas of risk which are of particular note for waste contracts include:

- Tonnages:
    - Refuse: The risk of tonnage reducing due to waste minimisation measures implemented by the council and others. This risk can include the impacts of introduction of product stewardship schemes
    - Recycling: Increasing tonnage as a result of waste minimisation measures or product stewardship
    - These risks are generally accounted for in contracts with provisions for renegotiation in the event of significant reduction in waste tonnage or changes in the recyclable commodity market.
- Fluctuations in the international market for recyclable materials:
    - Prices for recyclables can vary during the term of a contract, particularly for paper, plastics and glass. A reduction in the value of a recyclable material may make it uneconomic to collect, process and transport it to market, especially if the market is some distance away as is the case with Waipa
    - The introduction of new services, and the development of contracts, should take into account the availability of suitable markets. Contracts should also allow for new materials to be included in a contract, if viable markets become available during the term of the contract
    - Emergency / disaster management and traffic management: These are usually managed by developing contingency plans, with regular review and reporting as contract deliverables.

In recycling contracts, there should be separation of the known costs i.e. collection and processing costs, and any risk sharing should be targeted at the variable component of recyclables i.e. markets and sale prices.

An equitable division of the cost to recycle each type of recyclable material can be negotiated if required. These can include keeping the costs of collection and sorting of each material separate and transparent, such as by utilising a recycling index where separate prices are provided by tenderers for recycling each type of material. However, there are a number of issues that arise from this methodology including:

[37] Guidance Principles: Best Practice for Recycling and Waste Management Contracts, MfE, 2007
[38] Guidance principles for recycling and waste management contracts; Sue Hamilton and Ewen Skinner Morrison Low & Associates Ltd

- tenderers can be reluctant to divulge full costing, as they do not wish to share the benefits with the Principal when the market is high for a product
- confusion about the real value of recyclable materials
- tenderers may price items to meet their needs and not necessarily reflect reality of market conditions
- the need to ensure that any index does not provide a disincentive to obtaining the best price possible for recyclables.

(b) Contract Models

Three service provision models are commonly considered in relation to waste services contracts, these are separation, bundling and sharing[39].

(i) Separation

Separating services (e.g. separating refuse collection from recycling collection contracts) provides the benefits of transparency of price for the different service components, maintains competition between providers, and supports waste reduction.

However, there may be an increase in staffing required to undertake appropriate contract management. In addition, there may be a loss in the ability to leverage off contractor plant and equipment.

(ii) Bundling

Bundling of services involves combining several services under a single contract and is useful where there are only a few providers able to provide the total service. Bundled service often require sub-contractor relationships which may result in service level issues or a higher level of contract management. In some situations bundled services may allow for smaller providers or community groups to be included in a contract.

Bundling of services may provide price advantages, but this may be at the expense of obtaining definitive source data for each waste stream.

(iii) Sharing

The Waipa District Council LTP sets out a key objective of:

Collaboration *– Working with our partners to achieve desired outcomes while minimising rate impacts, and pursuing opportunities for efficiencies by working with other councils.*

WDC also works closely with other councils in the region and the Waikato and BoP Regional Councils, in developing regional waste services and facilities. This collaboration has the potential for Waipa to participate in cost effective shared services or infrastructure that are regionally aligned.

The sharing of services or infrastructure between more than one council depends on a number of issues, including the:

- alignment of objectives
- similarity of services or infrastructure required
- availability of infrastructure or providers
- geographic location of the population base

[39] Guidance Principles: Best Practice for Recycling and Waste Management Contracts, MfE, 2007

In many instances, cost savings of 5−10% can be realised through rationalisation of facilities, plant, staff, reporting and data collection systems. The council will also be able to make efficiencies through rationalising staffing and resources. These savings will be passed on to the councils through a lower contract price. This is in addition to improved services to the community in each locality and the development of regionally consistent services, making any future regional initiatives easier to implement.

It is important to identify and mitigate risks prior to any shared service contract being initiated. The risks for shared services contracts include[40]:

- Political/community resistance to shared contracts, resulting in implementation issues
- Inconsistency of council requirements, which reduces the likelihood of efficiencies and cost savings; and changes and uncertainties during the contract term, which will increase the likelihood that costs will increase and the possibility of contractual problems
- Incorrect information in a contract, which increases the risk of a variation being sought with resulting additional cost (this risk will affect all councils in the shared contract even if one supplies accurate information)
- Contract administration and management − lack of clear definition of the respective councils' staff roles and responsibilities can cause problems. With a shared service contract one council is exposed to any problems and issues that affect any other council
- Effect on local contractors − by increasing the size of the contract some local tenderers may not be able to tender, and there is an increased likelihood that a larger contractor will be awarded the contract
- Tender evaluation − for a shared services contract the tender evaluation process will be more complex as a result of having to satisfy the needs of all the councils.

There are a number of tender mechanisms that can be used for shared services.

Type of shared service contract	Description
Joint tender / contingent pricing	• Separate contracts are developed for each council • Each contract includes aligned services and contract provisions to provide economies of scale and consistency for the councils. • The tenderer can price either or all contracts. If they tender for all, then they can offer a 'combined contract' discount price. • Each contract is administered separately by each council
Single framework contract	• A contract is entered into by one of the councils on behalf of the others, with the others being nominated parties to receive services under the contract • This option does not easily accommodate differences in specification / levels of service, short-term commitment between the councils or political alignment • The council/s who are not the principal would have to seek any legal redress under the contract through the principal, who may not necessarily agree with the contract breach. • The tenderer may offer a discount for providing services to all the councils
Joint principals contract	A contract is awarded by the councils as joint principals. The resulting contract is managed by a management board, who make the major operative and contractual decisions

[40] Guidance Principles: Best Practice for Recycling and Waste Management Contracts, MfE, 2007

Joint venture legal entity	A legal entity is formed (e.g. a council-controlled organisation) with shareholding by the participating councils. One contract can be entered into for the services they wish to tender and administer together

Table 33 Types of shared service contracts

Waipa District Council has shown a willingness to explore shared service opportunities where they are shown to be beneficial. For example WDC provide education on waste minimisation via funding support to the EnviroSchools programme, and has the highest participation rate of any area in the country. In addition, Sustainable Cambridge plays a role in promoting various aspects of sustainability to the local community including waste minimisation and recycling –a programme which could be extended to other areas within the District.

(c) Social procurement

"Sustainable procurement can minimise the environmental impacts of public sector organisations, as well as benefiting society, the natural environment and reducing overall operating costs[41]."

For local government, social procurement (frequently used interchangeably with 'sustainable procurement') utilises procurement procedures and purchasing power to create positive environmental and social outcomes. The council still receives the same delivery of cost effective goods, services and works that a commercial supplier could provide but community organisations and social enterprises are instead contracted.

The procurement processes of large organisations like local government have a significant impact on the local environment and economy. Altering how goods and services are acquired, so that cost as well as environmental and social benefits are given equal value will help Waipa District Council to deliver strategic goals and build a stronger community.

Community groups within the Waipa District have called for WDC to implement sustainable / social procurement, particularly in relation to waste services and facilities (see section 4.5).

Guidelines to assist local government to implement sustainable procurement, can be found on the New Zealand Government Procurement website[42].

(d) Contract term

A five to seven year contract term is generally recommended for waste management and recycling contracts. A fourteen year term is considered more suitable for Material Recovery Facilities.

Longer term contracts can be considered where a contractor will need to invest in specialised and expensive equipment; or if there is a clear price advantage. Short term contracts allow capability for introducing change, which can be attractive to councils when policy changes are indicated e.g. as a result of climate change planning.

(e) Ownership of the waste stream

Ownership of waste varies depending on the stage in the collection – processing – disposal process. In general, waste is owned by the person placing it for collection until it is collected by the intended collector. Ownership then passes to the collector, and so on throughout the process.

[41] P.6. APCC: Australia and New Zealand Government Framework for Sustainable Procurement
[42] http://www.procurement.govt.nz/procurement/for-agencies/guides-and-tools/A-to-Z-guides-tools-templates#st

Clarifying ownership of the waste stream can become an important aspect of waste minimisation activities. For example, if it is not clear who owns residential waste located at kerbside there may be obstacles to council undertaking a kerbside waste audit to determine composition of waste collected in residential services.

Where services are not council provided, it is recommended that any licencing system specifies council ability to undertake waste auditing and similar waste measurement and minimisation activities related to council's obligations under the Waste Minimisation Act 2008.

Aspects of ownership of waste relative to its location also need to be considered in contracts and bylaws e.g. is the waste:

- on public or private property prior to collection
- collected by someone other than the intended collector from public and or private property (e.g., kerbside recycling, drop-off bins for clothing or other materials)
- in a landfill
- in a MRF, potentially under joint ownership due to a risk or revenue sharing arrangement (e.g. recyclable product).

If waste is taken by a collector other than the intended collector, it may be considered theft e.g. taking aluminium cans out of kerbside recycling receptacles can be considered theft.

To ensure there is clarity of ownership of the waste stream, it should be clearly spelt out in any contract documents where ownership lies and when ownership applies.

This may become more important in the future is regulation is enacted to introduce product stewardship such as Container Deposit Schemes. Such schemes will increase the value of some waste materials and having ownership clearly understood will be necessary.

8.3.3 Should Waipa introduce a council refuse service?

Waipa is one of a small number of councils in New Zealand who do not provide a refuse service. Not providing or controlling the residential refuse waste stream reduces council's ability to obtain data on refuse flows, and reduces council's ability to influence household's waste behaviour via pricing and other mechanisms. One option is for Waipa District Council to commence a council provided refuse service.

Prior to the introduction of a new waste service, a number of aspects need to be considered including procurement and contract models (see 8.3.2), service systems and funding (user pays vs rates funded).

(a) Service systems

Waste service systems comprise of a number of components including:

- Receptacle type
- Frequency of collection; and
- Method of collection

(b) Refuse receptacle type - bags or MGB's?

In order to consider the receptacle used in refuse services, a comparison is provided of the benefits and draw-backs of refuse bags vs refuse MGB's[43].

[43] Mobile Garbage Bins = MGB

(i) Reduction in waste

The capacity of the receptacle, the number of receptacles put out for collection, the frequency of collections, and the funding mechanism (whether the service is user pays or rates-funded) are the most important factors in reducing waste to landfill.

MGB's have an advantage if waste reduction is to be achieved by reducing the frequency of refuse collection due to a reduction in odour and vermin i.e. a fortnightly MGB refuse collection may be more acceptable than a fortnightly bagged refuse collection.

Bags have an advantage over rates-funded MGB refuse collections if a user pays bag service is to be implemented. The incentive to reduce waste is greater if a cost is incurred for every bag of refuse that is set out as compared to a flat fee for a regular wheelie bin collection. While user pays MGB refuse services can be implemented using RFID and other technologies these systems require a greater initial investment to implement.

(ii) Health & safety

Automated collection of MGB's (e.g. trucks with automated mechanical lift arms) result in a reduction in the risk of accidents compared to manual workers collecting bags from the kerbside.

Manual collectors of refuse bags are at risk from a variety of causes including traffic hazards, sharp objects in the refuse, and repetitive strain injuries from lifting bags, some of which can weigh as much as 18-20 kg.

(iii) Cost

When the funding system is the same (i.e. user-pays or rates-funded) neither bags nor MGB's has a clear advantage when it comes to collection costs.

An automated collection of MGB's requires lower labour inputs than manual bag collections, but this is offset by the high capital costs of the automated collection vehicles and bins and the faster collection times of the manual collection. In addition, the cost of distributing bins to every household must be taken into account.

On an on-going basis, bins are more expensive to administer, as bin asset databases need to be maintained and the bins require on-going service and replacement.

However, the whole-of-life costs of a MGB are lower than the cost of bags over the same period of time. A MGB asset can have a lifespan of 15-20 years with an initial cost of around $40 (around 0.5c per lift, 52 lifts per year over 15 years). While bags are cheap to purchase at 1-2c each, over a 15 year time period, they are more expensive than a MGB (1c per bag, 52 bags per year, over 15 years = $937.50).

Establishing a user-pays funding arrangement for MGB collections (e.g. on a collection frequency basis) would entail additional cost due to the technology requirements (financial and customer service databases, method for recording service provision etc.).

(iv) User convenience and acceptance

User perception of bags vs MGB bins varies greatly:

- Some households (particularly in dense urban areas) consider MGB's take up too much space, are difficult to store, create odour and are difficult on long driveways or where there is limited street frontage
- Those who create very little waste, such as single person households, may find the need to store a MGB for particularly problematic. A single person household may only generate the

equivalent of a small bag of waste every week, but that household is still required to store and use the same bins as a large household

- Moving MGB's to the kerbside can cause problems for the aged, disabled, or householders with physical impairments. Large bins can be particularly difficult to move around properties with stairs or steep driveways. However, councils who have introduced MGB's have been able to offer exception services to cater to users who experience difficulty with the bins e.g. allowing a small number of people use continue to use bags.
- For many householders in rural or hilly suburbs, the only option is to use a vehicle to tow their wheelie bin to the kerbside.

Despite these potential problems, most householders find bins to be more convenient than refuse bags. Disposing of refuse into a bin doesn't involve as much contact with the refuse as putting it into a bag and refuse can be compacted more easily and safely into a bin.

Householders may also find wheelie bins to be more hygienic as they can be stored outside and aren't subject to animal strike in the same way as refuse bags.

(v) Street amenity

Kerbside set out of both refuse bags and bins inevitably reduces the amenity value of the streetscape environment, and creates litter. As refuse bags are more susceptible to animal strike, bags are more likely to be associated with litter on the kerbside, although wheelie bins can create litter when they tip over or as they are being emptied.

Refuse bags leave a tidied streetscape after collection, as the street is left completely cleared. Emptied bins, on the other hand, can be left on the kerbside for hours, or days, after collection. This is particularly an issue when householders go away on holiday.

Bins can also block pedestrians and other footpath users and are subject to being blown over on windy days.

(vi) Options for refuse bags

The options to consider regarding kerbside refuse bags are limited to the type of material, the size of the bag, and the bag colour.

- Plastic bags
    - Lightweight, but prone to punctures
    - Less environmentally friendly (not-compostable)
    - Cheaper
    - Perform well when wet or when filled with wet materials.
    - Available in a range of sizes
- Multi-wall paper bags
    - More puncture-resistant than plastic bags
    - More environmentally friendly (compostable)
    - Generally have a smaller capacity, which reduces health and safety issues related to overweight bags
    - More expensive
    - Do not perform as well when wet or when filled with wet materials.

(vii) Options for MGB's

There are two main variables that affect the functionality of wheelie bins.

- **Design:** to ensure they can be collected by vehicles fitted with automated external lift arms efficiently with minimal damage to the bins.

- **Capacity of the bin**: The sizes most commonly used by councils for kerbside services are 120-litre and 240-litre. Other sizes are also used e.g. 80L, 140L or 360L

(c) Frequency of collection

In general, refuse services are collected weekly to minimise odour and vermin. However, MGB based refuse services can be successfully changed to fortnightly if there is sufficient waste diversion occurring to reduce the overall volume of household refuse.

(d) Method of collection

Two main collection methods are available for kerbside residential refuse collections:

- Manual collection
  - 'Runners' collect bags and throw them in a collection vehicle; or
  - 'Runners' collect small bins and empty them into a collection vehicle
- Mechanical collection
  - The driver of an automated collection vehicle uses a mechanical arm to operate the bin lifter from inside the cab using a joystick. They must occasionally exit the truck to manoeuvre bins around obstacles.
  - Semi-automated collection involves the driver or a runner alighting from the collection vehicle frequently to push or pull bins to the side or rear of the truck, placing the bin into or onto a bin lifter, then activating the lifter to invert the bin to tip the contents into the hopper. The bin is then lowered back to the ground and wheeled back to the kerbside.

(e) Summary of service system options for refuse

	Mobile garbage bin (MGB)	Refuse bag
Receptacle characteristics	MGB sizes 240L, 120L and 80L are most common.	60L bags are most common.
	Smaller MGBs encourage waste minimisation. Large MGBs discourage waste reduction.	Variety of materials – usually purpose manufactured for refuse collection.
	Alternative diversion options are necessary when small MGBs are used.	Bags are easy to distribute.
	The MGB asset requires a database to record numbers, location, maintenance details, etc.	Bag size can be reduced as recovery rates rise.
Frequency of collection	Weekly or fortnightly, depending on size and other services offered by the principal.	Weekly.
Method of collection	Mechanical lifting of the MGB. Operators need to dismount vehicles to realign the MGB. Health and safety issues are reduced.	Manual, using 'runners', with associated health and safety issues (e.g. traffic hazards).
	Monitoring of the content of the MGB for potentially hazardous, commercial refuse or green waste can be undertaken with collection vehicle mounted equipment.	Health and safety issues occur from cuts from sharp objects, strain and sprain injuries.
	Appropriate advertising and education are required.	Overweight bags can be an issue.
		Monitoring of the content of refuse bags is limited to cursory inspection by 'runners', and it is often difficult to identify prohibited materials in closed bags.
		Flexibility of collection method as specialised collection equipment is not required.

		Animal strike occurs.
Cost	Significant capital costs depending on the term of the contract and amortisation period of the asset. Most MGBs have an effective life of 15 years.	Well suited to user pays collections.
	Options for the contractor or principal to own the MGB.	Low cost to consumer compared to MGB.
	MGB costs include capital outlay for purchase, servicing of debt if they are purchased under a 'hire purchase' arrangement, administration of bin distribution and database management, and recycling of bins at the end of their useful life. Collection and disposal costs are additional.	Bag costs include receptacle purchase collection and disposal costs.
	Contractor ownership option, paid for up front or over the term of the contract as a component of the collection rate (with or without a residual amount at the end of the retained by the contract). Ownership is contractor. Maintenance of bins and replacements for stolen bins are the contractor's responsibility. The MGB is usually transferred to principal's ownership at the end of the contract term.	User pays can have the effect in small communities of companies promoting their large MGB service and thus discouraging waste reduction. User-pays collections also often encourage MGB collectors to offer private collection services in high density (profitable) areas, leaving the low density and rural (less profitable) areas to the council collection service.
	This option may preclude smaller operators due to the capital requirement.	
	There is a principal ownership option – paid for by the principal, who carries the risk.	
	Additional costs relate to maintaining and administering an MGB database.	

Table 34 Summary of collection system options for refuse[44]

(f) Operational funding of kerbside refuse services

The way a kerbside refuse system is funded is one of the main factors influencing a reduction in waste to landfill. When a householder is required to pay directly for the amount of refuse they dispose of, they are more likely to recycle more and dispose of less.

<u>Options for funding kerbside refuse services</u>

There are two general funding mechanisms used for kerbside refuse services:

- **User-pays** – In a user-pays system, there is a direct relationship between a householder's use of a service and how much is paid for the service. If a householder doesn't use a service at all, they do not pay anything for it.
- **Rates-funded** – In a rates-funded system, the costs of a service are paid for by the council, so the costs are ultimately borne by the ratepayer. In a completely rates-funded system, it is possible that a ratepayer pays the full costs for a service that they do not use at all. Because all rates-funded systems charge the ratepayer rather than the householder, there is no incentive for occupiers of rental properties to reduce the waste they put out on the kerbside. *Targeted rates* allow a more targeted distribution of costs, as the council can choose to rate only the properties that are provided with a service, allow ratepayers to opt in and out of the service, or provide extra services at an extra cost.

[44] Source: Guidance Principles: Best Practice for Recycling and Waste Management Contracts; Ministry for the Environment, 2007

There are also partial user pays systems that include a combination of rates and user pays funding (e.g. a set number of bags supplied by the council with any additional bags purchased by the resident) and MGB based rebate systems for households who use less than the average number of collections per year.

Where a council has sufficient control of the refuse stream, they are able to introduce pricing mechanisms to encourage recycling and discourage waste to landfill.

However, where there is competition in the waste market, any attempt to control waste behaviour using pricing mechanisms will result in a loss of market share i.e. if council utilise a user pays system and put the price or refuse up, competing commercial operators will establish a cheaper refuse system and therefore undermine efforts to minimise waste to landfill.

(g) What are the implications of changing to a council refuse service[45]?

The current situation of fully user-pays privately provided services appears to be acceptable to the public and there is no call for council to commence a council-provided service (either user-pays or rates funded).

If council currently provided a rates funded, council refuse system – with the associated control of the waste stream – it would be imprudent to change. However, once a fully privatised service has been established, it is difficult to move back to a council controlled service.

If WDC were to consider the introduction of a council-provided refuse service, a number of factors would need to be taken into account:

(i) Competition – user pays service

A council provided user pays collection would be in direct competition with existing private operators who can offer a cheaper, convenient and more responsive service. If council commenced providing a service, they would need to provide the service to all residents - probably at the same price – whereas the competition would be free to focus on urban areas where collection is more economic. It is possible council would be left with the unprofitable, rural customers without being able to attract the profitable, urban customers.

Council would also need to make a decision on whether to allow a potential council refuse contractor to collect waste as part of council services while simultaneously offering a private service.

Opportunities to ensure private collectors provide a service that promotes waste minimisation can be adopted via a waste Bylaw which e.g. requires private contractors also provide a recycling service to their refuse customers or provide services to all customers in the District (cannot refuse less profitable customers); or places limits on the size of refuse bins, frequency of collection and day of collection (to minimise truck movements in a single street over the course of a week).

(ii) Rates funded service issues

A rates funded system can be by way of targeted or general rates.

Where a council provides a fully rates funded system, they will hold a high level of market share which can usually be maintained even if the rates are increased. However, rates increases are generally politically unfavourable, lessening the ability to use this as a mechanism to encourage waste minimisation behaviour.

[45] Guidance principles for recycling and waste management contracts; Sue Hamilton and Ewen Skinner Morrison Low & Associates Ltd

A rates funded refuse system can include the provision of flexible service options to users, such as different sized receptacles and varied collection frequency to suit household needs.

(iii) Impact on existing businesses

Waipa District includes a number of small to medium sized local waste businesses who, combined, maintain a substantial market share. The provision of a council refuse service would adversely impact these local businesses in three ways:

- A user pays service would be in direct competition with the local services. Any reduction in market share is likely to reduce the viability of local businesses.
- A rates funded council service would have a severe adverse impact on local waste businesses, who are not in a position to compete for a council contract. A rates funded service is likely to effectively end locally provided private residential refuse services.
- Larger, nationwide companies are likely to welcome a rates funded service in the knowledge that they have a high chance of benefiting from a council refuse contract, at the expense of the smaller local competitors.

(iv) Capital and operational expenditure

The capital expenditure required for the introduction of a refuse service may be significant. Capital costs can include:

- initial receptacle provision (MGB)
- collection vehicles (if fully council provided / not contracted)
- Implementation costs (labour & preparation)

Operational costs can include:

- Contract costs – collection and disposal
- Staff costs for contract management
- Asset management costs (maintenance of receptacles)
- Call centre and service education / enforcement

There may also be additional capital and operational costs associated with any shared services contracts.

(v) Effectiveness

Prior to implementing a council refuse service two questions must be asked:

- What outcomes do we want to achieve?
    - Good recycling rates?
    - Cost effective for householders / council?
    - Public acceptability?
    - Control of the waste stream to minimise waste?
    - Able to meet obligations under the WMA? (e.g. data)
    - Flexibility of services?
- Is this new service the best and most effective way achieve those outcomes? Does it:
    - Increase recycling rates and divert waste from landfill?
    - Allow council to meet its reporting obligations under the WMA?
    - Reduce costs to council or householders?
    - Meet the demands of residents?
    - Provide the preferred level of flexibility?

In the case of a refuse service, the outcomes council would seek to meet are related to obtaining data on the waste stream; and obtaining greater control of the waste stream in order to

implement waste minimisation measures (in order to meet obligations under the Waste Minimisation Act 2008).

A council provided refuse service will enable council to obtain data on residential refuse, but it will not enable access to other waste data and information from private operators e.g. commercial or RTS volumes or composition.

It is also questionable as to the extent provision of a refuse service would enable council to control the waste stream for the purposes of implementing waste minimisation measures.

Residents are accustomed to existing services. Regulatory measures on a council provided service - such as enforcing material bans, raising prices or otherwise discouraging use of the refuse service (to divert material to the recycling service) - are likely to result in dissatisfaction and a potential return to private collectors.

Other mechanisms for obtaining data and encouraging waste minimisation messages (such as waste licencing and targeted education) may prove more effective than service provision.

8.3.4 Recycling

Kerbside recycling volumes are currently static, after a period of decline. The decline was in part due to a nationwide trend in the reduction of papers from newsprint, offset by a slight increase in plastic/cans. The following options are available for increasing the volume of recycling material collected in the kerbside service:

- **Expanding recycling services via the introduction of additional services such as at a resource recovery centre.**
  While all three transfer stations in the District accept recyclables, there is limited facility for construction & demolition waste, e-waste, farm waste and certain reusable items. Cambridge in particular will develop further demand as the population increases, leading to current RTS facilities being insufficient to needs. Developing a dedicated resource recovery centre would provide additional recycling and waste material recovery, diverting an increased range of materials from landfill.
  Establishing a resource recovery facility in conjunction with community groups may provide additional benefits, beyond just waste minimisation (see section 4.5). Any such facility could target large scale problematic waste streams (such as construction & demolition, farm waste) and provide a base for any future product stewardship schemes.
- **Introducing an MGB based collection system – either co-mingled or with an additional separate glass crate based collection.**
  The 60L crate kerbside recycling service is currently sufficient to requirements, although increased population and the need to divert more material from landfill suggests it may not meet future demand. Council should investigate the introduction of a larger capacity receptacle such as a MGB bin once more robust data is available on refuse and recycling flows in the District. A larger bin would encourage more recycling and reduce litter blown from crates.

8.3.5 Organics

National data indicates that a third of refuse from householders is organic material such as food scraps. In the Waikato region, Hamilton City is proposing to investigate whether a food waste or food & green waste kerbside service would reduce the volume of refuse being sent to landfill. There may be opportunities for other councils in the region to work jointly on this investigation.

While an initial investigation occurred as part of the 2015 Services Review, there is insufficient data to determine the extent to which organic waste is being disposed of to landfill in private refuse services. However, it is likely Waipa would be similar to other districts.

While organic material is not a priority issue for Waipa at this time, it may prove to be so within the time frame of the Waipa Waste Strategy (18 years). Participating in any regional investigation may future proof Waipa's options in this regard.

8.3.6 Litter and street cleaning services

Volume data collected from council contracts such as litter/illegal dumping; street cleaning and building cleaning services should be managed to ensure suitable quality, and incorporated into an ongoing waste data management system. This data should be monitored for trends and included within District waste volumes for planning purposes.

8.3.7 Options for collection services

Ref	Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Councils' Role
CS1	Status Quo. Recycling collection only	Maintaining collections status quo would not have a positive effect on any the key issues.	*Social / Cultural / Environmental / Economic / Health* - no new impacts	Would not impact on the status quo prediction of demand.	Provides a kerbside recycling service
CS2	Enhanced Status Quo - introduce an MGB based recycling collection – either co-mingled or with an additional separate glass crate based collection	Increasing quantity of waste to landfill Data quality and management of data Recycling performance static/declining Potential for greater joint working in Council service delivery	*Social/Cultural:* Council and the collection contractor have a responsibility to mitigate the risks associated with kerbside recycling collections. Private operators do not necessarily always provide the appropriate levels of service, for example, at peak times *Environmental:* Increased volume of recycling bins would lead to	Would meet predictions of demand	Provides an expanded kerbside recycling service Councils will need to consider shared service arrangements as part of their S17A reviews and this should inform future procurement programmes

Ref	Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Councils' Role
			overall improved volumes of recyclable material *Economic:* Expanded services may lead to increased costs of service *Health*. Vulnerable sectors of the community may chose not to access waste services due to cost. Some people may find it difficult to manage a MGB bin		
CS3	Licensing of private sector operators & require contracted waste service operators to provide data on litter & illegal dumping; and street sweeping volumes	Data quality and management of data Cleanfill numbers and tonnages Potential for greater joint working in Council service delivery	*Social/Cultural:* Private operators do not necessarily always provide the appropriate levels of service, for example, at peak times, or in more remote/less economic areas *Environmental:* Potential for increased waste to disposal/less recycling if the licensing regime does not contain appropriate measures *Economic:* No change *Health*. No new impacts	Could impact on demand if private provision leads to increased disposal (e.g. through larger waste receptacles.) or reduced recycling (e.g. through reduced levels of service)	Council would have responsibility for licensing operators, and monitoring and enforcing license provisions. Provisions could include supply of data, restrictions on receptacle size, requirement to provide recyclables collections etc.
CS4	Council investigate the provision of an organic waste service – either alone or in conjunction with other councils	Increasing quantity of waste to landfill Data quality and management of data	*Social/Cultural:* Improved services to residents *Environmental:* Reduced waste to landfill *Economic:* Additional costs to ratepayers	Would need to be developed to take into account future demand	Council would be service provider (contracted service)

Ref	Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Councils' Role
		Potential for greater joint working in Council service delivery	*Health*. Vulnerable sectors of the community may not be able to afford increased costs Potential for animal strike		

Table 35 Options: Collection services

8.4 Options: Capacity building within the District

The number of options have been identified to account for some of the broader issues raised in this waste assessment, including information in section 4.5 – Options for social benefit; and 2.5.11 cross-regional collaboration.

Ref	Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Councils' Role
CB1	Appoint regional Coordinator to assist with joint projects. Each Council responsible for own jurisdiction.	A regional coordinator will assist in progressing closer working in a number of areas including solid waste bylaws, education and data	*Social/Cultural/Environmental/ Health* - no new impacts *Economic*: Shared funding	No significant impact on status quo forecast of future demand	Councils continue to develop strategic documents, such as the WMMP, through the joint committee. Funding.
CB2	Collaborate with Mana whenua firstly and then community groups and private sector to investigate opportunities to enhance economic development through resource recovery.	Increasing quantity of waste to landfill Recycling performance static/declining Low level of capacity within the community to allow the introduction of community partnerships for waste minimisation	*Social/Cultural:* potential for downstream job creation *Environmental:* potential enhancement through waste minimisation *Economic:* could result in benefits for the local economy *Health:* Health impacts dependent on the nature of the collaboration.	There are waste minimisation activities such as reuse shops that are marginally cost effective in strictly commercial sense, but provide opportunities for social enterprise/charitable community group. Having all three sectors working together can provide mutual benefits for all.	Council to lead and facilitate Council funding & staff support will be required for both establishment and ongoing support. Council to employ a full-time waste minimisation officer at a senior level.

Table 36 Options: Capacity building

8.5 Options: Infrastructure

The following options are based on the summary of infrastructure in Part 4 - Waste infrastructure.

Ref	Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Councils' Role
IN1	Status Quo:	Maintaining infrastructure status quo would not have a positive effect on any the key issues.	*Social/Cultural/Environmental/ Economic/Health* - no new impacts	Would not impact significantly on the status quo prediction of demand for	Council continues to subsidise Cambridge RTS
IN2	A Resource Recovery Centre is developed in partnership with a community organisation	Increasing quantity of waste to landfill Data quality and management of data Recycling performance static/declining Potential for greater joint working in Council service delivery	*Social/Cultural:* enhanced services enabling separation of materials and access to low-cost used goods. Community capacity building will be required *Environmental:* improvement to waste recovery *Economic:* Councils will need to invest funding in capacity building and developing facilities *Health:* Enhanced services enabling separation of materials such as hazardous waste would facilitate appropriate disposal and reduce health impacts	Would have an impact on demand for landfill and would increase demand for recycling/recovery services and processing facilities	Councils' key role would be in overseeing and planning capacity building, development and operation of a community facility Council may need to provide a suitable site at less than commercial rates

Table 37 Options: Infrastructure

8.6 Options: Hazardous waste

The following options are based on the information in Section 3.2.4 and 7.3.2.

Ref	Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Councils' Role
HW1	Status Quo. No household hazardous waste provision. Limited used oil provision	Maintaining status quo would not have a positive effect on any the key issues.	*Social/Cultural:* no new impacts. *Environmental:* no new impacts. *Economic:* no new impacts. *Health*: continued risk of harm due to insufficient hazardous waste disposal options for householders	Would not impact on the status quo prediction of demand.	None
HW2	Provision of hazardous waste services via the provision of either fixed point or event based household hazardous waste services	Increasing quantity of waste to landfill Limited household hazardous waste disposal options Potential for greater joint working in Council service delivery	*Social/Cultural:* Improved service provision *Economic:* Costs of service provision *Health:* Reduced risk of harm from hazardous materials	Would need to be developed to take into account future demand.	Provides household hazardous waste service Works with industry to encourage the provision of product stewardship schemes

Table 38 Options: Hazardous waste

8.7 Options: Procurement

Ref	Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Councils' Role
PR1	Status Quo. Current procurement practices continued	Maintaining status quo would not have a positive effect on any the key issues.	*Social/Cultural/Economic:* no new impacts. *Health*: continued risk of harm due to insufficient hazardous waste disposal options for householders	Would not impact on the status quo prediction of demand.	None
PR2	Councils enter into shared service or joint procurement arrangements where there is mutual benefit	Increasing quantity of waste to landfill Data quality and management of data Recycling performance static/declining Potential for greater joint working in Council service delivery	*Social/Cultural*: some improved consistency in approach. *Environmental:* impacts depend on the collaborative strategies and projects. *Economic:* shared services could reduce costs and enable access to better quality services. *Health:* Enhanced services would facilitate appropriate disposal and reduce health impacts	No significant impact on status quo forecast of future demand	Councils make a joint formal approach to neighbouring authorities to form collaborative partnerships on various strategic or operational projects Where services are to be shared there will a need to align service provision and contract dates
PR3	Establishment of a social/sustainable procurement model over time	Increasing quantity of waste to landfill Data quality and management of data Recycling performance static/declining Potential for greater joint working in Council service delivery	*Social/Cultural:* Supporting community capacity and fostering strong communities *Environmental:* improvement to waste recovery *Economic:* Could result in benefits for the local economy *Health*: Enhanced services enabling separation of materials such as hazardous waste would facilitate appropriate disposal and reduce health impacts	Could enable management of future demand while also meeting LTP objectives	Changes to council procurement practices. Council recognise the importance of diversity in the mix of scales of economy and localised solutions Councils will support a mix of economic models to target best fit solutions depending on the situation

Table 39 Options: Procurement

8.8 Options: Communication and education

The following options are based on the information in section 5.1.3.

Ref	Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Councils' Role
CE1	Continue existing education programmes including application of the Regional Waste Education Strategy	Increasing quantity of waste to landfill Recycling performance static/declining Low level of capacity within the community to allow the introduction of community partnerships for waste minimisation High volume of rural waste Waipa District's aging population requires a different focus for waste minimisation	*Social/Cultural*: no change in community level of ownership of waste issues *Environmental:* education programmes aim to establish and support positive behaviours that reduce environmental impact *Economic:* currently funded *Health*: Public informed of health risks of waste materials and appropriate disposal pathways	Awareness of waste issues and behaviour would not change significantly from current situation	Council would continue to fund and coordinate education programmes
CE2	Extend existing communication programme to focus on target audiences e.g. rural, older people, businesses May include preliminary work such as surveying target audiences to identify best method of engagement	Increasing quantity of waste to landfill Recycling performance static/declining Low level of capacity within the community to allow the introduction of community partnerships for waste minimisation High volume of rural waste	*Social/cultural:* community will be more aware of options and more engaged in the waste management process, taking a higher level of ownership of the issue *Environmental:* education programmes would seek to establish, support and extend positive behaviours that reduce environmental impact	Expanding the target audience may improve results in increased recycling and decreased unwanted behaviour such as landfilling and other land disposal	Councils would fund and/or coordinate education programmes

Ref	Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Councils' Role
		Waipa District's aging population requires a different focus for waste minimisation	*Economic:* could potentially be funded through waste levy funding *Health*: Information regarding health risks of waste materials and appropriate disposal pathways would reach a wider audience. More vulnerable sectors of the public informed of health risks related to waste management. Messages better targeted to audiences needs		
CE3	Extend existing communication programmes to support any new rates-funded services provided by the Council (e.g. hazardous waste services, community resource recovery centre)	Increasing quantity of waste to landfill Recycling performance static/declining Low level of capacity within the community to allow the introduction of community partnerships for waste minimisation High volume of rural waste Waipa District's aging population requires a different focus for waste minimisation Limited household hazardous waste disposal options	*Social/cultural:* community will be more aware of options and more engaged in the waste management process, taking a higher level of ownership of the issue. Information regarding health risks of waste materials and appropriate disposal pathways would reach a wider audience *Environmental:* education programmes would seek to establish, support and extend positive behaviours that reduce environmental impact *Economic:* could initially be funded through waste levy funding when new services are introduced; subsequent	Depending on the new rates-funded services that are provided, this could potentially contribute to a significant reduction in demand for landfill, and an increase in demand for recycling services and processing. Education alone will not support behaviour change. Pathways need to be provided for residents and businesses to take action on education messages	Councils would fund and coordinate education programmes

Ref	Option	Issues Addressed	Strategic Assessment	Impact on Current/Future Demand	Councils' Role
			communications would be rates-funded *Health*: Information regarding health risks of relevant waste materials and appropriate management targeted to audiences needs		
CE4	Lobby for effective product stewardship programmes and	Increasing quantity of waste to landfill Data quality and management of data Recycling performance static/declining High volume of rural waste Limited household hazardous waste disposal options	*Social/Cultural:* product take back will require behaviour change; potentially better management of hazardous materials *Environmental:* improved resource efficiency. *Economic:* potential for producer pays schemes *Health*: product take back will ensure better management of hazardous materials	Product stewardship is specifically enabled in the WMA. Fully enacting this principle will help ensure true costs of products are reflected in their price. Product stewardship schemes will assist Council to meet future demand by providing effective waste recycling services for products such as e-waste, agricultural chemicals and tyres	Promote current schemes and lobby Government for priority products such as tyres, agricultural chemicals and e-waste Work with DHB's on product take back schemes for medical waste

Table 40 Options: Communication and education

8.9 Summary table of potential scenarios

The above options can form an almost infinite number of combinations. To simplify consideration of the options, high level scenarios with logical combinations of the above options are laid out in the table below. The scenarios are for illustration and can be amended.

	Status Quo	Scenario 1: Expanded Services	Scenario 2: Full Resource Recovery
Data & regulation	Regional bylaw without enacting operator and facility licensing WDC gathers own data not in alignment with National Waste Data Framework (no regional collation)	**Regionally aligned bylaw with operator and facility licensing, data provision, service standards and receptacle restrictions** **All reporting to be against the standard reporting indicators under the National Waste Data Framework**	**Regionally aligned bylaw with operator and facility licensing, data provision, service standards, and receptacle restrictions** **All reporting to be against the standard reporting indicators under the National Waste Data Framework**
Collection services	Private refuse Private recycling Council Recycling	Private refuse Private recycling Council recycling Contracted waste service operators (including litter, street cleaning and illegal dumping) to provide detailed data on volumes **Participate in sub-regional investigations into potential organics service; and, potentially, regional services**	Private refuse Private recycling **Council refuse** Council recycling Contracted waste service operators (including litter, street cleaning and illegal dumping) to provide detailed data on volumes **Work towards a council provided organics service**
Capacity Building	Limited capacity within community Limited capacity within council	**Appoint regional coordinator** **Develop internal council capacity related to waste minimisation** **Support community to develop waste minimisation capacity**	**Appoint regional coordinator** **Develop internal council capacity related to waste minimisation** **Support community to develop waste minimisation capacity** **Jointly held CCO or similar to manage assets and contracts**

Infrastructure	Private RTS Private composting	Private RTS Private composting **Investigate joint Council waste facilities** **Develop Community Resource Recovery Centre**	Private RTS Private Composting **Develop Community Resource Recovery Centre** **Develop joint CCO owned landfills, RTS or CCO food / biosolids facility**
Hazardous waste	No household hazardous waste services Limited used oil recovery facilities	**Council provided fixed point or event based household hazardous waste services (including used oil)**	**Council provided fixed point or event based household hazardous waste services (including used oil)**
Procurement	Current procurement practices	Councils enter into shared service or joint procurement arrangements where there is mutual benefit Move towards a social procurement approach Introduce LGNZ waste contracts	Councils enter into shared service or joint procurement arrangements where there is mutual benefit Move towards a social procurement approach Introduce LGNZ waste contracts
Communication & Education	Regional education strategy, specific regional programmes	Regional Education Strategy **Regional communication programme** **Investigate regionally standardised branding and signage for litter and illegal dumping** **Targeted education programmes for rural and elderly** **Facilitate access to farm waste collection services**	Regional Education Strategy **Regional communication programme** **Commit to regionally standardised branding and signage for litter and illegal dumping** **Targeted education programmes for rural and elderly** **Facilitate access to farm waste collection services**

Table 41 Summary: Potential scenarios

PART 9 - STATEMENT OF COUNCIL'S INTENDED ROLE

9.1 Statutory Obligations and Powers

Councils have a number of statutory obligations and powers in respect of the planning and provision of waste services. These include the following:

- Under the WMA each Council "must promote effective and efficient waste management and minimisation within its district" (s 42). The WMA requires TAs to develop and adopt a Waste Management and Minimisation Plan (WMMP).[46]
- The WMA also requires TAs to have regard to the New Zealand Waste Strategy 2010. The Strategy has two high levels goals: 'Reducing the harmful effects of waste' and 'Improving the efficiency of resource use'. These goals must be taken into consideration in the development of the Councils' waste strategy.
- Under the Local Government Act 2002 (LGA) the Councils must consult the public about their plans for managing waste.
- Under the Resource Management Act 1991 (RMA), TA responsibility includes controlling the effects of land-use activities that have the potential to create adverse effects on the natural and physical resources of their district. Facilities involved in the disposal, treatment or use of waste or recoverable materials may carry this potential. Permitted, controlled, discretionary, non-complying and prohibited activities and their controls are specified within district planning documents, thereby defining further land-use-related resource consent requirements for waste-related facilities.
- Under the Litter Act 1979 TAs have powers to make bylaws, issue infringement notices, and require the clean-up of litter from land.
- The Health Act 1956. Health Act provisions for the removal of refuse by local authorities have been repealed by local government legislation. The Public Health Bill is currently progressing through Parliament. It is a major legislative reform reviewing and updating the Health Act 1956, but it contains similar provisions for sanitary services to those currently contained in the Health Act 1956.
- The Hazardous Substances and New Organisms Act 1996 (the HSNO Act). The HSNO Act provides minimum national standards that may apply to the disposal of a hazardous substance. However, under the RMA a regional council or TA may set more stringent controls relating to the use of land for storing, using, disposing of or transporting hazardous substances.
- Under current legislation and the new Health and Safety at Work Act the Council has a duty to ensure that its contractors are operating in a safe manner.
- The Waikato/BoP region Councils, in determining their role, need to ensure that their statutory obligations, including those noted above, are met.

9.2 Overall Strategic Direction and Role

The Councils overall strategic direction and role has been set out in the Waipa District 2017-2023 WMMP.

[46] The development of a WMMP in the WMA is a requirement modified from Part 31 of the LGA 1974, but with even greater emphasis on waste minimisation.

PART 10 - STATEMENT OF PROPOSALS

Council proposes for the 6-year term of its next WMMP to continue providing the following current waste services in the district:

- Council provided household and school kerbside recycling collection and disposal
- litterbin servicing and illegal dumping collection
- ongoing monitoring of its closed landfills to ensure that resource consent conditions continue to be met
- waste minimisation promotion and education.

In addition, based on the options identified in this Waste Assessment and the Council's intended role in meeting forecast demand a range of proposals are put forward. Actions and timeframes for delivery of these proposals are identified in the 2017-2023 Waste Management and Minimisation Plan.

It is expected that the implementation of these proposals will meet forecast demand for services as well as support the Councils' goals and objectives for waste management and minimisation. These goals and objectives will be confirmed as part of the development and adoption of the 2017-2023 Waste Management and Minimisation Plan.

10.1 Statement of Extent

In accordance with section 51 (f), a Waste Assessment must include a statement about the extent to which the proposals will (i) ensure that public health is adequately protected, (ii) promote effective and efficient waste management and minimisation.

10.1.1 Protection of Public Health

The Health Act 1956 requires the Council to ensure the provision of waste services adequately protects public health.

The Waste Assessment has identified potential public health issues associated with each of the options, and appropriate initiatives to manage these risks would be a part of any implementation programme.

In respect of Council-provided waste and recycling services, public health issues will be able to be addressed through setting appropriate performance standards for waste service contracts and ensuring performance is monitored and reported on, and that there are appropriate structures within the contracts for addressing issues that arise.

Privately-provided services will be regulated through local bylaws and uncontrolled disposal of waste, for example in rural areas and in cleanfills, will be regulated through local and regional bylaws.

It is considered that these proposals will adequately protect public health.

10.1.2 Effective and Efficient Waste Management and Minimisation

The Waste Assessment has investigated current and future quantities of waste and diverted material, and outlines the Council's role in meeting the forecast demand for services.

It is considered that the process of forecasting has been robust, and that the Council's intended role in meeting these demands is appropriate in the context of the overall statutory planning framework for the Council.

Therefore, it is considered that the proposals would promote effective and efficient waste management and minimisation.

A.1.0 Medical Officer of Health Statement

A draft of the Waste Assessment was provided to the Medical Officer of Health for comment as per the requirements of the Waste Minimisation Act 2008.

The Act states:

Section 51 Requirements for waste assessment

(5) In making an assessment, the territorial authority must—

(a) use its best endeavours to make a full and balanced assessment; and

(b) consult the Medical Officer of Health.

Commentary from the Medical Officer of Health is provided below. The Medical Officer of Health made minor suggestions regarding the inclusion of additional information on closed landfills and cleanfills. This information has been included in the final version of this Waste Assessment.

POPULATION HEALTH

Waikato District Health Board

Te Hanga Whaioranga Mō Te Iwi – **Building Healthy Communities**

1 February 2017

Sandra Murray
Senior Environmental Consultant
Zenzic Consulting

Dear Sandra

Re Waste Assessment for Waipa District Council

Thank you for consulting the Medical Officer of Health on the draft Waipa Waste Assessment prepared for Waipa District Council as per section 51 of the Waste Minimisation Act 2008.

I have reviewed the draft Waipa Waste Assessment, together with one of our Health Protection Officers. We feel that the assessment was thorough and we are pleased to be able to respond to your consultation. We recognise that effective waste management is critical for good public health outcomes.

From a public health perspective, sanitary collection and disposal of solid waste is essential for:

- Human disease control (for example pathogenic wastes and reducing harbourage of human disease vectors such as rats, fleas, and mosquitoes)
- Control of health nuisances from dust, odour and pest species
- Control of health risks from hazardous wastes such as asbestos
- Prevention of contamination of drinking or recreational water from runoff or leachate
- Public safety, in terms of uncluttered thoroughfares

The waste assessment has identified that there are gaps in waste data for all waste streams, leading to difficulty for council to plan for the future. It is only through a clear understanding of the amount and composition of the various waste streams that plans can be put into place to minimise waste to landfill. We believe that this issue needs to be addressed going forward. We therefore support any actions to improve waste data, such as the proposed options of reviewing waste bylaws, enacting licensing systems and auditing waste streams.

Waste minimisation practices (such as reducing, reusing and recycling), reduce the amount of waste generated and thereby reduce the health hazards associated with waste. We support council activities that lead to waste minimisation. We support the principles of reduction and recycling as a way of minimising waste at landfills. We commend council on the current regular kerbside recycling and the availability of recycling in schools. We support the proposed extension of this to businesses as well as the introduction of additional services such as a resource recovery centre. In addition we ask council to consider other types of recyclable products. For example polystyrene is a high volume waste for its weight, and there is a risk that it won't be disposed of appropriately. Should 'waste owners' decide to burn polystyrene it produces polycyclic aromatic hydrocarbons that are carcinogenic. It also produces flaming sticky drops that can stick to many surfaces and may present a risk of personal injury or fire spread. We understand that polystyrene is recyclable and should be given consideration within the waste assessment.

DHB2

Hugh Monckton Trust Building, Rostrevor Street, Private Bag 3200, Hamilton 3240, New Zealand
T: 07 838 2569 F: 07 838 2382
www.waikatodhb.health.nz

The assessment has identified a lack of permanent facilities for the collection and disposal of hazardous materials requiring treatment. For example there are no facilities for the disposal of used household oil. Where there are no facilities to appropriately dispose of hazardous waste there is a risk that such materials will be stored or disposed of inappropriately by members of the public. We advocate for provision of a service for household hazardous waste and used oil, and support the suggested option to provide hazardous waste services.

We note the high percentage of farm waste disposed of on-site within the Waipa region. This waste includes plastics and agrichemicals, and is commonly buried, burned, or kept in bulk storage. These practices can lead to contamination of the environment, with associated health risks. We support the proposed options of targeted rural education programmes. We note that education programmes are more likely to be successful when combined with other actions, such as working with farm communities to identify and remove barriers to appropriate waste disposal. We therefore support actions to facilitate access to farm waste services.

While there are no current operational landfills within Waipa, we understand that there are three closed landfill sites within the district. The 2011-2017 Waste Management and Minimisation Plan included an action for ongoing monitoring of these closed landfills to ensure that resource conditions will be met. No further information is provided around the age or state of these closed landfills in the draft waste assessment. Public health risk from leachate is a potential problem from old landfill sites and an appropriate monitoring and care programme is important to enable assessment of any risk from these sites.

Additionally, there are two cleanfill sites within Waipa. Cleanfill sites are intended to accept only inert wastes, however if this is not monitored and enforced there is the risk of mistaken disposal of other materials that could have an adverse effect on the environment and public health. Contaminants in soils incorrectly dumped at cleanfill sites can have adverse implications for waterways, with potential risk to human health. Insufficient information is provided within the waste assessment to determine what is accepted at these sites, or how they are managed.

We hope that these comments will add to the utility of the Waipa Waste Assessment, and be helpful in developing the Waste Management and Minimisation Plan.

Yours sincerely

Dr Richard Wall
Medical Officer of Health

A.2.0 Glossary of Terms

Term	Definition
Cleanfill	A cleanfill (properly referred to as a Class 4 landfill) is any disposal facility that accepts only cleanfill material. This is defined as material that, when buried, will have no adverse environmental effect on people or the environment.
C&D Waste	Waste generated from the construction or demolition of a building including the preparation and/or clearance of the property or site. This excludes materials such as clay, soil and rock when those materials are associated with infrastructure such as road construction and maintenance, but includes building-related infrastructure.
Diverted Material	Anything that is no longer required for its original purpose and, but for commercial or other waste minimisation activities, would be disposed of or discarded.
Domestic Waste	Waste from domestic activity in households.
ETS	Emissions Trading Scheme
ICI	Industrial, Commercial, Institutional
Landfill	A disposal facility as defined in S.7 of the Waste Minimisation Act 2008, excluding incineration. Includes, by definition in the WMA, only those facilities that accept 'household waste'. Properly referred to as a Class 1 landfill. See Landfill categories and definitions in Appendix A.2.2 below
LGA	Local Government Act 2002
Managed Fill	A disposal site requiring a resource consent to accept well-defined types of non-household waste, e.g. low-level contaminated soils or industrial by-products, such as sewage by-products. Properly referred to as a Class 3 landfill.
MfE	Ministry for the Environment
MRF	Materials Recovery Facility
MSW	Municipal Solid Waste
NZ	New Zealand
NZWS	New Zealand Waste Strategy
Putrescible; garden or greenwaste	Plant based material and other bio-degradable material that can be recovered through composting, digestion or other similar processes.
RRP	Resource Recovery Park
RTS	Refuse Transfer Station
Service Delivery Review	As defined by s17A of the LGA 2002. Councils are required to review the cost-effectiveness of current arrangements for meeting the needs of communities within its district or region for good-quality local infrastructure, local public services, and performance of regulatory functions. A review under subsection (1) must consider options for the governance, funding, and delivery of infrastructure, services, and regulatory functions.
TA	Territorial Authority (a city or district council)
Waste	Means, according to the WMA: a) Anything disposed of or discarded, and

Term	Definition
	b) Includes a type of waste that is defined by its composition or source (for example, organic waste, electronic waste, or construction and demolition waste); and c) To avoid doubt, includes any component or element of diverted material, if the component or element is disposed or or discarded.
WA	Waste Assessment as defined by s51 of the Waste Minimisation Act 2008. A Waste Assessment must be completed whenever a WMMP is reviewed
WMA	Waste Minimisation Act 2008
WMMP	A Waste Management and Minimisation Plan as defined by s43 of the Waste Minimisation Act 2008
WWTP	Wastewater treatment plant

Table 42 Glossary of terms

Landfill definitions (From the 'Technical Guidelines for Disposal to Land' (2016))	
WAC	Waste Acceptance Criteria
Class 1 - Landfill	A Class 1 landfill is a site that accepts municipal solid waste as defined in the Guidelines. A Class 1 landfill generally also accepts C&D waste, some industrial wastes and contaminated soils. Class 1 landfills often use managed fill and clean fill materials they accept, as daily cover. Class 1 landfills require: • a rigorous assessment of siting constraints, considering all factors, but with achieving a high level of containment as a key aim; • engineered environmental protection by way of a liner and leachate collection system, and an appropriate cap, all with appropriate redundancy; and • landfill gas management. A rigorous monitoring and reporting regime is required, along with stringent operational controls. Monitoring of accepted waste materials is required, as is monitoring of sediment runoff, surface water and groundwater quality, leachate quality and quantity, and landfill gas. Waste acceptance criteria comprises: • municipal solid waste; and • for potentially hazardous leachable contaminants, maximum chemical contaminant leachability limits (TCLP) from Module 2 Hazardous Waste Guidelines – Class A4.
Class 2 Landfill	A Class 2 landfill is a site that accepts non-putrescible wastes including C&D wastes, inert industrial wastes, managed fill material and clean fill material as defined in these Guidelines. Although not as strong as Class 1 landfill leachate, Class 2 landfill leachate is typically characterised by mildly acidic pH, and the presence of ammoniacal nitrogen and soluble metals, including heavy metals. Similarly, industrial wastes from some activities may generate leachates with chemical characteristics that are not necessarily organic. Operational controls are required, as are monitoring of accepted waste materials, monitoring of sediment runoff, surface water and groundwater quality, and monitoring of leachate quality and quantity. Waste acceptance criteria comprises: • a list of acceptable materials; and • maximum ancillary biodegradeable materials (e.g. vegetation) to be no more than 5% by volume per load; and • maximum chemical contaminant leachability limits (TCLP) for potentially hazardous leachable contaminants. For Class 2 landfills, leachability testing should be completed to provide assurance that waste materials meet the WAC.

Landfill definitions (From the 'Technical Guidelines for Disposal to Land' (2016))	
Class 3 Landfill – Managed/Controlled Fill	A Class 3 landfill accepts managed fill materials as defined in the Guidelines. 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. Site ownership, location and transport distance are likely to be the predominant siting criteria. However, as contaminated materials (in accordance with specified limits) may be accepted, an environmental site assessment is required in respect of geology, stability, surface hydrology and topography. Monitoring of accepted material is required, as are operational controls, and monitoring of sediment runoff and groundwater. Waste acceptance criteria comprises: • a list of acceptable solid materials; and • maximum incidental or attached biodegradable materials (e.g. vegetation) to be no more than 2% by volume per load; and • maximum chemical contaminant limits. A Class 3 landfill does not include any form of engineered containment. Due to the nature of material received it has the potential to receive wastes that are above soil background levels. The WAC criteria for a Class 3 landfill are therefore the main means of controlling potential adverse effects.
Class 4 Landfill - Cleanfill	Class 4 landfill accepts only clean fill material as defined in the Guidelines. The principal control on contaminant discharges to the environment from Class 4 landfills is the waste acceptance criteria. Stringent siting requirements to protect groundwater and surface water receptors are not required. Practical and commercial considerations such as site ownership, location and transport distance are likely to be the predominant siting criteria, rather than technical criteria. Clean filling can generally take place on the existing natural or altered land without engineered environmental protection or the development of significant site infrastructure. However, surface water controls may be required to manage sediment runoff. Extensive characterisation of local geology and hydrogeology is not usually required. Monitoring of both accepted material and sediment runoff is required, along with operational controls. Waste acceptance criteria comprises: • virgin excavated natural materials (VENM), including soil, clay, gravel and rock; and • maximum incidental inert manufactured materials (e.g. concrete, brick, tiles) to be no more than 5% by volume per load; and • maximum incidental5 or attached biodegradable materials (e.g. vegetation) to be no more than 2% by volume per load; and • maximum chemical contaminant limits are local natural background soil concentrations. Materials disposed to a Class 4 landfill should pose no significant immediate or future risk to human health or the environment.
Note: The Guidelines should be referred to directly for the full criteria and definitions.	

Table 43 Landfill definitions

A.3.0 National Legislative and Policy Context

(a) The New Zealand Waste Strategy 2010

The New Zealand Waste Strategy 2010 provides the Government's strategic direction for waste management and minimisation in New Zealand. This strategy was released in 2010 and replaced the 2002 Waste Strategy.

The New Zealand Waste Strategy has two goals. These are to:

- reduce the harmful effects of waste
- improve the efficiency of resource use.

The strategy's goals provide direction to central and local government, businesses (including the waste industry), and communities on where to focus their efforts to manage waste. The strategy's flexible approach ensures waste management and minimisation activities are appropriate for local situations.

Under section 44 of the Waste Management Act 2008, in preparing their waste management and minimisation plan (WMMP) councils must have regard to the New Zealand Waste Strategy, or any government policy on waste management and minimisation that replaces the strategy. Guidance on how councils may achieve this is provided in section 4.4.3.

A copy of the New Zealand Waste Strategy is available on the Ministry's website at

www.mfe.govt.nz/publications/waste/new-zealand-waste-strategy-reducing-harm-improvingefficiency.

(b) Waste Minimisation Act 2008

The purpose of the Waste Minimisation Act 2008 (WMA) is to encourage waste minimisation and a decrease in waste disposal to protect the environment from harm and obtain environmental, economic, social and cultural benefits.

The WMA introduced tools, including:

- waste management and minimisation plan obligations for territorial authorities
- a waste disposal levy to fund waste minimisation initiatives at local and central government levels
- product stewardship provisions.

Part 4 of the WMA is dedicated to the responsibilities of a council. Councils "must promote effective and efficient waste management and minimisation within its district" (section 42).

Part 4 requires councils to develop and adopt a WMMP. The development of a WMMP in the WMA is a requirement modified from Part 31 of the Local Government Act 1974, but with even greater emphasis on waste minimisation.

To support the implementation of a WMMP, section 56 of the WMA also provides councils the ability to:

- develop bylaws
- regulate the deposit, collection and transportation of wastes
- prescribe charges for waste facilities
- control access to waste facilities
- prohibit the removal of waste intended for recycling.

A number of specific clauses in Part 4 relate to the WMMP process. It is essential that those involved in developing a WMMP read and are familiar with the WMA and Part 4 in particular.

The Waste Minimisation Act 2008 (WMA) provides a regulatory framework for waste minimisation that had previously been based on largely voluntary initiatives and the involvement of territorial authorities under previous legislation, including Local Government Act 1974, Local Government Amendment Act (No 4) 1996, and Local Government Act 2002. The purpose of the WMA is to encourage a reduction in the amount of waste disposed of in New Zealand.

In summary, the WMA:

- Clarifies the roles and responsibilities of territorial authorities with respect to waste minimisation e.g. updating Waste Management and Minimisation Plans (WMMPs) and collecting/administering levy funding for waste minimisation projects.
- Requires that a Territorial Authority promote effective and efficient waste management and minimisation within its district (Section 42).
- Requires that when preparing a WMMP a Territorial Authority must consider the following methods of waste management and minimisation in the following order of importance: Reduction, Reuse, Recycling, Recovery, Treatment and Disposal
- Put a levy on all waste disposed of in a landfill.
- Allows for mandatory and accredited voluntary product stewardship schemes.
- Allows for regulations to be made making it mandatory for certain groups (for example, landfill operators) to report on waste to improve information on waste minimisation.
- Establishes the Waste Advisory Board to give independent advice to the Minister for the Environment on waste minimisation issues.

Various aspects of the Waste Minimisation Act are discussed in more detail below.

(c) Waste Levy

From 1st July 2009 the Waste Levy came in to effect, adding $10 per tonne to the cost of landfill disposal at sites which accept household solid waste. The levy has two purposes, which are set out in the Act:

- to raise revenue for promoting and achieving waste minimisation
- to increase the cost of waste disposal to recognise that disposal imposes costs on the environment, society and the economy.

This levy is collected and managed by the Ministry for the Environment (MfE) who distribute half of the revenue collected to territorial authorities (TA) on a population basis to be spent on promoting or achieving waste minimisation as set out in their WMMPs. The other half is retained by the MfE and managed by them as a central contestable fund for waste minimisation initiatives.

Currently the levy is set at $10/tonne and applies to wastes deposited in landfills accepting household waste. The MfE published a waste disposal levy review in 2014.[47] The review indicates that the levy may be extended in the future:

"The levy was never intended to apply exclusively to household waste, but was applied to landfills that accept household waste as a starting point. Information gathered through the review supports consideration being given to extending levy obligations to additional waste

[47] Ministry for the Environment. 2014. Review of the effectiveness of the waste disposal levy, 2014 in accordance with section 39 of the Waste Minimisation Act 2008. Wellington: Ministry for the Environment

disposal sites, to reduce opportunities for levy avoidance and provide greater incentives for waste minimisation."

(d) Product Stewardship

Under the Waste Minimisation Act 2008, if the Minister for the Environment declares a product to be a priority product, a product stewardship scheme must be developed and accredited to ensure effective reduction, reuse, recycling or recovery of the product and to manage any environmental harm arising from the product when it becomes waste[48]. No Priority Products have been declared as of May 2015.[49]

Further details on current schemes are available on: http://www.mfe.govt.nz/waste/product-stewardship/accredited-voluntary-schemes

(e) Waste Minimisation Fund

The Waste Minimisation Fund has been set up by the Ministry for the Environment to help fund waste minimisation projects and to improve New Zealand's waste minimisation performance through:

- Investment in infrastructure;
- Investment in waste minimisation systems and
- Increasing educational and promotional capacity.

Criteria for the Waste Minimisation Fund have been published:

1. Only waste minimisation projects are eligible for funding. Projects must promote or achieve waste minimisation. Waste minimisation covers the reduction of waste and the reuse, recycling and recovery of waste and diverted material. The scope of the fund includes educational projects that promote waste minimisation activity.
2. Projects must result in new waste minimisation activity, either by implementing new initiatives or a significant expansion in the scope or coverage of existing activities.
3. Funding is not for the ongoing financial support of existing activities, nor is it for the running costs of the existing activities of organisations, individuals, councils or firms.
4. Projects should be for a discrete timeframe of up to three years, after which the project objectives will have been achieved and, where appropriate, the initiative will become self-funding.
5. Funding can be for operational or capital expenditure required to undertake a project.
6. For projects where alternative, more suitable, Government funding streams are available (such as the Sustainable Management Fund, the Contaminated Sites Remediation Fund, or research funding from the Foundation for Research, Science and Technology), applicants should apply to these funding sources before applying to the Waste Minimisation Fund.
7. The applicant must be a legal entity.
8. The fund will not cover the entire cost of the project. Applicants will need part funding from other sources.
9. The minimum grant for feasibility studies will be $10,000.00. The minimum grant for other projects will be $50,000.00.

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[48] Waste Management Act 2008 2(8)

49 MfE, Priority waste streams for product stewardship intervention: Consultation Feedback Publication date: April 2015

Application assessment criteria have also been published by the Ministry.

(f) Local Government Act 2002

The Local Government Act 2002 (LGA) provides the general framework and powers under which New Zealand's democratically elected and accountable local authorities operate.

The LGA contains various provisions that may apply to councils when preparing their WMMPs, including consultation and bylaw provisions. For example, Part 6 of the LGA refers to planning and decision-making requirements to promote accountability between local authorities and their communities, and a long-term focus for the decisions and activities of the local authority. This part includes requirements for information to be included in the long-term plan (LTP), including summary information about the WMMP.

More information on the LGA can be found at ww.dia.govt.nz/better-local-government.

(g) Resource Management Act 1991

The Resource Management Act 1991 (RMA) promotes sustainable management of natural and physical resources. Although it does not specifically define 'waste', the RMA addresses waste management and minimisation activity through controls on the environmental effects of waste management and minimisation activities and facilities through national, regional and local policy, standards, plans and consent procedures. In this role, the RMA exercises considerable influence over facilities for waste disposal and recycling, recovery, treatment and others in terms of the potential impacts of these facilities on the environment.

Under section 30 of the RMA, regional councils are responsible for controlling the discharge of contaminants into or on to land, air or water. These responsibilities are addressed through regional planning and discharge consent requirements. Other regional council responsibilities that may be relevant to waste and recoverable materials facilities include:

- managing the adverse effects of storing, using, disposing of and transporting hazardous wastes
- the dumping of wastes from ships, aircraft and offshore installations into the coastal marine area
- the allocation and use of water.

Under section 31 of the RMA, council responsibility includes controlling the effects of land-use activities that have the potential to create adverse effects on the natural and physical resources of their district. Facilities involved in the disposal, treatment or use of waste or recoverable materials may carry this potential. Permitted, controlled, discretionary, noncomplying and prohibited activities, and their controls, are specified in district planning documents, thereby defining further land-use-related resource consent requirements for waste-related facilities.

In addition, the RMA provides for the development of national policy statements and for the setting of national environmental standards (NES). There is currently one enacted NES that directly influences the management of waste in New Zealand – the Resource Management (National Environmental Standards for Air Quality) Regulations 2004. This NES requires certain landfills (e.g., those with a capacity of more than 1 million tonnes of waste) to collect landfill gases and either flare them or use them as fuel for generating electricity.

Unless exemption criteria are met, the NES for Air Quality also prohibits the lighting of fires and burning of wastes at landfills, the burning of tyres, bitumen burning for road maintenance, burning coated wire or oil, and operating high-temperature hazardous waste incinerators.

These prohibitions aim to protect air quality.

(h) New Zealand Emissions Trading Scheme

The Climate Change Response Act 2002 and associated regulations is the Government's principal response to manage climate change. A key mechanism for this is the New Zealand Emissions Trading Scheme (NZ ETS) The NZ ETS puts a price on greenhouse gas emissions, providing an incentive for people to reduce emissions and plant forests to absorb carbon dioxide. Certain sectors are required to acquire and surrender emission units to account for their direct greenhouse gas emissions or the emissions associated with their products. Landfills that are subject to the waste disposal levy are required to surrender emission units to cover methane emissions generated from landfill. These disposal facilities are required to report the tonnages landfilled annually to calculate emissions.

The NZ ETS was introduced in 2010 and, from 2013, landfills have been required to surrender New Zealand Emissions Units for each tonne of CO_2 (equivalent) that they produce. To date however the impact of the NZETS on disposal prices has been very small. There are a number of reasons for this:

- The global price of carbon crashed during the GFC in 2007-8 and has never recovered. Prior to the crash it was trading at around $20 per tonne. The price has been as low as $2, but since in June 2015 the Government moved to no longer accept international units in NZETS the NZU price has increased markedly (currently sitting at around $18 per tonne)[50].
- The transitional provisions of the Climate Change Response Act, which were extended indefinitely in 2013 (but have now been reviewed), mean that landfills have only had to surrender half the number of units they would be required to otherwise[51]
- Landfills are allowed to apply for 'a methane capture and destruction Unique Emissions Factor (UEF). This means that if landfills have a gas collection system in place and flare or otherwise use the gas (and turn it from Methane into CO_2) they can reduce their liabilities in proportion to how much gas they capture. Up to 90% capture and destruction is allowed to be claimed under the regulations, with large facilities applying for UEF's at the upper end of the range.

Taken together (a low price of carbon, two for one surrender only required, and methane destruction of 80-90%) these mean that the actual cost of compliance with the NZETS has been negligible. Disposal facilities have typically imposed charges (in the order of $5 per tonne) to their customers, but these charges currently reflect mainly the costs of scheme administration, compliance, and hedging against risk rather than the actual cost of carbon.

The way the scheme has been structured to date also results in some inconsistencies in the way it is applied – for example class 2-4 landfills and closed landfills do not have any liabilities under the scheme. Further, the default waste composition (rather than a SWAP) can be used to calculate the theoretical gas production, which means landfill owners have an incentive to import biodegradable waste, which then increases gas production and which can then be captured and offset against ETS liabilities.

Despite these constraints on the impact of the ETS, there may be potential for the picture to change in the future (to a degree). The United Nations Climate Change Conference, (COP21) to be held in Paris France in November – December of 2015, established universal (but non-binding)

[50] https://carbonmatch.co.nz/ accessed 19 July 2016
[51] The two for one transitional provisions are now to be phased out by the Government from 1 January 2017

emissions reduction targets for all the nations of the world. The outcomes could result in growing demand for carbon offsets and hence drive up the price of carbon. The other factor which is likely to come into play is the removal of the transitional provisions from 1 January 2017– meaning that landfills will need to surrender twice the number of NZUs they do currently. Even in a 'worst case' scenario however where the transitional provisions are removed and the price of carbon rises dramatically to say $50 per tonne, the liability for a landfill that is capturing 80% of methane generated would only be $13.10.[52] Therefore while the ETS could have an impact on disposal costs in the medium term this level of impact will likely not be sufficient to drive significant change in the waste sector.

More information is available at www.climatechange.govt.nz/emissions-trading-scheme.

(i) Litter Act 1979

Under the Litter Act it is an offence for any person or body corporate to deposit or leave litter:

- In or on any public place; or
- In or on any private land without the consent of its occupier.

The Act enables Council to appoint Litter Officers with powers to enforce the provisions of the legislation.

The legislative definition of the term "Litter" is wide and includes refuse, rubbish, animal remains, glass, metal, garbage, debris, dirt, filth, rubble, ballast, stones, earth, waste matter or other thing of a like nature.

Any person who commits an offence under the Act is liable to:

- An instant fine of $400 imposed by the issue of an infringement notice; or a fine not exceeding $5,000 in the case of an individual or $20,000 for a body corporate upon conviction in a District Court.
- A term of imprisonment where the litter is of a nature that it may endanger, cause physical injury, disease or infection to any person coming into contact with it.

Under the Litter Act 1979 it is an offence for any person to deposit litter of any kind in a public place, or onto private land without the approval of the owner.

The Litter Act is enforced by territorial authorities, who have the responsibility to monitor litter dumping, act on complaints, and deal with those responsible for litter dumping. Councils reserve the right to prosecute offenders via fines and infringement notices administered by a litter control warden or officer. The maximum fines for littering are $5,000 for a person and $20,000 for a corporation.

Council powers under the Litter Act could be used to address illegal dumping issues that may be included in the scope of a council's waste management and minimisation plan.

(j) Health Act 1956

The Health Act 1956 places obligations on TAs (if required by the Minister of Health) to provide sanitary works for the collection and disposal of refuse, for the purpose of public health protection (Part 2 – Powers and duties of local authorities, section 25). It specifically identifies certain waste management practices as nuisances (S 29) and offensive trades (Third Schedule).

[52] Each tonne of waste is assumed under the NZETS to generate 1.31 tonnes of CO_2 equivalent. Therefore one tonne of waste requires 1.31 carbon offsets, which at $50 a tonne would cost $65.50. 20% of $65.50 (the liability if 80% of methane is captured and destroyed) is $13.10

Section 54 places restrictions on carrying out an offensive trade and requires that the local authority and medical officer of health must give written consent and can impose conditions on the operation. Section 54 only applies where resource consent has not been granted under the RMA. The Health Act enables TAs to raise loans for certain sanitary works and/or to receive government grants and subsidies, where available.[53]

Health Act provisions to remove refuse by local authorities have been repealed.

(k) Hazardous Substances and New Organisms Act 1996 (HSNO Act)

The HSNO Act addresses the management of substances (including their disposal) that pose a significant risk to the environment and/or human health. The Act relates to waste management primarily through controls on the import or manufacture of new hazardous materials and the handling and disposal of hazardous substances.

Depending on the amount of a hazardous substance on site, the HSNO Act sets out requirements for material storage, staff training and certification. These requirements would need to be addressed within operational and health and safety plans for waste facilities. Hazardous substances commonly managed by TAs include used oil, household chemicals, asbestos, agrichemicals, LPG and batteries.

The HSNO Act provides minimum national standards that may apply to the disposal of a hazardous substance. However, under the RMA a regional council or TA may set more stringent controls relating to the use of land for storing, using, disposing of or transporting hazardous substances.[54]

(l) Health and Safety at Work Act 2015

The new Health and Safety at Work Act, passed in September 2015 replaces the Health and Safety in Employment Act 1992. The bulk of the Act is due to come into force from 4 April 2016.

The Health and Safety at Work Act introduces the concept of a Person Conducting a Business or Undertaking, known as a PCBU. The Council will have a role to play as a PCBU for waste services and facilities.

The primary duty of care requires all PCBUs to ensure, so far as is reasonably practicable:

1. the health and safety of workers employed or engaged or caused to be employed or engaged, by the PCBU or those workers who are influenced or directed by the PCBU (for example workers and contractors)
2. that the health and safety of other people is not put at risk from work carried out as part of the conduct of the business or undertaking (for example visitors and customers).

The PCBU's specific obligations, so far as is reasonably practicable:

- providing and maintaining a work environment, plant and systems of work that are without risks to health and safety
- ensuring the safe use, handling and storage of plant, structures and substances
- providing adequate facilities at work for the welfare of workers, including ensuring access to those facilities

[53] From: MfE 2009: Waste Management and Minimisation Planning, Guidance for Territorial Authorities.
[54] MfE 2009: Waste Management and Minimisation Planning, Guidance for Territorial Authorities

- providing information, training, instruction or supervision necessary to protect workers and others from risks to their health and safety
- monitoring the health of workers and the conditions at the workplace for the purpose of preventing illness or injury.

A key feature of the new legislation is that cost should no longer be a major consideration in determining the safest course of action that must be taken.

Health and Safety at Work (Hazardous Substances) Regulations 2016 are due to be released March 2017 and come into effect December 2017. These regulations will place additional controls on the collection, storage, handling and transport of hazardous waste. If a council managed household hazardous waste facility or service is established, they will need to comply with these regulations.

(m) Other legislation

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

- Hazardous Substances and New Organisms Act 1996
- Biosecurity Act 1993
- Radiation Protection Act 1965
- Ozone Layer Protection Act 1996
- Agricultural Chemicals and Veterinary Medicines Act 1997.

For full text copies of the legislation listed above see www.legislation.govt.nz.

A.4.0 International commitments

New Zealand is party to international agreements that have an influence on the requirements of our domestic legislation for waste minimisation and disposal. Some key agreements are the:

- Montreal Protocol
- Basel Convention
- Stockholm Convention
- Waigani Convention
- Minamata Convention.

More information on these international agreements can be found on the Ministry's website at www.mfe.govt.nz/more/international-environmental-agreements.

A.5.0 Site Selection Criteria for a Community Recycling Centre in Waipa

Community Recycling Centres have been a part of New Zealand's resource recovery sector for over 25 years and one of the key success factors is the ability for model to be applied to a wide variety of sites. For example, there are CRCs operating from converted transfer stations, industrial warehouses, high density residential areas, rural sites as well as from sites without water or power.
This flexibility means establishing exactly what it is that makes a site suitable is somewhat difficult. With this in mind, any site criteria should be held lightly and considered as a set of guiding principles only and not an absolute list of requirements.

The criteria developed for a Waipa CRC assumes the facility will; operate as a social enterprise, be focused on providing services to primarily residential customers, maximise waste diversion, job creation and financial sustainability, with the majority of processing occurring offsite (with the exception of some baling of recyclable commodities).

Possible services provided by the CRC may include:

- Reuse shop
- Reusables drop off
- Recyclable commodities drop off
- Green waste drop off
- Hazardous waste drop off
- Education programs

Minimum criteria for a Community Recycling Centre:

Baseline criteria • >0.3ha site footprint • Close proximity to major roads • Provision of onsite parking • Planning status / land use classification
Exclusion criteria • Land parcel too small or large • Too far from major roads • Zoning • Coastal inundation and flood prone areas • Outstanding natural features • Mana whenua significant sites • Heritage sites
Non-essential but preferable features • Proximity to supporting waste infrastructure • At least one enclosed building preferably 200m2 or larger • Ability to have separate road entry and exit points • Large paved areas • Fenced or otherwise enclosed

Table 44 Criteria for a CRC site

A.6.0 Table of Tables

A.7.0 Table of Figures

TE AWAMUTU - HEAD OFFICE
101 Bank Street, Private Bag 2402, Te Awamutu Ph 07 872 0030

CAMBRIDGE - SERVICE CENTRE
23 Wilson Street, Cambridge Ph 07 823 3800