

WASTE MANAGEMENT AND MINIMISATION PLAN 2018 - 2024

**THIS PLAN WAS ADOPTED AT A MEETING OF THE OTOROHANGA DISTRICT
COUNCIL ON 24 JULY 2018**



Mayor

04/08/2018
Date



Chief Executive

24/7/2018.
Date

CONTENTS

	<u>Page No.</u>
1. Introduction.....	1
1.1 Purpose of the Plan.....	1
1.2 Previous and Current Solid Waste Activities of Council	2
1.3 WMMP Scope	3
2. Vision, Goals, Objectives and Targets	3
2.1 Council Vision	3
2.2 Objectives and Targets – Solid Waste Management	4
3. Application of Waste Management Hierarchy	4
3.1 Reduce	5
3.2 Reuse	5
3.3 Recycle	6
3.4 Recovery.....	7
3.5 Residue Disposal	9
4. Council Services Cost & Funding.....	11
5. Waste Minimisation Performance and Key Issues	12
5.1 Waste Minimisation Performance.....	12
5.2 Key Issues and Potential Responses	12
Appendix A - Waste Assessment 2018.....	17

1. Introduction

Otorohanga District Council serves an area of 1976 square kilometres (197,600 hectares) comprising a strip of land approximately 30 kilometres wide that extends from the shores of the Tasman sea in the west to the Waikato River in the east. Falling within the boundaries of the Waikato Regional Council, the District is a varied area containing diverse topography, productive farmland, extensive native vegetation, ocean beaches and protected harbours. It is a District with strong historical and cultural associations, dating back to the arrival of the Tainui waka in the Kawhia harbour.

The Otorohanga District is primarily rural, with main urban centres at Otorohanga and Kawhia. The total permanently resident population of the district is approximately 10,000, of which approximately 35% are in the main urban centres.

Council's solid waste activities comprise strategic planning, asset management and administration of contracts for delivery of refuse disposal and recycling services.

Council does not own substantial assets in relation to this activity, with asset ownership mainly limited to recycling centres in Otorohanga and Kawhia.

Council endeavours to ensure that efficient refuse and recycling services are available on a cost effective and environmentally responsible basis for all properties within the Otorohanga, Kawhia and Aotea Communities, and that rural residents can access recycling services in the urban centres if they wish to do so.

Council is also committed to working towards a progressive reduction of the quantity of solid waste going to landfill from the District in accordance with this Waste Minimisation and Management Plan.

1.1 Purpose of the Plan

The Waste Minimisation Act 2008 (WMA) came into effect on 25 September 2008 and represents Government's approach to managing and minimising waste. The WMA recognises the need to focus efforts higher in the waste hierarchy in terms of reducing and recovering waste earlier in its life cycle, shifting focus away from treatment and disposal. Government's three core goals, as stated in the NZ Waste Strategy, are reflected in the purpose of the Act.

- Protect public health;
- Reducing the harmful effects of waste; and
- Improving the efficiency of resource use.

The WMA requires each local authority to adopt a Waste Management and Minimisation Plan (WMMP) that provides the following:

1. Objectives and policies for achieving effective and efficient waste management and minimisation within the district:
2. Methods for achieving effective and efficient waste management and minimisation within the district, including:-
 - collection, recovery, recycling, treatment, and disposal services to meet current and future waste management and minimisation needs; and
 - any waste management and minimisation facilities provided, or to be provided, by the territorial authority; and

- any waste management and minimisation activities, including any educational or public awareness activities, provided, or to be provided, by the territorial authority;
- how implementing the plan is to be funded; and
- if the territorial authority wishes to make grants or advances of money, the framework for doing so.

The WMA also requires that In preparing, amending, or revoking a WMMP, a territorial authority must consider the all of the methods available for waste management and minimisation, ie reduction, reuse, recycling, recovery, treatment and disposal;

Furthermore the WMMP must:

- Ensure that the collection, transport, and disposal of waste does not, or is not likely to, cause a nuisance; and
- have regard to the New Zealand Waste Strategy, or any government policy on waste management and minimisation that replaces the strategy; and
- have regard to a Waste Assessment that describes the District's current solid waste services, forecasts demand for those services, states the authorities intended role in meeting those demands and considers options available to meet those demands

WMMPs have to be reviewed at intervals of not more than 6 years, with public consultation on the draft plan

1.2 Previous and Current Solid Waste Activities of Council

ODC's waste management activities significantly changed in the 1990s responding to greater environmental awareness and the introduction of the Resource Management Act.

During this decade Council ceased to operate landfills and introduced recycling services, with a first formal Waste Management Strategy adopted in 1998.

A period of strong focus on waste minimisation and 'Zero Waste' objectives occurred in the early 2000s, and in 2002 Council adopted a revised WMS and 'Zero Waste' Policy and set an ambitious objective of achieving zero waste to landfill from the District by 2015.

Various initiatives towards this objective were conducted in the early 2000s, including:

- Development of recycling centres with re-use shops
- Exploring potential composting of food waste
- Employment of a 'zero waste' educator
- Subsidised scrap car recycling etc

These initiatives had varying degrees of success, but their pursuit did create much improved understanding of the opportunities and challenges in respect of waste minimisation, and this was reflected in a somewhat more pragmatic approach to waste minimisation being reflected in the first WMMP that was produced in 2012.

This plan is now due for review, and this document is presented for that purpose. The presented Plan is intended to cover the period 1 July 2018 to 30 June 2024 and will be reviewed no later than six years after the last review, in accordance with section 50 of the Waste Minimisation Act.

1.3 WMMP Scope

This WMMP focuses on solid and hazardous waste produced in the Otorohanga District. It does not include liquid waste (sewage), bulk liquid hazardous waste, or bio-solids (sewage sludge).

Waste types considered in this plan are:

- Materials that are destined for landfill;
- Organic materials including greenwaste;
- Material able to be recycled or reused including metals (ferrous and non ferrous, plastics, paper, cardboard, textiles, glass and other recycling materials presented by the private sector;
- Hazardous materials including, batteries, electronic waste and other materials needing special treatment before disposal.

Waste is recognised as coming from a number of sources including:

- Kerbside and on-site collection from residential, commercial and rural properties;
- Construction and demolition activities;
- Illegal dumping;
- Street Litter collections.

Details of the waste generation, infrastructure and services in the District, together with an assessment of the previous 2012-18 WMMP, are provided in the document *Otorohanga District Council Waste Assessment (February 2018)* that was produced by Sandra Murray of Zenzic Consulting.

The Waste Assessment is a key document that should be read in conjunction with this WMMP, and hence this WMMP does not attempt to duplicate its full content.

2. Vision, Goals, Objectives and Targets

2.1 Council Vision

Council's Vision for the district is to be a place 'where Kiwis can fly' – a strong energetic and supportive community where residents have the opportunity to achieve their aspirations.

Council also endeavours towards delivering the following outcomes, that have been previously indicated to be desired by the community:

- Otorohanga district is a safe place in which to live;
- Ensure services and facilities meet the needs of the community;
- Provide for the unique history and culture of the district;
- Promote the local economy and opportunities for sustainable economic development;
- Manage the natural and physical environment in a sustainable manner;
- Foster an involved and engaged community;
- Protect the special character of our harbours and their catchments;
- Recognise the importance of the district's rural character.

Council's considers that its solid waste management activities contribute to outcomes 1,2,5,6 and 7 above.

2.2 Objectives and Targets – Solid Waste Management

Solid waste management services are provided to the urban communities because there is considered to be an expectation amongst urban residents that Council will do so, and it is believed that a failure to do so may contribute towards uncontrolled refuse dumping, burning and potentially unsanitary conditions in these communities.

The Health Act 1956 requires Council to provide this activity as ‘sanitary works’ to ensure that the public suffers no adverse affects due to the accumulation of refuse. This requirement is particular strong in urban communities where relatively small property sizes and close proximity of neighbours has potential for dumped refuse to cause ill health.

Council also recognises that the generation and non-productive disposal of active (decomposing wastes) is likely to have adverse environmental effects and that Council therefore should, to the extent that it is reasonably able, support, encourage or facilitate the reduction of such disposal.

The objectives of this Waste Management and Minimisation Plan are therefore:

- 1) To promote the concept of waste minimisation, and to encourage individuals, households and businesses to take responsibility for their waste, and to provide leadership, information and support to all groups.
- 2) To actively encourage community participation in all waste reduction activities.
- 3) To target specific components of the waste stream in all sectors of the community and achieve optimum reduction, re-use and recycling of them.
- 4) To understand our waste stream to enable measurement of changes and the effectiveness of reduction initiatives.
- 5) To progressively extend the range of waste stream components targeted and facilitate their reduction, re-use or diversion to recycling.
- 6) To ensure that the costs of waste disposal are progressively apportioned to those who generate the waste.

Council does not hold a monopoly in respect of solid waste services in the District, and various private contractors provide both refuse disposal and (to a lesser extent) recycling services, and rural property owners frequently rely on ‘on-site’ methods of solid waste disposal. This creates challenges in giving effect to some of these objectives.

The recently completed Waste Assessment that was prepared in support of this Plan (and which is attached as an Appendix) has highlighted the lack of reliability of the information currently available to Council in respect of waste and recycling quantities.

This, together with the dynamic factors affecting waste generation and diversion which are outside of the control of Council, makes it difficult for Council to set specific quantifiable waste minimisation targets at this time.

3. Application of Waste Management Hierarchy

The internationally recognised hierarchy of waste management uses the 5Rs – Reduce, Reuse, Recycle, Recover, Residue Disposal descending order of priority.

This approach to waste management is recognised in the Local Government Amendment Act 1996 by inclusion in Section 557.

Councils are directed by the WMA to consider these five methods of waste management in priority order.

The following sections consider each of these methods, and their current and potential future application by ODC.

3.1 Reduce – the highest priority and the heart of zero waste. It refers to avoiding making waste in the first place.

It is achieved domestically by such measures as selective purchasing – buying goods, which will last, or are designed to be repaired, by buying goods in bulk rather than in small containers, not buying one-trip disposable items etc. Far from requiring a new attitude to resources, it necessitates a return to a previous philosophy.

ODC Application

Whilst reduction is the best possible response, ODC's ability to enable this is limited.

We live in a consumption focussed world, where individuals are under constant pressure from society, producers and marketers to obtain increasing amounts of goods and services, often with little regard for associated adverse environmental effects of associated waste.

Changing the behaviours of people away from waste generation in the face of such pressures is difficult and is likely to only be effectively achieved through strong actions of central government, such as very substantially raising the cost of disposal for consumers.

The only significant roles that it is believed that ODC might potentially be able to play in enabling waste reduction are:

- i. supporting education initiatives for younger children that may help embed a waste minimisation mentality in future generations; and
- ii. advocating to central government for it to take a more active role in driving it, for example through a substantial increase of the landfill levy.

3.2 Reuse – the second priority, is the further use of products in their existing form for their original or similar purpose.

Bottle return schemes and second chance shops are examples where this can be applied to domestic consumption, whilst multiple use of pallets and containers can enable waste reduction in commercial enterprises. The national organisation Agrecovery Rural Recycling Programme enables re-use of silage wrap, plastic containers, unwanted and expired chemicals and garden plastics.

ODC Application

ODC's ability to enable re-use is again limited, with substantial influence again lying with producers or central government, through initiatives such as introduction of mandatory product stewardship, where such a party accepts responsibility for reducing a products environmental impact, which can in turn drive approaches such as re-use.

Council's only realistic opportunity to help enable re-use is through operation or support of second-chance shops or facilities, and there are a number of significant

limitations as to what is likely to be achievable, associated with public perceptions, the small size of our communities and unfavourable economics.

It is however unlikely that Council operated or supported reuse services will ever result in a truly significant diversion of district waste from landfill, and a more effective approach may be Council more actively advocating for central government to take a role in requiring mandatory product stewardship.

- 3.3 Recycle** – this aspect has received most attention, and is clearly the focus of most community action, but it is only third in priority after reduction and re-use. It reduces the processing of materials to create new products, rather than using virgin materials. As such it is a valuable method of diversion for the waste stream, but is in many cases requiring on-going financial support to make it viable.

Many materials cannot be endlessly recycled; there is a general deterioration of material quality through repeated cycles. It is difficult to reliably track what happens to recyclable materials that are exported overseas, with the possibility of associated negative environmental outcomes in those countries

It is arguable that recycling eases the conscience of consumers, encouraging them to consume more, in turn generating more waste

ODC Application

Whilst it is by no means a perfect means of waste minimisation, recycling services are likely to remain the overwhelmingly dominant method of waste minimisation offered by ODC.

Currently Council offers kerbside recycling services in the Otorohanga, Kawhia and Aotea urban communities, operates manned recycling centres in Otorohanga and Kawhia, and unmanned rural recycling centres at Arohena, Korakonui, Ngutunui and Maihihi. Council also provides a limited numbers of kerbside recycling bins in the two main urban communities.

The range of materials accepted for free recycling through all these services are type 1 and 2 plastics, glass bottles and jars, steel and aluminium cans and paper and cardboard. Collected glass is taken to Visy glass for processing; plastic, steel tins and aluminum cans are currently delivered co-mingled to the Taupo branch of ESL whilst paper and cardboard are carted to Hamilton to make cardboard through CHH's paper mills.

The Otorohanga and Kawhia Recycling Centres also accept a range of other specific items for recycling on a charged basis, such as whiteware, electronic items, batteries and tyres, but the volumes of such materials received is very low. Whilst the quantities of these charged items is insignificant in the context of overall waste generation within the District, the provision of these services is however considered to send out a useful message that there are alternatives to landfill disposal.

In accordance with the objectives stated in section 2.2 it continues to be the desire of Council to progressively extend to scope of recycling services available in the District to the extent that is reasonably efficient and affordable for the community.

A district-wide level of service survey was conducted across the district in 2014 in which ratepayers were asked to indicate their preferences from a range of level of service options with differing costs to users. Amongst these were options to further

increase the number of rural recycling centres, and to provide kerbside recycling to all district residents, including those in the rural areas.

These two options found received only very limited support in the survey (16% and 6% respectively) and as such there is not considered to be a community mandate for such initiatives at this time.

The rural recycling centres have been progressively established using operating funding from Council's received income from the Landfill Levy, and if the amount of such funding received was significantly increased it is however likely that some of this additional funding would be utilised to close the remaining coverage gaps for these facilities, as shown in the following figure.

The likely target location for a further rural recycling centre would be in the vicinity of Te Kawa Road.

It is currently estimated that more than 75% of the population of the district is within the indicated catchments of the existing recycling centres, and it is believed that commissioning of a further facility at Te Kawa Road would increase this figure to close to 90%.

The quantities of material collected by Council's recycling services, as indicated by the recent Waste Assessment are considered to be very high on a per-capita basis, suggesting that these services are being extremely well utilised.

The economics of material recycling are however dynamic, with prices for recycled products volatile, particularly in the current environment where previous overseas markets for these products being restricted, notably in China.

In the past the value of collected recycled products has often largely covered the cost of their collection, but in the future this may become the exception rather than the rule, particularly for the less readily recycled materials.

That some recycled materials may have no value – or indeed a negative value, as a party may have to be paid to take them away – has the potential to create further challenges in ensuring that these materials are indeed beneficially recycled, and are not instead dumped.

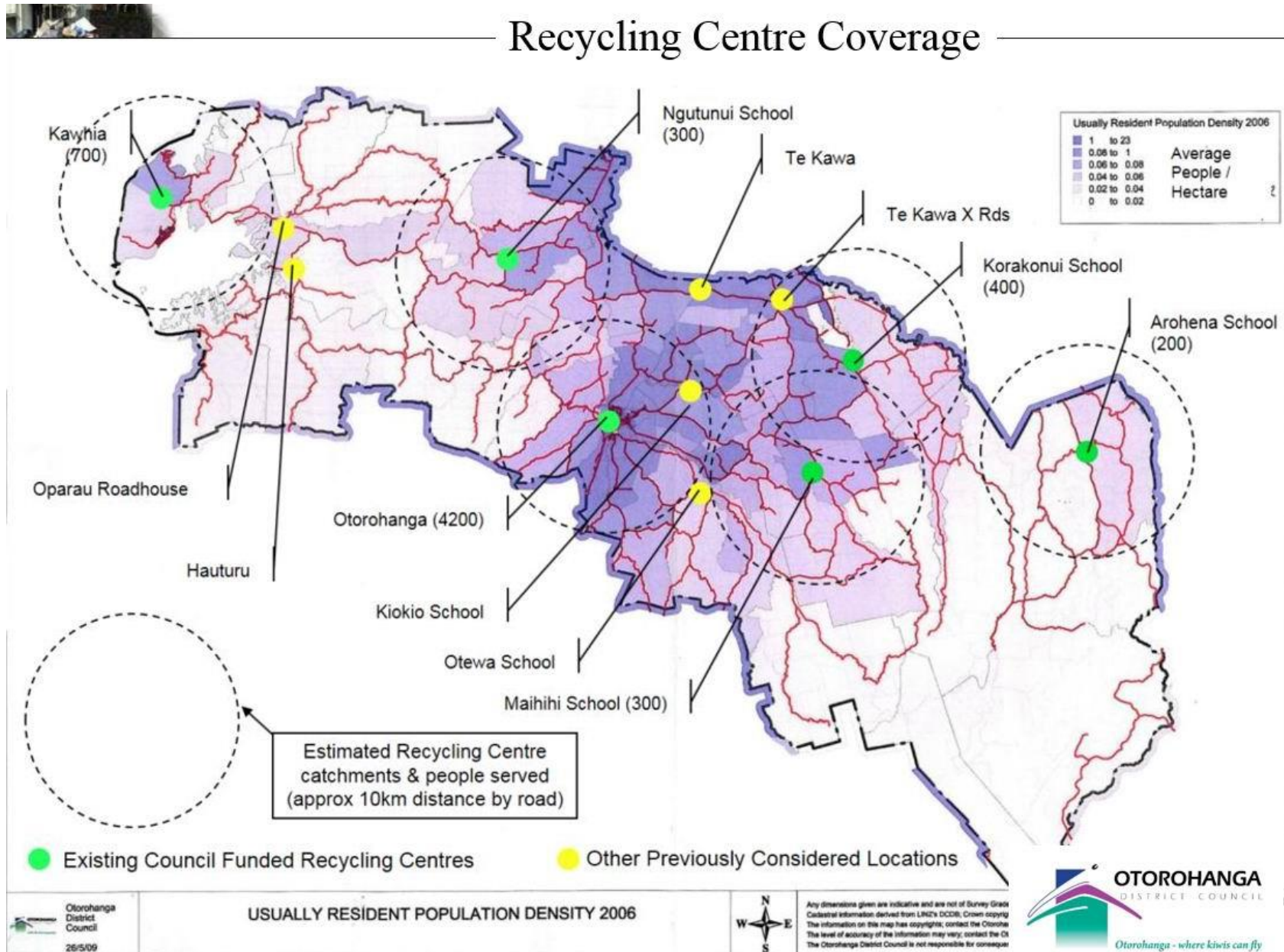
It is therefore considered important that ODC maximises the value of its expenditure on recycling, and for this reason the range of materials that are accepted for recycling is considered unlikely to be increased in the near future, and indeed it may be necessary to more effectively control material receipt.

- 3.4 Recovery** – there is a lot of biomass, energy and materials in waste which can be recovered e.g. composting and worm-farming recover nutrients.

ODC Application

Currently the only element of recovery within the waste management services offered by ODC is the composting of green waste collected at the Otorohanga and Kawhia recycling centres. Composting is conducted by Council's solid waste contractor outside of the Otorohanga District.

Recycling Centre Coverage



Council has given previous consideration to the possibility of applying recovery to the putrescible components of the household waste that currently makes up a substantial proportion of the refuse collected at kerbside, and explored the potential of establishing a pilot project for this purpose in Kawhia, but found that there were substantial operational challenges and barriers present. As such Council does not currently propose to further explore this.

A less direct way in which Council could encourage recovery or recycling is through the implementation of a waste bylaw under section 56 of the WMA that would prevent the deposit of certain items in the district, such as used tyres, perhaps making it more likely that they would be directed towards a recovery process.

3.5 Residue Disposal – the disposal of the declining volume of waste created, which cannot currently be diverted from the waste stream.

ODC Application

As stated in section 2.2 Council provides collection services for residual waste for in its urban communities because of a community expectation for it to do so, and a failure to do so could result in adverse outcomes in respect of public health.

Council currently provides a kerbside collection service for household refuse in the Otorohanga, Kawhia and Aotea urban communities, and provides limited bulk refuse acceptance services at the Otorohanga and Kawhia Recycling Centres. Street litter bins are also provided in Otorohanga and Kawhia.

All collected refuse is transported to the Te Kuiti Landfill for disposal.

These services, like Council's other solid waste services, are currently provided under contract by EnviroWaste Ltd. This Contractor has provided Council with very reliable services over a long period with only a very limited level of contract management input required from Council staff.

In accordance with the objectives stated in section 2.2 Council considers it important that the residual waste collection services that it provides do not inappropriately encourage the creation of such waste, and that the costs of waste disposal are progressively apportioned to those who generate the waste. For this reason heavy financial subsidy of refuse disposal activities by general ratepayers is not considered appropriate.

Council's refuse services are intended for the disposal of the relatively small quantities of residual waste that remain after other waste minimisation methods (including re-use, recycling and resource recovery) have been employed.

The refuse collection services provided by Council are also only intended to meet the needs of residents who might not otherwise have ready access to other affordable means of waste disposal, and for whom the failure to have such a service could result in significant adverse health or environmental outcomes for themselves or the broader community.

Council refuse services are therefore not orientated towards the needs of business, for whom other waste disposal options, including other commercial services from providers such as Envirowaste, are considered to exist.

The Te Kuiti Landfill accepts a broad range of wastes, including hazardous or contaminated materials, and as such this is the likely destination of most residual waste from the Otorohanga District.

A present Council refuse services are also not orientated the needs of rural residents, since it is considered that many of these are either operating as businesses, or otherwise have residual waste disposal options available to them that do not significantly compromise health or environmental outcomes for the broader community.

Because it does not wish to encourage the generation of waste Council will not provide services such as the periodic kerbside collections of bulk inorganic waste, or large capacity wheelie bins for refuse, since such services do not incentive waste minimisation.

4. Council Services Cost & Funding

The current total cost of all Council's solid waste services (excluding litter control, which is considered outside of the scope of the WMMP) is in the order of \$350,000 per annum.

Of this the large majority (around 80%) is paid to the current Council solid waste contractor, Envirowaste. A breakdown of payments to Envirowaste is provided in the following table.

The existing contract is considered to provide excellent value for money, though Council is conscious that EnviroWaste is potentially in a relatively strong commercial position with limited effective local competition, and as such there could be potential for future increases in contract prices.

This potential for increased cost of services is further heightened by the unfavourable changes in the markets for recyclable materials referenced in section 3.3, which have the potential to not only prevent Council extending its range of recyclable products but also to increase the cost of existing recycling.

This may in turn place an economic constraint on other potential extensions of Council's waste minimisation activities.

The only significant Council owned assets in relation to solid waste management are Recycling Centres in Otorohanga and Kawhia, and street litter and recycling bins.

Both Recycling Centres are less than 15 years old and consist only of developed land and simple buildings, with all required ancillary equipment provided by a Contractor. As such the asset management responsibilities of Council in relation to these sites, and in general, are expected to be relatively limited, with only minor maintenance works expected to be required over the next 10 years. As such the costs associated with these assets are relatively small.

ODC Solid Waste Services – Contract Costs and User Pays Portions

	Contract Monthly Cost	Contract Annual Cost	Annual Tonnes	Estimated ODC Payment*/tonne	Estimated User Pays/tonne	Estimated Total Revenue/tonne	Estimated % User Pays
Otorohanga Kerbside Refuse	\$1,622	\$19,464	263	\$74	\$350	\$424	83%
Kawhia Kerbside Refuse	\$1,250	\$15,000	68	\$221	\$350	\$571	61%
Street Bin Refuse	\$3,825	\$45,900	13	\$3,489	\$0	\$3,489	0%
Otorohanga Recycling centre refuse	\$199	\$2,388	NA	NA	NA	NA	NA
Kawhia Recycling Centre refuse	\$1,572	\$18,867	100	\$189	\$75	\$264	28%
Kerbside Recycling	\$4,655	\$55,860	393	\$142	\$0	\$142	0%
Recycling Centre Recycling	\$7,079	\$84,943	2697	\$31	NA	NA	NA
Recycling - Street Bins	\$359	\$4,308	11	\$392	\$0	\$392	0%
Greenwaste	\$2,258	\$27,092	NA	NA	\$120	NA	NA
Total	\$22,819	\$273,823		* Includes landfill levy revenue			Assumptions

Funding of Council portions of cost for services in Otorohanga and Kawhia is largely through rates targeted to those communities, with lesser funding from the remainder of the district as a whole. Services for the remainder of the District are funded from general rates with a significant degree of support from the Landfill Levy income.

As can be seen from the previous table there is a degree of apparent Council subsidisation of its refuse services, which is greatest in Kawhia. This reflects a previous view that there is perhaps greater risk associated with inappropriate disposal of refuse from that community if residents were required to directly meet all of the associated costs.

Whether this view remains valid is perhaps worthy of further discussion once more waste stream data has been gathered.

Overall costs of solid waste services are however still considered to be low.

5. Waste Minimisation Performance and Key Issues

5.1 Waste Minimisation Performance

Information on the waste stream within the District is provided in the Waste Assessment in Appendix 1.

It is however recognised that the quality of much of this information is not high. Council does not have accurate up-to-date information available on the tonnage of material being sent from the district to landfill, due to this activity being undertaken by private contractors with limited reporting requirements in place.

The information available on the Council operated waste services suggests that a relatively high level of waste diversion from landfill is occurring in these services, but once again there are features of this data that appear to be curious, and which suggest that it may not be reliable.

As such it is difficult to be confident on either the level of waste diversion being achieved in the district, or how the level of diversion has changed over time.

The acquisition of more comprehensive and reliable waste stream data is therefore a priority for the future.

5.2 Key Issues & Potential Responses

It is believed that a period is being entered when the focus should be on consolidating existing practical solid waste diversion activities and exploring opportunities to influence other parties (in particular central government) to do more to facilitate waste minimisation, rather than attempting to expand the services provided by ODC.

It is therefore proposed that the following activities proposed in the previous WMMP continue to be pursued:

What	How
Schools	Support the Paper 4Trees programme in primary and secondary schools within the district
	Support the Enviroschools programme in primary schools within the district
Community	Update Council's website with useful recycling information and links to complementary websites
Urban residents	Continue with the present kerbside collection of waste and recyclables – glass bottles and jars; plastic bottles (1&2); aluminium and steel cans; paper and cardboard.
	Promote an awareness of waste avoidance methods and effective participation in recycling, by the distribution of promotional materials
Recyclable Materials	Retain existing range of recyclable materials being collected
	Support recycling initiatives / opportunities as they arise
Recycling facilities	Improve current facilities as required
Rural residents	Potential operation of additional recycling centres at rural schools or relevant community centres if can be funded by Landfill Levy income
District Council	Support and promote Council's WMMP in all operations
	Specifications in contract documents to require appropriate management of waste
Business	Encourage all businesses to provide in-house recycling facilities via the Otorohanga Business Association

The Waste Assessment and other Council consideration has however suggested that the following issues may also need to be addressed by the 2018-24 WMMP.

- Insufficient systems in place for obtaining waste data from private operators in the District
- Increasing quantity of waste to landfill per capita
- Increasing volumes of recycling and types of recyclables to manage with potential for national and international events to adversely impact the cost of recycling services
- Insufficient leadership from central government to address national waste issues
- Opportunities for improved sub-regional, regional and national collaboration to achieve reduction and minimisation of waste
- Potential for greater community partnership, engagement in order to improve public understanding of waste issues
- Insufficient breadth of resource recovery and re-use options in the District to meet potential future demand
- Potential for improved services targeting the rural sector

A range of potential actions intended to address these issues are presented in the following tables, with suggested associated priorities ranging from 1 (highest) to 3.

It is however important to note that all of these potential actions would to some greater or lesser degree result in increased costs to Council. In many cases these increases may only be associated with a Council staff member investing time in that activity, but these costs are nevertheless very real, particularly in the current environment where staff are already very fully utilised in their existing duties.

Indeed it is believed that the reality is that to make significant progress on many of these initiatives a suitable additional staff resource – perhaps a part-time Waste Minimisation Officer – would be required. The cost of such an additional role may not necessarily be great, but the funding for it would have to be obtained in an environment where there may already be significantly increased costs to maintain the status quo in respect of services such as recycling.

It is believed that the establishment of such a role is best not considered until the implication of recent changes in the markets for recycled materials have had the opportunity to flow through to Council's solid waste contract, and any resultant increase in cost is known. The establishment of such a role might also be presented to the community as a level of service option in the next district-wide level of service survey, which is likely to be undertaken in 2019/20.

For this reason the establishment of such a role is not specifically identified as a potential action, but the possibility of such is referenced in relation to a number of other potential actions

Potential Actions - Data and Regulation

Option	Comments	Councils' Role	Proposed Priority / Target Completion Date
Implement regionally consistent Solid Waste Bylaw and waste licensing system	Would enable better understanding of the waste flows in the district, and opportunities arising from that. Control over undesirable dumping in District, such as tyres	Councils would develop and enforce the bylaw; monitor and report on waste quantities and outcomes. There are opportunities to implement waste licencing as part of sub-regional co-operation to reduce costs and impact on providers.	1: End of 2018/19 FY if possible (reliant on others)
Audit waste stream at least once every 6 years.	Enables better understanding of waste flows and alignment with regional / national data	Plan for and action a SWAP analysis at least once every 6 years.	1: End of 2018/19 FY
Implement National Waste Data Framework and regional collation of data	Better enables comparison with other districts.	Council 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	2: Not seen as high priority but may naturally fit with bylaw development
Develop Event Waste Guidelines and clarify consenting requirements for Event Waste; potentially as part of a sub-regional collaboration.	Little likely effect on waste stream but could have value as an educational /promotional initiative	Regulatory Education and partnerships Opportunities for regional or sub-regional collaboration to maximise impact Staff time	3: No date set

Improving our understanding of waste flows in the District is considered to be particularly important at this time.

Potential Actions: Collection Services & Procurement

Option	Council's Role	Comments	Proposed Priority / Target Completion Date
Monitor international and national trends and review waste services regularly to ensure viability of recycling services	<i>Maintain awareness of recycling market conditions and other waste issues and effectively communicate the implications of these (ie potential changes to services) to the community</i>	Requires increased engagement of Council staff in broader issues relating to waste management, creates additional workload, but considered necessary at this time.	1: Ongoing
Councils enter into shared service or joint procurement arrangements where there is mutual benefit	Maintain contact with neighbouring authorities to explore collaborative partnerships on various strategic or operational projects Where services are to be shared there will be a need to align service provision and contract dates	Potential to build upon existing inter-council alignment through common contractor. Considered unlikely to yield cost savings but could provide benefits of service uniformity.	3: Ongoing
Investigate and implement community based waste diversion services	<i>Investigate / explore / be open to alternative procurement practices.</i>	<i>Previous experience has not been particularly encouraging, small scale of local activities has been disadvantageous.</i>	3: Ongoing
Support programmes to avoid and reduce food waste; and increase composting and associated behaviours	<i>Possible promotion of home based composting / worm farming</i>	<i>Centralised service suspected not to be viable, but Council could promote other domestic recovery options.</i>	1: Distribution of promotional material before end of 2018/19 FY

Potential Actions: Infrastructure

Option	Council's Role	Comments	Proposed Priority / Target Completion Date
Investigate and, where applicable, facilitate the development of additional resource recovery services at existing or new facilities. Investigations and improvements could be undertaken in partnership with community.	<i>Identify proposed enhancement and provide associated operation and funding models.</i>	A possible next target for service expansion might be a rural recycling centre in the Te Kawa Road area.	2: But likely to be dependent on additional revenue from Landfill Levy becoming available

Potential Actions: Influence and Partnerships

Option	Council's Role	Comments	Proposed Priority / Target Completion Date
Engage in regional cooperation including appointing a Regional Coordinator to assist with joint projects. Each Council responsible for own jurisdiction.	Continue to develop strategic documents through a joint committee. Funding for agreed projects and initiatives. Support Coordinator proposal if it arises from others.	Possibly worthwhile to advance regional bylaw etc; potentially a more affordable alternative to in-house Waste Minimisation Officer	2: Support if proposal put forward by joint committee or other Councils
Identify and support community and business champions in waste reduction and avoidance.	Staff time and potentially some funding identified on a case by case basis.	Little evidence of the passion necessary for success.	3: No date set
Establish a Council / community Zero Waste Working Group (or similar) to assist council to encourage the communities towards becoming a 'zero waste communities'.	Staff time and potentially some funding identified on a case by case basis.	Existed previously but enthusiasm dwindled. Perhaps difficult to reignite passion	2: Perhaps reconsider if a Waste Minimisation Officer appointed
Strongly advocate for effective product stewardship and regulation under section 2 of the WMA2008 (including a container deposit scheme) and support independent organisations advocating for similar outcomes	Strongly advocate to Government for regulation and product stewardship Work with other councils to call for product stewardship and regulation Work with DHB's and others to establish and implement product take back schemes for medical waste and other materials Support NGO's and other organisations acting to achieve producer responsibility for end of life products	Appears the obvious route for further substantial progress	1: Ongoing as the opportunities arise
Collaborate with Mana Whenua, community groups and private sector to investigate and (if suitable) implement opportunities to enhance economic development through resource recovery	Council to facilitate only if expressions of interest shown from outside. Council funding & staff support may be required for both establishment and ongoing support of opportunities.	Has been explored previously but lack of potential economies of scale and other factors constrained viability	3: Concept attractive but requires opportunity identification / initiation by others
Continue existing education programmes including application of the Regional Waste Education Strategy and identify areas where an extension of services would be beneficial.	Council would continue to fund and coordinate education programmes	Very little recent educational effort, even modest activity would be a significant improvement, but resourcing needs to be considered	1: Immediate attention desirable if resources permit.
More regular engagement with Councillors on matters relating to solid waste management and minimisation	Staff to provide routine reports to Council on solid waste, including	In recent times there has been little or no such engagement	1: Suggest formal reports to Council at least every 12 months, commencing October 2018

APPENDIX A WASTE ASSESSMENT 2018





Otorohanga District Council: Waste Assessment

February 2018



Sandra Murray
ZENZIC CONSULTING

Prepared by:

Sandra Murray
Zenzic Consulting
sandra@zenzic.nz
Mobile: 021 890 629

Approved by:

David McKinley
Services Manager
Otorohanga District Council

PREFACE

The Waste Assessment (WA) is a technical document. The key purpose of the WA is to present a clear picture of what happens with waste in the Otorohanga District area, what forces are driving current behaviours and outcomes, and 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.

Issue		Author	Reviewer	Date
1	Version 1	Sandra Murray	Medical Officer of Health	25/12/2017
2	Version 2	Sandra Murray	David McKinley	25/12/2017
3	Final	Sandra Murray	David McKinley	08/02/2018

Table of Contents

Part 1 - Executive Summary	5
Part 2 - Introduction	6
2.1 What is the purpose of the Waste Assessment?	6
2.2 Legislative Context	6
2.3 Scope	7
2.4 Strategic context - Regional and local	8
2.5 Strategic context – National	12
2.6 Strategic context - International	15
2.7 General data limitations, completeness and assumptions	16
Part 3 - The waste problem	16
3.1 How much waste is going to landfill from the Otorohanga District?	17
3.2 How much is being recycled or diverted from landfill	19
Part 4 - Waste infrastructure	21
4.1 Waste to land	21
4.2 Reuse, recycling, recovery and disposal facilities	22
4.3 Assessment of infrastructure and council role	25
Part 5 - Waste services	25
5.1 Council-provided waste services	25
5.2 Funding for council-provided services	29
5.3 Non-Council Services	30
5.4 Sustainable procurement and community benefits	31
Part 6 - Review of the 2012-2018 Waste Management and Minimisation Plan	33
6.1 Objectives of 2012-2018 WMMP	34
6.2 2012 WMMP Targets	34
6.3 Key Issues of 2012-2018 WMMP	35
6.4 New Guidance	35
6.5 Review of Actions	36
6.6 Summary of progress	37
Part 7 - Future demand and gap analysis	37
7.1 Otorohanga District Council area	37
7.2 Future Demand	37
7.3 Gap Analysis - Future Demand	40
Part 8 - Options	43
8.1 Key issues to be addressed by the 2018 – 2024 WMMP	43
8.2 Options: Data & regulation	43

8.3	Options: Collection services	48
8.4	Options: Infrastructure.....	52
8.5	Influence and partnerships.....	53
8.6	Summary table of potential scenarios.....	55
Part 9	- Statement of Council's Intended Role.....	57
9.1	Statutory Obligations and Powers.....	57
9.2	Overall Strategic Direction and Role	57
Part 10	- Statement of Proposals	58
10.1	Statement of Extent	58
A.1.0	Medical Officer of Health Statement.....	59
A.2.0	Glossary of Terms	62
A.3.0	National Legislative and Policy Context.....	65
A.4.0	International commitments	72
A.5.0	Table of Tables	73
A.6.0	Table of Figures.....	74

PART 1 - EXECUTIVE SUMMARY

Otorohanga District generates an estimated total of 21,456 tonnes of waste each year, which includes 8,632 tonnes of farm waste disposed of on-farm (40% of waste generated in the district).

Of this amount, an estimated 12,824 tonnes of general refuse and recycling waste are collected by waste services and facilities in the Otorohanga District each year (60% of waste generated).

Of the general waste, 6,632 tonnes (31%) were sent to landfill - an average of 730kg per person every year; and 6,192 tonnes (29%) was recovered for reuse or recycling through recycling facilities and kerbside services - around 680 kg diversion per household per year.

While the per capita tonnage of kerbside refuse is lower than other councils, kerbside refuse volumes appear to be increasing on a per capita basis. This is in line with national trends, with a national increase of 20% waste to landfill in the past three years.

However, some caution should be noted as data collection from private waste operators is voluntary, and data quality was low for some operators. Estimates of volumes have been made for some private operators.

While the available waste services and facilities are currently meeting the district's needs, changes to recycling markets internationally and changing product composition, means additional reuse and recycling facilities will be needed in the future. In addition, improved education about waste issues and encouraging residents to adopt a zero-waste approach to living are recommended. These will assist council to avoid costly increases in refuse and recycling services in the future.

Key opportunities for Otorohanga are to:

- Introduce cost effective waste minimisation by supporting community based resource recovery activities that promote a zero-waste approach.
- Introduce a waste operator and facility licencing system to increase Councils access to waste flow information, and improve 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)
- Investigate rural waste needs and consider ways to encourage on-farm waste minimisation and resource recovery

Without improving access to waste education, and increasing the level of influence council has over waste flows, Otorohanga may face cost increases for services and difficulty meeting future resident demand for improved services.

PART 2 - INTRODUCTION

2.1 What is the purpose of the Waste Assessment?

The 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 Waste Management and Minimisation Plan (WMMP) in an informed and effective manner.

It is a technical document that presents as clear a picture as possible of what happens with waste in the Otorohanga District, what forces are driving current behaviours and outcomes, and from that to highlight the key issues and the basic options for addressing those issues.

2.2 Legislative Context

2.2.1 Waste Minimisation

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 WMMP at least every six years. The review must be consistent with WMA sections 44, 50 and 51.

Section 50 of the WMA also requires all TAs to prepare a ‘waste assessment’ prior to reviewing its existing plan.

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.

This document has been prepared in fulfilment of that requirement.

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

2.2.2 Public Health

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

Protection of public health is currently addressed by a number of legislative enactments, including Health Act 1956 and Health and Safety at Work Act 2015.

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.

Further discussion of the implications of the legislation is contained in Appendix A.3.0.

2.3 Scope

2.3.1 General

The WMA requirements for the waste assessment means that it must take into consideration all waste and recycling services carried out by private waste operators as well as Otorohanga District Council services.

While Council has 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 Otorohanga District Council to plan for the future and to include waste reduction targets in their WMMP.

In preparing this document, reference has 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. This Waste Assessment was developed between September 2017 - February 2018 and informs the 2018-2024 WMMP process.

2.3.3 Consideration of Solid, Liquid and Gaseous Wastes

This Waste Assessment, and the subsequent WMMP, is focused on solid waste, biosolids and special wastes that are managed through solid waste facilities.

Solid wastes include all solid waste material that is disposed of to land or diverted from land disposal, for example refuse and recyclables.

Special wastes included in this WA include sewage millscreenings from the Council's wastewater treatment plant and road sweepings.

Liquid and gaseous wastes (such as refrigerant gases and LPG) are not included except where they interact with solid waste systems.

2.3.4 Consideration of Public Health

Public health issues are dependent on the local context and actions taken. As well as meeting the legislative requirements the key issues that are likely to be of concern in terms of public health include the following:

- Population health profile and characteristics
- 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

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.

This WA and the WMMP 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.

2.4 Strategic context - Regional and local

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

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

2.4.1 Waikato Regional Policy Statement

The Regional Policy Statement looks 100 years into the future. This accords well with the purposes of sustainable management of natural and physical resources, and meeting the reasonably foreseeable needs of future generations. It recognises the long life of community infrastructure, including the fact that many critical infrastructural elements in the region are either the same structures or have been in the same location for the last century. Additionally, the effects of current activities are projected to take many years for their full impacts to be realised.

2.4.2 Maniapoto Environment Management Plan

Geographically, the Maniapoto Environmental Management Plan (the Plan) covers the Maniapoto rohe, including the areas commonly known within Te Ao Māori as Te Rohe Pōtae and Te Nehenehenui.

It is anticipated that the objectives, policies and actions in the Plan will inform the review, development and implementation of regional and district plans, policies and strategies. The Plan is also a tool to support the leadership of Maniapoto at the forefront of exercising kaitiakitanga and rangatiratanga within the Maniapoto rohe.

The Maniapoto Environmental Management Plan includes three policies and a number of actions in Section 24 – Waste Management.

Policy: 24.2.2.1 Incentives and initiatives to reduce	(a) Ensure Maniapoto participation and input to initiatives to reduce waste
	(b) Require discharge to land activities associated with solid and hazardous waste and by-products to be effectively controlled and monitored

<i>the volume of waste are supported.</i>	(c) Incentivise systems that promote waste minimisation or deal with waste as close to point of origin as possible
	(d) Promote product stewardship initiatives where the costs of waste disposal are met by product manufacturers (imported materials are taxed to cover eventual disposal costs) and other waste generators at source
	e) Promote education initiatives on waste minimisation programmes and zero waste – (see Parakore model)
	(f) Support and provide for low waste trading practices, including no packaging supermarkets, farmers' markets and bulk suppliers
	(g) Establish accessible community recycling, composting facilities, swap or exchange facility for unwanted items
<i>Policy: 24.2.2.2 Waste disposal facilities are appropriately sited and managed to avoid adverse effects.</i>	(h) Ensure Maniapoto participation and input to any new proposals for waste facilities and review of existing facilities to avoid any adverse effects on Maniapoto values and interests in a manner
	(i) Undertake remedial work at closed landfill sites where leaching of contaminants is occurring, or could occur, to prevent contamination of groundwater, waterways, and coastal waters
	(j) Ensure disposal facilities are designed and managed to ensure no leaching to or contamination of the environment
	(k) Ensure new waste disposal facilities are sited so as to prevent any impact on wāhi tapu, mahinga kai, kura, marae, urupā
<i>Policy: 24.2.2.2 Unsafe disposal of waste, including hazardous waste and by-products, is eliminated.</i>	(a) Solid and hazardous waste disposal practices are safe and avoid any adverse effects on Maniapoto values and interests
	(b) Enforce regulation of disposal of hazardous products
	(c) Promote education initiatives to the public regarding appropriate disposal options for different types of waste
	(d) Ensure penalties for illegal dumping provide a significant deterrent
	(e) Report, investigate and enforce penalties for illegal

Table 1 Maniapoto Environment Management Plan policies

2.4.3 Waikato-Tainui Environmental Plan

The Waikato-Tainui environmental plan provides high-level guidance on Waikato-Tainui objectives and policies, with respect to the environment, to resource managers, users and activity operators, and those regulating such activities, within the Waikato-Tainui rohe. With regard to waste management the following objective and policy are particularly relevant:

Objective - liquid, solid, and hazardous waste

26.3.3 Liquid, solid, and hazardous waste management is best practice and manages social, cultural, spiritual, economic and environmental effects.

Policy – liquid, solid and hazardous waste

26.3.3.1 to ensure that liquid, solid and hazardous waste management is best practice and manages social, cultural, spiritual, economic, and environmental effects.

2.4.4 Regional waste stock-take

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 the table 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 virgin, excavated material	411,300		0.59 tonnes	

Table 2 Tonnage of waste to landfill from Waikato and Bay of Plenty¹

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, 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 are 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.

¹ Source: Bay of Plenty and Waikato Regions Waste Stocktake; Report for Bay of Plenty and Waikato Regional Councils; April 2013

2.4.5 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”*.

A Waste Strategy Advisory Group (WSAG) was established and includes representation from industry, local authorities (including HCC), community enterprises, 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.

2.4.6 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.

2.4.7 Otorohanga District 2015-2025 Long Term Plan

The Long-Term Plan outlines five key areas of focus to support and give direction councils overall vision of ‘Otorohanga – where Kiwis can fly’

- **Use Resources Efficiently:** Council and the District must ensure that it makes the best possible use of the physical, social, economic and cultural resources available to it.
- **Support Young and Old:** Both young and older people will be increasingly important in the future of the District, and initiatives that benefit these groups should be encouraged and where appropriate supported.
- **Enable Economic Growth:** Adopt a ‘business friendly’ approach that supports existing enterprises and makes the district an attractive location for new business development.
- **Retain the District’s Identity:** Recognise the importance of local rural identity and self-determination.
- **Plan for the Future:** Progress will occur, and to not move forwards is in effect to go backwards. Council must plan to ‘future proof’ the District, acting boldly where necessary

2.4.8 Otorohanga District Plan 2014

This Waste Assessment includes considerations (where appropriate) of District Plan objectives around:

Effects on Natural Environment	Effects on Physical Environment
1. Natural Landscapes, Indigenous Biodiversity and Mineral and Soil Resources	5. Neighbourhood Character
2. Coastal Environment	6. Subdivision of Land
3. Rural Character	7. Heritage / Cultural Values
4. Natural Hazards	8. Safety of Road Users
	9. Hazardous Substances
	10. Contaminated Land
	11. Network Utility Operations
	12. Surface Water Activities

Table 3 District Plan considerations

2.5 Strategic context – National

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

2.5.1 Review of the effectiveness of the Waste Disposal Levy 2017

For the review period of 1 July 2013 to 30 June 2016, levied waste disposal facilities received a total of 10,681,295 gross tonnes of waste. From this, 1,207,786 tonnes of material were diverted, leaving total net waste to landfill at 9,473,509 tonnes.

Total gross tonnage of waste increased by 16.4% from the 2014 review, while the quantity of waste diverted decreased by 6.3%. As a result, the total net tonnage disposed to levied landfills has increased by 20.1% since the 2014 review².

	2010/2013	2013/2016	Difference	% Increase/decrease
Total gross tonnage	9,178,592	10,681,295	1,502,703	16.4%
Total diverted tonnage	1,288,766	1,207,786	-80,980	-6.3%
Total net tonnage to levied landfills	7,889,826	9,473,509	1,583,683	20.1%

Table 4 Total gross, diverted and net tonnages of waste at levied waste disposal facilities

Net waste to levied landfills has increased every year since the levy was introduced (except for 2012). New Zealanders are now producing about 734kg of levied waste per person annually.

The 2017 review also identified that only 11% of consented waste disposal facilities were levied. The report noted “annual levied waste is increasing, indicating that the levy is not currently achieving its objective. Added to this, the majority of New Zealand's waste disposal facilities are exempt from the levy and no data is available about the waste that is disposed at these facilities”.

² Review of the effectiveness of the Waste Disposal Levy 2017, Ministry for the Environment

The Ministry³ intends to:

- Develop a clear vision, strategy and set of outcomes for the future direction of the waste disposal levy. Develop an aligned approach to invest funding into projects that are targeted, measurable and provide the greatest returns (over 2 years).
- Invest in developing a national waste data collection and evaluation framework that targets key information to prioritise waste issues and measures effectiveness of the waste disposal levy (over 3 years).
- Develop and implement a staged approach to applying the waste disposal levy across additional classes of landfills and assess the role of a differential rating system (over 5 years).

2.5.2 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.

2.5.3 Review of the Waste Minimisation Act 2008

As at the time of writing, the Government has announced an upcoming review of the Waste Minimisation Act 2008 to be completed in 2018. The scope of this review is not yet available.

2.5.4 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
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

³ *Review of the effectiveness of the Waste Disposal Levy 2017*, Ministry for the Environment

2.5.5 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 WasteMINZ⁴ sets out a consistent methodology for the collection and categorisation of waste data.

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. Additional aspects 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 Framework's 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

In October 2015 WasteMINZ, the Glass Packaging Forum, and councils around New Zealand agreed on a standardised set of colours for mobile recycling and refuse bins, crates and internal office bins⁵.

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	refuse	Dark Green	garden waste
Yellow	commingled recycling (glass, plastic, metal and paper combined)	Light Blue	commingled glass collections (white, brown, green glass combined)
Lime green	food waste and food waste/garden (referring to green) waste combined	Grey	paper and cardboard recycling

Table 5 Recommended bin and bin lid colours for MGB's

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

2.5.6 Emissions Trading Scheme⁶

The Climate Change (Unique Emissions Factors) Amendment Regulations 2010 require landfills to surrender New Zealand Emissions Units (NZUs) for Carbon-dioxide equivalent gases (CO₂-e) generated and released into the atmosphere. Landfills are required to surrender units only for methane that is released, not for CO₂, as CO₂ is considered biogenic (part of the natural carbon

⁴ WasteMinz is the largest representative body of the waste, resource recovery and contaminated land sectors in New Zealand

⁵ More information is available from WasteMINZ - <http://www.wasteminz.org.nz/sector-groups/behaviour-change/standardising-the-colours-of-mobile-waste-and-recycling-containers/>

⁶ Service Review: Analysis of Current Services (April 2014); Eunomia

cycle). The regulations required landfills to begin reporting from January 2012, and to surrender emissions units from January 2013.

The purpose of the ETS is to impose a cost on greenhouse gas generating activities, and provide a market-based incentive to invest in low carbon or carbon reducing activities. In the case of waste management, the ETS should provide an incentive to reduce the amount of biodegradable waste going to landfill as well as encourage better management of landfill methane through landfill gas capture and destruction. How effective this incentive will depend on the price of carbon.

Reviews in 2013, and again in 2016 caused changes to the Act; and it is likely that further changes will be implemented over the next two years as the government elected in 2017 campaigned on climate change policies.

Landfill operators are likely to pass on ETS charge to waste, as well as other related costs such as administration and scheme compliance costs, and risk premiums.

The ETS regulations allow for landfills to reduce their ETS liabilities by applying for a Unique Emissions Factor (UEF). There are two types of UEFs:

- If a landfill captures and destroys methane generated in a landfill through a gas capture system, they can reduce their liabilities in proportion to the amount of methane captured and destroyed by applying for a methane capture and destruction UEF (up to 90% capture and destruction is allowed to be claimed under the regulations).
- Where a landfill can show that they accept less biodegradable waste than is assumed by the default emissions factor they can apply for a 'waste composition UEF'. This means they can then surrender NZUs based on the lower level of emissions they are estimated to generate.

ETS exposure for Otorohanga District Council is indirect. Landfills compete for tonnage not only against other proximate facilities but against other recovery options. The extent to which landfills pass ETS costs on will determine the extent of exposure for council. Disposal contracts are usually negotiated where there is a council service contract, and ETS costs should be specifically set out in such contracts.

2.6 Strategic context - International

While they do not immediately impact on Otorohanga Districts 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, particularly to Indonesia and 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 materials⁷. 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 may mean changes to collection and sorting methodologies in order to achieve export standards. This may impact the costs associated with recycling with some estimates indicating recycling costs could double within the

⁷ <https://resource-recycling.com/recycling/2017/02/21/china-announces-sword-crackdown-illegal-recyclable-material-imports/>

5-10-year period (regardless of collection methodology). This may also mean that, in the long run, crate based services become more expensive than co-mingled MGB based services.

It is recommended that council indicates these potential increases to the community and councillors. If necessary, procurement processes and contracts can be used to make recycling proposals more attractive to contractors and share the risks associated with contamination and cleaning up the recycling. Some councils may start to consider in-house service provision (council owned trucks and staff rather than contracted out services).

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 limited 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 the Otorohanga District. It considers future demand for waste facilities and services; and reasonably practicable options available to meet demand, while achieving Council's objectives including waste management and minimisation objectives.

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

This document was prepared using information gathered from a variety of sources. While every effort has been made to achieve a reasonable degree of accuracy in this assessment, limitations exist due to:

- Variation in the voluntary provision of data from private operators
- Poor quality data including low levels of detail from private operators
- A lack of standardisation of data collection methodology across private operators
- Difficulty separating Otorohanga data from operator's total tonnages (trucks collect from customers across council boundaries and estimates are taken of the tonnages from within Otorohanga vs outside of Otorohanga District).

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.

PART 3 - THE WASTE PROBLEM

Information gathered during this Waste Assessment indicates a total of 21,456 tonnes of waste is generated in Otorohanga District each year, which includes 8,632 tonnes of farm waste disposed of on-farm (40% of waste generated in the district).

Based on information from council, private collectors and facility operators, an estimated 12,824 tonnes of refuse and recyclables are collected by waste services and facilities in the Otorohanga District each year (60% of waste generated).

Of this amount, 6,632 tonnes (31%) were sent to landfill and 6,192 tonnes (29%) was recovered for reuse or recycling through recycling facilities and kerbside services.

This does not represent all the waste and diverted materials generated in the District as an unknown volume of material is currently collected, re-used, recovered, recycled or disposed of through other means or via facilities out of the District. In addition, provision of information from private waste companies is voluntary, therefore not all information was accessible. Where operators failed to provide data, estimates were made based on operator's market share within the District.

3.1 How much waste is going to landfill from the Otorohanga District?

The identified volumes of waste disposed of to landfill from the Otorohanga District is summarised in Table 6 below.

Waste disposed of to land	Tonnes	% of total waste collected	Tonnes/capita/annum ⁸
General waste to Class 1 landfills	6,632	31%	0.73
Farm waste disposed of on-site	8,632	40%	0.94
Waste diverted from landfill			
(Council recycling services)	(3,101)	(14.5%)	(0.34)
Other waste (diverted))	(3,091)	(14.5%)	(0.34)
Total waste diverted from landfill	6,192	29%	0.68
Total waste generated	21,456	100%	2.35

Table 6 Summary - estimated waste disposed of to land Waikato District

The reliability of the estimates for different types of waste varies. Some waste to landfill data comes unverified from private waste operators, while other waste data and wastewater screening tonnages are verifiable as they have been provided by ODC staff or council contractors.

3.1.1 Council kerbside refuse collection

The ODC kerbside refuse service collects around 345 tonnes of refuse per annum, an average of 40 kg per person⁹ per annum. This is approximately 5% of the general waste to landfill for the Otorohanga District, although this is likely to be an underestimate of residential volumes as not all residents receive a kerbside service.

The per capita weight of refuse is lower than for similar sized councils in New Zealand. A comparison of the amounts of refuse material collected compared to comparable councils is shown in Table 7 below.

District and year of survey	Kg/capita/annum	Comment
Otorohanga District Council 2017	40	Pre-paid bags. Not all properties have access to kerbside refuse services
Matamata Piako District 2016	62	Only 66% of properties have kerbside refuse services

⁸ Population 9,138 from NZ Statistics 2013 Census.

⁹ Population 9,138 from NZ Statistics 2013 Census.

Hauraki District 2016	78	Only 73% of properties have kerbside refuse services
Thames Coromandel District 2016	131	91% of properties have kerbside refuse services

Table 7 Kerbside refuse comparison with other councils

3.1.2 Wastewater sludge / biosolids

ODC records indicate that approximately 200 litres of wastewater screenings are sent to landfill (Te Kuiti) weekly, approximately 10,400 litres per annum.

3.1.3 Other general waste

Of the general waste to landfill generated in the District, 6,287 tonnes are from collections and services other than kerbside refuse. It is unclear where this volume is being generated as much of it is sourced from private services and facilities.

It is possible that a small number of large-scale generators are operating in the District. However, it is unclear what these may be. Further investigation into the source of this material may suggest options for a reduction in waste to landfill from sources of material currently flowing through private operators.

3.1.4 Farm waste disposed of to land

Otorohanga District Council has a responsibility to consider all waste generated in the district when planning waste infrastructure and services. This includes farm waste including 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, including animal carcasses and crop residues. The three most common rural waste management practices were burning, burial, or bulk storage for an indefinite time.

As different farm types create different volumes of waste, NZ Statistics¹⁰ data on farm type and number specific to the Otorohanga 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 (Table 8 below).

	Dairy		Livestock		Arable		Horticulture	
Number of Farms (Total 729)	387		297		33		12	
Per farm	Average (t)	Total (t)	Average (t)	Total (t)	Average (t)	Total (t)	Average (t)	Total (t)
Inorganic	1.71	662	3.81	1130	1.80	59	3.32	40
Organic	1.17	453	0.72	215	0.80	26	17.82	214
Hazardous	6.74	2608	9.59	2849	3.42	113	21.92	263
Average t/farm/annum	9.62		14.12		6.02		43.06	
Sub-Total (t / farm type / annum)	3,723		4,194		199		517	
Total (t/ District)	8,632							

Table 8 Farm waste tonnages for the Otorohanga District

¹⁰ NZ Statistics Agricultural Census 2012

The 729 farms in the District (excluding forestry) are estimated to generate approximately 8,632 tonnes of waste per annum. This is an average of 12 tonne of waste per farm across the District.

However, this total may include material such as carcasses which would not normally be considered as solid waste from the council's perspective.

Table 8 above indicates that some farming types create larger volumes of waste than others. For example, horticulture creates an average of 43.06 tonne waste per farm, while arable farming creates an average of 6.02 tonne per farm. There is also considerable variation within the livestock category, with piggeries creating considerably more waste than sheep, beef or deer farming, while horticulture and piggeries create high volumes of hazardous waste.

The Rural Waste Survey 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.

3.2 How much is being recycled or diverted from landfill

An estimated 29% of all waste identified as being collected in Otorohanga district is recycled or otherwise diverted. Total weights of material recycled or otherwise diverted from landfill in 2016-17 are shown in Table 9 below:

Waste diverted from landfill	Tonnes	% of total diverted	Tonnes/capita/annum
Council recycling services	3,101	50%	0.34
Other recycling or diversion	2,989	48%	0.33
Composted (excluding on-farm)	102	2%	0.01
Total	6,192	100%	

Table 9 Recycled and diverted material – summary

Of the waste diverted from landfill, 50% was from council recycling services (kerbside and drop-offs) and 50% from private recycling and composting. Only 2% was identified as being composted in either council or private facilities, although this figure excludes composting on farms or at residential properties.

Council recycling	2016/17 year
Council recycling (kg)	3,101
Population ¹¹	9,138
Kg/capita/annum	339

Table 10 Kg per capita per annum for council recycling services

¹¹ NZ Statistics 2013 Census

Across all recycling services (kerbside and recycling centres) around 69% of material collection is glass, with 24% being mixed paper and cardboard.

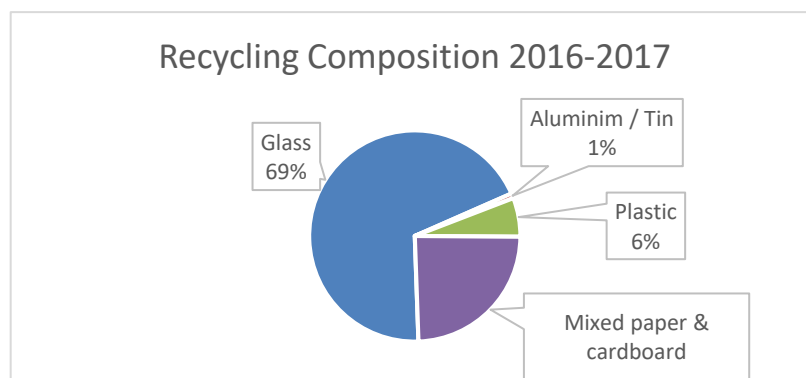


Figure 1 Recycling composition from all council services 2016-2017

3.2.1 Council recycling services

Approximately 3,101 tonnes of recycling material were collected via council services in the 2016-2017 financial year. This comprised of:

Collection Type	Tonnes	%
Kerbside recycling	393	12.7%
Attended recycle centres	2,697	87%
Unattended recycling centres (Rippi Bins)	11	0.3%
Total	3,101	

Table 11 Recycling tonnages collected 2016-2017

These figures are likely to be underestimate total household recycling rates as not all residents receive a kerbside service.

Kerbside recycling has a higher proportion of glass at 87%, compared to the overall recycling services (69%), and a lower proportion of mixed paper and cardboard (7% compared to 24%).

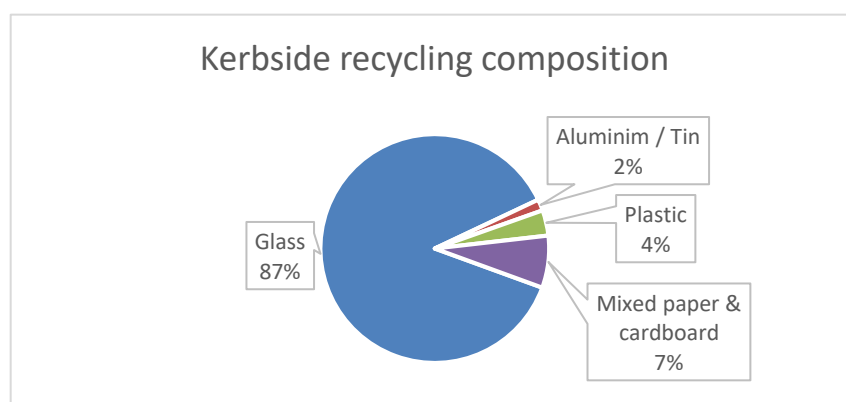


Figure 2 Kerbside recycling composition 2016-2017

3.2.2 Organic waste

Approximately 102 tonnes of organic material were identified as having been diverted from landfill in 2016-17 via waste services and facilities in the District. The low volume of organic material diverted is most likely a reflection of the rural nature of the District i.e. most organic

material disposed of in the District is likely to have been captured on the rural waste tonnages disposed of on-site on farms, rather than as tonnages transported to a facility in the District.

3.2.3 Recycling centres and other recovery facilities

Recycling centres and other material recovery facilities accept a range of types of waste including:

- Residential & commercial recycling
- Construction & demolition (C&D)
- Industrial/commercial/institutional
- Landscaping & earthworks

Although most material is disposed at facilities outside the district, a small number of private facilities are located in the District and provide C&D, commercial, landscaping or earthworks disposal. Private companies are not legally required to provide data around their tonnages. Therefore, it is not possible to know what proportion of each waste material is being handled by facilities in the District.

PART 4 - WASTE INFRASTRUCTURE

There are no Class 1 landfill in operation in the Otorohanga District, although the district is suitably serviced by nearby and more distant landfills including Waitomo District Landfill, the North Waikato Regional Landfill and Tirohia Landfill. These landfills may also accept waste from other parts of the Waikato, Bay of Plenty and Auckland Regions.

There are two transfer stations located in the District, at Otorohanga and Kawhia. There is also an unattended community run recycling centre located at Ngutunui School.

4.1 Waste to land

4.1.1 Landfills

The table below lists the landfills that may receive municipal waste from the Otorohanga District.

Name & Owner/Operator	Accepts	Location	Capacity & Consent
Waitomo District Landfill (Waitomo District Council)	Non-hazardous residential, commercial and industrial solid waste, including special wastes. Compostable material is also processed on site. Asbestos and contaminated soil are also accepted on pre-approval.	Te Kuiti, Waitomo District	Consented to 2030
North Waikato Regional Landfill (EnviroNZ)	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
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

Table 12 Landfills accessible from Otorohanga District

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

4.1.2 Closed Landfills

The two closed landfills for which the council has ongoing management and monitoring responsibility are located in Otorohanga and Kawhia. These have been closed and capped and are monitored and inspected regularly to ensure that they are remediated and managed according to the requirements of their resource consents.

4.1.3 Cleanfills

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.

Risks associated with cleanfills are disposal of unsuitable material (i.e. material not defined as appropriate for cleanfill), settlement, slope failure, and erosion.

Typically, cleanfills are not strongly regulated, although the MfE is investigating the need for further regulation of cleanfills, and in general there is a need for more stringent conditions and monitoring of registered cleanfills as there is evidence that some cleanfills may be accepting municipal waste.

The Ministry for the Environment report, Consented Non-levied Cleanfills and Landfills in New Zealand (2011) noted only one consented cleanfill facility in the Otorohanga District.

4.2 Reuse, recycling, recovery and disposal facilities

Transfer Stations, recycling centres and drop off points within and near to Otorohanga District provide options for residents and businesses to drop off their refuse and recycling. As some of these facilities are operated by private providers, provision of information on their activities (including tonnages diverted from landfill) is at the discretion of the business owner. Therefore, council is unable to identify the volume of waste managed by private providers via such facilities.

4.2.1 Council recycling centres

(a) Recycling centres:

Recyclables can be dropped off free of charge at attended recycling centres in Otorohanga and Kawhia. Both residential and commercial recycling is collected at the centres.

In addition, refuse and green waste (excluding noxious weeds or unmanageable material, such as flax) is also accepted on a charged basis at both centres.

A re-use store is located at the Otorohanga Recycling Centre, where unwanted items that are suitable for re-use by other people may be accepted.

Kawhia (managed by Envirowaste)	Otorohanga
Wednesday: 12.00pm to 3.00pm Saturday: 12.00pm to 3.00pm	Friday to Wednesday: 10.00am to 4.00pm Thursday: Closed

<p>Sunday: 12.00pm to 3.00pm</p> <p>Statutory Holidays, except for Christmas Day, Good Friday and Anzac Day: 12.00pm to 3.00pm</p> <p>There may also be extended opening times during the Christmas / New Year holiday period. For details phone Council (07) 873 4000 or Envirowaste 0800 240 120.</p>	<p>Statutory Holidays, except for Christmas Day, Good Friday and Anzac Day: 10.00am to 4.00pm</p>
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Table 13 Attended recycling centres – opening times

Attended recycling centres recovered a high proportion of glass (95%) compared to other council services due to the acceptance of commercial recycling from e.g. bars and restaurants, where alcohol is served. Other materials are received in lower volumes.

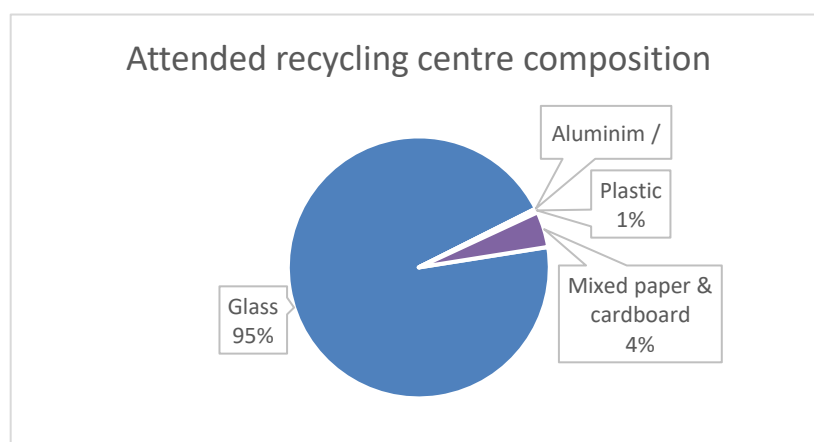


Figure 3 Attended recycling centres – composition

(b) Unattended recycling centres (RIPPI bins)

Council provides recycling services to rural areas through unattended rural recycling centres located at some rural schools. These centres consist of RIPPI bins where material can be deposited, and accept the same range of materials as per the kerbside services.

Currently, there are facilities at:

- Ngutunui School
- Arohena School
- Maihihi School
- Korakonui School

These are small recycling-only facilities for the benefit of the community and rely on community support for their care and management. Around 11 tonnes of material are collected via the unattended recycling centres – a small volume compared to the attended recycling centres and kerbside recycling (only 0.4% of recycling collected).

However, the unattended centres collect the highest proportion of plastic at 9%. Other materials are collected in a similar proportion to kerbside services.

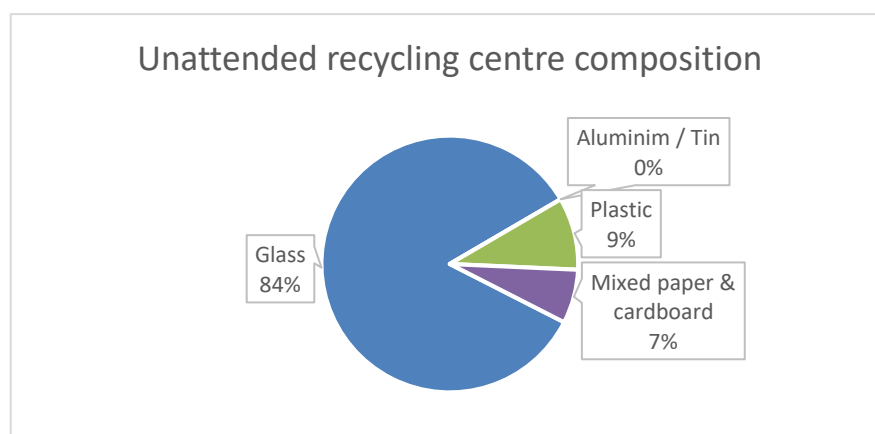


Figure 4 Composition of recyclables from unattended collections

4.2.2 Construction & demolition waste facilities

A range of companies provide residential and commercial construction, deconstruction, dismantling and demolition waste and recycling services in or close to the Otorohanga District. These include:

- Nikau Group (Nationwide)
- Materials Processing Ltd (Rotorua)
- Building Recycling Centre (Rotorua)
- Demolition Traders (Hamilton)
- Hamilton Demolition (Hamilton)

No information is available on the volumes of waste managed by private facilities.

4.2.3 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
- 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.

Otorohanga does not provide hazardous waste collection or disposal facilities due to the cost and risks involved. Residents must transport their unwanted hazardous waste to a facility outside of the district or employ a suitable private contractor to manage their disposal.

4.2.4 Other destination facilities for recyclables

Out of district recycling processing facilities may receive material from the Otorohanga District either directly from commercial users; or from private waste companies. These include¹²:

- O-I NZ Ltd
- SIMS Pacific
- Oji Fibre Solutions
- Visy MRF
- CHH Fullcircle
- South Waikato Achievement Trust
- Envirowaste MRF - Taupo
- Smart Environmental MRF - Kopu
- International – China / Indonesia / Jakarta

The term 'recyclables processing facilities' refers to material recovery facilities (MRFs). At a MRF, dry recyclables/commodities are sorted and bulked for transport to recycling facilities outside the region for processing.

4.3 Assessment of infrastructure and council role

In general, the collection and processing of dry recyclables/commodities from commercial premises is a mature market, with limited opportunity for expansion due to issues related to transportation and international markets. 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 limited facilities for recycling or consolidation in Otorohanga district, access to recycling, consolidation and processing facilities is currently sufficient within the region. There may be need for further development to meet future demand for reuse and recycling facilities.

Particular future issues include:

- Cost increases to access landfills, as the nearest landfills are nearing capacity. Once these landfills close, there will be a greater distance to transport material. Further activities to reduce waste landfill could mitigate these costs.
- Changes or cost increases to recycle some materials which have a low market value or which require significant transportation to processing facilities.
- Population demographic changes, including migration from areas where waste services are more available, may also mean community demand for reuse, recovery and diversion facilities will increase.

PART 5 - WASTE SERVICES

5.1 Council-provided waste services

ODC provides a range of waste services including:

- Kerbside refuse for Otorohanga, Kawhia and Aotea
- Kerbside recycling collection service for Otorohanga, Kawhia and Aotea
- Recycle centres located at Otorohanga and Kawhia

¹² This list is not exhaustive, it is extracted from operators contacted in regards to this waste assessment

- RIPPI bins located at four rural schools

Of the material collected via council services, recyclables collected via the recycling centres makes up the largest percentage (78%). The RIPPI bins at unattended rural locations makes up less than 1% of material collected. Approximately equal tonnages of refuse and recycling are collected from kerbside services.

5.1.1 Council kerbside refuse collection service

Approximately 345 tonnes of refuse are collected annually for council refuse services provided to residential properties in Otorohanga (Wednesdays), Kawhia and Aotea (Mondays). Commercial properties are not included in council service provision.

Kerbside refuse	Tonnes
Otorohanga	277
Kawhia / Aotea	68
Total	345

Table 14 Refuse tonnages collected via council kerbside services 2016 – 2017

Kerbside refuse collections require the use of official council refuse bags, which are available to be purchased from local stores.

5.1.2 Composition of council kerbside refuse

The composition of kerbside refuse is unknown. However, general trends in kerbside composition taken from nationwide data can be identified.

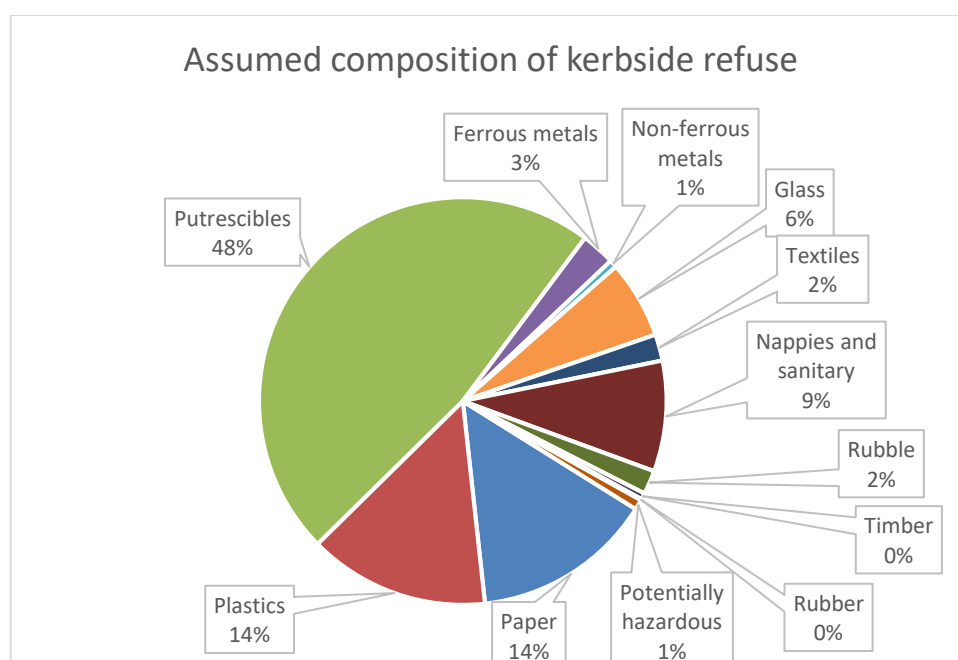


Figure 5 Composition of kerbside refuse¹³

¹³ From Ministry for the Environment <http://www.mfe.govt.nz/publications/waste/solid-waste-audits-ministry-environment-waste-data-programme-200708-kaikoura-8>

Based on Ministry for the Environment data, it is assumed that kerbside refuse tonnages are approximately 48% organic material (e.g. food waste and green waste), with potentially recyclable paper (14.4%), plastics (14.4%) and glass (6.2%).

On this basis there is potential to divert around 80% of kerbside refuse from landfill via behaviour change and other services. These could include encouraging composting, running food waste programmes such as Love Food Hate Waste, through better education about what can be recycled and enforcement of restrictions on what can go in the refuse bin.

However, the average proportions provided by the Ministry for the Environment will be an average of rural and urban areas. Therefore, it is likely that there are lower volumes of organic material in rural refuse. Local compositional analysis should be used to determine the proportion of organic material in kerbside services prior to the introduction of any new services.

5.1.3 Council kerbside recycling collection

A kerbside recycling collection service is provided for Otorohanga, Kawhia and Aotea via 55L crates provided by council. Materials collected are:

- Glass
- Aluminium
- Tin
- Type 1 - 7 plastics
- Mixed paper and cardboard

Approximately 3,101 tonnes of recycling material were collected via council services in the 2016-2017 financial year. This comprised of:

Collection Type	Tonnes	%
Kerbside Recycle	393	12.7%
Attended recycle Centres	2,697	87%
Unattended recycling centres (Rippi Bins)	11	0.3%
Total	3,101	

Table 15 Recycling tonnages collected 2016-2017

The majority of recyclable material collected was glass, followed by mixed paper and cardboard. This composition may provide some future issues for council as the cost of recycling glass is likely to increase while the value is likely to stay the same or decrease.

However, if a container deposit scheme is introduced by central government, the value of the glass will increase for whole (unbroken) bottles while volumes collected will decrease.

5.1.4 Illegal dumping and abandoned vehicles

Illegal dumping is not considered to be problematic in the District with only one incident reported in 2016/17. The low rate of illegal dumping may be due to rural residents being allowed to burn material on-property – so long as they do not create a nuisance which is offensive or likely to be prejudicial to health.

Nationally, such allowances are generally being phased out due to the adverse environmental effects of burning and burying waste.

Similarly, only around 10 vehicles per year are identified as abandoned. For abandoned vehicles the number plates are checked and the owners asked to pick up or the cars will be scrapped at owners cost.

5.1.5 Litter servicing

Approximately 11 tonnes were collected from litter bins and loose litter in 2016/17.

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.

5.1.6 Waste education and minimisation programmes

Waste education partnerships with community groups may be beneficial, particularly where they have networks, contacts and low-cost structures for achieving maximum community involvement for waste education and promotion.

In addition, 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

There are three education programmes supported by ODC:

(i) Love Food Hate Waste

Love Food Hate Waste is a programme being run by 60 councils from around New Zealand in conjunction with WasteMINZ and Wanaka Wastebusters.

The programme encourages people to reduce their food waste through tips and education such as for recipes that use food scraps, how to freeze or preserve food, and storage tips.

(ii) Enviroschools

The Enviroschools kaupapa is creating a healthy, peaceful and sustainable world through facilitating action-learning; where inter-generations of people work with and learn from nature. The kaupapa reminds us to be in connection: to love, care for and respect ourselves, each other and our planet.

ODC supports 2 schools to take part in environmental education through the EnviroSchools programme. They are:

- Kio Kio School
- Ngutunui School

(iii) Paper for Trees

Paper4trees, an environmental education programme run by EERST (Environmental Education for Resource Sustainability Trust), encouraging schools and preschools to reduce the amount of paper and cardboard waste they send to landfill.

5.1.7 Event waste

Otorohanga District Council does not provide requirements, guidelines or encouragement for events held in the District to minimise waste or become zero waste. While some private businesses provide zero waste event management systems, these are not formally supported by council.

Waste minimisation at events is becoming increasingly popular in New Zealand, and the practices involved are increasingly mature and effective. However, events carried out in the Otorohanga District are not commonly managed in a manner to avoid or reduce waste.

This is seen as an area where improvement could be made with some encouragement by council, such as by promoting waste companies which assist event organisers to manage zero-waste events.

Waste created at events can be a considerable, and avoidable, volume of waste. Due to growing awareness, around environmental sustainability affects poorly managed waste can leave a bad impression on – particularly international – visitors.

There are a number of factors influencing the amount, and kind, of waste generated at an event. These can include:

- Length of the event (one-day events produce far less waste per person per day than three-day events factoring in camping)
- Community attracted to an event (events that attract people who consume large quantities of alcohol tend produce more waste and more litter)
- Regulation of materials onsite - some events specify what suppliers can bring onsite – e.g. no glass, or compulsory use of biodegradable plates and cutlery
- Deliberate adoption of a waste minimisation strategy during planning and running the event – waste minimisation strategies can substantially reduce waste to landfill if implemented correctly

5.1.8 No Throw

ODC supports the regional waste exchange “Nothrow”. Nothrow is an online tool designed to help businesses, organisations and people find markets for by-products, surplus materials and resources. Through Nothrow, people who have unwanted materials can find alternative pathways to landfill for their materials through connecting with organisations and people who are able to reuse their unwanted materials.

Nothrow is a free service available to all business, industry and may be used by non-profit organisations, schools and individuals to locate materials they need.

5.1.9 Waste Grants

There is no council funded grant scheme which specifically targets waste minimisation activities. This is reflected in the low level of community engagement in waste minimisation activities across the District.

A specific Waste Minimisation Fund may encourage greater interest in establishing waste reduction, reuse, recovery or recycling initiatives by community groups.

5.2 Funding for council-provided services

All council-provided services are funded out of rates revenue or Waste Levy funding provided by the Ministry for the Environment.

The Waste Levy is accumulated from a \$10 per tonne levy (excluding GST) on all waste sent to landfill. The levy was introduced under the Waste Minimisation Act 2008. Disposal facility operators must pay the levy based on the weight of material disposed of at their facility. However, they may pass this cost on to the waste producer such as households and businesses.

Half of the levy money goes to territorial authorities (city and district councils) to spend on promoting or achieving the waste minimisation activities set out in their waste management and minimisation plans (WMMPs).

The remaining levy money (minus administration costs) is put into the Waste Minimisation Fund. The fund is for waste minimisation activities in New Zealand.

ODC received \$36,805.16 levy funding in 2016/2017¹⁴.

Territorial authorities must spend the levy to promote or achieve waste minimisation. Waste management and minimisation plans (WMMP) prepared by each territorial authority set out how the levy will be used.

5.3 Non-Council Services

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

5.3.1 Private refuse and recycling services

Commercial refuse and recycling is collected by a relatively small number of companies who offer a range of services including front end load (FEL) bins, skip bins, hook bins, compactors, and wheeled bins. They may accept refuse, recycling and/or green waste. Private operators identified for this Waste Assessment include:

Commercial waste service providers	
<ul style="list-style-type: none"> • Metrowaste • Envirowaste / Supa Bins • Waste Management • Vanders Bins • Nikau Contractors • Waitomo Liquid Waste Disposal 	<ul style="list-style-type: none"> • Fullcircle • Revitalfert • Flexi Bin • Salters Cartage • J J Richards • Sims Pacific Metals • Allans United

Table 16 Commercial refuse and recycling service providers

5.3.2 Private reuse organisations

A number of alternatives for the disposal and sale of reusable items are available in or near the District, such as charity stores and second-hand stores. These include:

- Brigids Op Shop (Otorohanga)
- Otorohanga Recycling Centre
- SPCA Op Shop (Te Kuiti)

In addition, there are a number of second-hand or opportunity shops in nearby Te Awamutu.

5.3.3 Para Kore

The Para Kore (Zero Waste) programme works with marae to increase the reuse, recycling and composting of waste materials thereby helping to reduce the extraction of natural resources and raw materials from Papatūānuku.

¹⁴ Ministry for the Environment; Payments to individual territorial authorities' data (January 2010 - April 2017)

More than 50 Marae in the Waikato District are part of the Para Kore programme, including marae in Otorohanga. While data on tonnages of material diverted from landfill are not available, Para Kore has a high level of success for assisting marae to reduce refuse and increase diversion of material through reuse, recycling and composting.

5.3.4 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.

5.3.5 Assessment of non-council (private) waste services

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

There may also be further opportunities to support the second hand and reuse markets – perhaps via support for 'upcycling' of waste materials into new or unique items for sale. Reuse and upcycling have additional potential benefits around local job creation.

The main area of concern with private services relates to a lack of visibility around the volume and composition of refuse collected via private services. The most promising mechanism for obtaining information on volume and composition of material collected by private collectors and operators is the introduction of waste licencing. The introduction of licensing will greatly improve data quality for the development of the next Waste Assessment.

5.4 Sustainable procurement and community benefits

For local government, sustainable procurement (frequently used interchangeably with 'social 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 may help ODC to deliver strategic goals and build a stronger community.

5.4.1 Benefits of community involvement in waste issues

Community led resource recovery activities can provide positive outcomes for the local economy via 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 landfill¹⁵.

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

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
Kaitiaia	2 full time	18 full time, 16 part-time

Table 17 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 spending¹⁵.

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.

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

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 may exist regionally, for example e-waste recycling, additional funding would be required for expansion.
- **Operational capacity:** Managing a recycling facility requires operational skills and an understanding of waste markets and waste issues. This capacity is not always available within community groups, nor may council have the internal capacity or institutional knowledge of resource recovery to upskill community groups in these areas.

¹⁵ Valuing Recycling Town – Measuring which bucket has the most leaks : 2009 : Gary Kelk : Ministry for the Environment : New Zealand

- **Leadership:** There is a need for leadership in fostering collaboration and integration within council and across community to generate resource recovery and local economic development.
- **Council procurement:** Council's procurement approach is traditional and favours large businesses. Community organisations could benefit from a partnership approach to procurement that recognises the social, economic and environmental benefits of 'buying local'.

PART 6 - REVIEW OF THE 2012-2018 WASTE MANAGEMENT AND MINIMISATION PLAN

This Waste Assessment provides an assessment of the 2012-2018 Waste Management and Minimisation Plan (WMMP). The assessment of this document will provide insights to guide the development of the 2018-2024 WMMP.

The 2012-2018 Waste Management & Minimisation Plan (WMMP) was the first plan developed under the Waste Minimisation Act 2008. However, the lack of accurate data from private waste service and facility providers made it difficult to assess the exact quantities of waste – both during the development of the first WMMP and the development of this Waste Assessment.

The 2012 WMMP does not include an estimate of total waste to landfill for the District, as it was unable to obtain information from private waste operators in the district. Therefore, it is not possible to identify if waste to landfill has increased or decreased between 2011 and 2017.

It is likely that waste to landfill has increased in alignment with national trends, which indicate a 20% increase in waste landfill has occurred. A comparison of kerbside tonnes per capita per annum (Table 18 below) indicates kerbside refuse volumes have increased from 0.03 tonnes per capita, to 0.04 tonnes per capita; while recycling volumes have increased significantly from 0.07 tonnes per capita to 0.34 tonnes.

Material	Tonnes		Tonnes/ capita/ annum	
	2011	2017	2011 ¹⁶	2017 ¹⁷
Kerbside refuse ¹⁸	275	345	0.03	0.04
Recyclables (Council only)	650	3,101	0.07	0.34

Table 18 Comparison of volumes of refuse and recyclables: 2012 WA to 2017 WA * excludes farm waste to land

The increase in recyclable material is likely to be a result of a combination of low estimates in 2012 which excluded private recycling, and a genuine increase in recyclable recovery as markets have opened and private operators have moved to take advantage of these opportunities. The data suggest that council recycling services have avoided a substantial increase in refuse to landfill from council services since 2012.

¹⁶ 2012 population based on 2006 Census data (9,075)

¹⁷ 2017 population based on 2013 Census data (9,138)

¹⁸ Note: this figure does not include waste to land on rural properties, as this information was not available in 2012.

6.1 Objectives of 2012-2018 WMMP

The objectives of the 2012-2018 WMMP were:

2012 Objectives	Progress against objective
To promote the concept of waste minimisation, and to encourage individuals, households and businesses to take responsibility for their waste, and to provide leadership, information and support to all groups.	Moderate progress. Ongoing
To actively encourage community participation in all waste reduction activities.	Moderate progress. Ongoing
To target specific components of the waste stream in all sectors of the community and achieve optimum reduction, re-use and recycling of them.	Moderate progress. Ongoing
To understand our waste stream to enable measurement of changes and the effectiveness of reduction initiatives.	Further work required. Insufficient tonnage and compositional data.
To progressively extend the range of waste stream components targeted and facilitate the reduction, re-use or diversion to recycling.	Moderate progress. Ongoing
To ensure that the costs of waste disposal are progressively apportioned to those who generate the waste.	Moderate progress. Ongoing

Table 19 Progress against 2012 WMMP Objectives

6.2 2012 WMMP Targets

In 2011, the Otorohanga District Council set waste level of service targets and KPI's in the 2012/13 -2021/22 Long Term Plan (LTP). These were carried over into the 2012 WMMP as follows:

Service Characteristic	Performance Indicator	Target Level of Service	Performance measurement Procedure
Refuse and recycling collection services are provided and recycling actively promoted	Increase in recycling volumes over previous year	1% increase	Monitor against previous years data
	Complaints received from people whose refuse/recycling was not collected during kerbside collection as recorded in the service request system	Less than 10 customers annually reporting that their refuse/recycling was not collected during normal weekly kerbside collection	Data extracted from Council's Service Request system annually
	Council's solid waste management strategy remains relevant and up to date	Council's WMMP is reviewed by 1 July 2012 and then at intervals of not more than 6 years thereafter	Inspection of strategy document

The closed landfills the Council is responsible for meet environmental compliance	Extent of compliance with associated Resource Consent conditions for the closed landfills in Otorohanga and Kawhia	Overall assessment of 'Full Compliance' on all relevant consents	Results from most recent compliance inspection carried out by Waikato Regional Council.
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Table 20 2012 WMMP Targets and KPI's

The targets specified in the 2012/13 -2021/22 Long Term Plan (LTP) and carried over into the 2012 WMMP have largely been met through the period 2012-2017. However, these targets do not adequately indicate whether the council is achieving the aims of the Waste Minimisation Act 2008 or the NZ Waste Strategy 2010.

6.3 Key Issues of 2012-2018 WMMP

Key issues identified in the 2012-2018 WMMP were:

- To address the remaining amount of waste going to landfill that could be recycled
- High cost for refuse and recycling in lower populated areas
- The Contractor and landfill operators have not efficiently kept track of waste from specific regions and therefore a breakdown of waste is not available.
- At -0.5% population growth in the District, Council envisages services and quantities to remain static
- The cost of disposal in landfills has increased dramatically with the introduction of the Waste Minimisation Act 2008.
- The cost to transport to landfill has increased as the distance to landfill has increased
- Unavailability of compliant household and agricultural hazardous waste collection facilities
- Suitable disposal options of agricultural by-products such as silage wrap etc
- Development of event recycling protocol

Many of these issues continue to be relevant and further action is required to address them. Some issues – such as those related to costs to council for waste going to landfill – are set to increase still further as both the waste levy and climate change levies are likely to push costs up. This suggests further waste minimisation services and efforts will prove more cost effective than continued landfilling. Transferring these costs to the public is likely to encourage further waste minimisation efforts at an individual, household or business level. The risk of increased illegal dumping can be mitigated via good communication and education measures.

6.4 New Guidance

New Guidance from MfE on Waste Management and Minimisation Planning was released in 2015. 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 2012 documents did not provide for data to be collected in accordance with the National Waste Data Framework, as suggested by the new guidance.

6.5 Review of Actions

The 2012-2018 WMMP initiatives are shown alongside an assessment of progress in the table below.

What	How	Progress
Schools	Support the Paper 4Trees programme in primary and secondary schools within the district	Completed / Ongoing
	Support the Enviroschools programme in primary schools within the district	Completed / Ongoing
Community	Require all events on Council land, or which are Council funded, to have a waste minimisation plan	Completed / Ongoing. Recommend improved monitoring of compliance to submitted waste plans and improved guidance on how to run a Zero Waste event.
	Update Council's website with useful recycling information and links to complementary websites	Completed / Ongoing
Urban residents	Continue with the present kerbside collection of waste and recyclables – glass bottles and jars; plastic bottles (1&2); aluminium and steel cans; paper and cardboard.	Completed / Ongoing
	Promote an awareness of waste avoidance methods and participation in recycling, by the distribution of promotional materials	Completed / Ongoing. Recommend advancing waste minimisation engagement via pro-active workshops and community led engagement rather than via promotional materials.
Recyclable Materials	Retain existing range of recyclable materials being collected	Completed / Ongoing
	Support recycling initiatives / opportunities as they arise	Completed / Ongoing
Recycling facilities	Improve current facilities as required	Completed / Ongoing. Recommend investigating further development of reuse/repair options at facilities.
Rural residents	Operate and / or support three additional recycling centres at rural schools or relevant community centres.	Completed. Recycling centres now provided at: <ul style="list-style-type: none"> Ngutunui School Arohena School (new) Maihihi School (new) Korakonui School (new)
District Council	Support and promote Council's WMMP in all operations	Ongoing
	Specifications in contract documents to require appropriate management of waste	Ongoing
	Support and promote the use of recycled material in civil projects	Ongoing
Business	Encourage all businesses to provide in-house recycling facilities via the Otorohanga Business Association	Ongoing
Food & Hospitality	Increase the diversion of food waste and other biodegradable wastes from the waste stream. Councils Environmental Health Officer will carry out education at the time of inspection of food premises.	Ongoing

Garden Contractors	Contractors will be encouraged to shred and chip green waste on site, rather than deliver it to a community facility.	Completed / Ongoing. Limited success.
	Establish recycling outlet in Otorohanga to receive plastic waste generated by gardeners.	Ongoing
Rural - Industrial waste	Encourage the rural community to recycle: <ul style="list-style-type: none"> • Silage wrap • Agrichemical and animal health plastic containers • Any other recycling opportunities 	Completed / Ongoing

Table 21 Review of 2012 WMMP Actions

6.6 Summary of progress

Overall, ODC has made moderate progress in relation to the 2012-2018 WMMP Action Plan. Unfortunately, it is not possible to identify if these actions have resulted in a reduction on waste to landfill, as 2012 data on district waste tonnages is unavailable for comparison.

Further effort to collect accurate data and to measure waste flows should be the focus of the 2018-2024 WMMP.

PART 7 - FUTURE DEMAND AND GAP ANALYSIS

7.1 Otorohanga District Council area

The Otorohanga District covers an area of 1976 square kilometre (197,600 Hectares) comprising a strip of land approximately 30 kilometres wide that extends from the shores of the Tasman sea in the West to the Waikato River in the East. Falling within the boundaries of the Waikato Regional Council, the District is a varied area containing diverse topography, productive farmland, extensive native vegetation, ocean beaches and protected harbours. It is a District with strong historical and cultural associations, dating back to the arrival of the Tainui waka in the coastal community of Kawhia 600 to 700 years ago. Kawhia and other locations retain considerable significance for Maori.

The administrative and commercial centre of the District is Otorohanga, which has a resident population of approximately 2,700.

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, including urban gentrification
- 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.

7.2.1 Population growth¹⁹

The District had a normally resident population of 9,138 at the 2013 census, an increase of 60 on the figure recorded in 2006. This small increase was a change from a trend of slow declining population (at a rate of approximately -0.5% per annum) over the previous 10 years.

Looking to the future, Statistics New Zealand population projections suggest the District's total population to be relatively little changed over the next 30 years, despite the anticipated demographic changes that will occur with the aging of the large post-war 'Baby Boomer' generation.

Otorohanga, along with South Waikato and Waitomo, is projected to experience decline in all age groups below 65 years. This is led by a sizeable decline in birth numbers between 2013 and 2033, reflecting the net loss of people of reproductive age and net migration loss exceeding natural increases.

It is projected there will be a substantial growth in both numbers and proportions at 65+ years, with this growth accounting for all growth (and/or offsetting decline). The trends imply a continuation of overall population decline for Otorohanga.

The age profile of residents is changing with an increasing proportion of elderly residents. 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. Further research carried out by WRAP 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 increasingly pushed to home based healthcare.

7.2.2 Economic Activity

Research from the UK²⁰ and USA²¹ 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 6 below shows the relationship between growth in municipal waste in the OECD plotted against GDP and population.

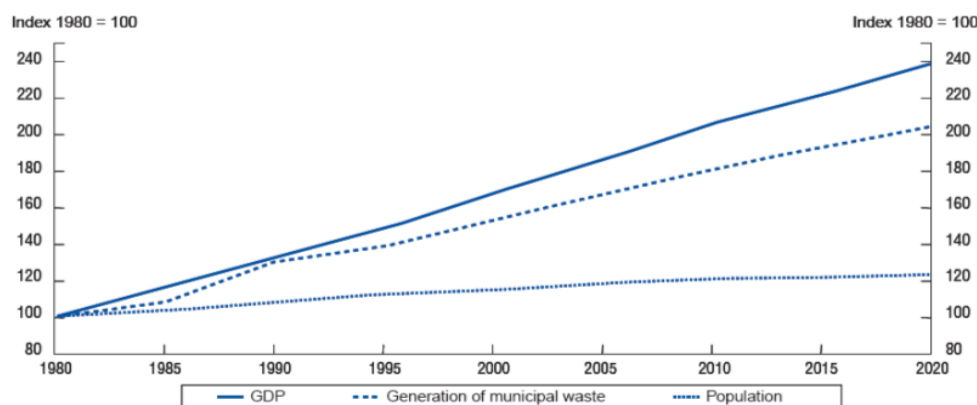
Total GDP is also a useful measure as it takes account of the effects of population growth as well as changes in economic activity. In general, municipal solid waste growth tracks above population growth but below GDP. The exact relationship between GDP, population, and waste growth will vary according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

¹⁹ Otorohanga District Council Long Term Plan 2015-2015

²⁰ Eunomia (2007), *Household Waste Prevention Policy Side Research Programme*, Final Report for Defra, London, England

²¹ EPA, 1999. National Source Reduction Characterisation Report For Municipal Solid Waste in the United States

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.



Source: OECD 2001.

Figure 6 Municipal waste generation, GDP and population in OECD 1980 – 2020²²

7.2.3 Changes in Lifestyle and Consumption

As the districts population is anticipated to remain neutral, it is likely waste volumes are likely to remain steady, although composition will change due to wider consumption habits and product design changes.

Migration and travel may also affect community expectations relating to recycling and waste minimisation, leading to demand for reuse, resource recovery and recycling services.

Consumption habits will also 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 2011²³.

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 Approaches²⁴

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.

²² Eunomia (2007), Household Waste Prevention Policy Side Research Programme, Final Report for Defra, London, England

²³ http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=10833117

²⁴ WDC 2015 Waste Services report

- 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.
- 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.

The proposed 2018 review of the Waste Minimisation Act 2008 may also have an as-yet-unknown impact on the national waste management approach.

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 small 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. An assessment of this was undertaken using a gap analysis based on the information in this Waste Assessment. The following 'gaps' have been identified:

- Insufficient systems in place for obtaining waste data from private operators in the District
- Potential for improved services targeting the rural sector
- Opportunities for improved sub-regional, regional and national collaboration to achieve reduction and minimisation of waste
- Insufficient leadership from central government to address national waste issues

7.3.1 Key waste Streams to be addressed

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

(a) National problematic waste streams

Waste tyres, e-waste and packaging waste are national issues and are best managed via national product stewardship schemes. Arguably, councils have little ability to reduce or manage these waste streams due to the scale of the problem and the lack of council control over those waste

streams. Such issues are most effectively managed at a national level.

ODC, in conjunction with other councils, has the ability to strongly advocate for the introduction of national schemes to assist in the management of these waste streams.

(b) Farm waste

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 Otorohanga District has a significant volume of farm waste being disposed of to land, 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.

7.3.2 Hazardous Wastes

(a) Household hazardous waste

Access to council services for household hazardous waste and used oil is likely to be of benefit for the District. 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, Dieldrin and mercury.

(b) 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.

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.

For non-home healthcare related waste issues, the Pharmacy Practice Handbook²⁵ 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.

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 healthcare providers and DHB's to assist the establishment of healthcare waste take-back programs may be a suitable solution to the issue.

(c) E-waste

Without a national product stewardship scheme, e-waste treatment and collection operations 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 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.

E-waste is a national issue and is best managed via a national mandatory product stewardship scheme, however, local services and infrastructure could be strengthened within the city to provide improved access to e-waste recycling; and ensure e-waste recyclers meet the joint Australian and New Zealand Standard AS/NZS 5377:2013 Collection, storage, transport and treatment of end-of-life electrical and electronic equipment.

²⁵ <https://nzpharmacy.wordpress.com/2009/06/09/disposal-of-unwanted-medicines/>

PART 8 - OPTIONS

This section sets out the range of options available to Council to address the key issues 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 2018 – 2024 WMMP

Issues identified during the development of this Waste Assessment are:

- Insufficient systems in place for obtaining waste data from private operators in the District
- Increasing quantity of waste to landfill per capita
- Increasing volumes of recycling and types of recyclables to manage with potential for national and international events to adversely impact the cost of recycling services
- Insufficient leadership from central government to address national waste issues
- Opportunities for improved sub-regional, regional and national collaboration to achieve reduction and minimisation of waste
- Potential for greater community partnership, engagement in order to improve public understanding of waste issues
- Insufficient breadth of resource recovery and re-use options in the District to meet potential future demand
- Potential for improved services targeting the rural sector

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 obtain accurate information from private collectors and operators regarding waste flows
- 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.

Addressing the inability to obtain quality waste data must be a priority. Options for addressing the data issue include:

1. Implementation of a licensing system for waste collectors and operators, potentially in a sub-regional or regional partnership; OR
2. Implementation of a central government waste data collection and management system which includes:
 - a. TA level data collection; and
 - b. Collecting data suitable for TA's to achieve their obligations under the WMA 2008; and
 - c. TA access to data collected by central government; OR
3. Amendments to the Waste Minimisation Act 2008 to obligate waste collectors and operators to provide relevant waste data to TA's

Of these options, only Option 1 is within the control of ODC.

The Ministry for the Environment has stated a key focus area for the next 1-3 years is to “invest in developing a national waste data collection and evaluation framework that targets key information to prioritise waste issues and measures effectiveness of the waste disposal levy²⁶”. However, the report goes on to state:

“A key recommendation by the OECD in its recent environmental performance review for New Zealand was that the Ministry for the Environment needed to improve its access and reporting of data and evidence regarding waste. Accessing data on quantities and types of waste disposed at waste disposal facilities would provide the Ministry with a deeper understanding of the waste sector in this country. This would enable the Ministry to prepare timely, comprehensive and internationally comparable reports based on sound information to support planning and strategy for the country”; and “Further attention should be directed towards improving the availability of data from territorial authorities and Waste Minimisation Fund projects, including provision of waste minimisation data and contributions to wider outcomes”.

These comments suggest that any national waste data scheme may be focused on the Ministry for the Environment’s needs for data rather than TA requirements; and also, that data collection may be placed as a further obligation of TA’s regardless of the current difficulty to obtain such data from the private sector.

In addition, the proposed 2018 review of the Waste Minimisation Act 2008 may have an impact on the national waste minimisation approach.

8.2.2 Solid Waste Bylaw

ODC is one of only a few councils in the Waikato region that does not have a Solid Waste bylaw.

Two issues within the region now provide a compelling case for the introduction of a Solid Waste Bylaw, including waste operator licensing provisions:

1. The Waikato and Bay of Plenty areas have experienced a number of incidents involving tyre piles which have resulted in some councils facing expensive ‘clean-ups’. 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.
2. 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 a regionally aligned template Solid Waste Bylaw to:

- Assist councils to offer similar levels of control of waste in their regions. The Bylaw takes 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

²⁶ Review of the effectiveness of the Waste Disposal Levy 2017, Ministry for the Environment

operator or facility. For example, by having similar reporting requirements, categories of waste, frequency of reporting etc.

The template bylaw also provides the opportunity for regional and sub-regional licensing administration. Options for working together include funding a single administrator who manages the licensing 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 and avoid resistance.

A regionally consistent Bylaw could help reduce unnecessary administrative burden for private operators, and the unintended consequences of less well-regulated areas becoming a target for undesirable practices, such as cleanfilling, tyre dumping and poorly managed waste facilities.

Auckland, Christchurch, Taupo, New Plymouth, Kapiti Coast, Waimakariri and Far North have licensing systems, the requirements vary as do the fees charged. For example, the fees are \$30 in New Plymouth and \$435 plus \$88 per vehicle in Auckland.

Another option under the template bylaw clauses is to introduce minimum standards. This could be applicable to the E-Waste issue, where e-waste providers frequently fail to meet the Joint Standard for e-waste recycling. The Bylaw could place meeting the Standard as a requirement of holding a Waste Collectors or Waste Operators licence.

8.2.3 Consenting and guidance for event waste management

Otorohanga District Council does not currently have guidelines for events held in the District. A set of guidelines may provide better guidance for events and include details of the consent process for events held in the ODC District (such as H&S Plan, Traffic Management Plan and Event Waste Minimisation Plan). It may be advantageous to develop Event Waste Guidelines as a sub-regional collaboration.

8.2.4 Options relating to data and regulation

Option	Strategic Assessment	Impact on Current/Future Demand	Councils' Role
Continue without a Solid Waste Bylaw	<p><i>Social/Cultural:</i> uneven understanding of waste flows in the district</p> <p><i>Environmental:</i> minimal ability to guard against environmental degradation through illegal disposal.</p> <p>Minimal ability to require environmental performance standards are met (e.g. recyclable material is separated)</p> <p><i>Economic:</i> No change to current systems.</p> <p><i>Health:</i> Limited ability to monitor and enforce actions of current providers and ensure public health is protected</p>	<p>A lack reliable information to monitor and plan for waste management in the region</p> <p>A lack of data and controls on private operators limits Councils' ability to effectively manage waste in the region.</p> <p>Constrained ability to plan for and respond to future demand</p>	<p>Council would implement and enforce existing bylaws</p> <p>May not be sufficient for reporting requirement changes signalled by MfE</p>
Implement regionally consistent Solid Waste Bylaw and waste licensing system	<p><i>Social/Cultural:</i> better understanding of the waste flows in the district</p> <p><i>Environmental:</i> would increase diversion from landfill and information about disposal practices and could potentially guard against environmental harm through illegal disposal</p> <p><i>Economic:</i> small increased cost for operators; additional resources will be required to monitor and enforce the regulatory system</p> <p><i>Health:</i> greater monitoring of providers to ensure no adverse health risks occur</p>	<p>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</p> <p>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</p>	<p>Councils would develop and enforce the bylaw; monitor and report on waste quantities and outcomes.</p> <p>There are opportunities to implement waste licencing as part of sub-regional co-operation to reduce costs and impact on providers.</p>
Audit waste stream at least once every 6 years.	<p><i>Social/Cultural:</i> Identifying material streams for recovery could lead to job creation. Better understanding of waste behaviour.</p> <p><i>Environmental:</i> Ability to identify materials and waste streams for potential recovery and reduction in waste to landfill.</p> <p><i>Economic:</i> 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</p> <p><i>Health:</i> Potential for improved data on hazardous and harmful wastes. A better understanding of the waste problem will highlight key areas for action to improve health outcomes</p>	Better information will inform council planning to meet future demand	Plan for and action a SWAP analysis at least once every 6 years.

Implement National Waste Data Framework and regional collation of data	<p><i>Social/Cultural:</i> improved knowledge of waste flows and better information available to the public on waste and recovery performance</p> <p><i>Environmental:</i> Improved ability to monitor and manage waste collection and disposal information and make appropriate planning and management decisions</p> <p><i>Economic:</i> improved understanding of waste flows resulting in better targeted waste and recovery services and facilities</p> <p><i>Health.</i> Potential for improved data on hazardous and harmful wastes</p>	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	Council 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
Develop Event Waste Guidelines and clarify consenting requirements for Event Waste; potentially as part of a sub-regional collaboration.	<p><i>Social/Cultural:</i> community will be more aware of waste minimisation issues outside of the home, taking a higher level of ownership of the issue</p> <p><i>Environmental:</i> services would seek to establish, support and extend positive behaviours that reduce environmental impact</p> <p><i>Economic:</i> costs borne by event managers</p> <p><i>Health.</i> Minimise health risks associated with waste management</p>	Meet future demand	<p>Regulatory</p> <p>Education and partnerships</p> <p>Opportunities for regional or sub-regional collaboration to maximise impact</p> <p>Staff time</p>

Table 22 Options: Data and Regulation

8.3 Options: Collection services

8.3.1 Recycling service affected by international trends

Much of the recycling collected in NZ is exported, particularly to Indonesia and China. China has in recent year's tightened measures around the acceptance of recycled materials.

Restrictions on the acceptance of recyclable material may mean changes to collection and sorting methodologies in order to achieve export standards. This may impact the costs associated with recycling with some estimates indicating recycling costs could double within the 5-10-year period (regardless of collection methodology) – however in the long run crate based services may become more expensive than co-mingled MGB based services.

It is recommended that council indicates these potential increases to the community and councillors. Procurement processes and contracts can be used to make recycling proposals more attractive to contractors and share the risks associated with contamination and cleaning up the recycling.

Limitations on materials collected for recycling may also be required, or at the least, careful consideration prior to new services being implemented.

8.3.2 Shared services

There is potential for ODC to work more closely with other councils in the region and the Waikato Regional Councils, in developing regional waste services and facilities. Such collaboration may have the potential to participate 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

In some instances, cost savings of 5–10% may be realised through rationalisation of facilities, plant, staff, reporting and data collection systems through a lower contract price. There may also be 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:

- 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 service contract the tender evaluation process will be more complex as a result of having to satisfy the needs of all the councils.

Otorohanga District Council already participates in some shared service opportunities where they are shown to be beneficial. For example, providing education on waste minimisation via funding support to the EnviroSchools and Love Food Hate Waste programmes.

8.3.3 Sustainable Procurement

Council is able to utilise procurement procedures and purchasing power to create positive environmental and social outcomes. Council would still receive the same delivery of cost effective goods, services and works that a commercial supplier could provide, but community organisations and social enterprises may instead be contracted.

Community led resource recovery activities can provide positive outcomes for the local economy via 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.

It is recommended that Council consider Sustainable Procurement for waste services, when appropriate.

8.3.4 Options: Collection Services & Procurement

Option	Strategic Assessment	Impact on Current/Future Demand	Councils' Role
Status Quo services and procurement practises.	<i>Social / Cultural / Environmental / Economic / Health</i> - no new impacts	Would not impact on the status quo prediction of demand.	Provides a kerbside recycling service
Monitor international and national trends and review waste services regularly to ensure viability of recycling services	<i>Social/Cultural:</i> maintain resident expectations of service levels <i>Environmental:</i> minimise environmental impacts from services <i>Economic:</i> manage service budgets and ratepayer expectations <i>Health:</i> Services will facilitate appropriate disposal and reduce health impacts	Maintain management of 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
Councils enter into shared service or joint procurement arrangements where there is mutual benefit	<i>Social/Cultural:</i> some improved consistency in approach. <i>Environmental:</i> impacts depend on the collaborative strategies and projects. <i>Economic:</i> shared services could reduce costs and enable access to better quality services. <i>Health:</i> Enhanced services would facilitate appropriate disposal and reduce health impacts	No significant impact on status quo forecast of future demand	Council to approach neighbouring authorities to form collaborative partnerships on various strategic or operational projects Where services are to be shared there will be a need to align service provision and contract dates
Investigate and implement sustainable procurement, where beneficial	<i>Social/Cultural:</i> Supporting community capacity and fostering strong communities <i>Environmental:</i> improvement to waste recovery <i>Economic:</i> Could result in benefits for the local economy <i>Health:</i> Enhanced services enabling separation of materials could 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

Support programmes to avoid and reduce food waste; and increase composting and associated behaviours	<p><i>Social/cultural:</i> Community awareness and engagement in the waste minimisation process, taking a higher level of ownership of the food waste issues.</p> <p><i>Environmental:</i> Education programmes would seek to establish, support and extend positive behaviours that reduce environmental impact</p> <p><i>Economic:</i> funded through waste levy funding</p> <p><i>Health:</i> Information regarding health risks of relevant waste materials and appropriate management targeted to audiences needs</p>	<p>Improved ability to meet future requirements</p> <p>Education alone will not support behaviour change. Pathways need to be provided for residents and businesses to take action on education messages and be supported to make behaviour change actions.</p>	<p>Councils would fund and coordinate education and engagement programmes.</p> <p>Programmes may be delivered by community or other partners.</p>
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Table 23 Options – Collection Services and Procurement

8.4 Options: Infrastructure

Options for Otorohanga District Council to consider include”

- undertaking improvements to the staffed recycling centres in order to improve re-use, recovery and recycling of materials
- investigating partnerships with community organisations for the delivery of services aimed to reduce, reuse and recycle waste.
- establishing a fuller resource recovery facility in conjunction with community groups is likely to provide additional benefits, beyond just waste minimisation including job creation, local spending, reuse/repair facilities and community engagement with waste minimisation.

8.4.1 Options: Infrastructure

Option	Strategic Assessment	Impact on Current/Future Demand	Councils' Role
Status Quo infrastructure	<i>Social / Cultural / Environmental / Economic / Health</i> - no new impacts	Would not provide any benefit towards meeting prediction of demand.	Provides a kerbside recycling service
Investigate and, where applicable, facilitate the development of additional resource recovery services at existing facilities. Investigations and improvements could be undertaken in partnership with community.	<i>Social/Cultural:</i> improved consistency in approach. <i>Environmental:</i> improved environmental outcomes including an increased diversion of waste from landfill <i>Economic:</i> local employment, potential for new small businesses to develop to meet reuse/recycling demand. Funded by waste levy and funding applications to the Waste Minimisation Fund (government) <i>Health:</i> Enhanced services would facilitate appropriate disposal and reduce health impacts	Increased ability to meet forecast of future demand	Investigation of potential facilities Leadership in collaborative projects with community partners Project management and assistance providing and obtaining funding

Table 24 Options - Infrastructure

8.5 Influence and partnerships

A number of opportunities have been identified for ODC to exert influence and / or partner with others to achieve waste avoidance, reduction or minimisation. These include:

- greater community partnership, engagement to foster understanding of waste issues
- potential for greater joint working in Council service delivery, regional and sub-regional collaboration; and
- advocacy for Product Stewardship and the introduction of a container deposit scheme

In addition, there is the potential to establish a Zero Waste Working Group (or similar) to assist council to encourage communities towards becoming a 'zero waste communities'. This could be a sub-regional group and be similar to Waikato/Bay of Plenty Sector Advisory group supporting the regional Councils achieve their waste minimisation goals.

8.5.1 Options relating to influence and partnerships

Option	Strategic Assessment	Impact on Current/Future Demand	Councils' Role
Engage in regional cooperation including appointing a Regional Coordinator to assist with joint projects. Each Council responsible for own jurisdiction.	<i>Social/Cultural/Environmental/ Health</i> - no new impacts <i>Economic</i> : Shared funding	No significant impact on status quo forecast of future demand	Continue to develop strategic documents through the joint committee. Funding for agreed projects and initiatives.
Identify and support community and business champions in waste reduction and avoidance.	<i>Social/Cultural</i> : improve community level of ownership of waste issues <i>Environmental</i> : improved resource efficiency and reduce harm from waste <i>Economic</i> : Potential to identify areas of job creation <i>Health</i> : Health impacts dependent on the nature of the collaboration.	Assist in meeting future demand	Staff time and potentially some funding identified on a case by case basis.
Establish a Council / community Zero Waste Working Group (or similar) to assist council to encourage the communities towards becoming a 'zero waste communities'.	<i>Social/Cultural</i> : improve community level of ownership of waste issues <i>Environmental</i> : improved resource efficiency and reduce harm from waste <i>Economic</i> : Potential to identify areas of job creation	Assist in meeting future demand	Staff time and potentially some funding identified on a case by case basis.

	<i>Health:</i> Health impacts dependent on the nature of the collaboration.		
Strongly advocate for effective product stewardship and regulation under section 2 of the WMA2008 (including a container deposit scheme) and support independent organisations advocating for similar outcomes	<p><i>Social/Cultural:</i> product take back schemes will require behaviour change by product producers and consumers; potentially better management of hazardous materials.</p> <p><i>Environmental:</i> improved resource efficiency.</p> <p><i>Economic:</i> producer responsibility for key waste streams reduces reliance on council funded services</p> <p><i>Health:</i> product take back will ensure better management of hazardous materials</p>	<p>Product stewardship is specifically enabled in the WMA. Fully enacting this principle will help ensure true costs of products are reflected in their price.</p> <p>Call for the introduction of a container deposit scheme</p> <p>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</p>	<p>Strongly advocate to Government for regulation and product stewardship</p> <p>Work with other councils to call for product stewardship and regulation</p> <p>Work with DHB's and others to establish and implement product take back schemes for medical waste and other materials</p> <p>Support NGO's and other organisations acting to achieve producer responsibility for end of life products</p>
Collaborate with Mana Whenua, community groups and private sector to investigate and (if suitable) implement opportunities to enhance economic development through resource recovery	<p><i>Social/Cultural:</i> potential for downstream job creation</p> <p><i>Environmental:</i> potential enhancement through waste minimisation</p> <p><i>Economic:</i> could result in benefits for the local economy</p> <p><i>Health:</i> Health impacts dependent on the nature of the collaboration.</p>	<p>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.</p>	<p>Council to lead and facilitate</p> <p>Council funding & staff support may be required for both establishment and ongoing support of opportunities.</p> <p>Council to employ 2 full-time waste minimisation officers.</p>
Continue existing education programmes including application of the Regional Waste Education Strategy and identify areas where an extension of services would be beneficial such as farm waste initiatives.	<p><i>Social/Cultural:</i> no change in community level of ownership of waste issues</p> <p><i>Environmental:</i> education programmes aim to establish and support positive behaviours that reduce environmental impact</p> <p><i>Economic:</i> currently funded</p> <p><i>Health:</i> Public informed of health risks of waste materials and appropriate disposal pathways</p>	<p>Awareness of waste issues and behaviour would not change significantly from current situation</p>	<p>Council would continue to fund and coordinate education programmes</p>

Table 25 Options – Influence and Partnerships

8.6 Summary table of potential scenarios

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:	Scenario 2:
Data & regulation	<p>No Solid Waste Bylaw or operator and facility licensing</p> <p>Data not in alignment with National Waste Data Framework</p>	<p>Regionally aligned bylaw with operator and facility licensing, data provision, service standards and receptacle restrictions</p> <p>All reporting to be against the standard reporting indicators under the National Waste Data Framework</p> <p>Regional or sub-regional licensing to reduce compliance costs</p> <p>Investigate utilising social procurement mechanisms for waste services</p> <p>Manage procurement and services to meet changing national and international market trends</p>	<p>Regionally aligned bylaw with operator and facility licensing, data provision, service standards, and receptacle restrictions</p> <p>All reporting to be against the standard reporting indicators under the National Waste Data Framework</p> <p>ODC provide licensing provisions separate to other councils in the region</p> <p>Investigate and implement utilising social procurement mechanisms for waste services</p> <p>Manage procurement and services to meet changing national and international market trends</p>
Organic waste	No change to services and education	Promote composting and food waste reduction programmes such as Love Food Hate Waste	Investigate and if appropriate implement a kerbside food waste service
Infrastructure	No change to waste infrastructure	Investigate and, where applicable, facilitate the development of additional services at recycling centres.	Investigate and, where applicable, facilitate the development of additional resource recovery centres similar to the Xtreme Zero Waste facility in Raglan.
Influence and partnerships	<p>No advocacy for product stewardship</p> <p>Maintain current relationships and level of regional collaboration</p>	<p>Advocate for effective product stewardship and regulation under section 2 of the WMA2008 and support independent organisations advocating for similar outcomes</p> <p>Call for the introduction of a container deposit scheme</p>	<p>Commit budget allocation for ongoing advocacy programme calling for effective product stewardship and regulation under section 2 of the WMA2008 and support independent organisations advocating for similar outcomes</p> <p>Call for the introduction of a container deposit scheme</p>

		<p>Engage in regional cooperation including appointing a Regional Coordinator to assist with joint projects. Each Council would be responsible for own jurisdiction.</p> <p>Identify and support community and business champions in waste reduction and avoidance.</p> <p>Collaborate with Mana Whenua, community groups and private sector to investigate and (if suitable) implement opportunities to enhance economic development through resource recovery</p> <p>Continue existing education programmes including application of the Regional Waste Education Strategy</p> <p>Investigate rural waste education</p>	<p>Engage in regional cooperation including appointing a Regional Coordinator to assist with joint projects. Each Council responsible for own jurisdiction.</p> <p>Identify and support community and business champions in waste reduction and avoidance.</p> <p>Collaborate with Mana Whenua, community groups and private sector to investigate and implement opportunities to enhance economic development through resource recovery</p> <p>Expand existing education programmes including application of the Regional Waste Education Strategy</p> <p>Implement rural waste services</p>
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Table 26 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).²⁷
- 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 Otorohanga District Council 2018-2024 WMMP.

²⁷ 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 Otorohanga District:

- Council provided kerbside refuse services
- Council provided kerbside recycling collections and drop off points
- Litter bin servicing and illegal dumping collection
- Ongoing monitoring of closed landfills to ensure that resource consent conditions continue are met
- Waste minimisation promotion and education
- Management of waste to ensure protection of health

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 2018-2024 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 2018-2024 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 endeavor's 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 supported the proposed options to improve waste management and minimization, access to quality data, and the proposed focus for activities.



8 February 2018

Sandra Murray
Zenzic Consulting
Sandra@zenzic.nz

Dear Sandra,

Re: Otorohanga District Council: Waste Assessment. February 2018

Thank you for the opportunity to provide comment on the 2018 draft Waste Assessment for Otorohanga District Council, as per the requirements of section 51 of the Waste Minimisation Act 2008. I have reviewed the document and am pleased to be able to respond and provide comment.

This Waste Assessment has identified a range of issues that are likely to be of concern to public health as set out in section 2.3.4 of the assessment. In doing so it acknowledges that effective waste management is critical for good public health outcomes.

The Waste Assessment is a well written, thorough document, which will provide guidance for Council activities to be included in a Waste Minimisation and Management Plan. It has identified a number of gaps in waste data for the region. These gaps appear to be partly due to private operators and facilities not being required to provide detailed information about waste and recycling volumes. Of particular concern for public health is the lack of information regarding the volumes and fate of hazardous waste. I believe that obtaining good quality data about the various waste streams is a key issue going forward, as it is only through the clear understanding of the amount and composition of waste that plans can be put in place to manage it appropriately. I, therefore, support the recommendations that may help to address this issue, including the proposed option to implement a solid waste bylaw and waste licensing system, and conducting regular waste audits.

I note that Otorohanga District does not currently have collection or disposal facilities for hazardous waste. Residents must transport their hazardous waste to a facility outside of the district, or employ a suitable private contractor to manage its disposal. There is a risk that residents will inappropriately dispose of hazardous waste if collection or disposal facilities are not readily available. As noted in the Assessment, access to council services for household hazardous waste and used oil is likely to be of benefit for the district, and I recommend that strong consideration be given to this.

Farm waste has been identified as contributing to an estimated 40% of all waste within the district. The Rural Waste Survey Data Analysis: Waikato & Bay of Plenty indicates that 100% of farms burn, bury or bulk store on site, and that 50% of rural property had a burn pile or farm dump less than 40 metres from a water course or drain. Such practices risk contamination of both land and waterways in

the longer term, with potential health risks. I encourage Council engagement with farms to help quantify and address this issue. I support the suggestion made within the Waste Assessment, for Council to facilitate the uptake of farm waste services through a combination of education and the identification and removal of barriers to appropriate waste disposal.

Public Health can be protected in the longer term by minimising the impact of waste on our environment. I support actions that reduce waste to landfill, such as reducing, recycling and reusing. A lack of data from Otorohanga District means that it is not possible to identify whether there has been a change in volume of waste to landfill over recent years, but it is likely to have increased in alignment with national trends. The Waste Assessment notes that kerbside waste volumes appear to be increasing on a per capita basis, and while the composition of kerbside refuse is unknown, there is potential to divert a significant proportion of this from landfill. I encourage Council to investigate and undertake actions that will increase recycling and resource recovery, such as proposed options to facilitate the development of additional resource recovery services or centres. Encouraging recycling behaviour may require additional actions to ensure that the best choice is the easiest choice for communities. I support community partnerships, to gain a better understanding of barriers to recycling, and also support the development of a Zero Waste Working Group, to encourage communities in becoming zero waste communities.

The Waste Assessment indicates that Otorohanga District Council utilises pre-paid bags for rubbish collection. The requirement to purchase bags for refuse collection may help encourage recycling where appropriate recycling bins are also provided. However, it also has the potential to create inequities and disadvantage low socioeconomic groups. Recycling behaviour could instead be encouraged by using smaller sized bins for waste, rather than bags. This may provide a more equitable outcome.

Once again, thank you for the opportunity to comment. The Waikato Public Health Unit recognises that effective waste management contributes to better health outcomes for the community and would like to continue working with the Council in the development of the Waste Management Plan.

Kind regards



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 green waste	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 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 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 27 Glossary of terms

Landfill definitions (From the 'Technical Guidelines for Disposal to Land' (2016))	
WAC	Waste Acceptance Criteria
Class 1 - Landfill	<p>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.</p> <p>Class 1 landfills require:</p> <ul style="list-style-type: none"> • 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. <p>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.</p> <p>Waste acceptance criteria comprises:</p> <ul style="list-style-type: none"> • 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	<p>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.</p> <p>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.</p> <p>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.</p> <p>Waste acceptance criteria comprises:</p> <ul style="list-style-type: none"> • a list of acceptable materials; and • maximum ancillary biodegradable 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.
Class 3 Landfill – Managed/Controlled Fill	<p>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.</p> <p>Monitoring of accepted material is required, as are operational controls, and monitoring of sediment runoff and groundwater.</p> <p>Waste acceptance criteria comprises:</p> <ul style="list-style-type: none"> • 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. <p>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.</p>
Class 4 Landfill - Cleanfill	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Waste acceptance criteria comprises:</p> <ul style="list-style-type: none"> • 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 incidental 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. <p>Materials disposed to a Class 4 landfill should pose no significant immediate or future risk to human health or the environment.</p>
Note: The Guidelines should be referred to directly for the full criteria and definitions.	

Table 28 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 2017²⁸. This review notes that for the review period of 1 July 2013 to 30 June 2016, levied waste disposal facilities received a total of 10,681,295 gross tonnes of waste. From this, 1,207,786 tonnes of material were diverted, leaving total net waste to landfill at 9,473,509 tonnes. Total gross tonnage of waste increased by 16.4% from the 2014 review,

²⁸ Ministry for the Environment. 2017. 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

while the quantity of waste diverted decreased by 6.3%. As a result, the total net tonnage disposed to levied landfills has increased by 20.1% since the 2014 review.

The review goes on to note: “Systems and processes to administer the waste disposal levy are operating efficiently and effectively, and all stakeholders are meeting their obligations relevant to this review as prescribed in the Waste Minimisation Act. However, annual levied waste is increasing, indicating that the levy is not currently achieving its objective. Added to this, the majority of New Zealand’s waste disposal facilities are exempt from the levy and no data is available about the waste that is disposed at these facilities”.

In conclusion, the Ministry intends to develop and implement a staged approach to applying the waste disposal levy across additional classes of landfills and assess the role of a differential rating system. This staged approach will be developed over a 1-5-year period.

(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 waste²⁹. No Priority Products have been declared as of May 2015.³⁰

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.

²⁹ Waste Management Act 2008 2(8)

³⁰ MfE, Priority waste streams for product stewardship intervention: Consultation Feedback Publication date: April 2015

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.

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 www.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 CO₂ (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)³¹.
- 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 otherwise³².
- 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 CO₂) 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.

³¹ <https://carbonmatch.co.nz/> accessed 19 July 2016

³² The two for one transitional provisions are now to be phased out by the Government from 1 January 2017

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) 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 \$13.10.³³ 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, refuse, 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.

³³ Each tonne of waste is assumed under the NZETS to generate 1.31 tonnes of CO₂ 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

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). 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.³⁴

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.³⁵

(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:

³⁴ From: MfE 2009: Waste Management and Minimisation Planning, Guidance for Territorial Authorities.

³⁵ MfE 2009: Waste Management and Minimisation Planning, Guidance for Territorial Authorities

- 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
- 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 Table of Tables

Table 1	Maniapoto Environment Management Plan policies	9
Table 2	Tonnage of waste to landfill from Waikato and Bay of Plenty	10
Table 3	District Plan considerations	12
Table 4	Total gross, diverted and net tonnages of waste at levied waste disposal facilities	12
Table 5	Recommended bin and bin lid colours for MGB's	14
Table 6	Summary - estimated waste disposed of to land Waikato District.....	17
Table 7	Kerbside refuse comparison with other councils	18
Table 8	Farm waste tonnages for the Otorohanga District	18
Table 9	Recycled and diverted material – summary	19
Table 10	Kg per capita per annum for council recycling services.....	19
Table 11	Recycling tonnages collected 2016-2017	20
Table 12	Landfills accessible from Otorohanga District	21
Table 13	Attended recycling centres – opening times	23
Table 14	Refuse tonnages collected via council kerbside services 2016 – 2017	26
Table 15	Recycling tonnages collected 2016-2017	27
Table 16	Commercial refuse and recycling service providers	30
Table 17	Employment before and after CRC development.....	32
Table 18	Comparison of volumes of refuse and recyclables: 2012 WA to 2017 WA * excludes farm waste to land	33
Table 19	Progress against 2012 WMMP Objectives.....	34
Table 20	2012 WMMP Targets and KPI's	35
Table 21	Review of 2012 WMMP Actions	37
Table 22	Options: Data and Regulation	47
Table 23	Options – Collection Services and Procurement	51
Table 24	Options - Infrastructure.....	52
Table 25	Options – Influence and Partnerships	54
Table 26	Summary: Potential scenarios	56
Table 27	Glossary of terms.....	63
Table 28	Landfill definitions.....	64

A.6.0 Table of Figures

Figure 1	Recycling composition from all council services 2016-2017.....	20
Figure 2	Kerbside recycling composition 2016-2017.....	20
Figure 3	Attended recycling centres – composition	23
Figure 4	Composition of recyclables from unattended collections	24
Figure 5	Composition of kerbside refuse.....	26
Figure 6	Municipal waste generation, GDP and population in OECD 1980 – 2020	39