



# Waste Minimisation Plan

(WMP)

2009 - 2012

Prepared by

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# Statement from the Mayor

## Sue Morris

The Ruapehu District enjoys a very special natural environment that provides a unique and enviable lifestyle to its residents. Our abundant natural resources and world-renowned scenery are defining characteristics of the district that sustain our key industries such as farming, forestry and tourism.



Ruapehu residents value a clean environment and recognise its importance to our lifestyle and economic well-being. The responsibility for the maintenance of our pristine environment falls on us all as Ruapehu residents who as ambassadors for the District need to take ownership for the District's 'clean, green' status.

It is not enough to leave the maintenance and quality of Ruapehu's environment to chance. Under the Local Government Act (LGA) Council is required to have a plan for the management of its solid waste.

Council's first series of solid waste plans were called 'Solid Waste Management Plans' (SWaMP) and were developed in-line with Council's participation in the Zero Waste Trust National Project for waste minimisation which is working toward zero waste by 2015. Since 1999 70% of Local Authorities in New Zealand have adopted a zero waste policy, most like us with a 2015 target for achieving 'zero waste'.

The new Waste Minimisation Plan (WMP) 2009-12 is 'business as usual' in regard to the strategic 2015 'zero waste' objective, however the renaming of Council's solid waste plan (from SWaMP to WMP) reflects the shift over time in Council's approach from 'managing' solid waste to a focus on 'minimisation' of solid waste. The WMP 2009/12 provides a 'roadmap' for how the Ruapehu District is going to achieve its strategic goal of zero waste by 2015 by progressively reducing the quantities of residual waste entering the District landfill.

With Ruapehu's economic wellbeing so tightly tied to our environmental wellbeing we have much to gain from the successful implementation of WMP 2009-12. Being a rural district with a low permanent population that has large numbers of visitors at certain times of the year brings its own unique waste management problems.

The 'zero waste' goal is a powerful concept that challenges old ways of thinking and inspires new attitudes and behaviour. The objective is to minimise and ultimately eliminate waste by being a resource efficient society where material flows are cyclical and everything is recycled, made for reuse or composted.

The District has been making significant gains toward achieving our strategic 2015 'zero waste' goal. As reported in this year's State of the District Report, since 2005-06 the amount of waste being diverted from landfill to recycling has outstripped the waste entering landfill. In addition the total waste stream for the district is now a quarter less than it was ten years ago. It is crucial that this momentum is maintained going forward.

The protection and maintenance of our natural environment is recognised as being fundamental to our living sustainably with many residents identifying a 'clean, unspoilt and beautiful environment' as a major strength of the District.

Because of the importance of WMP 2009-12 to maintaining and preserving some of our most important assets I encourage you to familiarise yourself with the plan, its tactics and objectives.

## Key Changes as a Result of Consultation

The WMP was consulted on in draft format in late 2008 and as part of Council's Draft Long Term Plan 2009-19 (LTP) during April and May 2009. As a result of submissions to the LTP process Council decided to make the following changes to the WMP:

- The 'Jack Trash' unit at Raetihi will remain in use until other solutions can be found with the community.
- The proposed kerbside composting trial has been removed from the Solid Waste work programme for 2009/10.

## Changing Operating Environment

The WMP has been developed in accordance with the new Waste Minimisation Act 2008 which is currently still being implemented across New Zealand (see Appendix C). This implementation is an on-going process with various regulations in development stage and parts of the Act relating to the waste disposal levy not in force yet. As a result there will be some uncertainty and fluidity in Council's Solid Waste operating environment during the life of this WMP.

## Certificate of Compliance

This Plan is Ruapehu District Council's Waste Minimisation Plan 2009-12 (WMP) and has been produced in compliance with Sections 42 and 43 of the Waste Minimisation Act 2008.

The WMP was adopted by Ruapehu District Council on 30 June 2009.

Approved for public release:

Peter Till

**GROUP MANAGER ASSETS**

30 June 2009



# 1 Introduction

## 1.1 What is the Waste Minimisation Plan (WMP)?

Ruapehu District Council is committed to the National Strategy to reduce waste in general. Management of solid waste is divided into waste generation, the collection of waste, reuse of usable items, recycling and recovery of usable portions, and finally disposal of the remaining portion (residual waste). The WMP will help Council and the Ruapehu Community manage waste produced in the District in the best way possible to ensure minimal impact on the environment and minimise cost.

This WMP focuses on solid and hazardous waste produced in the Ruapehu District. It does not include liquid waste (sewage), bulk liquid hazardous waste, or bio-solids (sewage sludge). By identifying issues the WMP sets objectives and policies that are related to Strategic Goals. These in turn directly support Community Outcomes. The WMP also provides background information to assist in the understanding of issues surrounding solid waste.

The WMP is an overview of Council's approach to implementing the National Waste Strategy rather than a detailed action plan. Technology and practices will change with time, lessons are learnt and the WMP must be flexible to incorporate these changes. This WMP has been guided by the previous similar documents. It has also been compared to the progress of the national targets since the last solid waste management plan. The new Waste Minimisation Act 2008 has also influenced the structure of the document in that objectives and policies have been developed from previous strategies to reflect the intentions of this Act.

This WMP:

- Meets the statutory requirements of the LGA 1974 and LGA 2002 (refer

Appendix C: Legislative Requirements).

- Identifies the objectives for solid waste management, and the policies the Council will adopt to achieve these objectives.
- Describes how Ruapehu District Council manages solid waste in the District, in a manner that is economical and environmentally acceptable.
- Provides an overview of the progress made and activities undertaken which are associated with solid waste in Ruapehu District.

## 1.2 Principles Guiding Waste Management and Minimisation

Historically cheap waste disposal to landfill has helped create an inefficient system that does not always take into account the lifecycle cost and effects to the environment and future generations. In New Zealand, landfill of waste remains a large part of the waste management process. Waste disposal to landfill removes material from the community after use, rendering it unavailable for further generations, while creating an adverse legacy for those generations to address.

### 1.2.1 Waste Hierarchy

Section 539 of the Local Government Act (LGA) 1974 requires councils to adopt a waste management plan. The accepted hierarchy, based on the New Zealand Waste Strategy, is shown in Figure 1.

The waste hierarchy, often referred to as the “5R’s” (Reduction, Reuse, Recycling, Recovery and Residual waste disposal), will be used to reduce the residual component of the waste stream towards zero. The 5R’s are listed in descending order of desirability. Reducing waste is the most desirable method of addressing waste problems, while residual waste disposal is the least desirable.

### The 5 'R's of Waste Management

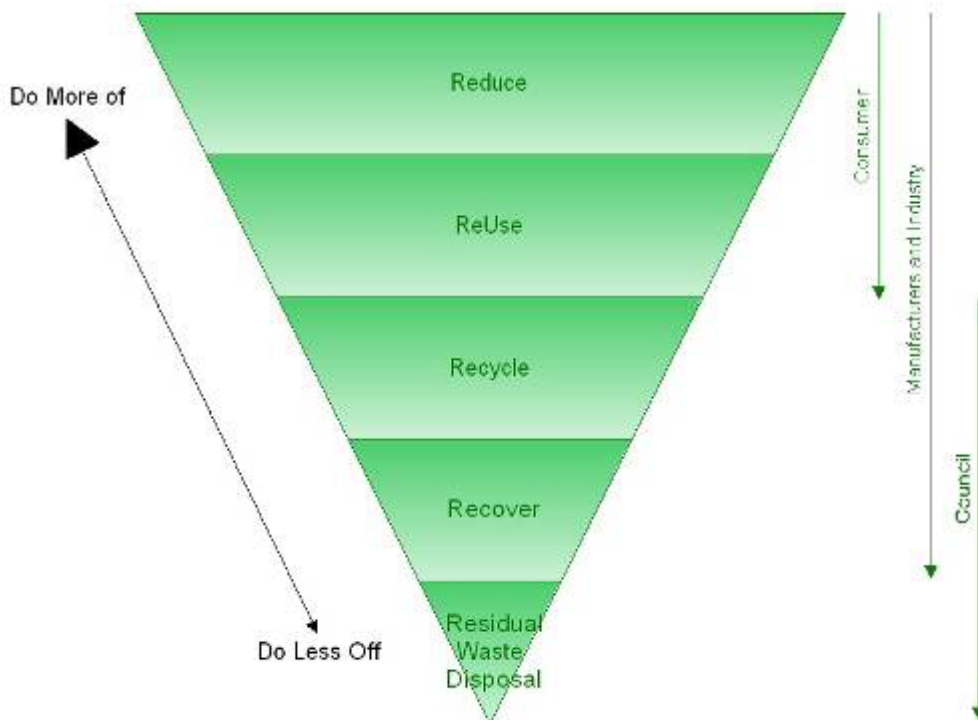


Figure 1 - The Waste Hierarchy

### **1.2.2 Key Principles to Guide Waste Management Approaches**

In developing WMP, nine key principles were used to cover the District's solid waste management issues:

1. Waste minimisation initiatives will be applied in the priority order stated in the waste hierarchy.
2. Education will be provided to all members of the Community, enabling and encouraging them to attain the District's solid waste mitigation objectives.
3. Community responsibility will be fostered to encourage the Community to take ownership for disposal of its waste.
4. Environmental commitment to protect and enhance the environment will be demonstrated. Council will avoid, remedy or mitigate adverse effects involved with solid waste management.
5. Application of the waste management strategy will be across the District, but will be flexible and integrate with regional initiatives.
6. Costs and charges will be transparent, and as far as practicable people who are disposing of solid waste should meet the costs of managing the waste they seek to dispose of.
7. District consultation will be undertaken to provide the public with information on the issues, and possible options, in order to involve them in developing the strategy. Council will work towards the attainment of wider community economic benefits, as well as protecting the environment and ensuring affordability.
8. Central Government policies will be utilised in this strategy. Submissions on Government policies related to this strategy will be made.
9. Measurements and reporting will be undertaken to show how effective initiatives are to date.

### **1.3 Background to the Waste Minimisation Plan**

The WMP summarises Council's proposed strategy for achieving its Strategic Goals of zero waste and waste minimisation by 2015, by progressively reducing the quantities of residual waste entering the District Landfill at Taumarunui.

This WMP is the fourth edition of this type of plan, the previous versions being referred to as Solid Waste Management Plans (SWaMP). The original SWaMP was adopted in 1999 after public consultation and was prepared under Section 31 of the Local Government Act (LGA) 1974. This outlined policies and methods for Council's solid waste management activities. The SWaMP was reviewed in 2002 and adopted on 21 March 2003, again after public consultation. The issues highlighted in the 2002 consultation were:

- The 2002 rate of land filling would lead to the District Landfill being full by 2012.
- The extension of recycling as a method for waste reduction would increase the cost for ratepayers to service and transport recyclables away.
- The cost of disposal of kerbside collected rubbish was considerably more than that being charged for at that time.

The third SWaMP in 2006, was adopted under the same process and the following issues were highlighted:

- Level of service and hours
- Closure of transfer stations
- Staffing and cost of facilities
- Kerbside recycling and organic waste
- Commercial collections
- Event hire bins

- Regional waste exchange subscription
- Illegal dumping

## 1.4 Management of WMP

The WMP is reviewed every three years. This will ensure that its provisions continue to be appropriate to the situation at that time, while taking advantage of the best practical options for solid waste management. Technologies in waste management have had a renaissance in recent years due to widespread recognition of waste as a significant environmental and social issue. This review process is also important as it assists us to evaluate the infrastructure and services needed to achieve Council's Strategic Goals and targets. With national interest in waste management high at the present time, the progress of the New Zealand Waste Strategy throughout New Zealand and how this affects Ruapehu is also relevant as goals change and lessons are learnt. This third review in 2008 will result in the adoption of this WMP for 2009-2012. In keeping with this process, it will next be reviewed in 2011 for the period of 2012-2015.

## 1.5 Consultation Process

The consultation process on Council's draft WMP was undertaken using the Special Consultative Procedure, pursuant to Section 83 of the LGA 2002. The consultation process opened on 30 September 2008 and closed on 31 October 2008.

Copies of the Statement of Proposal (SOP) and Summary of Information (SOI) were made available on public counters at Council offices in Raetihi, Ohakune and Taumarunui, as well as in the Taumarunui Library and on Council's website. During the consultation period the process was advertised in the Ruapehu Press and Ruapehu Bulletin newspapers.

Hearings on the draft WMP were held on 11 November 2008. A total of 14 written submissions were received and acknowledged. Subsequently the WMP was also consulted and deliberated on as part of the Long Term Plan 2009-19 (LTP) and finally adopted by Council on 30 June 2009.

## 1.6 Responsibilities for Waste

### 1.6.1 Central Government

Central Government has the ability to directly affect the amount of waste generated or reused by industry through voluntary accords, legislation, and national standards. In March 2002, Central Government published the New Zealand Waste Strategy (NZWS). This Strategy adopts the vision:

#### **“Towards Zero Waste and a Sustainable New Zealand”**

The Strategy recognises that previously waste has been addressed with ‘end of pipe’ solutions,<sup>1</sup> and that a more effective approach would be to produce less waste. In the past there has been a direct link between the rate of economic growth and the amount of waste we produce. The long-term challenge is to break this link.<sup>2</sup> The NZWS has three goals that underpin the national vision:

- Lower waste's environmental and economic costs and risks to society.
- Reduce environmental damage from disposal of waste.
- Increase economic benefit by using material resources more efficiently.

With these goals are five core policies for waste management. These are:

<sup>1</sup> New Zealand Waste Strategy, MfE March 2002

<sup>2</sup> New Zealand Waste Strategy, MfE March 2002

- A sound legislative basis for waste minimisation and management (addressed by the Waste Minimisation Act).
- Efficient pricing (reflecting the true cost of waste disposal as far as practicable).
- High environmental standards (to protect the environment and public health).
- Adequate and accessible information, recognising that information is vital for the success of initiatives.
- Efficient use of materials (which offers to have the biggest long-term impact on waste reduction).

### **1.6.2 Horizons Regional Council**

Horizons Regional Council (Horizons) has a responsibility to:

- Control discharges to the environment from landfills through issuing and enforcing Resource Consents (including leachate, odour and landfill gas).
- Monitor the environmental effects of activities such as landfills in relation to water and air.
- Prevent or mitigate any adverse effects of the storage, use, disposal, or transportation of hazardous substances.
- Promote environmentally acceptable waste disposal methods such as sanitary landfills and transfer stations.
- Provide opportunities for waste minimisation that are consistent across geographical areas, and provide an integrated workable framework.

Occasional but infrequent initiatives are undertaken in conjunction with Horizons, such as the AgChem collection of hazardous waste.

### **1.6.3 Ruapehu District Council**

Council takes the view that waste produced by a person or business remains ultimately the responsibility of that person or business. However, some processes of waste production are beyond the influence of the Council. Therefore Council emphasises the need to assist with this responsibility of using resources more efficiently, and reducing and dealing with waste by:

- Providing waste collection and disposal services.
- Promotion of waste reduction, reuse, recycling, resource recovery, and residual waste disposal.
- Providing policy direction in the Ruapehu District Plan and Waste Minimisation Plan.
- Preventing and mitigating “nuisances” such as pests, litter and odour.
- Controlling the use, development and protection of land to prevent or mitigate any adverse effects of the storage, use, disposal, or transportation of hazardous substances.
- Operating landfills in accordance with consents from Horizons and Ruapehu District Council.

Central, Regional and Local Government can only do so much under legislation. This relates to managing waste already created. Other groups which can play a key role in waste minimisation are discussed below.

The Waste Minimisation Act originally designated Territorial Authorities as ‘Waste Control Authorities’ with responsibilities for minimising waste. This was removed as existing responsibilities to promote waste management and minimisation under public health, and which were being undertaken already. This left the requirements under the LGA 1974 unchanged, but with an additional emphasis placed upon it.

#### **1.6.4 Industry, Retailers and Individuals**

More important than any of the initiatives in this plan, is the decision of each individual or organisation to proactively minimise the amount of waste they produce. Individuals, households, businesses and manufacturers have the responsibility to ensure resources are used efficiently and to reduce their waste. Much can be undertaken by organisations early in the supply chain and by consumers. This is one of the key principles of the NZWS.

It is the choice of manufacturers to produce items in a form that can be readily reused and which minimises potential waste through packaging and production. Retailers are a conduit for these to be supplied and to inform consumers of the alternatives to items that produce more waste.

Consumers should consider the implications of the products and services they purchase or invest in. Many incentives within this Plan rely on behaviour and choices of users of products or services, and the resultant waste generated. Wise consumer choice can minimise waste through reuse, recycling and recovery.

Community groups can play a major part in co-ordinating the efforts of the community and by promotion of the benefits of waste minimisation.

Decisions made every day by individuals affect the amount of waste produced. For example, putting used paper out for recycling instead of in a rubbish bin, or choosing items with minimal packaging. Consumer decisions in purchasing and use as a matter of practice greatly influence waste minimisation. The success in achieving the goals of this plan therefore relies heavily on the consumer subscribing to the values underpinning it.

#### **1.6.5 Kaitiakitanga/Stewardship**

Council supports the view of the NZWS, in that the Maori concept of Kaitiakitanga or Guardianship expresses an integrated view of the environment and recognises the relationship between all things. It represents the obligation of current generations to maintain the life sustaining capacity of the environment for present and future generations. Fulfilling this obligation means managing waste to reduce the potential to have adverse environmental effects. Council will work with Tangata Whenua to preserve mahinga kai and mauri from inappropriate waste disposal and contamination. Values important to Maori shall be recognised in all waste management activities.



# Ruapehu District Council Goals



## 2 Ruapehu District Council Goals

### 2.1 Vision for 2009-12

The vision for the Ruapehu District in solid waste management is:

***“To undertake solid waste management in an environmentally sustainable manner, in consideration of community values, and taking into account the priorities of the 5 ‘R’s in working towards zero waste.”***

Section 5 provides the details by giving specific objectives and policies to guide the Council in achieving this vision. Strategic Goals have been set with both this and Community Outcomes in mind.

The Council is participating in the Zero Waste Trust National Project for waste minimisation, which is working towards zero waste by 2015.

### 2.2 Community Outcomes

The following are the outcomes relevant to the solid waste activities that the Ruapehu community have identified as Community Outcomes, describing the District in which they wish to live:

Table 1 - Community Outcomes

No	Community Outcomes
10	Core facilities, services and infrastructure planning and provision (water, sewage, solid waste, power, roading and medical) keep pace with development.
16	A community that encourages participation in planning around community or District issues, and promotes community responsibility.
22	An environment which has an excellent quality of water, soil and air.
23	River catchment areas and waterways are protected from erosion and pollution.
24	A community which promotes a zero waste outlook and encourages minimisation of the impact of waste on the environment.

### 2.3 Strategic Goals

Council adopted a policy of waste minimisation in 1999, and proposed a 75% reduction in waste entering the Landfill by 2008, and zero waste by 2015. The following Strategic Goals have been developed specifically to achieve the Community Outcomes and have been included in the LTP:

**Table 2 - Strategic Goals**

<b>Strategic Goal<sup>3</sup></b>		<b>Community Outcome</b>	<b>Level of Service</b>
1	To provide and maintain an appropriate level of infrastructure in order to deliver the agreed level of service.	10	Waste collection and recycling services, transfer stations and landfill are provided.  Community is satisfied with the overall level of service for solid waste.
2	People are informed and participate in waste minimisation.	16, 24	Waste hierarchy (reduce, reuse, recover, redirect and refuse) promoted throughout the community.
3	The negative effects on the environment are avoided, remedied or mitigated	22, 23	Resource consents are complied with.  Major transfer stations accept residential quantities of hazardous waste material.
4	Council will work towards zero waste and a sustainable environment	22, 23, 24	The community is provided with opportunity to recycle.  The amount of waste received at the landfill is reduced.

## **2.4 75% Reduction by 2008**

In 1999, 11,698 m<sup>3</sup> of waste was deposited in 3 landfills in the Ruapehu District. By 2008 this had reduced to 3,945 m<sup>3</sup> (including some capping material). This equates to a reduction of 66%. While the reduction is significant, it is less than the target, indicating that additional effort is required in order to achieve this goal. This is an indication that additional attention needs to be afforded to maintain momentum to actively seek alternatives to further reduce waste.

## **2.5 Zero Waste**

Zero waste is an ideal to strive towards. The principle of zero waste is similar to such principles as 'zero accidents', or 'zero defects' in manufacturing. By setting an extreme target, new levels of innovation and efficiency are achieved. Zero waste means a 100% resource efficient society where material flows are cyclical and everything is recycled or made for reuse. Waste ceases to exist because everything becomes a resource. This sidesteps debate about what a 'reasonable' level of waste is, and instead puts the focus on steadily working towards a life without waste. It requires a change in attitude and in the way we think about waste. Our current "throw away" attitude needs to be changed to one where individuals think about, and take responsibility for, the waste we create.

In addition to the environmental benefits, there are economic and social benefits from working towards zero waste. By lengthening the life of the landfill the expense of establishing a new location or transporting waste outside the district is postponed. This issue has particular relevance in Ruapehu District as the capacity and remaining life of the District Landfill is forecast to be met within 8 to 12 years.

Implementing the Zero Waste Strategy will potentially create the following benefits:

- Lengthening the life of the District Landfill.
- Reducing land used for future waste disposal.
- Reducing contamination of soil, water and air from landfill discharges.

<sup>3</sup> Future Ruapehu Long Term Plan 2006-16

- Providing access to resources that were previously discarded through dumping.
- Cost recovery from the sale of reusable and recycled goods, and processed recovered materials.
- Achieving more effective use of resources by implementing cleaner production practices.
- Providing social and community benefits from employment created as a result of reuse, recycling and recovery operations.

As of 2008, 51 of the 71 councils (70%) in New Zealand had adopted the principles of zero waste management,<sup>4</sup> including Ruapehu District Council.

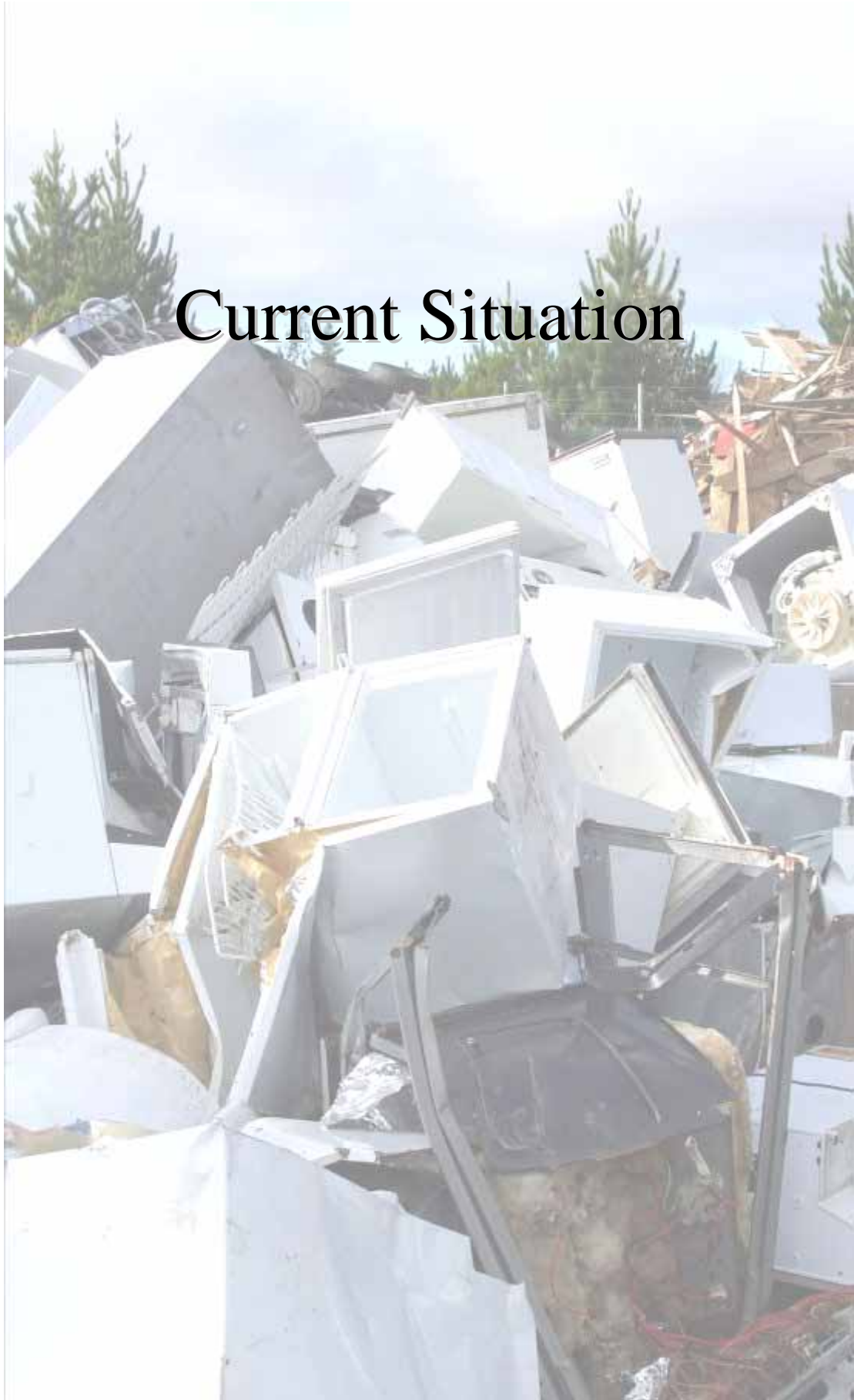
Council has adopted the philosophy that materials will be recycled where there is a market and there is no additional cost to sell the materials to market rather than disposing of it to landfill.



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<sup>4</sup> 2008 Zero Waste New Zealand Trust website, <http://www.zerowaste.co.nz/default,councils.sm>

# Current Situation



## 3 Current Situation

At the time of issue of the SWaMP in 2006, each person in New Zealand produced on average about a tonne of waste a year which was ending up in a landfill. In the Ruapehu District this figure is currently 372 kg. In spite of this the management of solid waste remains a community issue. It affects the quality of the environment in which we live, and therefore affects each person.

We value our environment and recognise the social and economic costs associated with waste. Ruapehu is a very special place and its people enjoy a unique lifestyle. As a people we want to maintain clean mountains and streams, and fulfil the “100% Pure” image of New Zealand. Council is committed to further reduce the amount of waste going to the landfill.

Waste is a reality in all societies. At some time society will need to address this issue, and this is the essence of sustainability. Rather than leave this to be managed by future generations as a legacy of our lifestyle today, Ruapehu District chooses to adopt sustainable practices and establish a way of life that can be enjoyed and maintained by future generations. But Council alone cannot address the waste problem. Commitment is also needed from residents, schools, businesses and manufacturers to meet this challenge.

### 3.1 Current Waste Management Services

#### 3.1.1 Infrastructure Overview

Figure 2 shows the 2006-09 configuration of Council's solid waste management infrastructure. Essentially there are four components to the current infrastructure:

- The District Landfill
- Transfer stations
- Kerbside collection
- Recovery centres

#### 3.1.2 District Landfill

The District Landfill is situated in Taumarunui and is the only such public disposal facility in Ruapehu District. All residual waste (which is not reused, recycled or recovered) is landfilled at this location including that collected by all Council waste collection activities. It is staffed 50 hours a week, and is open at weekends. The site also serves as a transfer station, a hazardous waste collection facility for residential quantities and recovery centre. Recycled materials are stockpiled on site for collection. Hazardous waste is collected and stored for disposal to an appropriate facility through Agrecovery and similar. Recovered goods are collected and offered for sale to the public on site.



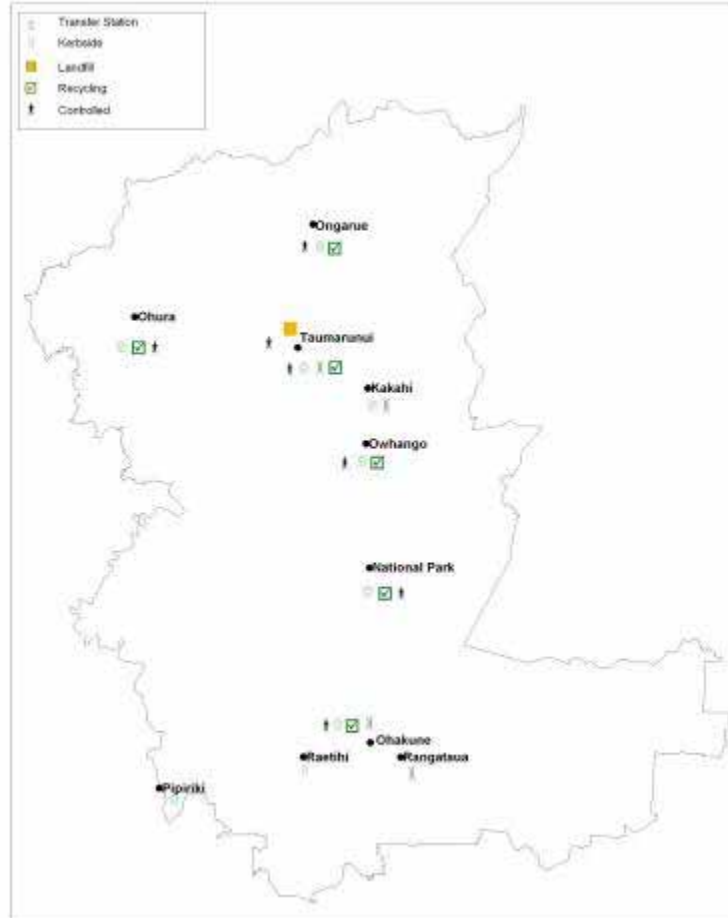


Figure 2 - Waste Management Infrastructure

### 3.1.3 Transfer Stations

There are seven transfer stations around the District. Residual waste is trucked from these stations to the District Landfill for disposal. Recyclables are collected and taken to Taumarunui for storage until they are transported to market in suitable quantities. There are varying services provided at each transfer station, including recycling bins, green waste collection, and bulk storage areas. With the closure of two transfer stations since 2006, a base level of service has been implemented with all transfer stations being staffed and it has been noted that the effectiveness of these facilities has been markedly improved. There is active control of over 90% of the material received. Gate charges are incurred for waste to landfill, to encourage the use of recycling subject to capacity. Recycling is generally free, although a small handling fee is applied to some recyclables due to the high cost of processing the material to a recyclable. A constant standard of sorting and collection ensures that the management of recovered materials is maintained.



Ohakune and Taumarunui facilities have hazardous waste storage.

### 3.1.4 Kerbside Collection

Kerbside collections are undertaken in Taumarunui, Ohakune, Rangataua, Raetihi, Mahoe, Manunui and Kakahi.

Kerbside recycling was introduced in 2006 to implement initiatives recommended in the previous SWaMP. Figure 3 below shows a sample of quantities collected as waste and recycling for the months 2007-08 and compared with averages of previous periods. Comparing the refuse (waste to landfill) against 2006-07, quantities appear to be stable and similar in monthly changes. The declining trend in refuse is apparent when comparing current and historical quantities. However the generation of total material appears comparable to that prior to kerbside recycling.

Plastic supermarket bags are used as the collection vessels for recycling. This offers low capital cost and a high level of quality. It does require a high level of household sorting prior to collection, and has a medium level operating cost. In comparison to other options it is believed to generate a lower level of participation.<sup>5</sup>

Incentives are constantly being assessed to improve the effectiveness of this service, which depends heavily on manual sorting to maintain efficiency and safety.

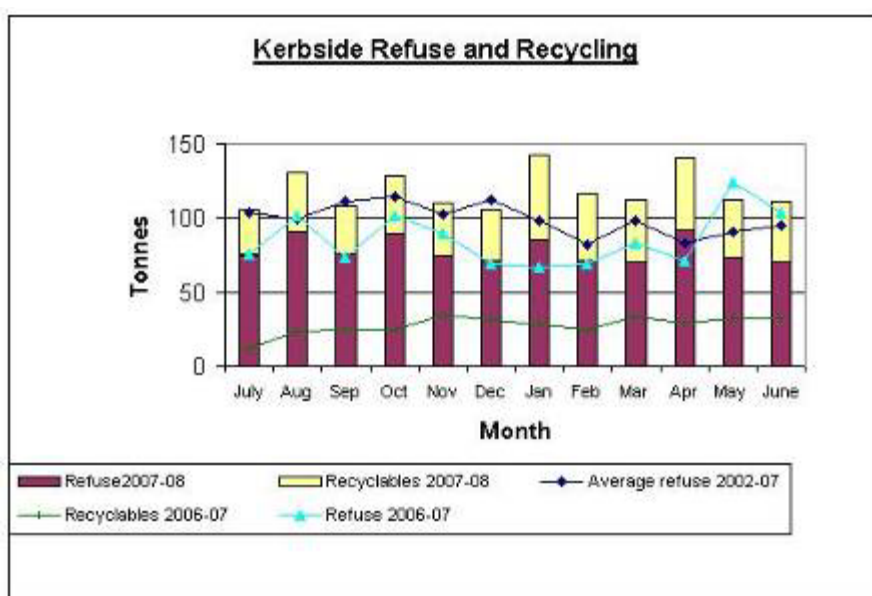


Figure 3 - Kerbside Refuse and Recycling 2007-2008

### 3.1.5 Recovery Centres

Recovery centres are present at two transfer stations. These offer goods for sale which have been recovered from the various waste streams and are usable without rendering to their base components. Visitors to the township recovery centres are free to browse and purchase items at nominal cost.



### 3.1.6 Other Services

#### Composting

Recently Council has installed a composting unit at the District Landfill. Previously composting was undertaken in the open. This composting unit will undergo further development in order to simplify access and make delivery of material more efficient. The resultant compost may be offered for sale to the public.

<sup>5</sup> Refer Kit Wilson Consulting Ltd Report, Appendix D

## **Township Recycling Centres**

Recycling bins were introduced at strategic locations in Taumarunui and Raetihi townships during the 2002-03 year. These bins in public places encourage sorting of waste and recyclables, which can then be collected efficiently. The sites are highly visible and frequently serviced within the town centres. Due to misuse these have proved uneconomic due to the cost of maintaining them. It is likely that this service will be discontinued.

## **Closed Landfills**

There are 4 closed landfills in Ruapehu District in addition to the operational District Landfill. These are at Raetihi, Ohakune, Ongarue and Ohura. Ohakune closed in 2002-2003, Raetihi in 1999-2000, and Ohura and Ongarue prior to this. The closure of these has been part of the overall move to minimise waste to landfill as evidenced by the decreasing quantity of waste received at the remaining District Landfill in spite of the removal of alternative sites. These sites were also unlined and could not be operated efficiently subject to current environmental standards.

## **Education and Communication**

Council has issued publications and flyers explaining the principles, requirements and availability of waste minimisation incentives, including pamphlets, stickers and a recycling 'wheel' describing recyclable materials that the householder can place for collection. Pamphlets detail procedures for kerbside recycling of items. In addition a promotional campaign was started with regular newspaper advertising.

Waste minimisation education continues to target the four main locations: home, school, work, and special recycling collection sites (where provided). Home is addressed with various media such as pamphlets, Council newsletters and stickers. Additionally this is emphasised through direct action in collecting waste and recycling. Schools are addressed with Council contracted to EERST (Environmental Education for Resource Sustainability Trust) to provide a waste minimisation programme to primary schools.

It is difficult to reach temporary and holiday residents. This part of the population contributes to waste creation, but does not attend school in the District and has only limited contact with the permanent community. It is therefore missed by many of the education initiatives. Attempts have been made to reach them through pamphlet drops.

## **Other disposal**

The NZ Army operates a landfill on its own land, and receives some waste from Waiouru residents. This is managed within their own area of authority and is not part of this management plan.

## **3.2 Current Quantities and Capacity**

### **3.2.1 Waste Streams**

Current trends in waste quantities is not obvious within the District, although there has been a marked decrease overall. Up to date data on national trends are difficult to locate. However it is assumed that these quantities continue to increase pa, 4-8% and recycling 5-10% pa.

The waste stream comprises several distinct components:

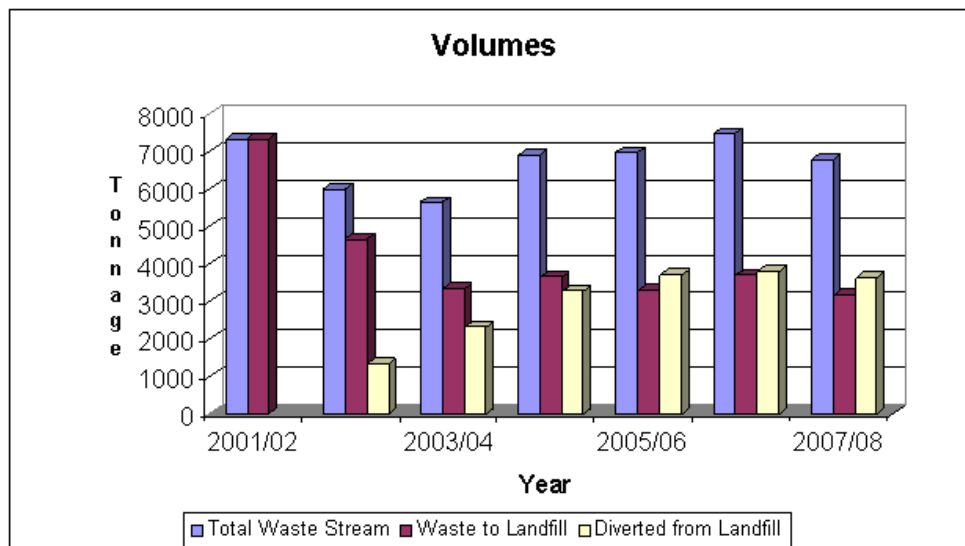
**Table 3 - Waste Stream Components**

Cleanfill	Inorganic material, e.g. some construction and demolition wastes, bricks, gravel, concrete and soil.
Organic	Biodegradable waste, e.g. food and vegetable scraps, paper, wood and garden trimmings.
Recyclable	Waste, e.g. paper, plastic, metal which is able to be recycled.
Special or Difficult	Material that needs special consideration before disposal, e.g. sewage sludge.
Hazardous	Material that has the potential to cause significant adverse effects to human health and the environment, e.g. pesticides, chemical waste and chemical containers.

Managing these wastes properly, in a way that minimises harmful effects to the environment and the District community, is essential.

### 3.2.2 Waste Composition and Quantities

Figure 4 indicates the quantities of waste received and diverted from the landfill and deposited in landfill 2001 to 2008. Note that the quantities have stabilised over the last 4 or so years indicating both a success in the initiatives to date, and a necessity for renewed effort in waste minimisation.



**Figure 4 - Volume of recycling and residual waste disposed to landfill 2001-8**

### Waste Composition Audits at Collection Points

Samples of the collection are analysed frequently at the collection points. A sample in June 2006 showed the following primary composition of the waste collected at the Taumaranui Landfill. This has been compared to previous years to demonstrate the trends.

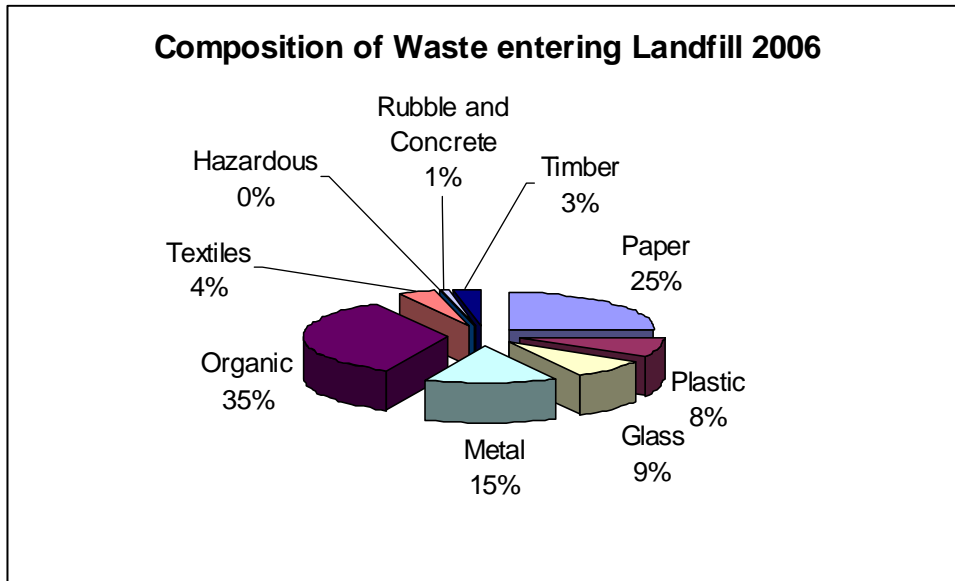


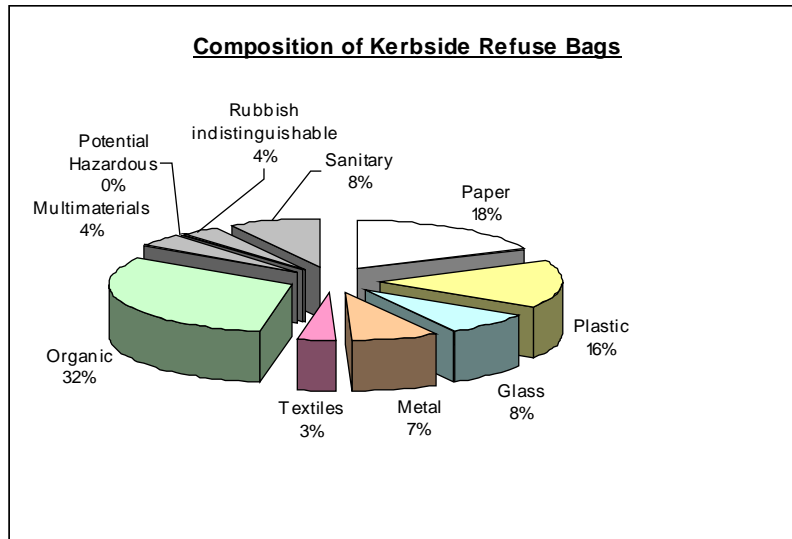
Figure 5 - Composition of Waste Entering Landfill 2006

Since 1997 the amount of waste reaching landfill has reduced but is still slightly above the interim target level of 75% reduction. The 10,000 tonnes recorded in 1997 has reduced to approximately 3,200 tonnes or less currently (2007-08), representing a 66% reduction. In 1997, it was identified that green waste was a major element (52%) in the waste being disposed of to landfill and constituted 46% of the average kerbside bag. This has been addressed and has been reduced to 35%. It is hoped that the recent addition of the composting unit will reduce this further, and more in keeping with meeting the NZWS target of 95% for 2010 (see Table 6).

### Waste Composition Audits – Refuse Bags

Until 2003, Council supplied 52 rubbish bags per annum per household. This was funded by a dedicated refuse rate. From 2003 Council ceased providing and charging for these bags in rates, and householders became responsible for purchasing their own bags. This created a more direct financial incentive to individuals to recycle more. Decisions made within the household then dictated the number of refuse bags purchased and was expected to have a direct impact on the content of the refuse bag.

In the summer of 2005 a survey was undertaken using the MfE's Waste Analysis Protocol (1992). There are nine primary waste categories in this protocol: paper, plastic, glass, organic, rubble and concrete, timber, rubber and textiles, and potentially hazardous materials. Figure 6 summarises the composition of 100 kerbside refuse domestic bags removed from a collection run in the Taumarunui Ward.



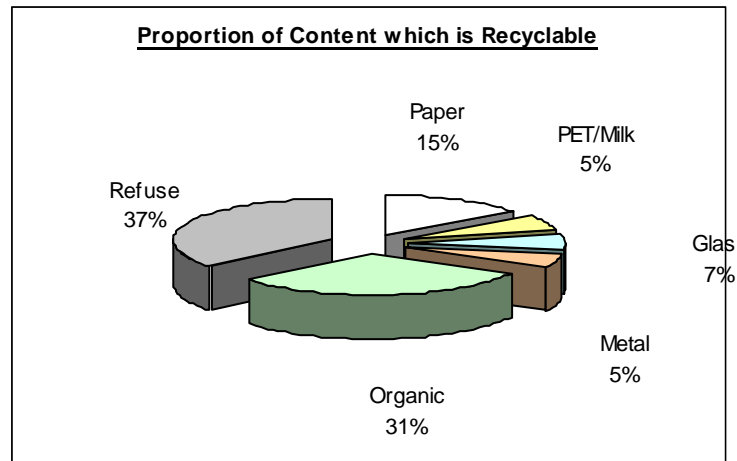
**Figure 6 - Composition Kerbside Bags in Taumarunui, 2005-2006**

There are some noted changes from the 2003 audit (see Appendix A: Regional Stocktake of Materials 2004). Organic waste remains the largest proportion of refuse bags at 32% although reduced from 46%. Further reduction can be achieved with the increase in home composting. This is potentially limited by urban environments with little room for on site composting and the number of temporary and holiday homes within the District where gardening and landscaping is of low priority.

Paper was the next largest at 18%, and plastic at 16%. Paper has reduced from 28%. This too could be reduced further with home composting. Both plastic (previously 3%) and metal (previously 3%) have increased significantly as proportions. In 2005 the average weight was estimated at 9 kg. This has reduced to 7 kg.

Only a very low proportion of material classed as hazardous waste was found in the refuse bags. This indicates residents are utilising the free disposal for hazardous waste services offered at the Taumarunui and Waimarino Transfer Stations.

The refuse composition was further assessed to estimate the proportion by weight of the refuse that may be recycled shown in Figure 7. An average 7kg refuse bag contained about 4kg (more than half) of potentially recyclable materials. This was a one-off survey and needs to be repeated to validate values.



**Figure 7 - Potential Recyclables in Kerbside Bags in Taumarunui, 2005-2006**

Kerbside bags provide an easy conduit for the disposal of domestic waste, especially in urban areas where there are few alternatives. Once in the bag recyclable materials are difficult to separate and are likely to end up in the landfill, with the resources being lost.

### **3.2.3 Construction and Commercial Waste**

Most construction materials are diverted from the waste stream. Without a weighbridge this stream is difficult to measure, but estimates of the volume diverted are now being made, and the planned installation of the weighbridge will assist in this. Quantities are affected by the amount of building and construction within the district at that time, and the marketability of recovered materials.



There are considerable quantities of chip/particle/gypsum boards and treated timber offcuts entering the landfill, as these cannot be recycled. Non-contaminated construction material (untreated wood) can be composted. The unpredictable nature of this waste stream makes it difficult to manage the remaining portions arriving at the landfill. With a commercial marketability of certain materials, there is much that is diverted in private ventures and as such does arrive at transfer stations. That which does often has less potential for recovery.

Rubble accounts for 4% of total waste. Commercial waste accounts for 10% of the total waste.

### 3.2.4 Hazardous Waste

Household hazardous waste is collected at Taumarunui and Waimarino Transfer Stations throughout the year. This material is temporarily stored on-site, before being collected by an approved handler and disposer of environmental waste. A small quantity of paint is occasionally available through the resale shop.



An initiative in the last quarter of 2005 has been to recycle more quality paint, (with the exception of lead based paints), back into the market place and out of the hazardous waste stream where it would be destroyed. Quantities over one litre are being processed as recycled paints where suitable.

Council previously had confidence in the data indicating that the quantities of chemicals being disposed of through the hazardous waste shed were increasing, attributed to increased awareness from the Hazwheel promotion. However, there is now reduced confidence in this area. There are now an increasing number of private and therefore unmeasured initiatives for items such as paint, and therefore alternatives to disposal through Council facilities. Council advocates to Horizons to collect agricultural chemicals which is done occasionally on a 'one off' collection basis. The subscription to this service highlights the number of agricultural containers in the environment. Through the New Zealand Packaging Accord, these containers are now collected by Agrecovery, if the manufacturer has joined the Accord.

## 3.3 Projected Quantities

### 3.3.1 Capacities of Existing Facilities

Prior to the initial SWaMP the landfill was rapidly filling and unlikely to live out the term of its resource consent expiring in 2020. Figure 8 below indicates it would have been filled as early as 2015. This has improved, but there remains room for improvement, and the capacity remains unpredictable. Exhaustion of the landfill will require an additional site to be located, most likely outside the District. This will involve additional costs for transport after collection, out of district charges, and difficulties and costs for planning and consents. It is preferable that the current momentum in decreasing volume to landfill be maintained.

The landfill is a Class B facility and therefore in respect to current MfE targets should either close by 2010 or be upgraded. To operate and maintain an effective and efficient lined landfill it is estimated that approximately 100,000 tonnes per year of waste is required, and it is therefore not considered economic to do so. It is considered prudent to convert the remaining landfill space into clean fill after 2010, and so reduce the amount of waste being transported out of the District for disposal in a compliant facility.

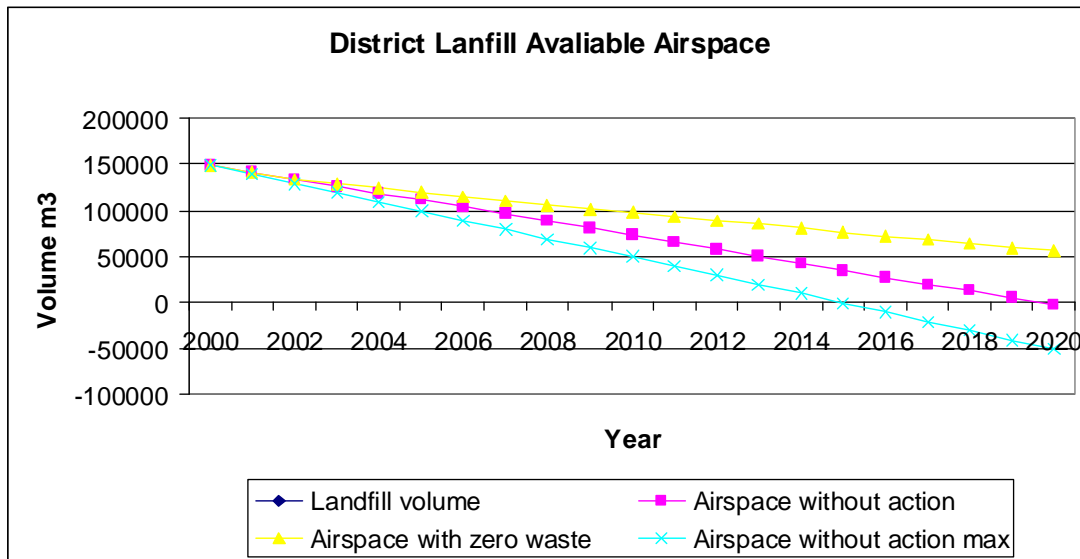


Figure 8 - Available Airspace in Landfill

The current targets are shown in Figure 9. Given recent initiatives in composting and recycling there is a potential for a further reduction in the volumes. A further improvement would be to target recoverable organic material in kerbside bags. It is hoped that by providing a convenient location for disposal this will arise as an alternative. The existence and ease of utilising these opportunities needs to be presented to the public.

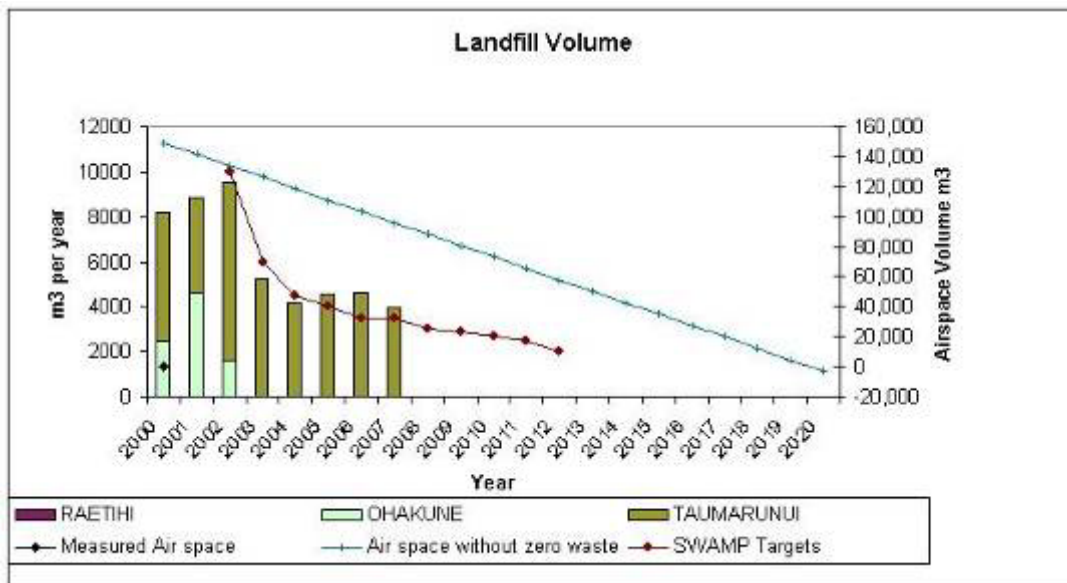


Figure 9 - Volumes to Landfill

### 3.3.2 Growth

There is a national trend, which shows total waste volumes growing at a rate of 5% per year. Those who undertake waste minimisation are finding their recycling volumes are increasing at a greater rate of approximately 20% per year. Council considers that waste minimisation targets set in previous SWaMPs may be overly ambitious. While this may spur action to reach this target, the attempt at an unachievable target and inevitable failure is considered to be counter-productive.



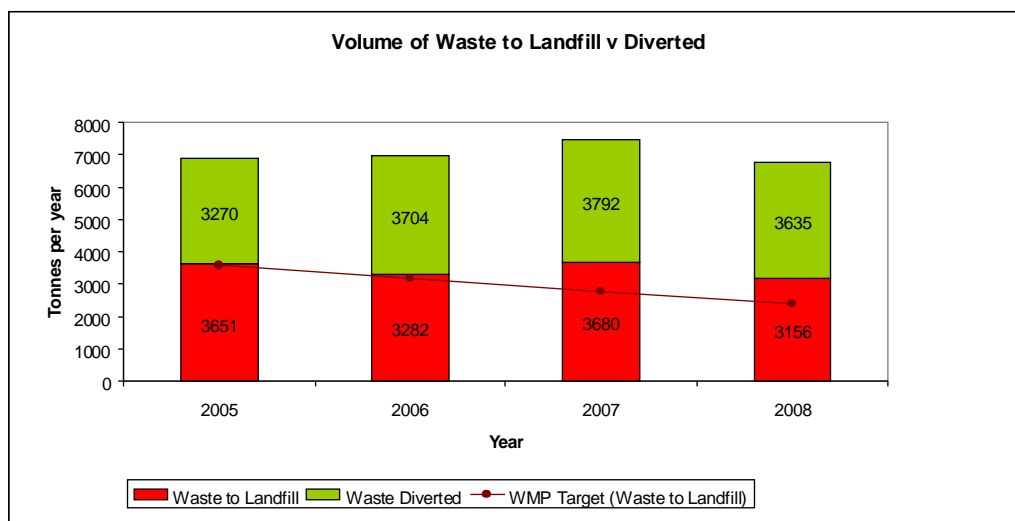
It should be noted however that Ruapehu has an existing low level of waste production (see Section 3) and this in itself is an achievement that should be heralded. Therefore, as with the 2006 review of National Targets, those set in the last SWaMP have been reviewed and modified (see Section 3.3.2). The new set of targets is shown in Table 4.

There are number of factors which influence our targets, e.g. visitor numbers within the District, development and construction projects, and population changes. While targets are important, it is more appropriate to measure the material diverted from landfill as recyclables/reuse items against materials deposited into landfill. This will be the emphasis for future reporting.

**Table 4 - Zero Waste Targets and Progress (Waste to Landfill)**

Zero Waste Target	RDC Target 2003 (m <sup>3</sup> )	RDC Target 2005 (m <sup>3</sup> )	RDC Target 2009 (m <sup>3</sup> )	Target met?
Reduction by 30 June 2003	to 6,000			Yes (5,200)
Reduction by 30 June 2004	to 4,500			Yes (4,173)
Reduction by 30 June 2006	to 3,500	4,000		No (4,101)
Reduction by 30 June 2008	to 2,500	3,000		No (3,945)
Reduction by 30 June 2010	to 1,500	2,000	2,500	
Reduction by 30 June 2012			2,000	

Recent quantities appear to have stabilized at levels of around 4,000 m<sup>3</sup> or slightly above. The effectiveness of measures may require review to reduce the amount of waste to an achievable and sustainable target.

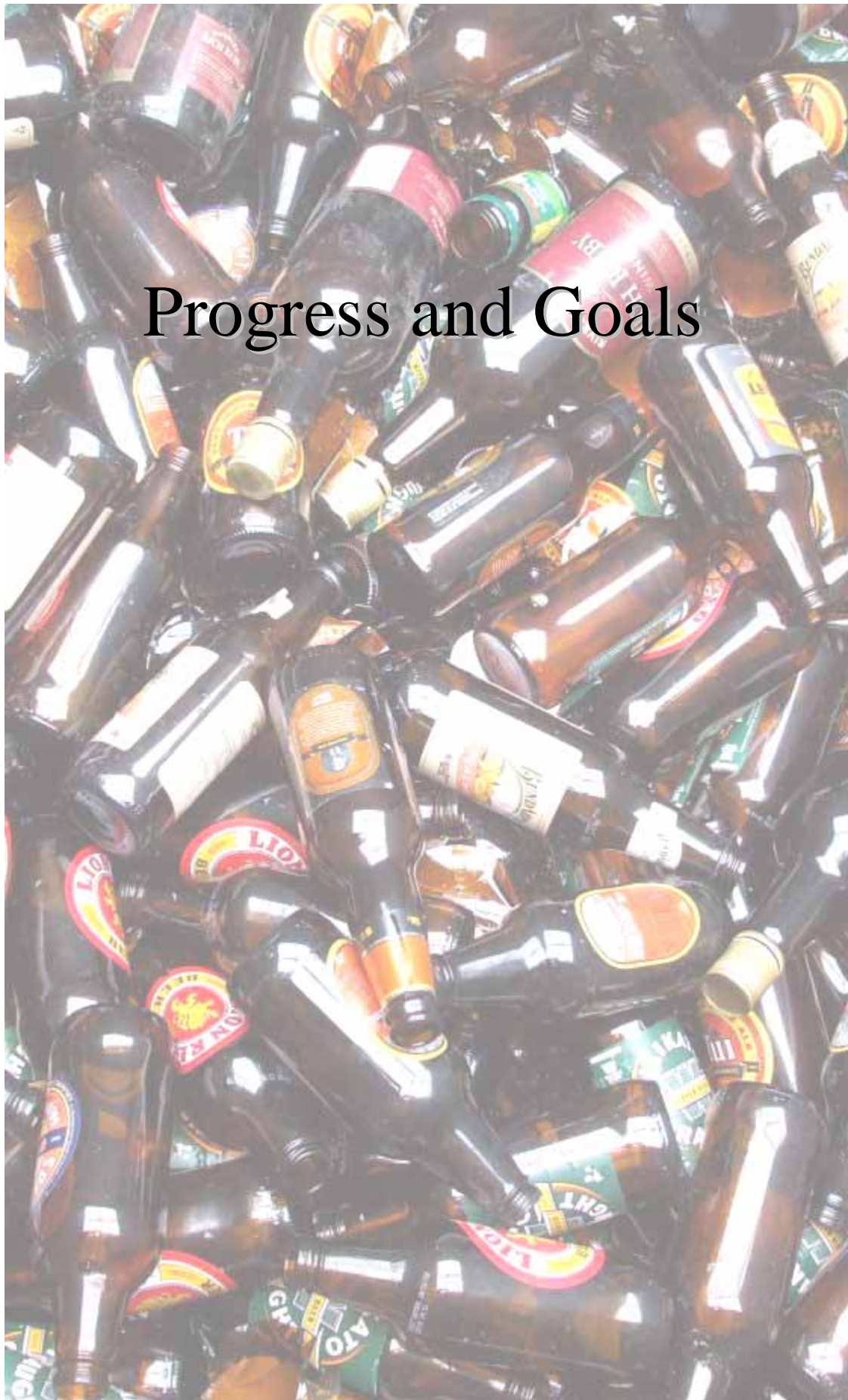


**Figure 10 - Tonnage of Waste to Landfill v Diverted Waste**

### 3.4 Funding

Funding policy is determined and set out in the Revenue and Financing Policy in the LTP, and this is quantified in the Annual Plan with a forecast of revenue. Parts of the total service have an overall benefit to the District or greater as a whole, while other portions are applicable to certain groups and users. As such the charges are allocated with portions of the general rates, targeted charges for certain areas, and finally direct charges to the actual users.

The Annual Plan reviews costs and sets the UAGC and TUAC rating elements for the next financial year. User charges are reviewed based on this funding and the required costs. Refer to the funding policy section in the most recent LTP for these figures.



# Progress and Goals

## 4 Progress 2006-2009 and Goals 2009-2012

The progress of WMP is measured against the goals set in the previous SWaMP, the LTP, and the NZWS.

### 4.1 Summary

- More than 95% of the District's population has access to recycling.
- Council monitors refuse through volume entering the transfer stations and landfill, as well as waste stream audits. The installation of a weigh station will improve confidence in this analysis.
- Council is diverting most green waste. Diverted green waste now makes up 26% of total waste produced.
- User charges based on full costs of waste have been assessed and applied, and are regularly reviewed.
- Since 1997 more than 60% of waste has been diverted from landfill.
- Four landfills have been closed in the District.
- A composting facility has been installed for significant quantities of green waste.
- A base level of service has been established over all facilities, with 90% of waste received being controlled.

### 4.2 Application of New Zealand Waste Strategy to Council

The Ministry for the Environment (MfE) sets out a waste strategy, and relevant national targets have been used to compare Ruapehu's progress. This was reviewed by MfE in 2006 and a progress report issued with comments on targets. Since then it has been monitored by MfE and the achievements noted in the updated report provided.

#### 4.2.1 Waste Minimisation

Table 5 - Waste Minimisation Targets and Progress

To Be Implemented By	Ministry for the Environment Targets	National Progress (2006 review) <sup>6</sup>	Ruapehu Progress to date
2001-02	Territorial Authorities will report their progress on waste minimisation / management for their Annual Reports in 2001-02, and quantitatively annually from then onwards.	Good progress but not fully achieved. 86% of territorial authorities report their waste management and minimisation activities to their communities.	Annual Reports are undertaken. In addition the waste is recorded at the tip and reported monthly to Council staff who maintain a running record. An in-depth report was prepared on waste minimisation goals in Regional Stocktake on Waste August 2004.
December 2005	At least ten major businesses will be participating with Central and Local Government to develop and promote waste minimisation programmes within their sector.	Target achieved ahead of due date.	This is a national target, and is being achieved through the Packaging Accord.

<sup>6</sup> Targets in the New Zealand Waste Strategy: 2006 Review of Progress, MfE, April 2007

December 2005	95% of the population will have access to community recycling facilities.	Target achieved. 97% of the New Zealand population have access to community recycling facilities.	Target is being met with the establishment of transfer stations throughout the district. Additionally kerbside collection is being implemented.
December 2005	Territorial Authorities will ensure that building regulations incorporate reference to space allocation for appropriate recycling facilities in multi-unit residential and commercial buildings.	Target unable to be achieved nationally. However, progress on space allocation for recycling facilities is being made.	The review of the District Plan currently underway will include the requirement for space to be set aside for recycling facilities.
December 2005	All Councils will ensure that waste minimisation procedures have been addressed for all facilities and assets they manage, and set target reductions based on public health, environmental and economic factors.	Target not achieved. 72% of territorial authorities and regional authorities have implemented waste minimisation strategies as of 2006.	This is being addressed with the preparation of Asset Management Plans.

#### 4.2.2 Organic Waste


Table 6 - Organic Waste Targets and Progress

To Be Implemented By	Target	National Progress (2006 review)	Ruapehu Progress
December 2003	All Territorial Authorities will have instituted a measurement programme to identify existing organic waste quantities and set local targets for diversion from disposal.	Target not achieved. Only 41% of Territorial Authorities have implemented a formal measurement regime.	Target partially achieved. As well as an audit of household refuse, green waste entering Transfer Stations is diverted and measured at the mulch stage, although by volume rather than weight. With the commencement of the composting operation, waste will be measured in further detail. Additionally a weigh bridge has been commissioned which will provide formal weight measurements in the near future. Clearer statistics are being pursued.

December 2005	60% of garden waste will be diverted from Landfill and beneficially reused, and by December 2010 the diversion of garden waste from Landfill to beneficial use will have exceeded 95%.	Unable to be measured. Only a small portion of organic waste in New Zealand is handled by territorial authorities, yet a sizeable portion is diverted from landfill (estimated that 55%).  A sizeable portion of green waste is composted by processes outside the measureable stream, such as home composting.	Unable to measure, but Council is diverting all shreddable green waste that reaches the landfill. Evidence suggests that the majority of green waste is garden waste. The recently installed composting unit at Taumarunui Landfill will soon start operations to compliment the current organic waste treatment.
December 2007	A clear quantitative understanding of other organic waste streams (kitchen waste) will have been achieved through the measurement programme established.	Target achieved ahead of date. Solid waste analysis in 2004 showed 23% waste to landfill was organic. Subsequent studies have provided additional data and understanding.	Achieved. In respect to waste reaching the landfill, measurements and understanding have led to incentive such as the composting operation.
December 2007	More than 95% of sewage sludge currently deposited of to landfill will be composted, beneficially used or appropriately treated to minimise the production of methane and leachate.	Unable to be measured.	Not included in this management plan.
December 2010	The diversion of commercial organic waste from landfill to beneficial use will have exceeded 95%.	Future target date. There is little data as much of this leaves the measurable waste stream through alternatives to landfill disposal implemented outside the influence of the territorial authority.	Unable to be measured. A separate investigation may be required to quantify organic waste further because of commercial operators shifting product out of this waste stream.

#### 4.2.3 Special Waste

Table 7 - Special Waste Targets and Progress

To Be Implemented By	Target	National Progress (2006 review)	Ruapehu Progress
December 2005	Businesses in at least eight different sectors will have introduced extended producer responsibility pilot programmes for the collection, reuse, recycling or appropriate treatment and disposal of at least eight categories of special waste.	Target achieved.	This is a national target being followed through by the MfE. 

#### 4.2.4 Construction and Demolition Waste

Table 8 - Construction and Demolition Waste Targets and Progress

To Be Implemented By	Target	National Progress (2006 review)	Ruapehu Progress
December 2005	All Territorial Authorities will have instituted a measurement programme to identify existing construction and demolition waste quantities, and set local targets for diversion from landfills.	Target not achieved. Variations in quantity and disposal to landfill outside the ownership of territorial authority lead to a lack of data.	Approximate values have been achieved. Council has a target of identifying construction and demolition waste quantities, and set targets for their diversion. As with the national progress, this material is often not measured by weight, as much of it does not arrive at the landfill, but is diverted to clean fill and reuse.
December 2008	There will have been a reduction of construction and demolition waste to landfills of 50% of December 2005 levels measured by weight.	Unable to be measured. As above.	Unable to be measured. Small communities have a limited capacity for commercial recovery. Demolition with no treated element, and is either clean fill or composted.

#### 4.2.5 Hazardous Waste

Table 9 - Hazardous Waste Targets and Progress

To Be Implemented By	Target	National Progress (2006 review)	Ruapehu Progress
December 2005	An integrated and comprehensive national hazardous waste management policy will be in place that covers reduction, transport, treatment, and disposal of hazardous wastes to effectively manage risks to people and the environment.	Target achieved. <i>Policy Framework to Reduce and Safely Manage Hazardous Waste</i> was published in 2004 and updated in 2006.	Achieved. As in the 2006-2009 SWaMP, Council actively takes residential quantities for free and AgChem containers.
December 2004	Hazardous waste will be appropriately treated before disposal at licensed facilities and current recovery and recycling rates will be established for a list of priority hazardous waste.	Not fully achieved, but significant progress to realisation.	Partially achieved. While there is no treatment facility in Ruapehu District, some hazardous waste in residential quantities and agricultural containers are stored for collection at the landfill.

December 2012	Recovery and recycling rates for priority hazardous waste will increase 20%.	Future target date. Limited data available through MfE documentation.	This target is being achieved to the best of Ruapehu District Council's knowledge. There remains a lack of data although a proprietary list is used. An audit of the waste will confirm this.
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#### 4.2.6 Waste Disposal

Table 10 - Waste Disposal Targets and Progress

To Be Implemented By	Target	National Progress (2006 review)	Ruapehu Progress
December 2003	Territorial Authorities will have addressed their Revenue and Finance Policy to ensure that full cost recovery can be achieved for all waste treatment and disposal processes.	Target achieved. The implementation of LTCCP's has set in place a transparent process in consultation with the community in which finances are considered in conjunction with the local community.	This has been achieved, and is monitored. A review of all charges is undertaken on a regular basis and through the LTP process.
December 2005	Operators of all landfills, clean fills and wastewater treatment plants will have calculated user charges based on the full costs of providing and operating the facilities, and established a programme to phase these charges in over a timeframe acceptable to the local community.	Target achieved. 51% of TA's charge on a user pays basis for refuse, and 98% charge for access to landfill. There are constraints in charging, but these are managed at a local level.	This target is being achieved according to the monitored information. The annual plan budgets for this based on the available data.
December 2005	All clean fills will comply with clean fill disposal guidelines.	Unable to be measured. With this being a 'permitted activity' in many parts of New Zealand, many smaller sites are operated without monitoring or measurement of quantities conditional on certain thresholds.	Clean fills are operated by contractors, not Council. However, to the best of the council's knowledge this is being achieved.
December 2010	All substandard landfills will be upgraded or closed.	Future target date. There has been a significant improvement both in the number of lined and compliant landfills, and the closer of many substandard landfills.	Not achieved at this time. The District Landfill is a B Grade Landfill and has no lining at present. It is not considered to be a feasible option to upgrade this facility. It is likely to be converted to a cleanfill in 2010.

### 4.3 Strategic Goals

Strategic goals relating to waste minimisation and management have been set in the LTP for Ruapehu District. These relate not only to the provision of services but also Council performance in meeting a level of service in regard to that service. The following relate to the strategic goals listed and the progress made towards achieving them. Targets not achieved are shown in bold font.

**Table 11 - Strategic Goal Progress**

Strategic Goal <sup>7</sup>	Level of Service	Key Performance Indicators	Triennial Targets (and results)	
			2006/07	2007/08
To provide and maintain an appropriate level of infrastructure in order to deliver the agreed level of service.	Waste collection and recycling services, transfer stations and landfill are provided.	Weekly collections service	100% (100%)	100% (100%)
		Complaints per quarter relating to weekly collections	<20 (7)	<20 (5)
		Transfer stations are available for residents at least 8 hours per week	100% (100%)	100% (100%)
		Complaints per quarter relating to transfer stations	<50 (13)	<50 (5)
		Landfill is available for waste from transfer stations	100% (100%)	100% (100%)
		Complaints per quarter relating to disposal to the landfill	<20 (unknown)	<20 (4)
	Community is satisfied with the overall level of service for solid waste.	Percentage of respondents who are satisfied or very satisfied with the level of service	60% (89)	60% (80%)
			2006/07	2007/08
People are informed and participate in waste minimisation.	Waste hierarchy (reduce, reuse, recover, redirect and refuse) promoted throughout the community.	The number of promotional opportunities that council avails itself of	>1 (8)	>2 (7)
		The number of schools that express a desire to participate in the programme and are delivered to Education Programme for Waste Minimisation each year.	70% (87%)	75% (100%)

<sup>7</sup> Future Ruapehu Long Term Plan (LTP) 2006-16

Strategic Goal <sup>7</sup>	Level of Service	Key Performance Indicators	Triennial Targets (and results)	
			2006/07	2007/08
The negative effects on the environment are avoided, remedied or mitigated	Resource consents are complied with.	Breaches of resource consents	<4 per quarter (0)	<4 per quarter (0)
	Major transfer stations accept residential quantities of hazardous waste material.	Residential quantities of hazardous waste presented at the two major transfer stations are accepted	80% (100%)	80% (100%)
			2006/07	2007/08
Council will work towards zero waste and a sustainable environment	The community is provided with opportunity to recycle.	The proportion of waste recycled increases	Kerbside 10% <b>(Unknown)</b> T. Stations: Glass 40% <b>(15%)</b> Cardboard 10% (16%) Paper 10% (25%) Plastics 5% (10%)	Kerbside 10% <b>(Unknown)</b> T. Stations: Glass 40% <b>(31%)</b> Cardboard 10% (14%) Paper 10% (16%) Plastics 5% (10%)
	The amount of waste received at the landfill is reduced.	Waste received at landfill per annum	<4000 m <sup>3</sup> <b>(4601 m<sup>3</sup>)</b>	<3000 m <sup>3</sup> <b>(3945 m<sup>3</sup>)</b>

#### 4.4 Challenges

A number of pressures have been combined to create a growing commitment to reducing waste to landfill in New Zealand. The Resource Management Act 1991 has created stricter standards for the construction and operation of landfills, which has raised and will continue to raise the cost and availability of landfill disposal. The LGA 1974 requires Local Authorities to produce a Waste Management Plan that incorporates the waste management hierarchy of reduction, reuse, recycling, recovery and residual waste disposal. The new Waste Minimisation Act as yet is not definitive in its requirements and regulations.

While previously there was only a growing demand from the general population for recycling services, this is now commonplace and part of daily life. The challenge is now to maintain the momentum of reducing waste at a later part of the attention cycle. Reduction of waste to landfill has slowed significantly and new initiatives are required to sustain progress towards zero with ongoing effort.

The 2001 plan (the 'Zero Waste Plan') put in place infrastructure to divert waste streams through low cost solutions. The 2006 plan re-emphasised this, and has been an influence for significant development in waste minimisation. In this 2006 plan it was noted that saturation of options may have occurred as the waste volume had grown. Now it is time to ensure that products from each of the waste streams are being diverted in an environmentally sound manner into sustainable markets. These markets continue to grow and diversify.

Council has considered waste initiatives and many have been pursued under the previous plan. This will continue as new opportunities arise, and these will be prioritised for implementation into ongoing programmes. Current operations will continue to be refined and resourced in order to pursue the identified goals and strategic outcomes. Further development of the facilities to boost capacity and effectiveness is required. Quantities are increasing and the capacity to address these, including supporting markets and processing facilities needs to be enhanced in conjunction with reduction incentives. Additionally public participation and action needs to be fostered, with realistic incentives.

A three-yearly review cycle is proposed for the **Zero Waste Plan** to ensure goals remain current and relevant.

## **4.5 Direction for 2009-2012**

The key directions of waste minimisation in Ruapehu District remain reduction, reuse, recycling, recovery, residual waste treatment then disposal to landfill. Overall reduction is likely to have the most significant effect, but over which the Council has the least influence. The primary focus for Council is therefore to try to recover and prolong the use of materials to minimise waste materials and waste to the landfill. However whereas one of the original intentions was the extension of the life of the landfill, this has shifted to that of waste minimisation in a broader sense, with the reduction of the waste stream in general and minimisation of disposal off site. After 2010 the unlined District Landfill may revert to a clean fill. It is not proposed that another site be found within Ruapehu District. Therefore all non-clean fill waste will be required to be transported outside the District to an approved facility for disposal.

Sustainable use of materials is possible but to achieve it pricing mechanisms must be put in place that identify the true cost of one-off consumptions and the associated environmental outcomes.

The Waste Minimisation Act will bring a number of new influences into play in waste management. Additional costs to the disposal of waste imposed by the waste levy will start at \$10 per tonne, which will be passed onto consumers through increases in charges and fees.

### **4.5.1 Actions**

Key issues that have been identified for action under this WMP for 2009-2012, in order to further reduce the amount of waste requiring disposal in landfill are:

#### **The development of the composting unit to reduce green and organic waste to landfill**

This will be underway by the time this Plan passes through the consultation process. However the sale of the resultant compost will act as not only revenue for the waste management activity, but create a resource in the community. The point of sale will also correspond with delivery of new material for processing where practical. This is a part of the overall waste management regime rather than revenue generation. Reduction of waste is the overall driver, with added value of reducing methane generation, which is consistent with both hazard mitigation and carbon emission strategies.

#### **Increase sorting of waste in kerbside collection**

Waste collected in kerbside bags relies on the householder to sort and separate as the bags are not able to be efficiently opened and sorted at a later time. Highlighted by the audits, the separation or home composting of organic waste offers a significant reduction in overall waste.

#### **Education that will maintain public attention and capture the transient population**

The ambient level of awareness of waste and related issues has grown significantly in New Zealand over the last decade. This has led to subscription to good practices and a significant reduction in waste in the environment. However as the figures show, some complacency has emerged and targets have been approached but not met. Education on waste issues overall will maintain this awareness as a way of life (like the effectiveness of the 'Be a tidy Kiwi' campaign in the 1970's). New initiatives need to build on the existing awareness and education incentives rather than being constantly reinvented.

Incentives in Ruapehu District also need to focus on the significant part of the population that do not live in the District permanently. This will address those in hotels, motels, rental and backpacker accommodation, and those who live in the District during holiday periods, weekends, or for a few weeks per year only.

**Review of costs**

This is a legislative requirement, but also reflects that overall recycling and waste management is a cost. Costs not only relate to the true cost of managing waste, but also have a direct influence on those creating waste. Although blunt, the imposition of increased fees has had a definite affect on the quantities that are disposed of to landfill. These costs should be reviewed constantly to shift the responsibility and cost to the polluter, and incentivise alternatives to waste creation for consumers, retailers and manufacturers. The waste levy in the Waste Minimisation Act is also likely to require an increase in charges and fees for the disposal of waste.

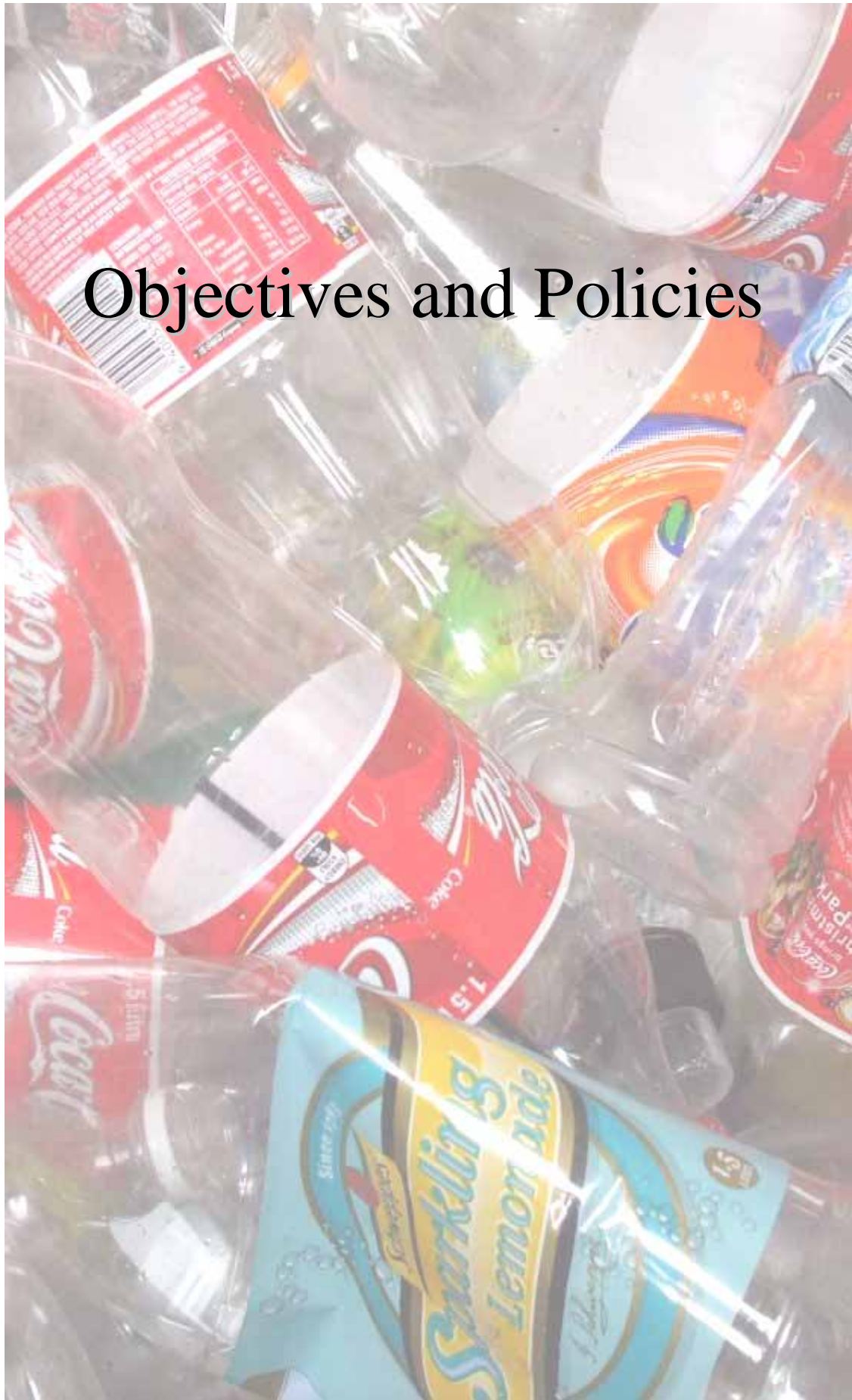
**Improved monitoring of quantities (weighbridge)**

Measuring quantities is essential to determining the success of all initiatives (as all targets rely to some degree on the quantity of materials) and also to measure the capacity of facilities for planning and logistics. The proposed future installation of weighbridges will greatly simplify the current system and provide greater confidence than estimating quantities based on volume.

**Increase markets**

Only recyclables that can be taken to a reliable market will be collected for recycling. Markets for recovered and recycled goods are essential. If no avenue for productive disposal is found materials are landfilled. Marketable waste becomes a commodity and may be intercepted before it reaches the landfill by a commercial operator. This in itself is an environmental good, but it results in the material that does reach landfill being the lowest grade and more difficult to recover. Other streams are intermittent and unpredictable and therefore do not accumulate an economic quantity at an expedient rate.

Firstly storage areas for materials are essential, and these need to be secure to prevent scavenging. This is addressed at the District Landfill. Secondly avenues for processing, such as that for latex and foam recovery, need to be constantly pursued.



# Objectives and Policies

## 5 Objectives and Policies

The following objectives and actions are a ten year plan, and where applicable will be implemented as time, resources and circumstances allow. Some of these initiatives have already commenced as discussed in the relevant previous section(s).

Some actions will fall into two or more classes and therefore have been placed into that which is considered the most appropriate. As such, many may be applicable to more than one classification and the overall intention should be considered.

### 5.1 Education and Promotion

Consistent education is a key component in achieving waste minimisation targets. The implementation and benefits of sustainable waste minimisation practices must be promoted the commercial and public sectors.

#### 5.1.1 Objectives and Policies

Objective O1.1: To foster awareness and promote the benefits of waste minimisation (including reduction, re-use, recycling and recovery), sustainable waste management and zero waste in the community.

Policy P1.1: Council will promote education and publicity of waste minimisation objectives and associated sustainability.

Policy P1.2: Council will promote and encourage initiatives that provide positive progress on waste minimisation and increase related opportunities and initiatives.

Policy P1.3: Council will establish and develop relationships that promote and assist in efficient and coordinated waste minimisation and sustainability both within Ruapehu District and New Zealand.

#### 5.1.2 Methods

- Education will be provided to primary schools, teaching the principles of environmental sustainability and waste minimisation
- Highlights of achievements in waste minimisation, related initiatives, and future plans for the Ruapehu District, will be published.
- All waste management staff will be knowledgeable and work towards maximising recycling at all sites.
- Communication and education to the community will be incorporated in all waste management actions.
- Promotion of zero waste and waste minimisation, as well as the actual costs of waste management with reference to alternatives and the real cost to the ratepayer will be part of all education and waste management.
- Private waste minimisation activities within the community will be encouraged.



- Council will subscribe to the Regional Waste Exchange and make it available to the community
- Partnerships within the tourist industry will be developed to investigate strategies to reduce extra waste generated by the visitors to the District.
- An Environmental Recognition mechanism within Ruapehu District will be established.
- Liaison with neighbouring Territorial Authorities will be undertaken to ensure a consistent message for the promotion of recycling.
- Markets for re-useable and recycled goods and composted products will be investigated, as well as waste exchange options to direct the resource from the waste stream.
- Liaison with the MfE, Department of Conservation, RAL, Army and Horizons Regional Council will be continued to ensure a consistent approach and to develop an integrated and focused solid waste management service, education and promotion in Ruapehu District.

## 5.2 Cultural Values

The values of Tangata Whenua with respect to solid waste management in the District need to be recognised and provided for in this WMP.

### 5.2.1 Objectives and Policies

Objective O2.1: To encourage active participation of tangata whenua in solid waste management issues in Ruapehu.

Policy P2.1: Council shall recognise the interests of Iwi in waste management issues and the effects of waste management on resources.

Policy P2.2: Council will consult with Iwi on waste management issues

Policy P2.3: Mechanisms to build Iwi capacity and participation in waste management shall be encouraged and supported by Council.

### 5.2.2 Methods

- Council will facilitate consultation with Iwi on solid waste management matters in the Ruapehu District.
- Council will recognise the principles of kaitiakitanga and stewardship in waste management operations, and identify issues that are relevant to Iwi in respect to waste and its effects.
- Council will liaise with other agencies on waste management matters of significance to Iwi.

## 5.3 Rural Waste

The high proportion of rural land use and population within Ruapehu District presents a challenge to provide a level of service to a demographic which is spread widely across the District.

### 5.3.1 Objectives and Policies

Objective O3.1: To encourage good waste management practices in rural areas.

Objective O3.2: To minimise the impact of waste on the rural environment and amenity values.

Policy P3.1: Council will promote waste minimisation irrespective of the social setting.

Policy P3.2: Council will promote and support where practical, waste collection options in the rural area where financially viable.

### 5.3.2 Methods

- The collection and disposal of unwanted chemicals and hazardous waste where practicable will be facilitated.
- The provision of information on managing hazardous chemical waste in rural areas where practicable will be facilitated.
- Issues relating to the rural community and solid waste through consultation will be identified.
- Council will offset the costs related to rural waste through rates.



## 5.4 Reduce

Waste reduction means lowering the amount of waste that is produced by controlling waste at its source. Waste reduction sits at the top of the waste hierarchy.

### 5.4.1 Objectives and Policies

Objective O4.1: To reduce the amount of waste generated in Ruapehu District.

Objective O4.2: To develop within the Ruapehu District and community an appreciation of the importance of waste reduction as the basis of waste management.

Policy P4.1: Sources of waste will be identified and more sustainable alternatives and practices investigated.

Policy P4.2: Council will promote and support incentives to sustainably reduce the source of waste both in its own practices and those of the community.

Policy P4.3: All Council activities will be undertaken to minimise and reduce waste, and encourage reuse and recycling.

#### 5.4.2 Methods

- Waste reduction will be promoted by:
  - Promoting separation at source;
  - Undertaking waste audits;
  - Identifying types of waste as distinct groups; and
  - Promoting cleaner production practices
- Educate for awareness of the true source of waste
- Financial incentives will be used to encourage reduction of waste.
- Council will advocate Central Government in order to achieve national initiatives aimed at waste reduction.
- Procurement policies will be investigated for Council purchased materials.

### 5.5 Re-Use and Recycle

This is the first opportunity that Council has in actively managing waste that has been produced, and influencing the minimisation of residual waste.

#### 5.5.1 Objectives and Policies

Objective O5.1: To maximise the diversion of material for refuse and recycling before it reaches the waste stream, and reduce the amount of waste entering the landfill.

Policy P5.1: Council will promote reuse and recycling in the community.

Policy P5.2: Council will provide and maintain recycling facilities to the community as part of its waste management infrastructure advertise and promote the efficient use of these facilities where financially viable.

Policy P5.3: Council will show preference where practicable to recycled and reused products in its daily activities and decisions.

Policy P5.4: Council will encourage sustainable private recycling and reuse schemes within Ruapehu District that remove materials from the waste stream and prevent it from entering landfill.

Policy P5.5: Council will promote the development of a demand for recycled materials and products.

Policy P5.6: Council will provide collection of recyclables in conjunction with regular waste collection in residential areas.

#### 5.5.2 Methods

- A collection of recyclable materials separate from non-recyclable will be provided.
- Separation of waste streams will be implemented at Council facilities.



- Infrastructure allowing for refuse facilities to operate and to encourage recycling of materials will be put in place.
- The public will be informed of recycling areas and appropriate actions for citizens who wish to promote change.
- Best management practices for recycling, collection and disposal will be adopted where practicable, and operations regularly reviewed to ensure that the approach taken is consistent with the emerging best practice of waste stream diversions.
- Further kerbside recycling collection will be provided for residents who wish to pay for the service.
- New multi-unit residential and commercial buildings will be required to include space for appropriate recycling and recovery facilities.
- Promotion of reuse and a change in attitude from away from the pervasive 'throwaway' mentality will be encouraged.
- Regional resources will be employed to encourage efficiency through co-operative effort as appropriate.
- Community based or business initiatives whose purpose is to increase reuse and/or recycling of materials will be evaluated and promoted.
- Relevant industries, Central Government and Horizons will be advocated where possible to take action at a national level and promote waste minimisation.
- Mechanisms which Council uses to divert material from the waste stream will be assessed and reviewed.
- Awareness of the benefits of reuse and recycling, and the costs of collection, treatment and disposal of non-recoverable materials will be emphasised.
- Financial incentives will be employed to encourage separation of reusable and recyclable materials.
- Recovery facilities for construction, demolition, commercial waste separation, and recycling facilities, paid for by the commercial sector will be promoted
- A relationship between commercial collection and Council will be maintained.
- The feasibility of a commercial recycling service paid for by the commercial sector will be evaluated.
- Further improvements to reclaim from refuse will be evaluated as they emerge.
- Event Hire Bins will be available on a user pays basis.



## 5.6 Recover

### 5.6.1 Objectives and Policies

Objective O6.1: To maximise the recovery of resources from the waste stream.

Objective O6.2: To maximise the diversion of organic material from the waste stream through composting or vermiculture.

Policy P6.1: Council will provide and maintain collection facilities to the community as part of its waste management infrastructure, and promote the efficient use of these facilities.

Policy P6.2: Council will maintain and operate its facilities in a manner which is environmentally sustainable and minimises or avoids adverse effects on the environment and public health.

Policy P6.3: To allow for the efficient separation of resources with recoverable components where financially viable.

Policy P6.4: All methodology, practices and funding shall be regularly assessed to promote and encourage best practice, optimal environmental efficiency and advanced technology.

Policy P6.5: Council will promote and support sustainable private composting and vermiculture.

### 5.6.2 Methods

- Green waste will be separated where possible and stockpiled at waste disposal facilities
- Recoverable materials including scrap steel, demolition material and tyres will be diverted from the waste stream where an alternative exists.
- Organic material will be diverted and composting will be undertaken at the Landfill
- The benefits of composting, vermiculture or other recovery practices will be promoted through Council.
- Financial incentives will be employed to encourage waste separation and diversion.
- Promote composting and resource recovery by providing financial incentives/ disincentives, and a charging structure that encourages resource recovery.
- A monitoring programme to assess the organic waste stream and options for achieving 95% diversion of commercial organic waste by December 2010 will be investigated.
- Construction and demolition waste will be monitored and economic options investigated.



## 5.7 Residual Waste Disposal and Treatment

Disposal of residual waste will be necessary for the foreseeable future when there is no other use for the waste. In Ruapehu District, waste is disposed of at the District Landfill in Taumarunui, or at the private Army landfill in Waiouru. MfE has indicated that these landfills will need to close before 2010, unless they are upgraded to Class A Landfills. Given the cost and likely residual life of the current landfill, it is unlikely that it is either practical or economic to upgrade to this class. Council will need to make provision for future residual waste disposal, which may include transport outside the District.



### 5.7.1 Objectives and Policies

Objective O7.1: To ensure that the collection, transfer and disposal of residual waste is achieved using current best practices for the Ruapehu District.

Objective O7.2: To ensure the waste disposal needs of Ruapehu District and its communities are provided for now and in the future, and that residents have access to suitable facilities.

Objective O7.3: To minimise the effects of solid waste management and disposal on the environment.

Policy P7.1: Council will provide for disposal of residual waste at a suitable and controlled facility.

Policy P7.2: Facilities will be maintained in manner which is sustainable and minimises or avoids adverse effects on public health or the environment.

Policy P7.3: Methods, practices and funding will be reviewed to encourage best practice, efficiency and advanced technology.

Policy P7.4: Council will provide incentives to avoid waste disposal, and disincentives to dispose of waste in landfill.

Policy P7.5: Council will reasonably avoid practices and products in its own usage that result in waste that ends up in landfills.

Policy P7.6: Council will provide a regular and efficient waste collection from residential areas where this is considered economically feasible.

Policy P7.7: Options and technology for treatment and disposal will be regularly reviewed.

### 5.7.2 Methods

- The District Landfill will be managed to support waste reduction and diversion.
- Timely, convenient and cost effective waste collection services will be provided where required and funded by the community.

- A point of disposal for the District's residual waste will be available which effectively meets the key principles of WMP. The future goal is that only material put into the Landfill is that which remains after all economic alternatives have been explored.
- Landfill and Transfer Stations will indicate opportunities for material reuse, recovery and recycling facilities to minimise unnecessary disposal to the landfill.
- Resource Consent conditions will be complied with at all facilities.
- Illegal and non-conforming dumping will be actioned.
- An awareness of the lifespan and impact on the environment of the landfill will be made apparent.
- Financial incentives will be used to encourage waste diversion.
- Where practicable, costs will fall within the ward boundary which generates the waste with a transparent charging regime between business and residential households.
- Contracts associated with solid waste management will be regularly reviewed.
- Future disposal options for the Ruapehu District will be investigated and reported where practicable.
- A clean fill disposal site will be investigated.
- Options for the banning of disposal of recyclables to landfill where a sustainable market exists will be investigated.
- Management Plans for transfer stations and landfills will be monitored and reviewed in order to ensure sites are managed in accordance with best practice.
- Where possible material entering the landfill will be assessed for feasibility of recycling more materials if cost effective.
- Future refuse disposal options will be considered.

## 5.8 Difficult and Hazardous Waste

Difficult and special waste needs treatment or specialised handling before disposal. This includes such waste as sewage screening, dead animals and dusty loads, and is usually transported directly to the landfill by arrangement rather than to a transfer station, due to the nature of the waste. It also requires disposal at a special site.



### 5.8.1 Objectives and Policies

Objective O8.1: To facilitate the disposal of special and hazardous wastes and materials in a manner that minimises or avoids adverse effects on the environment and on public health.

Objective O8.2: To encourage reduction in the use of hazardous material.

Policy P8.1: Council will facilitate the collection, storage and sustainable disposal of hazardous materials in accordance with Council waste acceptance criteria.

Policy P8.2: Council will identify hazardous end products and where practicable avoid products that result in the production of them in preference of alternatives.

Policy P8.3: Council will screen waste streams and remove hazardous waste and materials for appropriate disposal.

Policy P8.4: Council will facilitate education and awareness of hazardous materials and waste, their potential impacts, and correct procedure for removal from the waste stream.

Policy P8.5: Council will identify and emphasis responsibility for hazardous waste.

Policy P8.6: Council will abide by the relevant International Treaties, Conventions and Protocols relating to Hazardous waste, its production, storage and transport, and to which New Zealand is a signatory.

### 5.8.2 Methods

- Collection of commercial quantities of hazardous waste from any company's premises at their expense using Council's contractor will be facilitated on request.
- Transfer Stations will be staffed where possible to provide better control and education of waste management practices.
- Collection, storage and disposal of residential quantities of hazardous waste will be provided in the Ruapehu District.
- Awareness of alternatives to hazardous materials in the home and at work will be promoted.
- Cost effective and convenient facilities will be made available for residents to dispose of hazardous waste.
- Advocacy with Horizons will be pursued to find acceptable solutions for safe collection, storage and disposal of hazardous waste in the Ruapehu District.
- Central Government and other agencies will be advocated in order to achieve national initiatives aimed at the minimisation of hazardous waste.

## **5.9 Funding**

### **5.9.1 Objectives and Policies**

Objective O9.1: To determine the true costs of all waste management services and transfer this cost to the polluter.

Policy P9.1: Council shall develop funding policies based on balancing fees and funding for waste management to encourage responsible behavior, and present incentives to reduce, reuse and recycle.

Policy P9.2: Funding will be reviewed on a regular basis and fees set through the fees and charges manual.

Policy P9.3: Fees for disposal shall be representative of the true cost of disposal, and take into account external charges and levies.

### **5.9.2 Methods**

- A Landfill levy will be set to fund the development of waste minimisation in the district.
- Charges required to fund the Solid Waste Management, and including any future internal and external costs, fees or levies will be reviewed at regular intervals.
- Fees will take into account true Landfill disposal costs, including:
  - Full Landfill asset value, including the estimated asset value for Landfill space.
  - Estimated replacement Landfill disposal costs and Landfill "after care" costs.
  - Environmental effects.
  - All waste management services (collection, transfer, recycling, composting and landfill management).
  - Future external funds, fees and levies under current and future legislation.
- Public input into the LTP and Annual Plan processes in regard to waste management will be encouraged.
- An appropriate balance between general rates and charges for funding waste services will be sought.
- An awareness of responsibility for waste will be encouraged and promoted.
- Economic incentives to encourage recycling will be investigated

## **5.10 Monitoring**

The purpose of monitoring is to:

- Evaluate implications for WMP policies
- Determine progress towards targets
- Assess effectiveness of public information and education programs
- Assess costs associated with actions and policies of WMP
- Assess environmental effects of solid waste and solid waste management
- Assess the public support and perception of solid waste and its management in the Ruapehu District

### 5.10.1 Objectives and Policies

Objective O10.1: To determine the effectiveness in regard to waste minimisation of the waste management system and the diversion of material from the waste stream through monitoring of the waste stream.

Objective O10.2: To monitor the effectiveness of information and education programs.

Objective O10.3: To monitor the environmental effects of the waste management system and infrastructure.

Policy P10.1: Council will keep a record of all waste quantities and types, and undertake solid waste analysis on a regular basis at council facilities, and the functioning and capacity of these facilities.

Policy P10.2: Recognised methods for analysis and monitoring will be employed to ensure a consistent and recognised approach.

Policy P10.3: Closed landfills and significant waste disposal areas will be monitored for environmental impacts.

Policy P10.4: Council will consider the cost and environmental effects of all aspects of managing the waste stream, including production, collection, transport, disposal and after care.

Policy P10.5: To seek feedback and comment to ascertain the effectiveness of education and information programs.

### 5.10.2 Methods

- An analysis of refuse in the District will be undertaken every five years to measure progress against waste reduction goals, including use of the Solid Waste Analysis Protocol and landfill surveys.
- Landfilling rates will be monitored and recorded, and remaining landfill capacity calculated.
- The amount of material diverted to reuse, recycling and recover will be recorded, as well as the amount of hazardous waste.
- The environmental effects of the collection, transport and disposal system will be monitored and mitigated.
- The locations of closed landfills will be recorded and establish monitoring regimes implemented.
- Costs associated with collection, transport and disposal of waste will be monitored, and the effectiveness of any changing structure to recover the costs of activities.
- Construction and demolition waste will be monitored and measured.



## 6 Implementation

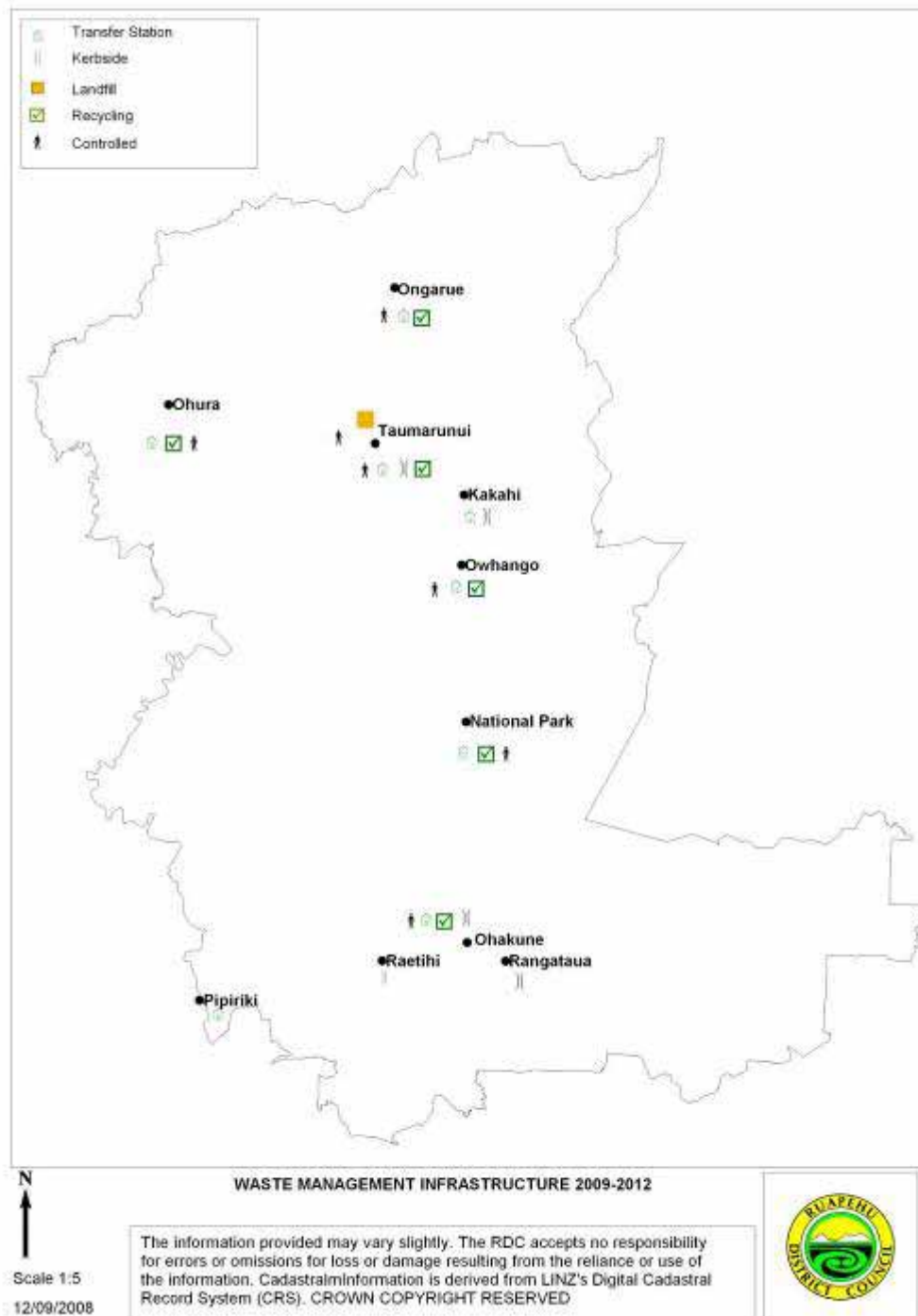


Figure 11 - Waste Management Infrastructure 2008

### 6.1.1 The Solid Waste Service 2009-2012

Council offers a waste management service across the District, which has the following attributes:

- Most transfer stations are only open when an attendant is present, the exception being Pipiriki.
- Refuse disposal is charged on a 'per cubic metre' base (loose).

- Official Council rubbish bags for residents are free to dispose of at Council Transfer Stations.
- The on-site attendant will encourage recycling at each site.
- Within the capacity of each site, a full range of recycling activities will be offered, with the exception that residential quantities of hazardous waste (including Agchem containers) can only be accepted at Waimarino and Taumarunui Transfer Stations.
- Education is an important tool in reducing waste, and will be delivered to the primary schools and to the Community as opportunities arise.

## 6.2 Facilities and Actions

The following describes the facilities for the solid waste service by ward for 2009-2012.

### 6.2.1 Ohura Ward

There are two transfer stations in the Ohura Ward. Table 12 describes the facilities location and attendance hours for each site.

Facility	Location	Hours/week	Attended?
Ohura Transfer Station	Taranui Street	16	Yes
Ongarue Transfer Station	Intersection of Ongarue-Waimiha and Ongarue Village Roads	16	Yes

Table 12 - Facilities in the Ohura Ward

#### Specific Actions

These services will be unchanged in relation to the services provided.



### 6.2.2 Taumarunui Ward

There is a transfer station at the Taumarunui Landfill. Table 13 describes the facilities location and attendance hours for each site.

Facility	Location	Hours/week	Attended?
District Landfill	Located together at 240 Golf Road	51.75	Yes
Taumarunui Transfer Station			

Table 13 - Facilities in the Taumarunui Ward

#### Specific Actions

These services will be unchanged in relation to the services provided.



### 6.2.3 National Park Ward

National Park Ward has Transfer Stations at both Owhango and National Park Townships. Table 14 describes the facilities location and attendance

hours for each site.

Facility	Location	Hours/week	Attended?
Owhango Transfer Station	Off State Highway 4	16	Yes
National Park Transfer Station	Pehi Road	16	Yes

**Table 14 - Facilities in the National Park Ward**

### Specific Actions

National Park Transfer Station will be expanded and improved. There is no current proposal to increase the hours unless the community actively pursues this.

### 6.2.4 Waimarino-Waiouru Ward

The Waimarino-Waiouru Ward comprises of three major townships: Raetihi, Waiouru and Ohakune with a satellite community at Rangataua. In Old Station Road, Ohakune, the Waimarino Transfer Station is the main services provider for Ohakune, Raetihi and Rangataua. The Pipiriki Community has its own Transfer Station serviced under the Wanganui District Council's service agreement.

A recycling container and a twenty-four hour 'Jack Trash' unit for small quantities of material are present in Raetihi (at Caltex service station) with a similar facility at the BP service station in Ohakune. All are problematic, with ad hoc dumping of materials having an undesirable effect both on its efficiency and acceptability. It is proposed that the BP facility will be removed completely, and the Raetihi facility be modified and monitored.

The Army at the Waiouru Military Base has traditionally serviced the Waiouru township, and have their own landfill which locals can access. Table 15 describes the facilities location and attendance hours for each site.

Facility	Location	Hours/week	Attended?
Waimarino Transfer Station	Old Station Road	51.75	Yes
Jack Trash Unit	BP Service Station	24/7	No
Raetihi Recycling Container and Jack Trash Unit	Caltex Service Station	24/7	No
Pipiriki Transfer Station	Pekapeka Road	24/7	No
Waiouru Landfill	SH1, Army Training Area	28*	Not applicable Not operated by RDC

**Table 15 - Facilities in Waimarino-Waiouru Ward**

### Specific Actions

Due to abuse resulting in excessive costs, the recycling centre at BP in Ohakune will be closed and removed permanently (see below). The recycling station at Caltex in Raetihi will

be investigated for either improvement or similar closure for the same reason. All 'Jack Trash' units will be closed and permanently removed.

### **6.2.5 Kerbside Collection and Recycling**

Residential quantities of refuse and recycling are collected from kerbsides in Taumarunui, Manunui, Mahoe, Piriaka, Ohakune, Raetihi, Kakahi and Rangataua.

Recyclables are collected in plastic bags. This means that the movement of refuse and recycling will be one-way, resulting in no containers having to be returned to the kerbside, thus allowing the intermittent home user to have more opportunity to use this service, and making it cleaner and more accessible. This service is not for commercial quantities of recyclables, as the quantities and needs are different.

#### **Specific Actions**

A pilot to investigate the feasibility of kerbside composting will be undertaken, as organic material remains the largest volume in rubbish bags. This will compliment the composting unit, and will be accompanied by an educational campaign. Alternatives to kerbside collection will be investigated to encourage composting.

## **6.3 District Wide Actions**

### **6.3.1 Recycling and Recycling Stations**

Recycling is undertaken and will remain free of user charges as part of waste minimisation. This is seen as economic incentive to undertake sustainable actions in not only waste disposal, but in purchasing of more environmentally complementary items. This does impose a cost upon the Council, with recycling being a cost. At present there is more recycling and recovery undertaken than waste to landfill and this is to be pursued as a continuing target.

As mentioned above, the recycling station trialled at BP in Taumarunui will be permanently removed due to abuse. A review of the trial recycling station at Caltex in Raetihi will be undertaken, with a decision made to improve it or similarly remove it permanently.

### **6.3.2 Transfer Stations**

At present all attendants are Council staff rather than having this contracted out, and this will not change. The benefits of this are that Council retains control of the waste stream, and can implement new initiatives. Opening hours of the remaining transfer stations will remain unchanged in regard to the number of hours but specific times and days required may change. All transfer stations that currently exist will remain.

As mentioned above, the National Park transfer station will proceed with expansion as planned. The next phase includes improving the service to that similar to Waimarino, and investing in ownership of the site.

### **6.3.3 Commercial Collection**

There are a number of retailers enquiring with regard to commercial collection. An investigation into this option and expansion of the collection will be undertaken.

### **6.3.4 Technology**

The computerisation of the monitoring and recording will be trialled, initially over two sites. This will improve links to measurement and other issues such as ozone protection. This may include touch screen terminals, swipe cards and/or bar readers.

### **6.3.5 Relationships and Shared Services**

The merit of partnerships with other local authorities and the subsequent sharing of services will continue to be investigated. Economics of scale offer advantages in strategy, policy advice, procurement and supervision. This is strengthened in that contractors provide similar services to a number of authorities. Additionally Council will continue to participate in the Regional Waste Management Forum, which offers partnership with other organisations, education and information services, centralised processing of recycling and regional advocacy.

# Appendices



## Appendix A: Regional Stocktake of Materials 2004

A Regional Stocktake on Waste was completed in August 2004 by an independent consultant commissioned by Horizons, with each of the seven Local Authorities participating in the survey.

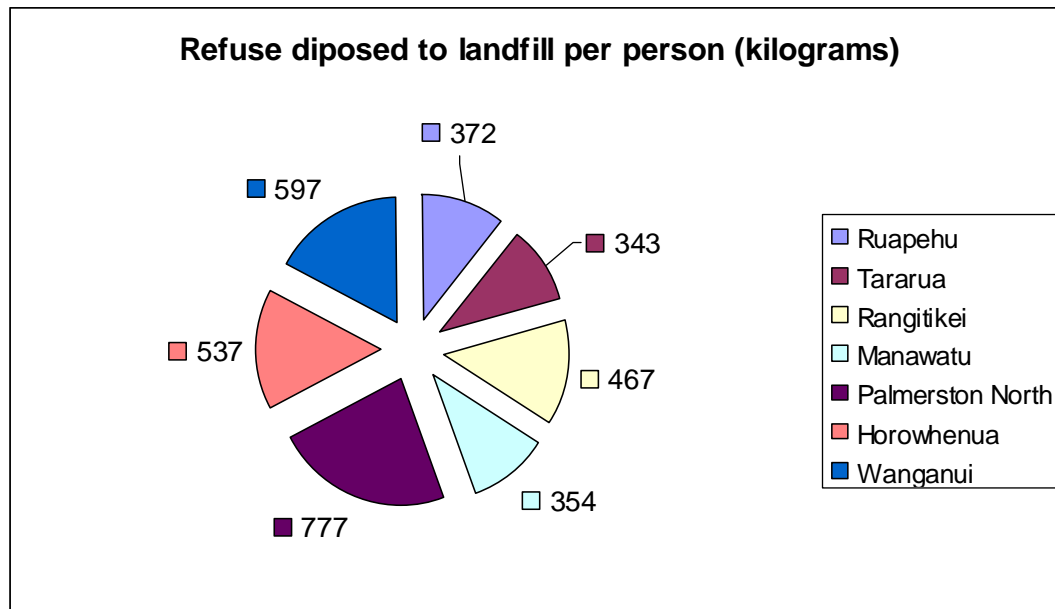


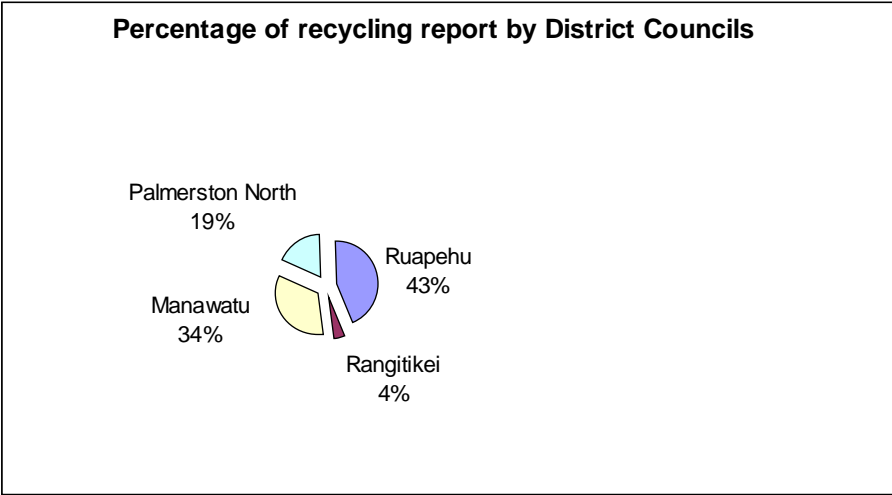
Figure 12 - Refuse disposal to Landfill in 2004

### Recycling / Reuse / Recover

(Based on 2004 figures from the Regional Stocktake on Waste)

In 2006, Ruapehu deposited 5,321 tonnes into its District Landfill. Figure 12 shows the composition of the refuse produced per person across the region. On average, each person in the region generates 573 kilos of rubbish, and 1.555 tonne of rubbish per household per year ends up in Landfills. Ruapehu residents produced, on average, 372 kilos of refuse per person that went to the District Landfill.

Figure 13 shows the average person recycles 28 kg per year of recyclables, e.g. plastic soft drink bottles, milk bottles, paper, cardboard, glass bottles and jars, over the region. Ruapehu residents recycle 40 kg, however this figure is distorted because it does not take into account the number of tourists visiting the area.

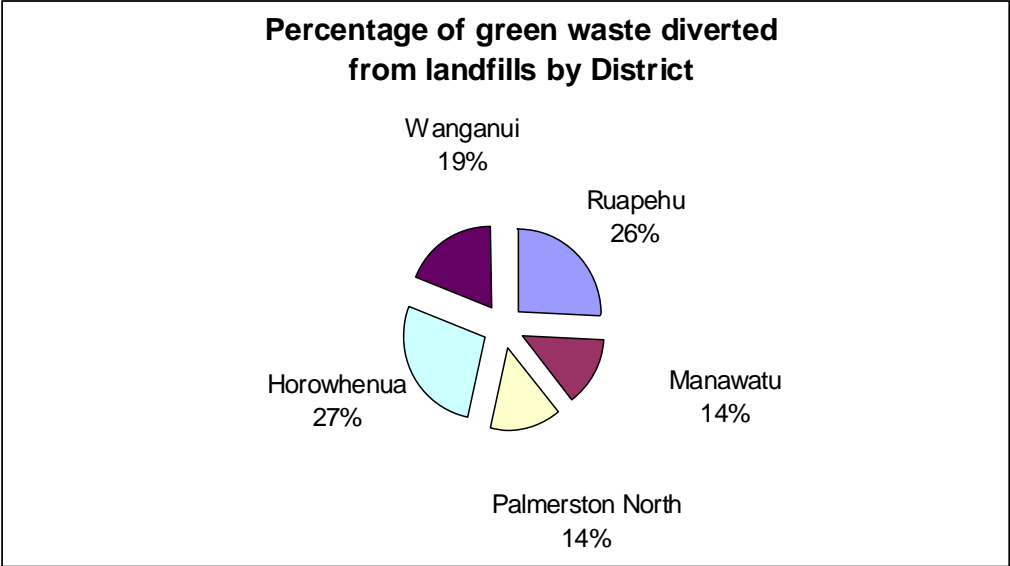


**Figure 13 - Recycling reported by District Councils in 2006**

**Green Waste**

Values of green waste recycling are shown in Figure 14. Approximately 83 kilos of green waste is recycled per person over the region. In 2003-04, Ruapehu residents diverted 157 kilos of green waste per person (26% of the total for the region) from the Landfill into the green waste stream. This value is distorted due to the severe storm experienced over that year. Council does not charge for green waste, whereas other Districts are charging a handling fee.

Previously green waste volumes have been diverted from the Landfill waste stream where it was shredded and piled for removal as a soil conditioner.



**Figure 14 - Green Waste diverted from Landfill Reported in 2006**



## Appendix B: General Information on Ruapehu District

Ruapehu District covers 6,700 square kilometres, or approximately 673,019 hectares, and has just under 9,000 rateable properties. The majority of the land is split as follows:

- 28% is recreational land (mainly Department of Conservation Land).
- 51% of the land is primary use land
- 8% is Defence land.
- Other (i.e. urban).

The District is primarily bordered by the Whanganui River in the West, the Hauhungaroa Range in the North East, and stretches towards the peaks of Tongariro, Ngauruhoe, and Ruapehu, which rises to 2,797 metres from the surrounding countryside. The District then continues East across State Highway One to include the southern most town of Waiouru and the New Zealand Defence Force lands. The Ruapehu District falls within the boundaries of the Manawatu-Wanganui Regional Council (Horizons Regional Council).

### Population

The population in the Ruapehu District as of June 2007 was 13,780. This equated to a decrease in population of 3.6% since the 2001 census, or a 16% decrease in growth over the last 10 years.

**Table 16 Resident Population by Ward**

Ward	Usual Resident Population 30 June 2007	Usual Resident Population 2001	Usual Resident Population 1996	% Change over last 10yrs (calculated since 1996)
Ohura	1220	1,290	1,880	-32%
Taumarunui	6480	6,750	7,675	-14%
National Park	1150	1,029	1,013	12%
Waimarino	4930	3,582	3,796	-18%
Waiouru		1,647	2,414	
<b>Totals</b>	<b>13780</b>	<b>14298</b>	<b>16778</b>	<b>-16%</b>

Source: Statistics New Zealand Final Population, 30 June 2007<sup>8</sup>

There are a number of contributing factors in the decline in population. These include the Mt Ruapehu eruptions, and subsequent poor ski seasons, freezing works closures and New Zealand Army downsizing in Waiouru. Recent anecdotal evidence indicates the population is remaining static or showing signs of increase, in Ohakune, National Park and Taumarunui.

However these figures do not take into account those that occupy holiday homes on a regular basis and therefore require the use of the infrastructure. A survey of 'outside ratepayers' found that this equated to a daily average of 965 persons each day. Peak population during the holiday and ski season was estimated at over 20,000 persons in the district.

It is expected that the usually resident population (URP) will remain static in the foreseeable future. However the peak population, based on visitors and holiday home construction, is expected to increase steadily (mainly due to the latter) over the next ten years. Demand

<sup>8</sup> Based on 2007 territorial authority boundaries. Due to boundary changes, estimates may differ from those previously published. The estimated resident population is based on the census usually resident population count, with adjustments for residents missed or counted more than once by the census (net census undercount), and for residents temporarily overseas on census night.

assumptions have been based on an increase in visitors of 3.4 %, 100 additional holiday homes per year and a subsequent increase of 1.5% in rateable properties per year.

### **Business and Industry**

The Ruapehu District is mainly comprised of primary production activities such as farming, forestry and horticulture. 22.2% of the employment in the District is in agriculture, forestry and fishing. The presence of the Army at Waiouru adds 16.3% associated with government, administration and defence. Construction employs 9.2% while retail and education claim 8.9% and 7.9% of the remaining workforce respectively.<sup>9</sup>

In 2007 the District saw a marked increase in the issue of residential building consents in comparison to 2006 (12,223 m<sup>2</sup> of floor compared to 6812 m<sup>2</sup> in 2006, being an increase of 79.4%). However, 2006 saw a drop from the typical increase over previous years. In this respect, 2007 showed a slightly larger annual increase than typical increases of the yearly trends of 2003 to 2005.

### **Settlement Types and Density**

Ruapehu District abuts Wanganui, Stratford, Waitomo, Ototrohanga, Taupo and Rangitikei Districts, and is located within the Wanganui-Manawatu Region. The main settlements within it are Taumaranui, Ohakune, Raetihi, National Park Village and Waiouru. There are a number of smaller settlements, including Ohura, Whakapapa Village, Owhango, Kakahi, Whakahoro and Waimiha. State Highway 1 passes through the eastern 'arm' of the district, and the North Island Main Trunk line through the centre, including National Park and Taumaranui.

A key issue for waste management is that a significant proportion of the population live in low-density rural areas outside the main centres (being a district dominated by agriculture and other primary industry). This presents difficulties for waste collection services and management facilities.

From waste analysis surveys, the elderly generally produce low volumes of waste, and the young generate high volumes of waste. The Ruapehu District has a high proportion of families with young children (42% of all families<sup>10</sup>) and this group generates high volumes of waste. Additionally there is a low median income in the District. Both are factors that should be considered when creating and funding infrastructure.

In comparison to New Zealand as a whole, the family size is smaller (being 2.6 people compared to 2.7). 27.7 % live in a 1 person household (compared with 23% NZ wide).<sup>11</sup>

### **Tourism**

The Ruapehu District transects two major National Parks, Whanganui National Park and Tongariro National Park, which has World Heritage status. Other areas of significant indigenous vegetation include Pureora Forest Park, Kara Forest, Tongariro Forest and Waitaanga Forest. Each of these parks has unique assets that attract a growing number of visitors each year. Other attractions in the District include Whakapapa and Turoa ski fields, the Queen Elizabeth II Army Museum in Waiouru, and a wide selection of tramping, rafting and mountain biking. Notably 10% of the local workforce is involved with accommodation,

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<sup>9</sup> Ruapehu District Quarterly Review, Dec 2007, Statistics New Zealand

<sup>10</sup> Statistics New Zealand Website, 'QuickStats about Ruapehu District (2006 Census), <http://www.stats.govt.nz/census/census-outputs/quickstats/>

<sup>11</sup> Statistics New Zealand Website, 'QuickStats about Ruapehu District (2006 Census), <http://www.stats.govt.nz/census/census-outputs/quickstats/>

cafes and restaurants.<sup>12</sup> There are also a number of specific historical points of interest within the District, such as the 'Bridge to Nowhere', Raurimu Spiral, Old Coach Road and the site of the 1953 Tangiwai rail disaster.

There is a population spike in the winter (the September quarter) as Mt Ruapehu's popularity with skiers grows, although recent trend has been a slight decrease (-4.6% comparing 2007 with 2006). However, there is a drive to also further promote the summer attractions and visitor numbers during this season are also growing.

Current data sets state that over 2000 beds are available from lodges and motels in Ohakune. This number does not include home stays, rental chalets, or other private stay facilities. The tourist population are high generators of waste and noncompliant rubbish with limited thought to recycling opportunities. There are no direct levies for contribution from tourists for the waste they generate in the District.

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<sup>12</sup> Ruapehu District Quarterly Review, Dec 2007, Statistics New Zealand



# Appendix C: Legislative Requirements

## **Local Government Act 1974 and Local Government Act 2002**

Part 31 (relating to waste management), Section 539 of the Local Government Act 1974 is specific in requiring councils to produce waste management plans. Councils are required to encourage effective and efficient waste management and adopt a waste management plan. It also sets priorities for the plan, and provides powers to administer or contract waste management, and create bylaws. The 1996 amendment inserted this requirements, which was to provide for the reduction, reuse, recycling, recovery, treatment and disposal of waste in the district. They were left intact by the 2002 plan of the same name. This part of the act also makes provision for waste collection, operations and facilities, and sets out powers in respect of waste management, make bylaws, and provide grants for promoting those provisions of the plan indicated above.

Part 6 of the 2002 act requires the identification of community outcomes and the compiling of a Long Term Council Community Plan. This act (Part 7) also requires councils to assess and plan for the provision of sanitary services (which is defined as in the Health Act 1956 to include the collection of refuse).

## **Health Act 1956**

This act contains provision for a local authority to be required to provide certain sanitary works if necessary. Previously it had requirements generally, these being repealed.

## **Resource Management Act 1991**

The Resource Management Act 1991 has a broad ranging influence and is perhaps the most widely encountered legislation in New Zealand today. This requires the creation and controls the contents of district plans, all dealings with resource consents, and generally effects on the environment. It has the accepted definition of the environment, effect and sustainability.

## **Hazardous Substances and New Organisms Act 1996**

This act, among other processes, controls the management of substances which may pose a risk to the environment and human health. This relates to the manufacture and storage, to transport and disposal.

## **Waste Minimisation Act 2008**

The Waste Minimisation Act 2008 encourages a reduction in the amount of waste we generate and dispose of in New Zealand and aims to lessen the environmental harm of waste. This Act also aims to benefit our economy by encouraging better use of materials throughout the product life cycle, promoting domestic reprocessing of recovered materials and providing more employment.

In a nutshell, the Act:

- puts a levy on all waste disposed of in landfills to generate funding to help local government, communities and businesses reduce the amount of waste
- helps and, when necessary makes, producers, brand owners, importers, retailers, consumers and other parties take responsibility for the environmental effects from their products at end-of-life – from 'cradle-to-grave'

- allows for regulations to be made making it mandatory for territorial authorities and others (for example, landfill operators) to report on waste to improve information on waste minimisation
- clarifies the roles and responsibilities of territorial authorities with respect to waste minimisation, including obligations for waste minimisation and management plans
- introduces a new Waste Advisory Board to give independent advice to the Minister for the Environment on waste minimisation issues.

## NZ Waste Strategy

This strategy, published in 2002, sets down 5 core principles for waste management, as well as defining the waste problem. These are:

- A sound legislative basis for waste minimisation and management.
- Efficient pricing
- High Environmental Standards
- Adequate and Accessible Information
- Efficient Use of Materials

The strategy sets targets, although councils are encouraged to set their own targets in line with the strategy. These targets address waste minimisation (in regard to reducing quantities), organic waste (in regard to diversion), special wastes (relating to business's taking responsibility for their waste), hazardous wastes, contaminated sites, organochlorines, trade wastes, and waste disposal (regarding fees and charges, and upgrading and closing landfills).

## Relationship to other documents

Document	Summary
<b>Regional Context</b>	
<b>Regional Policy Statement (RPS)</b>	<p>This is a document detailing the overall policies managing the environment in the region. It includes policies that relate directly to waste and hazardous substances, and also to land use in general. Issues relating to waste management include the following, that relate directly or otherwise to the '5 R's' of waste management in the SWaMP:</p> <ul style="list-style-type: none"> <li>• Inefficient use of resources leading to high volumes of waste needing disposal</li> <li>• Adverse effects resulting from poor management of disposal upon human health and the environment</li> <li>• Adverse effects that may result from management of hazardous substances, a lack of appropriate facilities, or a lack of information relating to hazardous substances.</li> <li>• Knowledge relating to adverse effects of substances on human health and the environment</li> </ul>
<b>Regional Land and Water Regional Plan</b>	<p>This plan, and the following air plan, reiterate and implement the policies established in the RPS. In particular there are rules relating to Solid Waste Disposal (Rule DL 12). In this respect the plan manages the effects that final disposal have (residual waste). Discharges to water and land are also addressed in a more general manner.</p>
<b>Regional Air Plan</b>	<p>As above this plan reiterates and implements the RPS. In particular to waste management, RAP Rule 12 requires no odour or dust to be apparent at the boundary of the property in relation to waste management.</p>
<b>Proposed 'One' Plan</b>	<p>This is a proposed plan currently being prepared, and which will eventually replace all the Regional Plans above. It contains corresponding controls to those above.</p>

<b>Local Context</b>	
<b>Long Term Council Community Plan (Long Term Plan; LTP)</b>	<p>As a mandatory requirement of LGA 2002, this strategic plan must be adopted every 3 years and cover a planning period of at least 10 years. It sets out Council's funding and financial policies for the long-term management of Council's assets, and analyses the impact strategic goals will have on LoS and long-term funding needs. The AM plan's financial projections are incorporated in the LTCCP consultation process. Key requirements:</p> <ul style="list-style-type: none"> <li>• Describes the activities of Ruapehu District and its community outcomes</li> <li>• Provides integrated decision making and co-ordination of resources</li> <li>• Provides a long-term focus for Council's decisions and activities</li> </ul>
<b>Annual Plan</b>	<p>A document produced annually to update information reported on within the LTCCP including its objectives, intended activities, performance, income and expenditure. This is an action plan on Council's projects and finances for each particular year between the review years of the LTP, detailing events considered of sufficient community impact or interest to affect LTP policies</p> <p>The Annual Plan shows how that year of the LTCCP will be funded and will provide detailed financial forecasts for the first 3 years, with summary forecasts provided for years 4 to 10.</p>
<b>Long Term Funding Impact Statement (LTFIS)</b>	Council's LTFIS includes financial projections. The financial projections for Council's asset groups will be taken from the financial forecasts in the AMP.
<b>District Plan</b>	This core document incorporates policies and objectives for landuse in Ruapehu District, and designations for future works incorporated in the AM Plan.
<b>Bylaws, Standards and Policies</b>	These tools for asset creation and subsequent management are needed to support asset management tactics and delivery of service.

## MfE Guidelines

<b>Ministry for the Environment Guidelines</b>	<b>Purpose<sup>13</sup></b>
CAE Landfill Guidelines	Sets standards for siting, design, construction, operating and aftercare of Landfills.
A Guide To The Management of Cleanfills.	Outlines the regulatory framework for cleanfills, definitions of cleanfills and cleanfill material, and sets out siting, design and operation considerations.
A Guide To Landfill Consent Conditions.	Assists in the development and effective enforcement of appropriate and effective resource consent conditions for landfills. This outlines approaches setting consent conditions for operating and closed landfills
A Guide To Closing and Closed Landfills.	To increase awareness of risks associated with closed landfills and outline the best practical methods to manage closed landfill sites effectively.
Landfill Full Cost Accounting Guide for New Zealand.	To assist decision-makers to implement a consistent full cost accounting approach to landfills.
Solid Waste Analysis Protocol.	To facilitate the collection of consistent and reliable data on solid waste.
Environmental Performance Indicators. Summary of Proposals for waste, hazardous substances and toxic contaminants.	A summary of environmental indicators proposed for monitoring waste and hazardous substances, and the effects of toxic contaminants on land, air, water and the health of ecosystems and people.

<sup>13</sup> Courtesy of MfE website, <http://www.mfe.govt.nz/issues/waste>

What's in Your Waste? A Resource for Trade Businesses.	Provides information for businesses and regulators on types of wastes produced from different trade businesses, and ways they can be disposed of.
Hazardous Waste Guidelines. Landfill Waste Acceptance Criteria and Landfill Classification.	Outlines a nationally consistent approach to the disposal of waste to landfills.
The New Zealand Waste Strategy. Towards zero waste and a sustainable New Zealand.	Sets in place a framework for addressing minimisation and management of waste.
The 2002 Landfill Review and Audit.	Provides a clear picture of the risks associated with landfills by assessing relative risks on a consistent basis nationwide.
Review of Targets in the New Zealand Waste Strategy (2006).	Reviews targets set in the NZWS 2002 with amendment based on assessment of current progress.

# Appendix D: Appraisal of Waste Management Practices for Ruapehu District Council

**Kit Wilson Consulting Ltd – August 2008**

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7. Recycling options	15
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## 1 EXECUTIVE SUMMARY

Ruapehu District Council requested that I prepare an independent view of their solid waste handling practices. The key factors to address were;

- Assess the effectiveness of the current practice and assess its fitness for purpose
- Compare the performance of RDC with that of other councils within the region
- Determine whether the costs of the current scheme are appropriate when compared with alternative options
- Compile a report of findings for the Council

In the preparation of this report I have been impressed with the enthusiasm and commitment shown by the Key staff at RDC. Given the rate of development shown over the past six years I believe that the RDC is in a good position to meet its targets with respect to the Zero Waste program.

The comparative costs shown in section 5 demonstrate that the costs of the service provided by RDC are within the range of councils reviewed with the magnitude of costs related to performance achieved. Overall the RDC is providing a cost effective service to its community.

Despite the above comment I believe that there are three key issues that must be addressed effectively for the goals are to be achieved.

1. The continued growth of holiday homes in key areas will challenge the future performance of the transfer stations in smaller centres. In particular National Park is likely to require increased service in the relatively near future.
2. The immediate challenge is to increase the quantity of material composted by adding organic material to the current greenwaste composting operation. The effectiveness of this new development will be largely dependent upon the capability of the operating staff who must learn the operational tricks required to cope with the vagaries of the weather and the seasons.
3. If for some reason the current progress is not maintained there is potential for problems to arise with the capacity of the current Taumarunui landfill that could fill up before the current consent expiry in 2020.

I have reviewed the operating choices made by the council and its staff and believe that the directions chosen have been both cost effective and appropriate for the region and its requirements. This includes the methodology for solid waste management, the charging structure for kerbside collection bags and transfer stations and the rating base.

## **2 REPORT STRUCTURE**

The executive summary provides an overview of the key issues and conclusions from this review of the Ruapehu District Council (RDC) solid waste management program.

The introduction covers the scope of the review and the information sources that have been used in this study.

I have broken down the analysis into sections covering the following key areas;

- Current situation
- Comparison with other councils
- Collection
- Recycling
- Landfill
- Composting

The last section of analysis covers the future directions proposed by RDC for the next period and this is followed by the conclusions reached from the analysis.

### 3 INTRODUCTION

Ruapehu District Council requested that I prepare an independent view of their solid waste handling practices. The key factors to address were;

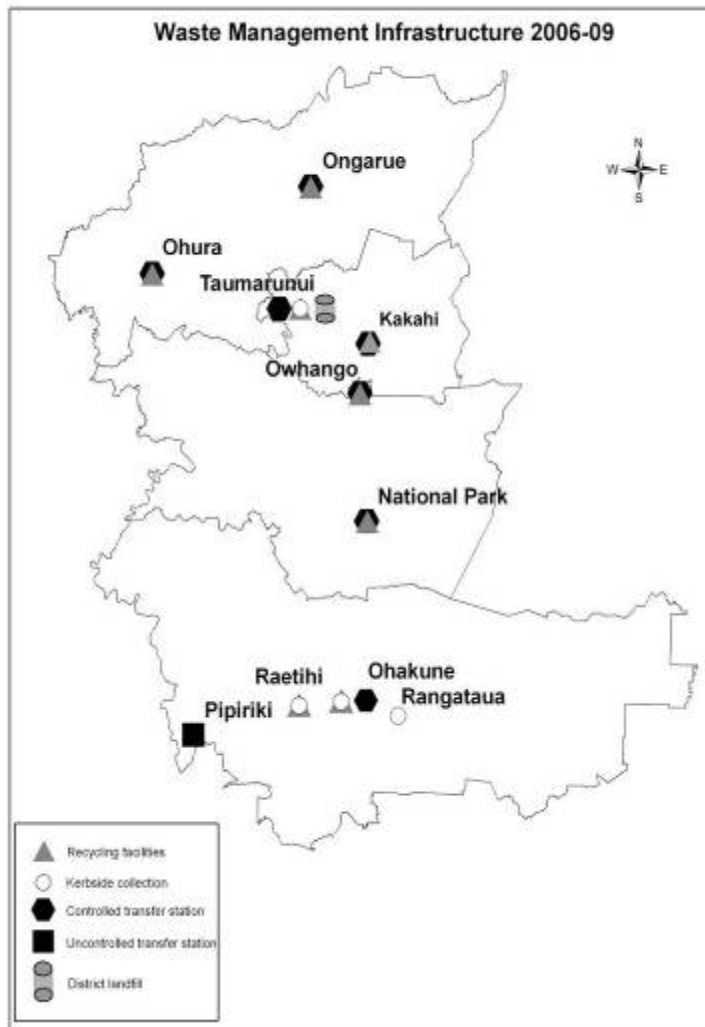
- Assess the effectiveness of the current practice and assess its fitness for purpose
- Compare the performance of RDC with that of other councils within the region
- Determine whether the costs of the current scheme are appropriate when compared with alternative options
- Compile a report of findings for the Council

Staff of the RDC gave me a very thorough briefing on the processes, the history of development and the proposals for the future. The source materials are listed below;

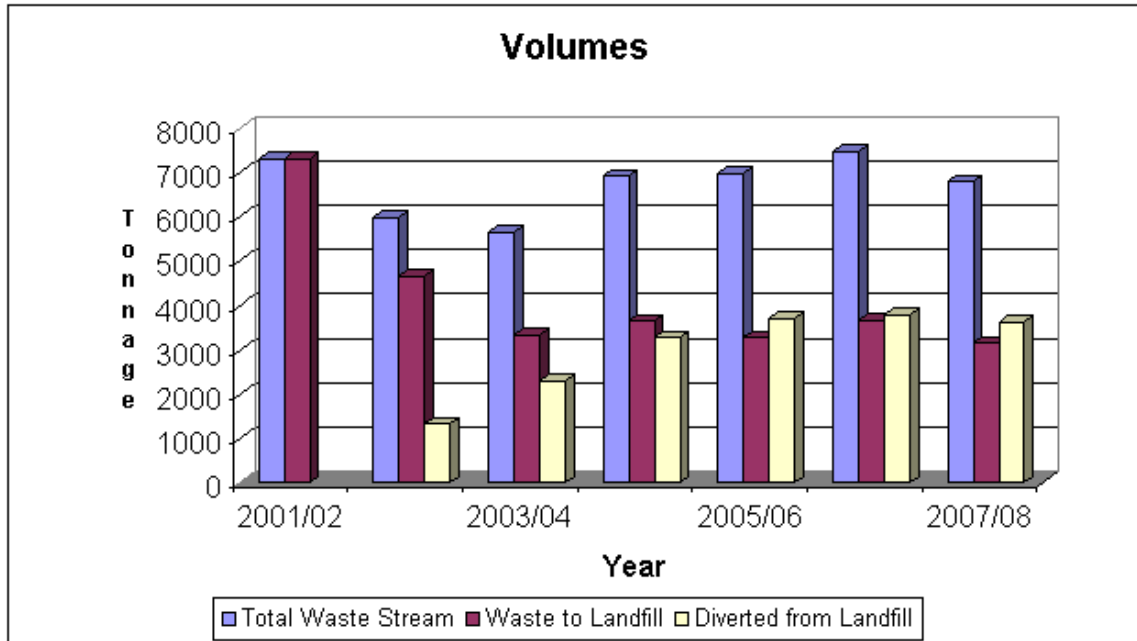
1. Government Agencies
  - Analysis of Kerbside Recycling Systems, July 2000, Zero Waste NZ
  - The End of Waste, Zero Waste by 2020, Zero Waste NZ
  - Targets in the New Zealand Waste Strategy: 2006 Review of Progress, Ministry of the Environment
  - Waste management planning by territorial authorities, April 2007, Performance audit by Controller and Auditor General
2. Regional Councils (excluding RDC)
  - Co-operative waste disposal in the Lower North Island, A feasibility study of options for management of a transitional phase for regional solid waste disposal, July 1998, Truebridge Callendar Beach Ltd, (Prepared for Horowhenua, Manawatu, Palmerston North, Rangitikei, Ruapehu, South Taranaki, Tararua and Wanganui Councils)
  - Rodney District Waste Analysis, October 2001, Waste Not Ltd
  - Zero Waste Plan, July 2002, Rodney District Council
  - Analysis of Domestic Kerbside Refuse in Rodney District Council, December 2003, Waste Not Consulting
  - Waste Minimisation Plan, November 2005, Palmerston North City Council
3. Ruapehu District Council
  - Ruapehu District council Waste Minimisation Study, July 1998
  - Solid Waste Disposal Strategy, April 1999
  - Asset Management Plan, Solid Waste, 2006
  - Solid waste Management Plan 2006-2009

#### 4 CURRENT SITUATION

The current solid waste collection structure is summarised in the diagram below.



Essentially this consists of a kerbside collection (waste and recycling) in the Taumarunui and Waimarino areas supplemented with seven controlled transfer substations with associated recycling facilities and an uncontrolled transfer station at Pipiriki. From there the material is moved to the landfill at Taumarunui for distribution or disposal. All of the options except the uncontrolled station at Pipiriki are manned to ensure that best options are taken in handling solid waste brought to the facility.



This graph shows that solid waste collection and handling performance has been excellent with increasing percentage of diversion from landfill.

The following table shows the composition of the domestic refuse entering the Taumarunui station in 2006. The breakdown is very similar to that measured a year earlier and consequently gives a fair picture of the waste stream prior to recycling.

Primary Composition of the Taumarunui Refuse Station	
Primary Category	Proportion of Total 2006
Paper	25
Plastic	8
Glass	9
Metal	15
Organic	35
Textiles	4
Hazardous	0
Rubble/Concrete	1
Timber	3
<b>TOTAL</b>	<b>100%</b>

The other major components of the solid waste stream include; greenwaste, cleanfill, commercial waste, hazardous substances and special requirements such as car bodies or sewage sludge. There are good processes in place that are handling these materials effectively.

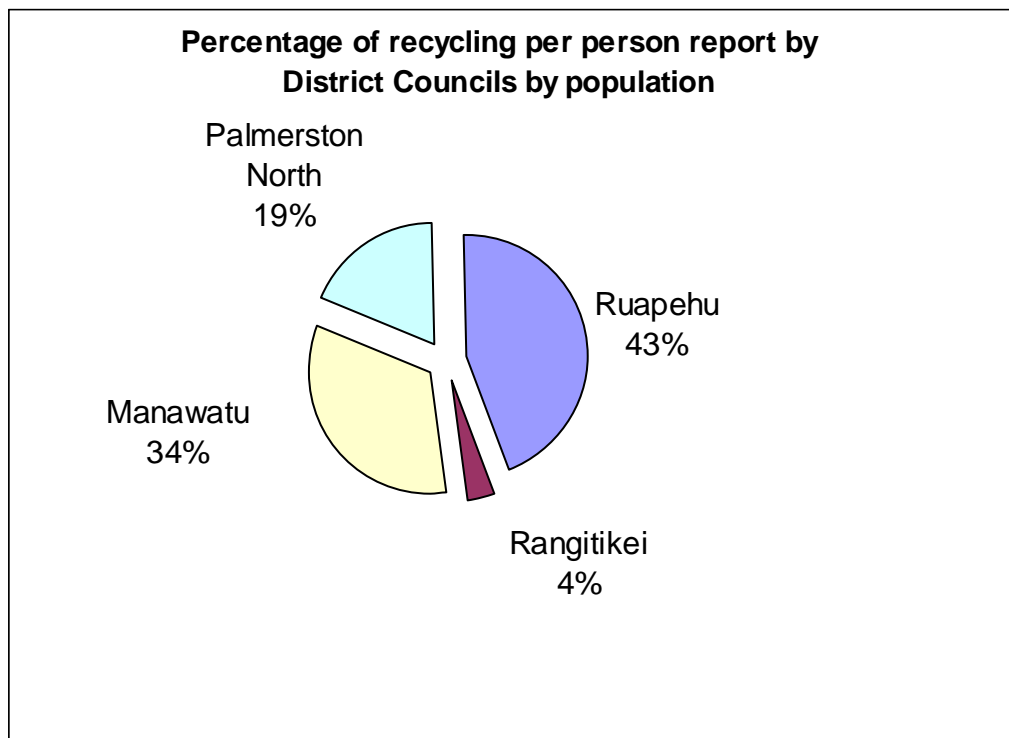
## 5 COMPARISON WITH COUNCILS IN THE REGION

### Performance

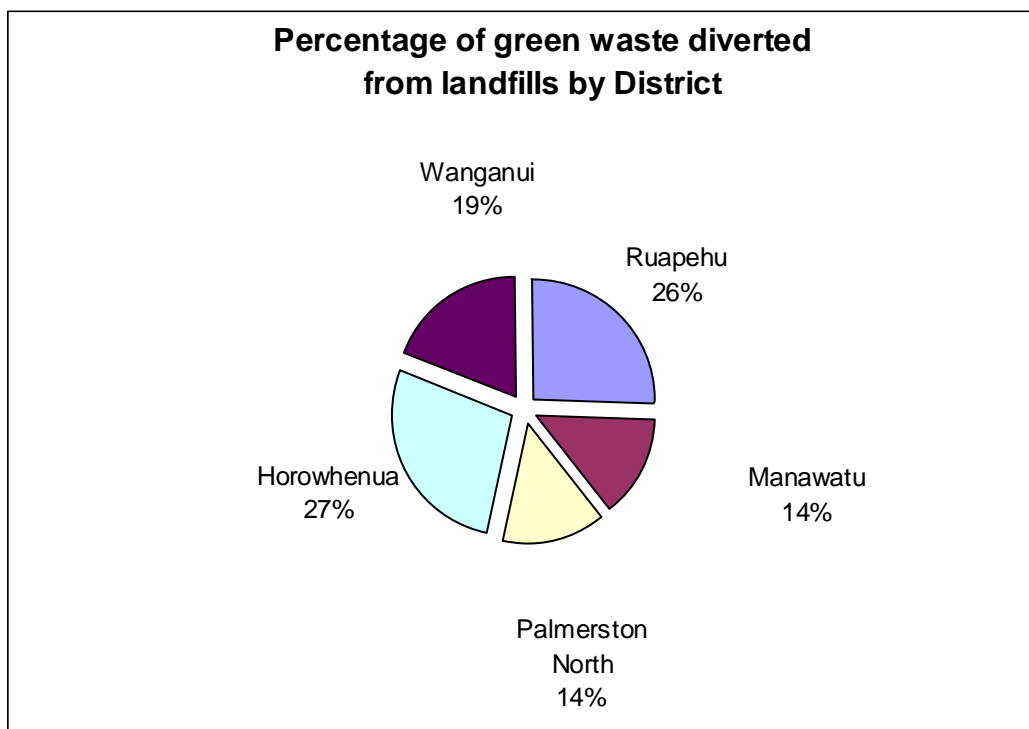
The main difficulty with creating this performance comparison is the impact of the large holiday home numbers in the RDC region and the shortage of significant industry. The large numbers of holiday homes means that additional domestic solid waste collection is required while the reduced industry base reduces the quantity of commercial waste to be handled.

For the above reasons the comparisons are made with primarily with councils to the south of the Ruapehu district rather than the northern King Country areas of Waitomo and Otorohanga.

The following graphs, though somewhat dated, outline the relative performance of a number of councils.



The high relative performance of recycling in the Ruapehu DC area shows that the systems are working satisfactorily.



Again the percentage of greenwaste being diverted is also excellent.

In summary the continued improvement in proportion of waste diverted from landfill, as shown in the graph in section 4, coupled with the very positive results in terms of greenwaste diversion and recycling percentage show that RDC is maintaining very good performance relative to those in similar situations.

The final key comparison is the availability of the manned transfer stations to meet the demands of the consumer, both usually resident and holiday home occupants. The comparative data covering a range of councils and sites is presented in the following table and shows that the level of access for the RDC area is very satisfactory.

Comparative opening hours of manned transfer stations

Council	Area	Week days	Weekend days	Total hours
Matamata	Matamata	3	2	25
Waitomo	Te Kuiti	5	2	34
Rangitikei	Marton	5	2	44
	Taihape	3	2	27
	Hunterville	1	1	5
Manawatu	Fielding	5	2	50
	Bunnythorpe	0	1	6
Tararua	Dannevirke	5	2	31.5
	Paihatua	3	2	23
	Woodville	2	2	10
Horowhenua	Foxton	5	2	42
	Shannon	3	1	12
Ruapehu	Taumarunui	5	2	51.75
	Waimarino	5	2	51.75
	National Park	2	2	16

### Cost comparison

Finally I have collected information on costs from a number of district councils from the area around the Ruapehu district. These costs have all been taken from the 2008/09 annual plans and incorporated in the tables below.

#### Total Cost

	<b>Rangitikei</b>	<b>Tararua</b>	<b>Waitomo</b>	<b>Ruapehu</b>
<b>Operating</b>	942	1462	940	1878
<b>Rates</b>	624	419	824	1137
<b>Fees/charges</b>	299	1169	116	518
<b>Capital/develop</b>	108	50	82	25
<b>Gain/(loss)</b>	(127)	78	(82)	(248)

Overall this is a relatively even range of costs with magnitude related primarily to the amount of service provided.

#### Fees

	<b>Rangitikei</b>	<b>Tararua</b>	<b>Waitomo</b>	<b>Ruapehu</b>
<b>Waste (overall)</b>	\$81	No breakdown	\$229	T \$45 W \$108
<b>Waste (collection)</b>	-	No breakdown	TK \$90 Piopio \$93	T \$62 W \$70
<b>Waste (recycling)</b>	-	No breakdown	-	T \$ 29 W \$33
<b>Landfill</b>	-	No breakdown	\$116	-
<b>Disposal bag</b>	\$1.30	\$2.00	\$3.00	\$1.80
<b>Disposal bin</b>	\$11.00	-	\$5.00	-
<b>Bulk</b>			\$90/t	Res \$25/m <sup>3</sup> Com \$35/m <sup>3</sup>
<b>Greenwaste</b>			\$60/t	\$4/m <sup>3</sup>

This provides an interesting range of costs but again RDC is very well positioned.

Note that data from the Otorohanga District Council has not been included as their operation is very different than the others covered. The following quote explains their position.

*“Council adopted a Zero Waste Strategy in December 2002 which set out Council’s proposals for providing refuse and recycling services throughout the district. It did however subsequently become apparent that very significant difficulties and costs would be encountered in achieving some of the objectives and targets that had been set out.*

*A review of Councils Solid Waste Management Strategy is therefore believed to be required, and no further significant changes to existing solid waste services will be made until such time as that review is complete.”*

## **6 COLLECTION OPTIONS**

The first choice is to determine which areas can economically be serviced with a routine kerbside collection service for solid waste. Within the RDC area there are only two areas that have sufficient population to allow for a regular collection service, namely Waimarino and Taumarunui. The secondary issue is the timing of collection, particularly because of the high numbers of holiday homes.

From customer feedback the collection has been settled on Tuesdays as this gives the best overall collection. As holiday home occupation can vary frequently in terms of timing it is essential that the manned transfer stations are available to supplement the kerbside collection.

The table of opening times above shows that RDC is maintaining an excellent level of service to cover the variety of demands from the community.

## 7 RECYCLING OPTIONS

The manned transfer stations have had a good history of recycling since their implementation and this has been supplemented by the addition of the kerbside recycling scheme. This has been based on use of plastic supermarket bags to separate the various classes of recycling (tin cans, aluminium cans, glass bottles and jars only, plastic drink bottles, milk bottles, paper and cardboard).

There are three alternatives to the supermarket bag mode of recycling;

- Recycling crates
- Standard wheelie bin
- Multi compartment wheelie bin

All of these kerbside recycling options provide a significant increase in recycling but they have various advantages and disadvantages. The following table summarises some of these points.

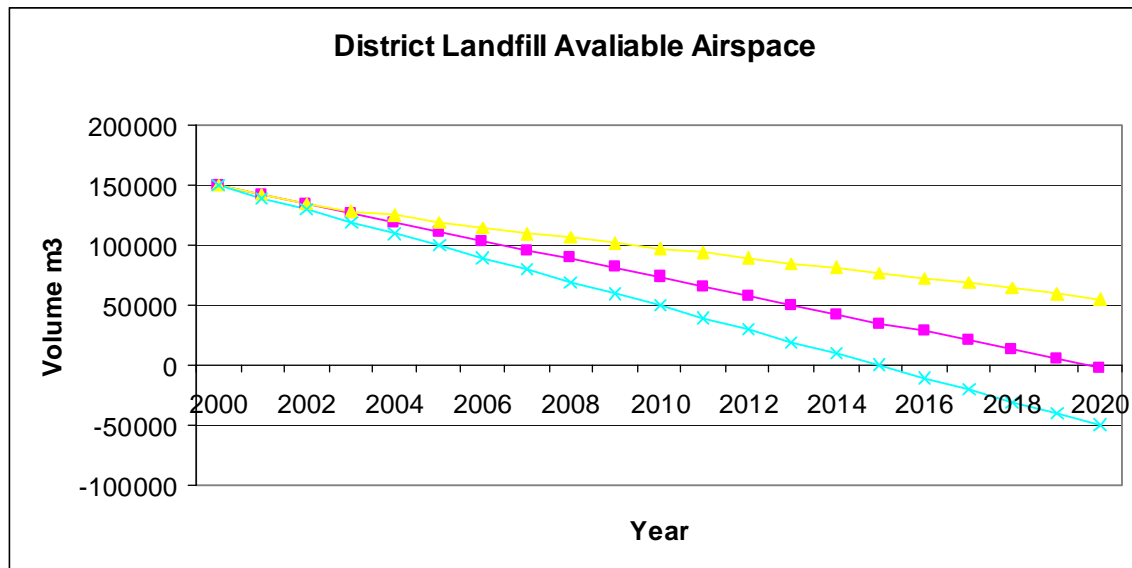
	<b>Multi compart. wheelie bin</b>	<b>Std wheelie bin</b>	<b>Recycling crate</b>	<b>Supermarket bag</b>
<b>Capital cost</b>	Very high costs for bins, specialised trucks and sorting facility reqts.	High costs for bins trucks and sorting facility requirements.	Reasonably low cost for crate and standard trucks and minimal sorting system.	Low costs and minimal sorting systems.
<b>Operating cost</b>	Lower costs due to low staff needs and mechanical sorting system.	Relatively low due to low staff and mechanical sorting.	High staff costs for kerbside sorting and low loading on trucks.	Medium costs as less kerbside sorting.
<b>Sorting requirements</b>	MRF required.	MRF required.	Some household sorting but high kerbside.	High household sorting reqt. But less after collection.
<b>Quality</b>	Quality impaired due to comingling of materials.	Quality impaired due to comingling of materials.	High quality due to kerbside sorting and separation.	Highest quality due to household sorting and separation.
<b>Participation</b>	Wheelie bins tend to increase participation	Wheelie bins tend to increase participation	Relatively high	Lower due to higher household effort required.
<b>Diversion</b>	Reduced due to quality impairment.	Reduced due to quality impairment	Good levels	Good levels

Overall the total diversion from the different methods tends to be similar because the higher participation assessed for wheelie bin options is balanced by the quality impairment from comingling of waste.

The selection of the supermarket bag recycling option is cost effective and appropriate for the requirements of the Ruapehu region.

## 8 LANDFILL OPTIONS

All waste in the RDC region that is not recycled or otherwise diverted is deposited in the Taumarunui landfill. This is currently consented for operation up to 2020. In 2005 the projection was that the landfill would be filled by 2012. The following graph shows the projected landfill space available under different scenarios.



The blue line projected loss of space with no action and the yellow with adoption of zero waste principles. Current performance shows that it will be sustainable until 2020 with the planned progress.

Looking ahead there has been much investigation of alternatives including the cooperative report of council from Ruapehu south. This report found that there were economic benefits for running a combined large scale landfill, however the costs of transportation by truck heavily outweighed any of these advantages and this was prior to the recent increase in fuel costs. Rail costs were identified as possibly an economic option, but only if there were to be sidings at the land fill and at the collection points. If trucking is required to move from collection to rail and from rail to landfill, then the economics are again unsatisfactory.

The only practical option remaining for RDC if/when the Taumarunui landfill closes is to liaise with the Waitomo council for access to the Te Kuiti landfill. Preferably continued improvement in recycling and diversion will minimise the requirement for this option.



Peak Population           **2.5% Overall**

Growth                       **1.5%**

(Increase in rateable units, subdivisions and consents for new dwellings). Ruapehu is expecting that new dwellings and the number of rateable units will increase by 1.5% per year.

Based on these projections the main impact is likely to be in the areas that have the major growth in holiday homes. In particular I believe that there is likely to be a demand for improved availability for the manned transfer stations, particularly in National Park. The main communities in Taumarunui and Waimarino already have excellent service availability and these areas should only need to maintain their standards.

As addressed in the previous section the immediate challenge will be to deliver on the plan to incorporate organic material from household refuse into the composting operation that is successfully treating greenwaste. This should take place on a progressive basis with an increasing proportion of the material included as the understanding of the process requirements grows.

Longer term issues will be dominated by future landfill needs if the present improvement rates are not maintained. If RDC maintains its current rate of progress in improving diversion from landfill then this is unlikely to be a significant issue within the next ten years.

## 11 CONCLUSIONS

Overall I have been impressed with the enthusiasm and commitment shown by the Key staff at RDC. Given the rate of development shown over the past six years I believe that the RDC is in a good position to meet its targets with respect to the Zero Waste program.

The cost comparisons show that RDC is appropriately charging for the services that it is providing and that its service is cost effective.

Despite the above comment I do think that there are three key issues that must be addressed effectively if the goals are to be achieved.

- The continued growth of holiday homes in key areas will challenge the on going performance of the transfer stations in smaller centres. In particular National Park is likely to require increased service in the relatively near future.
- The immediate challenge is to increase the composting by adding organic material to the current greenwaste. The effectiveness of this new development will be largely dependent upon the capability of the operating staff who must learn the operational tricks required to cope with the vagaries of the weather and the seasons.
- If for some reason the current progress is not maintained then there is potential for problems to arise with the capacity of the current Taumarunui landfill that may fill up before the consent expiry in 2020.

I have reviewed the operating decisions made by the council and its staff and believe that the directions chosen have been cost effective and appropriate for the region and its requirements. This includes the methodology for solid waste management, the charging structure for kerbside collection bags and transfer stations and the rating base.

## Appendix E: Glossary and Definition of Terms

### Defining Waste

Council has chosen to adopt the NZWS definition of waste. These are as follows:

**WASTE** is any material, solid, liquid or gas, that is unwanted and/or unvalued, and discarded or discharged by its owner.

**GASEOUS WASTE** consists of gases and small particles emitted from open fires, incinerators, agricultural and industrial processes, and vehicles. Once gaseous waste has been released into the environment, the effects are very hard to control. If gases are contained through pollution control devices before they enter the atmosphere, they can be controlled more easily. Gaseous waste has only been considered in relation to the operation of Landfills and Transfer Stations.

**GREEN WASTE** means lawn clippings, weeds, branches, plants or other vegetable matter. Shreddable green waste means uncontaminated green waste with a diameter less than 200mm but does not exclude flax, bamboo, toi toi or noxious weeds. There can be no containments, e.g. no rocks, steel, timber, dirt, concrete, rope or rubbish etc, within the green waste.

**HAZARDOUS WASTE** can be solid, liquid or gaseous in nature, and may present hazards to human health, the environment and property requiring special management controls. Hazardous waste includes chemicals, infectious and radioactive materials, and by nature are often complex mixtures of substances. A national definition of hazardous waste is being developed to provide consistency in defining hazardous waste.

**LIQUID WASTE** is generated as liquids or disposed of into a liquid waste stream or suspended solids. Wastewater is collected by the sewage system and piped to public wastewater treatment facilities before being discharged into rivers or coastal waters. This includes domestic food waste, washing water and toilet waste, as well as chemical and process waste from industry. Not all wastewater is collected by the sewage system. Some domestic waste goes into septic tanks, and some industrial plants have their own treatment facilities. Non-point source discharges include livestock excrement and agrichemicals that are washed from the land by rainwater, and urban stormwater which collects waste as it channels rainwater into waterways and out to sea. Liquid waste will not be included in WMP.

**ORGANIC WASTE** includes food, green or garden waste and biosolids.

**SOLID WASTE** is generated as solids or converted to a solid form for disposal. Solid waste includes common household waste, e.g. paper, plastic, glass, metals, appliances, and kitchen and garden waste, as well as a range of industrial and commercial waste, e.g. construction and demolition waste, organic waste from agricultural and food processing, and mine and quarrying tailings. Most solid waste is disposed of in Landfills or cleanfills. Some solid waste, e.g. medical waste generated by hospitals, is hazardous or potentially hazardous and requires controlled disposal, often through high temperature incineration.

### Other Terms and Definitions

**CLEANFILL MATERIAL** means material that does not undergo any physical, chemical or biological transformations that will cause adverse environmental effects or health effects once it is placed in a clean fill, i.e. inert material such as clay, soil, gravels, concrete and rubble.

**DISPOSAL** means final deposit of waste on land set apart for the purpose. (LGA 1974)

**EXTRAORINARY USES** means households that generate in excess of 10 m<sup>3</sup> of waste (including recycling) over a year.

**HOUSEHOLD REFUSE** includes wrapped cold ashes, sweepings, dust, paper, bottles, wrapped bones, and waste food, cans, cartons, or other food containers, or other refuse resulting from domestic housekeeping. Official Council rubbish bags are intended for the disposal of 'household rubbish', i.e. domestic waste which cannot be recycled or composted and is non hazardous.

**HSNO** means the Hazardous Substances and New Organisms Act 1996.

**ILLEGALLY DUMPED REFUSE** means any item, or collection of items deposited together, deposited on public property by a person without Council's permission.

**INORGANIC REFUSE** means all refuse arising from residential properties of an inorganic nature, including but not restricted to furniture, appliances, cut up motor vehicles or parts, carpet, bric-a-brac and other discarded items. Inorganic Refuse excludes non-complying items.

**KERBSIDE RECYCLING** means the roadside collection of materials separated for the purposes of recycling.

**LANDFILL** means a controlled site for the deposition of solid waste on land.

**LITTER** includes any refuse, rubbish, animal remains, glass, metal, garbage, debris, dirt, filth, rubble, ballast, stones, earth, or waste matter, or any other thing of a like nature (from the Litter Act 1979).

**MULTI-UNIT BUILDING** means a building which contains more than one separate household or family.

**NON-COMPLIANT BAG** means any refuse bag that does not display the official Ruapehu District Council logo, or does not meet the requirements for collection, e.g. the bag is not out by 7.30am, contains unwrapped sharp objects, heavy items and exceeds the maximum weight of 10kg, contains garden refuse, hot ash, corrosive or inflammable liquids, dangerous substances or is not securely tied.

**NON-COMPLYING MATERIALS** are materials that are not allowed to be put at a Transfer Station as the site is not designed for the material or is inappropriately presented.

**RECOVERY** means extraction of materials or energy from waste for further use or processing, and includes, but is not limited to, making materials into compost (LGA 1974).

**RECYCLING** is the reprocessing or remanufacturing of material into a new or different product, e.g. old newspapers can be reprocessed to make egg cartons

**REDUCTION** means lessening waste generation (LGA 1974).

**REFUSE BAG** means any refuse in a refuse bag that is placed on the kerbside for collection and disposal. This bag displays the official Ruapehu District Council logo.

**REUSE** is the repeated or continued use of a product or item in its original form.