



Performance audit report

Waste management planning by territorial authorities





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This is the report of a performance
audit we carried out under section 16
of the Public Audit Act 2001

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Foreword

Territorial authorities have an important role in managing waste. The Local Government Act 1974 requires all territorial authorities to adopt a waste management plan to provide for waste management in their district.

In my audit, I looked to see whether every territorial authority had adopted a waste management plan, and checked to see whether six selected territorial authorities were implementing their waste management plans. I also considered, as three case studies, specific waste management practices that some territorial authorities have pursued.

While all territorial authorities had prepared waste management plans, some of the plans were out of date or did not contain all the information I expected. I am concerned they would not be useful in guiding territorial authority decisions about waste management. In many cases, it was unclear whether the plans had been formally adopted.

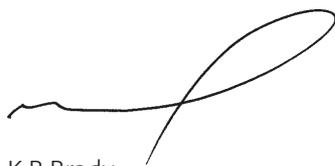
I expect territorial authorities preparing waste management plans to consider the requirements and implications of waste management methods before including them in plans, and I expect all territorial authorities to review their waste management plans regularly to ensure that they are relevant and useful.

The six territorial authorities I assessed in more detail were making progress in implementing their plans. I was pleased to see that most of them had updated and refined their waste management plans and practices through self-review. However, I note that, despite the progress they had made, they managed steady or increasing quantities of waste in recent years.

The three case study reviews highlight the need for territorial authorities to carefully evaluate the requirements and the implications of pursuing particular waste management practices before implementing them. In most instances, the territorial authorities I looked at for the case studies had done this.

I encourage every territorial authority to carefully consider the sustainability of the approaches within their waste management plans and the effect on community well-being.

I would like to thank all the territorial authorities who assisted with this performance audit for their co-operation.



K B Brady
Controller and Auditor-General

19 April 2007

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Glossary

Disposal – final deposit of waste on land set apart for the purpose.

Diversion methods – methods for managing waste that reuse, recycle, and recover waste. These methods divert waste from landfills.

Landfill – an area of land set apart for the controlled disposal of solid waste.

LTCCP – long-term council community plan.

Methods for managing waste – those methods identified in the Local Government Act 1974; namely reduction, reuse, recycling, recovery, treatment, and disposal.

Recovery – extraction of materials or energy from waste for further use or processing, and includes, but is not limited to, making materials into compost.

Recycling – reprocessing waste materials to produce new products.

Reduction – lessening waste generation.

Residual waste – the waste that remains after any waste diversion has occurred and that will require disposal.

Reuse – further using of products in their existing form for their original purpose or a similar purpose.

Territorial authority – city and district councils; it does not include regional councils.

Treatment – subjecting waste to any physical, biological, or chemical process to change the volume or character of that waste so that it may be disposed of with no, or reduced, significant adverse effect on the environment.

Waste – in this report, any solid waste that may be reused, recycled, recovered, treated, or disposed of in a landfill. This definition may differ from that in documents prepared by other government agencies.

Waste hierarchy – giving priority to methods for reduction, reuse, recycling, recovery, treatment, and disposal of waste, in that order of importance.

Summary

Territorial authorities (city and district councils) have an important role in managing waste. The Local Government Act 1974 requires all territorial authorities to formally adopt a waste management plan to provide for waste collection and management in the district.

The Act directs territorial authorities, when preparing their plans, to consider the waste management methods of reduction, reuse, recycling, recovery, treatment, and disposal, in that order of priority. The methods with higher priority use fewer resources.

We wanted to provide assurance to Parliament about the usefulness of territorial authorities' waste management planning for solid waste.

When preparing their waste management plans, territorial authorities need to take account of the costs, benefits, and operational requirements of pursuing particular methods of managing waste. Territorial authorities need to ensure that methods are feasible and that they understand the implications of adopting particular activities.

We conducted our audit in three parts. We considered:

- whether all territorial authorities had adopted a waste management plan, and how the plan provided for the management of solid waste in the district;
- how six selected territorial authorities were implementing their waste management plans; and
- three case studies of particular approaches to the management of solid waste.

Our findings

While all territorial authorities had prepared waste management plans, some of the plans were out of date or did not contain all the information we expected. We are concerned the plans would not be useful in guiding council decisions about waste management.

The six territorial authorities we reviewed in more detail were progressively implementing their plans. Several of them had improved their plans and practices through self-review and by updating their plans.

The waste management methods these councils had implemented favoured waste diversion and waste disposal activities rather than waste reduction.

Waste management plans for all territorial authorities

We expected every territorial authority to have a waste management plan. We asked every authority to provide us with a copy of its waste management plan, and we assessed the plans to see whether they met the requirements of the Local Government Acts 1974 and 2002.

Every territorial authority had prepared a waste management plan. However, the status of many plans was unclear, and authorities needed to clarify whether they were intending to do further work on their plan or whether it had been formally adopted.

Many waste management plans included clear information about the particular waste collection and management methods they intended to pursue. However, some plans did not include detailed enough methods, and some were out of date.

In our view, territorial authorities need to ensure that their waste management plans clearly identify the methods for collecting and managing waste, and they need to review their plans regularly to ensure that the plans are still relevant and useful.

Most plans included some information about the quantity and composition of waste in the district, although fewer identified how much waste was expected in the future. While baseline information about the quantity and composition of waste is an important starting point for preparing a waste management plan, territorial authorities also need to consider how much waste they can expect in the future so they can better plan services to meet the demand.

The Ministry for the Environment published *The New Zealand Waste Strategy* (the Waste Strategy) in 2002. The Waste Strategy provides national guidance for waste management, and includes targets for territorial authorities. About two-thirds (65%) of plans made reference to the Waste Strategy, and some plans were closely aligned with it.

How six selected territorial authorities had implemented their waste management plans

We selected six territorial authorities so we had an example of an urban, provincial, and rural territorial authority in each of the North and South Islands. We reviewed each authority's progress in implementing its waste management plan. The authorities we selected were:

- North Shore City Council;
- Rotorua District Council;

- South Taranaki District Council;
- Nelson City Council;
- Mackenzie District Council; and
- Queenstown-Lakes District Council.

All six territorial authorities were implementing their waste management plans. However, most of their activities involved managing waste that had been generated, rather than reducing the quantity of waste generated.

If there is no reduction in the amount of waste generated, territorial authorities can expect to manage steady or increasing quantities of waste. We are not convinced that all of the six territorial authorities understood the demand this will place on some aspects of their waste management activities in the future.

Current waste management practices and policies have a strong influence on the quantity of waste that territorial authorities can expect to manage in the future, and the ultimate destination of this waste. We encourage each territorial authority to consider carefully the sustainability of the approaches in its waste management plan, and the effects of these approaches on community well-being.

We were pleased to see most of the six territorial authorities demonstrating good waste management practices. Most had updated and refined their waste management plans and practices through self-review, and all collected detailed data on the waste they managed. Several had clear internal reporting systems that linked reporting on waste management activities to the relevant parts of their waste management plans.

There were a number of practices that individual authorities could improve. These related to updating waste management plans, managing contracts, data management, and the need to ensure that information in the waste management plan was consistent with information in the long-term council community plan.

Case studies of three solid waste management approaches

We undertook three case studies to identify any issues or problems that territorial authorities needed to address when they used particular waste management approaches. The case studies considered:

- a territorial authority with a zero waste policy;
- territorial authorities with joint waste management arrangements; and
- territorial authorities using landfill gas as a source of energy.

Case study 1 – Implementing a zero waste policy

About 60% of the waste management plans included a zero waste policy – that is, a long-term goal of not disposing of any waste in landfills. Our case study considered how Ashburton District Council was seeking to implement its zero waste policy.

In 2005/06, Ashburton District Council diverted 39% of the district's total waste from landfill disposal. The council had taken an active role in diverting waste, and was continuing to reduce the proportion of waste going to a landfill.

The council followed a number of practices that we consider contributed to this achievement. In particular, it:

- carried out detailed solid waste planning at the same time as it prepared its solid waste management plan;
- recognised the particular expertise it required to deliver solid waste services, and provided for that expertise; and
- took time to trial and evaluate waste management practices before setting them up throughout the district.

However, we note that, despite substantial effort from the council to divert waste, the total waste from the district (that is, all waste before any was diverted through activities such as recycling) had increased significantly in the past few years. This had resulted in increased demand for waste management services, including diversion and disposal services.

Case study 2 – Territorial authorities with joint waste management arrangements

A number of territorial authorities had joint arrangements with other territorial authorities for various waste management activities. We considered three joint arrangements between the Hastings District and Napier City Councils for waste management activities. These included:

- jointly owning the Omarunui landfill;
- implementing a joint waste management plan in 2000, particularly joint waste minimisation activities; and
- preparing a new joint waste management plan in 2006/07.

The joint arrangements for the Omarunui landfill and the new joint waste management plan had agreed frameworks that identified the arrangements and how they would work. This provided the two councils with certainty about how the arrangements would work. Both derived benefits from the arrangements, and had demonstrated a commitment to making them work.

Although both councils were implementing the 2000 joint waste management plan, the formal arrangements for joint waste minimisation activities were unclear. In our view, this arrangement did not provide the councils with certainty about how the arrangement would work.

Case study 3 – Territorial authorities converting landfill gas to energy

Regulations prohibit some landfills from discharging landfill gas to air, but provide for them to collect landfill gas and either flare it or use it as an energy source. Deciding to use landfill gas as an energy source can have implications for future management of organic waste.

Landfill gas is produced from the breakdown of organic material in the landfill. There needs to be enough organic matter for ventures using landfill gas as an energy source to be commercially viable.

However, disposing of organic waste in landfills to generate gas for energy is somewhat contrary to the direction provided in the Local Government Act 1974 and the Waste Strategy, which encourage territorial authorities to divert waste away from landfills. Further, many territorial authority waste management plans had zero waste policies or policies to divert waste from landfills.

Territorial authorities considering energy ventures using landfill gas need to weigh up the direction provided by the Local Government Act 1974 and their own waste management plans, and to have clear reasons for any decision they make.

We looked at two territorial authorities with arrangements to use landfill gas for energy – Nelson City and Hutt City Councils. Nelson City Council had taken account of its waste management plan in entering arrangements to use landfill gas for energy. It was well-positioned to benefit from these arrangements and to continue diverting green waste from landfill. Hutt City Council entered an arrangement to use landfill gas for energy in the early 1990s, well before it prepared its waste management plan. It had done some work reviewing the effects of diverting organic waste from landfills.

Part 1

Introduction

- 1.1 In this Part, we describe:
- why we did this performance audit;
 - the scope of our audit; and
 - the legislative requirements for waste management plans.

Why we undertook our audit

- 1.2 The Local Government Act 1974 requires all territorial authorities to prepare and formally adopt a waste management plan. The requirement was first introduced in 1996 and did not specify when territorial authorities needed to prepare a plan by. The Local Government Act 2002 introduced a further requirement that each authority must adopt a waste management plan by 30 June 2005.
- 1.3 The Local Government Act 1974 directs territorial authorities, when preparing their plans, to consider the waste management methods of reduction, reuse, recycling, recovery, treatment, and disposal, and to provide for waste collection and management activities in the district.
- 1.4 We wanted to provide an assurance to Parliament about the usefulness of territorial authorities' waste management planning for solid waste.
- 1.5 We wanted to know whether every territorial authority had prepared a waste management plan that provided for waste collection and management activities in its district, and we wanted to see whether six selected territorial authorities were following their waste management plans. We also wanted to look at case studies of particular approaches to waste management, and comment on how territorial authority practices contributed to the effectiveness of those approaches.

Scope of our audit

- 1.6 Our audit assessed:
- the extent to which all territorial authorities' waste management plans met the requirements of the Local Government Acts 1974 and 2002, and took account of targets set in *The New Zealand Waste Strategy* (the Waste Strategy);
 - how six selected territorial authorities had implemented their plans; and
 - examples of particular approaches that territorial authorities had taken to waste management.
- 1.7 Our audit of waste management plans was limited to solid waste management. We did not consider liquid or gas wastes. However, we note that the Local

Government Acts 1974 and 2002 do not define waste and do not specify the wastes (for example, solid, liquid, or gas) that a waste management plan must address.

- 1.8 We did not assess any central government agency's or regional council's role in waste management planning.

Legislative requirements for waste management plans

- 1.9 Every territorial authority is required to adopt a waste management plan by 30 June 2005. Waste management plans must describe how the authority intends to provide for waste management in the district. Plans need to be adopted under the Local Government Act 2002 special consultative procedure,¹ which requires the community to be consulted on the plan before it is adopted.

- 1.10 In preparing waste management plans, territorial authorities must consider (in the following order of priority) the following methods for managing waste:

- reduction;
- reuse;
- recycling;
- recovery;
- treatment; and
- disposal.

- 1.11 These methods, shown in Figure 1, are often presented as the waste hierarchy. Methods higher up the hierarchy are given priority because they use fewer resources.

- 1.12 For this report, we have organised the waste hierarchy into three groups: waste reduction, waste diversion (reuse, recycling, and recovery) and waste disposal (treatment and disposal).

The New Zealand Waste Strategy

- 1.13 The Ministry for the Environment, in consultation with Local Government New Zealand, published the Waste Strategy in 2002. The document provides national guidance for waste management, including targets and actions. However, territorial authorities do not have to comply with the Waste Strategy.

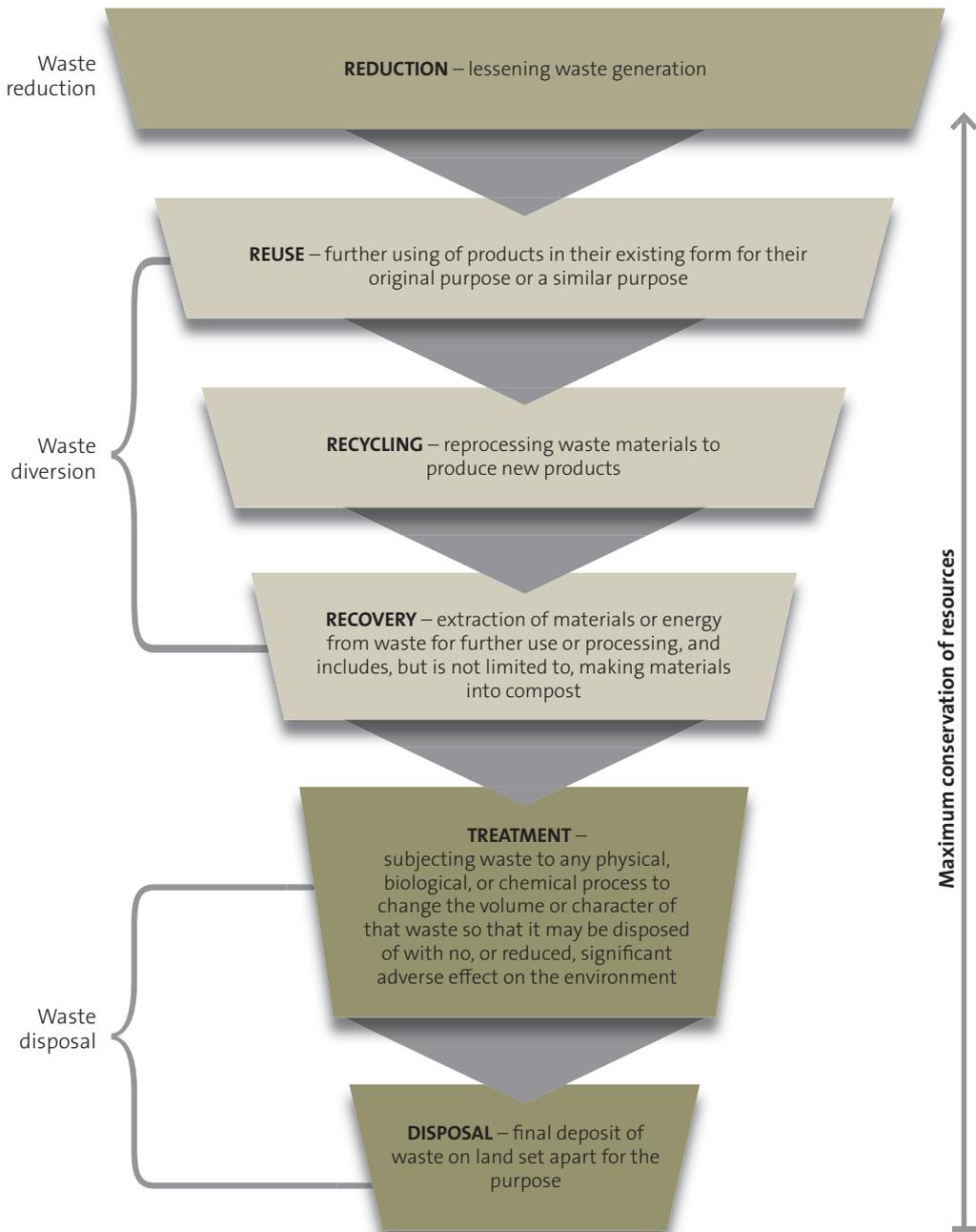
Long-term council community plans

- 1.14 The long-term council community plan (LTCCP) is the main mechanism that territorial authorities use to consider and allocate resources to provide for waste management activities over the long term.

¹ Plans prepared before 2002 needed to be adopted under the Local Government Act 1974 special consultative procedure.

- 1.15 The Local Government Act 2002 requires every territorial authority to have an LTCCP at all times.
- 1.16 An LTCCP serves a variety of purposes. These include:
- describing the territorial authority's activities;
 - providing a long-term focus for the authority's decisions and activities; and
 - providing integrated decision-making by the authority, and co-ordination of its resources.
- 1.17 Territorial authorities must identify all activities they undertake or intend to undertake (including waste management activities) in their LTCCP. The Local Government Act 2002 sets out the information every territorial authority must include about each activity or group of activities in its LTCCP.
- 1.18 Every LTCCP must also include the waste management plan or a summary of the plan.

Figure 1
The waste hierarchy



Part 2

Review of waste management plans for all territorial authorities

- 2.1 In this Part, we set out:
- how we assessed waste management plans;
 - whether every territorial authority had a waste management plan;
 - how waste management plans took account of the Waste Strategy;
 - the methods included in waste management plans for collecting and managing waste;
 - whether plans included data on waste collection and management, and numerical targets for managing waste; and
 - our conclusions.

How we assessed waste management plans

- 2.2 We considered the requirements in the Local Government Acts 1974 and 2002 for waste management plans and the guidance provided in the Waste Strategy. We then identified:
- information we expected waste management plans to contain; and
 - additional information, such as data on waste, that territorial authorities needed to prepare their waste management plans.
- 2.3 We asked every territorial authority to provide us with a copy of its waste management plan. We assessed each plan against:
- requirements in the Local Government Acts 1974 and 2002; and
 - aspects of the Waste Strategy.

Does every territorial authority have a waste management plan?

- 2.4 The Local Government Act 2002 requires every territorial authority to adopt a waste management plan by 30 June 2005.
- 2.5 We expected every territorial authority to have adopted a waste management plan, and the time frame the plan covered to be clear.

Findings

- 2.6 Every territorial authority had prepared a waste management plan, although the status of many of these plans was unclear.
- 2.7 In many cases, we were unable to determine whether waste management plans had been adopted under the special consultative procedure (see paragraph 1.9).

- 2.8 In several cases, territorial authorities had prepared two waste management plans at different times, and it was not clear which plan was in force.
- 2.9 Each territorial authority needs to prepare and adopt a waste management plan to meet the requirements of the Local Government Acts 1974 and 2002, and to show the community how it intends to provide for waste management in the district. If authorities have prepared more than one waste management plan, they need to be clear which is the current document for guiding waste management decisions.
- 2.10 Most plans were for a specified time frame, usually three to five years. In some cases, there was no evidence that territorial authorities had reviewed or updated the plan within the specified time frame. Four plans stated that the plan would be reviewed in five years. However, it was not clear when these plans were prepared, so we could not tell if they were overdue for review.
- 2.11 One waste management plan was very old (prepared in 1992), and about a quarter of all plans were prepared before the Waste Strategy was published in 2002.
- 2.12 Reviewing waste management plans and practices provides territorial authorities with an opportunity to assess whether current waste management methods are effective and to refine the plan to better address particular issues or improve waste management practices. This can assist authorities to make progress towards long-term goals and to introduce more sophisticated waste management practices.
- 2.13 We were concerned that a number of waste management plans were old or overdue for review. Plans that are out of date are of little use to territorial authorities in guiding waste management decisions. It is important that authorities review their plans from time to time to ensure that the plans are relevant and useful.

Taking account of *The New Zealand Waste Strategy* in waste management plans

- 2.14 The Waste Strategy, while not mandatory, provides national guidance for waste management. It includes targets and actions that territorial authorities can incorporate into their waste management plans. For example, the Waste Strategy has a target that “By December 2005, all territorial local authorities will have instituted a measurement programme to identify existing construction and demolition waste quantities and set local targets for diversion from landfills”.¹ In paragraphs 2.54-2.60, we discuss the number of waste management plans that had set targets for diversion of construction and demolition waste.

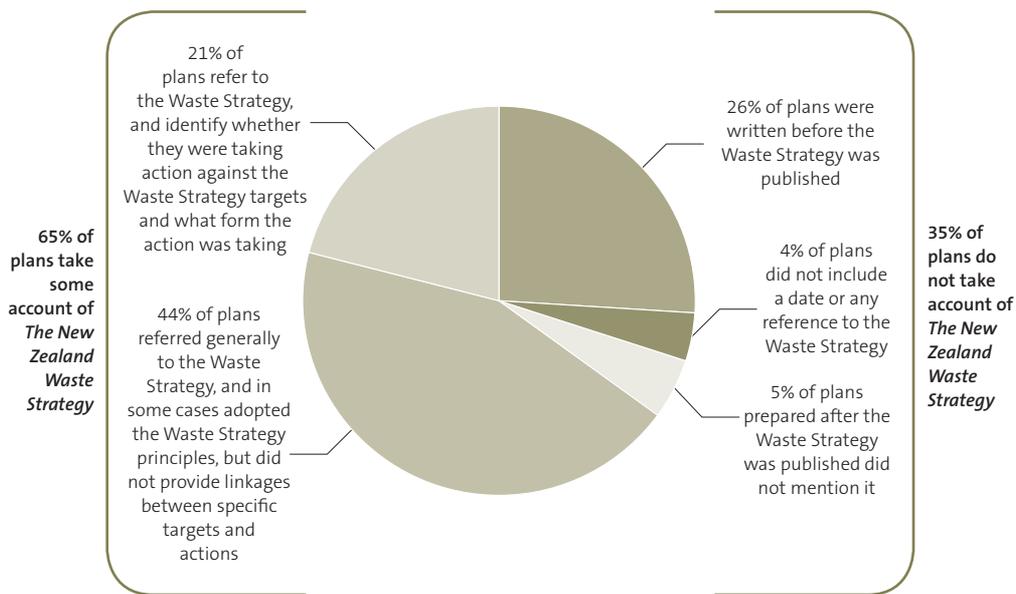
¹ *The New Zealand Waste Strategy*, 2002, Ministry for the Environment, New Zealand, page 25.

- 2.15 The Waste Strategy provides a framework to support local and central government to move towards common goals and address particular waste issues. As the Waste Strategy is not mandatory, it might not be adopted and implemented uniformly among local and central government agencies. However, because the Waste Strategy is a national guidance document, we expected territorial authorities to take account of it when preparing waste management plans. There are a number of benefits in doing so:
- The Waste Strategy provides information about common waste management issues and particular actions that territorial authorities can take to address them.
 - Assessing the relevance of the Waste Strategy, or particular targets within it, and including this information within waste management plans is a transparent means of demonstrating the fit between national guidance and local circumstances. This information can be useful for other local and central government agencies that are reviewing the Waste Strategy or putting it into practice.
 - A number of territorial authorities participate in regional or joint waste management activities. In these instances, common targets can help territorial authorities determine what they wish to achieve together. The Waste Strategy provides a framework for this.
- 2.16 We expected every waste management plan prepared after publication of the Waste Strategy to take account of it.

Findings

- 2.17 About two-thirds (65%) of waste management plans made some reference to the Waste Strategy. Some of these plans showed close links to the Waste Strategy principles and/or targets.
- 2.18 About one-third (35%) of waste management plans did not take account of the Waste Strategy. This was because most of these plans were prepared before it was published.
- 2.19 Figure 2 shows how waste management plans had taken account of the Waste Strategy.

Figure 2
How waste management plans take account of The New Zealand Waste Strategy



Methods for collecting and managing waste

- 2.20 The Local Government Act 1974 requires every territorial authority to **consider** waste reduction, reuse, recycling, recovery, treatment, and disposal (in that order of priority) **before** they prepare their waste management plan.
- 2.21 The Local Government Act 1974 requires every waste management plan to **provide for**:
- waste collection; and
 - waste reduction, reuse, recycling, recovery, treatment, or disposal.
- 2.22 We looked for evidence within plans that territorial authorities had considered waste reduction, reuse, recycling, recovery, treatment, and disposal (the waste hierarchy) in preparing their waste management plans.
- 2.23 We expected waste management plans to include clear methods by which territorial authorities would provide for waste collection and management. To check this, we looked to see whether activities identified in waste management plans indicated the services that residents and businesses in the district could expect, whether the council was likely to undertake the activity itself or contract it out, and any assets required.

Findings

- 2.24 Figure 3 sets out our findings of the percentage of plans that referred to waste collection, reduction, reuse, recycling, recovery, treatment, and disposal.

Figure 3

Waste collection and waste management methods within plans

Waste collection and waste management methods		Percentage of plans including each method
	Collection	86
Waste hierarchy	Reduction	79
	Reuse	66
	Recycling	86
	Recovery	77
	Treatment	15
	Disposal	82

Waste collection

- 2.25 The majority (86%) of plans included activities for collecting waste. The remaining plans did not adequately provide for waste collection, in that they either:
- did not include any waste collection activities at all; or
 - did not include any means for collecting domestic residual waste (that is, they may have included collection for recycling, but not for residual waste).
- 2.26 Territorial authorities are responsible for ensuring that waste does not cause a nuisance and is not injurious to health. Waste collection and disposal play an important part in ensuring this, and territorial authorities need to state clearly in their plans how residual waste will be collected and disposed of.

Waste reduction, reuse, recycling, recovery, treatment, and disposal

- 2.27 Many waste management plans included clear information about the particular waste management methods the territorial authorities intended to use. However, in our view, not all the plans included enough detail.
- 2.28 In some plans, it was difficult to determine what activities, if any, the authority intended to carry out.
- 2.29 Several waste management plans did not contain adequate details about **how** territorial authorities would provide for the various methods of waste reduction, reuse, recycling, recovery, treatment, or disposal in the district. This included plans that:

- did not have any methods for waste reduction, reuse, recycling, recovery, treatment, or disposal;
- did not say how residual waste would be disposed of, even though it was present; and
- noted that waste disposal facilities were expected to close before the plan was due for review, but did not say how waste would be disposed of after this time.

2.30 The Local Government Act 1974 requires every territorial authority to provide for effective and efficient implementation of its waste management plan. Authorities need to ensure that the waste management methods included in their plans are detailed enough to make it clear how they intend to carry out their chosen methods for managing waste.

Taking account of the waste hierarchy in preparing plans

- 2.31 We set out information about the waste hierarchy in paragraphs 1.10-1.12 and Figure 1. Most waste management plans made some reference to the waste hierarchy or a derivation of it.
- 2.32 We note below some issues about how territorial authorities had given effect to the waste hierarchy in their waste management plans.
- 2.33 Some plans confused waste reduction with waste diversion. There is a fundamental difference between these activities – waste reduction seeks to reduce the quantity of waste generated, but waste diversion seeks to reduce the quantity of waste going to a landfill. It is important for territorial authorities to understand the difference between waste reduction and waste diversion, and to communicate this clearly in their waste management plans.
- 2.34 Figure 3 shows that waste management plans favoured recycling more than any of the other waste management methods. Recycling, which is third on the waste hierarchy after waste reduction and waste reuse, is a complex activity with various operational requirements.
- 2.35 We suggest territorial authorities that intend to provide recycling services have a very clear idea of what recycling involves before they commit to particular recycling activities. We set out some considerations for them in Figure 4.

Figure 4
Considerations when undertaking recycling activities

Territorial authorities intending to provide recycling services should consider:

- what goods are to be recycled;
- how these recyclables will be collected, sorted, stored, and transported;
- how quality control systems will be provided to ensure that recycled material is not contaminated;
- whether there is a sustainable market for the recycled goods;
- the benefits of providing a recycling service;
- the cost of recycling services and how they will be funded; and
- whether the territorial authority proposes to own and/or operate any of the assets associated with recycling (for example, transfer stations, resource recovery centres, machinery).

- 2.36 It is important for territorial authorities, when preparing waste management plans, to consider the costs, benefits, and operational requirements of waste management methods to understand the implications of adopting particular activities or policies for managing waste. Authorities that do not assess this run the risk that selected activities and policies will cost more than expected or will be difficult to carry out.
- 2.37 It can be useful for plans to explain the reasons for adopting particular methods, activities, and policies, and to include information about the implications of adopting them. This enables councillors and the community to make informed decisions about the plan when they read it.

Information and targets in waste management plans

Do plans provide for the management of solid, liquid, and gas waste?

- 2.38 Although we limited our audit to solid waste activities, we wished to know the wastes that the plans provided for.
- 2.39 Three-quarters of the plans were for solid waste only.
- 2.40 We note that the Local Government Acts 1974 and 2002 do not define waste.

Reliance on external providers

- 2.41 Whether territorial authorities decide to own and operate solid waste assets and infrastructure themselves or to rely on external providers for solid waste services indicates how a territorial authority intends to position itself for long-term management of solid waste.

Reliance on external providers through contract arrangements

- 2.42 We wanted to know how many waste management plans said the territorial authority expected to enter into contracts or similar arrangements with external providers for waste management services.
- 2.43 More than three-quarters (77%) of waste management plans noted that the territorial authority had entered or intended to enter into contracts with external providers for solid waste services.
- 2.44 In our view, it is important for territorial authorities with contracts in place to make sure it is clear who is responsible for managing the contract. Authorities need to ensure that contract managers have appropriate skills, and that contract management systems are in place.

Reliance on private operators who do not have a contract with the territorial authority

- 2.45 We also checked to see whether territorial authorities relied, or expected to rely, on privately operated waste services that were not under contract to the authority – that is, private operators providing collection and disposal facilities for domestic or commercial customers independently of the authority.
- 2.46 Nearly half (48%) of plans showed the territorial authorities relied, or expected to rely, on such private operators to provide some waste services in the district.
- 2.47 The Local Government Act 1974 requires territorial authorities to “ensure that the management of waste does not cause a nuisance or be injurious to health”. Territorial authorities relying on independent operators should consider the mechanisms they need to ensure that this requirement in the Act is met.

Data on waste

- 2.48 When preparing a waste management plan, territorial authorities need information about how much waste is managed in the district and what this waste comprises. This information is an essential starting point, so that territorial authorities can see where best to focus waste management activities. Information on trends helps territorial authorities to forecast future waste quantities, and therefore to estimate future demand for waste services and whether they will have sufficient asset capacity for future waste.
- 2.49 Including data in the plans on the quantity and composition of waste can assist readers to understand particular waste issues for the district, including why a territorial authority has selected particular methods and policies for managing waste.

- 2.50 We expect territorial authorities to collect data on waste, although they may not necessarily choose to include this in their waste management plan. We looked to see whether plans included data on the composition and quantities of waste collected and managed now, as well as data on the quantity of waste expected in the future.
- 2.51 Most plans included information about the quantity of waste managed in the district, although only a quarter of all plans had information about the future quantities the authority could expect to manage. A number of plans noted difficulties in obtaining data on waste. Several territorial authorities had established bylaws to collect information about the quantity of waste managed by private operators.
- 2.52 Two-thirds of plans included information about the composition of waste managed in the district.
- 2.53 Figure 5 presents information on the percentage of plans showing information on waste.

Figure 5

Data in waste management plans

Information in waste management plans specific to each district	Percentage of plans
Plans that include information about the quantity of waste managed in the district	71
Plans that show projected waste quantities the territorial authority can expect to manage in the future	26
Plans that show data about the composition of waste in the district	66

Numeric targets for waste activities

- 2.54 The Waste Strategy reports that organic waste and construction and demolition waste each form a large proportion of the waste stream in New Zealand.² The Waste Strategy recommends that territorial authorities set local targets to divert these wastes away from landfills.
- 2.55 Describing what a plan wants to achieve and the time frame for this is a useful practice. Quantifying what territorial authorities hope to achieve through the plan is useful for those who need this information to forecast future waste requirements.
- 2.56 We checked to see whether waste management plans set out numeric targets for waste activities, including numeric targets for organic waste and for construction and demolition waste.

² *The New Zealand Waste Strategy, 2002*, Ministry for the Environment, New Zealand, pages 23-24.

Findings

- 2.57 About two-thirds of the waste management plans included one or more numerical targets for the quantities of waste to be managed.
- 2.58 A smaller proportion of waste management plans included numerical targets specifically for organic waste (27% of plans) or for construction and demolition waste (16% of plans).
- 2.59 Targets were not always clear or specific enough. For example, one territorial authority had a target to “reduce the quantity of waste disposed of to landfill by five percent [of 2001 levels] per annum”. It was not clear whether the target was for all the waste generated in the district, only waste the authority directly managed, or some other portions of the waste stream. The part of the plan containing the target did not include information about 2001 levels or address whether or how population growth would be factored into the target.
- 2.60 In our view, territorial authorities setting targets for reducing or diverting waste need to ensure that targets are clear, so those implementing the plan have clear and robust measures to assess their progress in implementing the plan.

Our conclusions

- 2.61 Every territorial authority had prepared a waste management plan. However, the status of many plans was unclear, and authorities needed to clarify whether they intended to do further work on their plan or whether it had been formally adopted.
- 2.62 A number of waste management plans were overdue for review, were no longer relevant for particular waste management activities, or did not have enough detail on how waste would be collected and managed in the district.
- 2.63 In our view, territorial authorities need to ensure that methods in the waste management plan are clear, and that the plan remains relevant to assist decision-making and to direct waste management activities. Authorities need to review waste management plans regularly to make sure that this is the case.
- 2.64 Most plans included some information about the quantity and composition of waste in the district, although fewer identified how much waste was expected in the future. While baseline information about waste data and composition is an important starting point for preparing a waste management plan, territorial authorities also need to consider how much waste they can expect in the future so they can better plan services to provide for future demand.
- 2.65 Many waste management plans referred to the Waste Strategy, and some plans were closely aligned with it.

- 2.66 Figure 6 sets out some considerations for territorial authorities to take into account when preparing or reviewing their waste management plans.

Figure 6

Considerations when preparing or reviewing waste management plans

Territorial authorities must meet the requirements of the Local Government Acts 1974 and 2002 when preparing a waste management plan. As part of this, they must consider (in order of priority) the following methods for managing waste:

- reduction;
- reuse;
- recycling;
- recovery;
- treatment; and
- disposal.

When preparing a waste management plan, they should also:

- review current practices and any current waste management plan;
- take account of the Waste Strategy;
- consider the costs, benefits, and operational requirements of each method, particularly those they intend to use;
- consider the information they collect about waste in the district;
- forecast the nature and quantity of waste they expect in the future;
- decide which waste management methods they wish to use, and document the reasons for the decision; and
- consider how they meet the Local Government Act 1974 requirement to ensure that the management of waste does not cause a nuisance and is not injurious to health.

Waste management plans should:

- clearly state:
 - the status of the plan (whether it is draft, adopted, amended, or revoked);
 - the time frame the plan covers; and
 - when the plan will be reviewed;
- include information about the waste hierarchy;
- have clearly identified activities for carrying out:
 - waste collection; and
 - waste reduction, reuse, recycling, recovery, treatment, or disposal;
- set out the reasons why the territorial authority has selected these waste collection and management activities, and include information about the implications of adopting them;
- identify how the territorial authority has taken account of the Waste Strategy;
- make sure that targets are clear and measurable; and
- include clear information about the type and quantity of waste managed in the district, and how much waste the territorial authority expects in the future.

Part 3

Waste management plan implementation by six selected authorities

- 3.1 In this Part, we discuss how six selected territorial authorities implemented their waste management plans. This includes:
- how we conducted this part of the audit;
 - the individual territorial authorities' waste management activities;
 - progress by the territorial authorities in implementing waste management plans;
 - how the territorial authorities provided for the implementation of the plan through their LTCCP;
 - the territorial authorities' progress in reducing or diverting the amount of waste going to landfills;
 - the territorial authorities' collection of data on waste;
 - how the territorial authorities reported on their waste management activities; and
 - our conclusions.

How we conducted this part of the audit

- 3.2 We selected six territorial authorities so we had an example of an urban, provincial, and rural authority in each of the North and South Islands, giving a cross-section of sizes throughout New Zealand. The authorities we selected were:
- North Shore City Council;
 - Rotorua District Council;
 - South Taranaki District Council;
 - Nelson City Council;
 - Mackenzie District Council; and
 - Queenstown-Lakes District Council.
- 3.3 We reviewed each council's progress in implementing its waste management plan by:
- reviewing council documents;
 - interviewing staff and one or more councillors from each council; and
 - visiting the waste management facilities of each council and council contractors.

Individual council waste management activities

- 3.4 The six councils had all prepared waste management plans. We summarise each individual council's progress in implementing the plans in paragraphs 3.6-3.30.
- 3.5 Figures 7-12 show the quantity of waste that each council managed itself or through contract arrangements. Some of the councils owned their landfills. These councils directly managed a larger proportion of waste in the district than councils without landfills, because the landfills accepted waste from private operators as well as any waste the council collected. The councils also collected waste data differently, so Figures 7-12 cannot be easily compared.

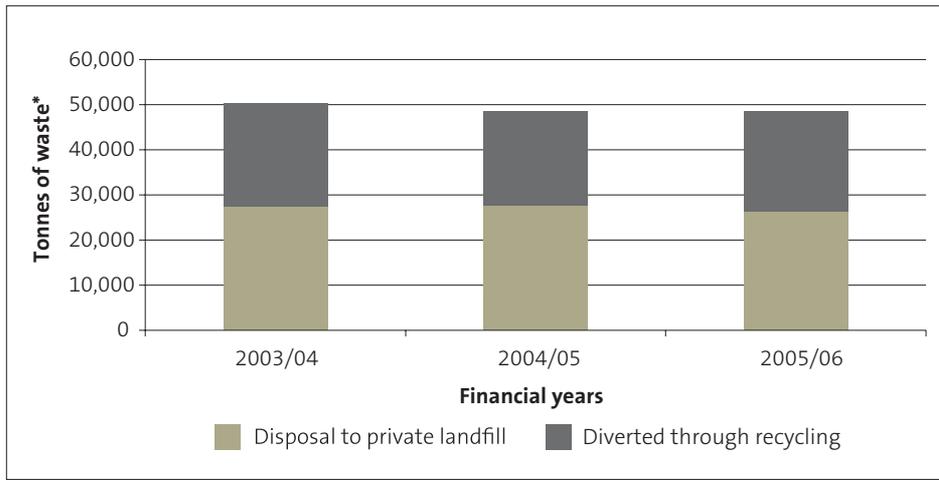
North Shore City Council

- 3.6 North Shore City Council adopted its current waste management plan in 2005, and had started implementing it. The plan was an update of its 2001 waste management plan.
- 3.7 The council had contracts, resources, and a small number of assets in place to provide for waste collection, recycling, and disposal. It had investigated waste recovery options.
- 3.8 Education activities comprised a significant part of the council's waste management programme. Activities included programmes¹ to encourage efficient use of resources, including reducing the waste generated by businesses and the construction industry. Its EnviroSmart® district programme and subsequent North Shore City Council-led regional EnviroSmart® programme had been expanded into a national programme² to improve business environmental performance and efficiency in resource use.
- 3.9 The council also had education programmes to encourage the diversion of waste through recycling and recovery.
- 3.10 The council measured how much waste it collected for recycling and disposal. We show this in Figure 7. The council adopted a bylaw in 2005 to enable it to gather information about the quantity of waste managed by private waste operators in the district.
- 3.11 There are no landfills operating in the North Shore district, so any residual waste must be transported outside the district for disposal.

1 For example, see www.rebri.org.nz.

2 See http://www.landcareresearch.co.nz/research/sustain_business/enviromark/envirosmart/.

Figure 7
Waste quantities managed by North Shore City Council

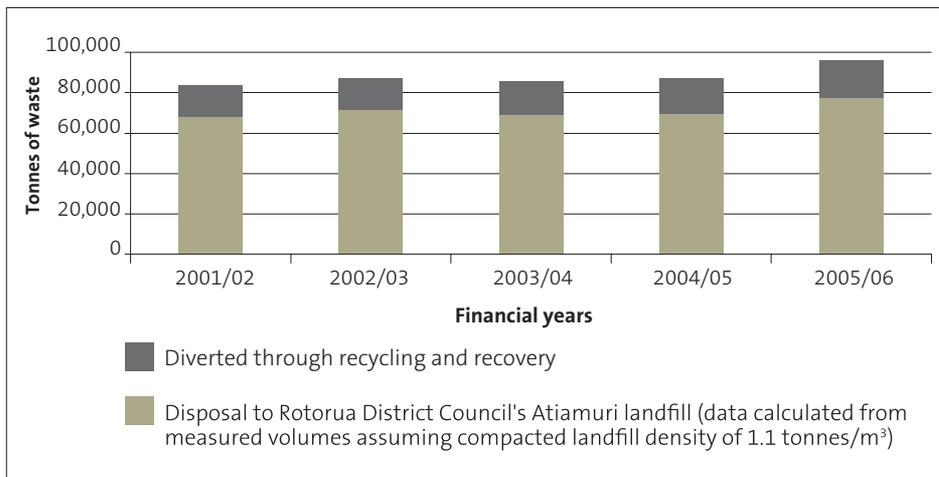


*This does not include waste managed by private operators within the district.

Rotorua District Council

- 3.12 Rotorua District Council adopted its waste management plan in 1999. In 2004, it reviewed its implementation of the plan and prepared a detailed review document.
- 3.13 The majority of programmes in the waste management plan were in place. The council had contracts, resources, and assets in place to provide for waste collection, reuse, recycling, recovery, treatment, and disposal.
- 3.14 The council had set up education programmes that encouraged waste diversion and, to a small extent, waste reduction. It had a waste education centre.
- 3.15 The council measured how much waste it collected for recycling, recovery, and residual disposal. It also measured how much waste was disposed of in its Atiamuri landfill, which accepted waste only from within the district. Figure 8 shows the quantities of waste managed by the council.

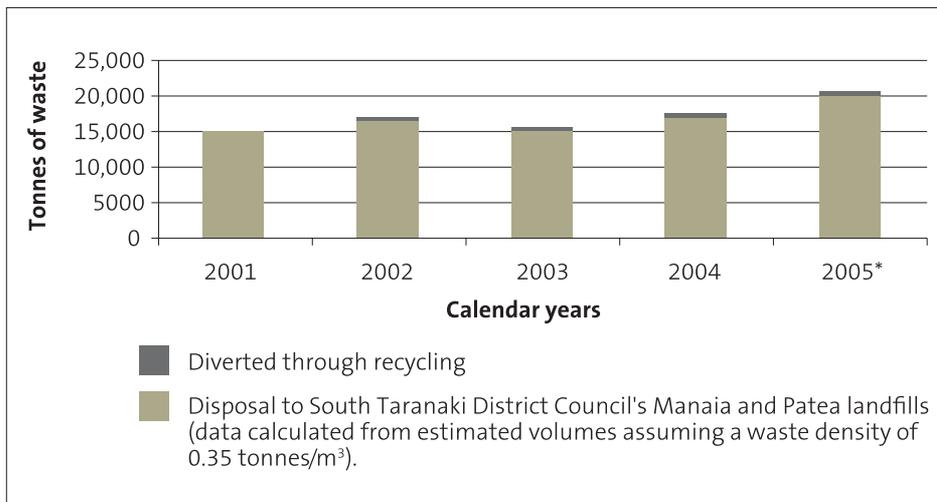
Figure 8
Waste quantities managed by Rotorua District Council



South Taranaki District Council

- 3.16 South Taranaki District Council adopted its waste management plan in 2000, and was in the process of preparing a new plan. It was a party to the Taranaki Regional Waste Strategy, which was prepared by the region’s territorial authorities and the Taranaki Regional Council. South Taranaki District Council had done much of the work in its waste management plan. Some activities had been done with other councils and the Taranaki Regional Council through a regional working party.
- 3.17 South Taranaki District Council had assets, a contract, and resources in place to provide for waste collection, reuse, recycling, recovery, and disposal. It had recently changed its systems for collection and recycling. It was preparing for changes to disposal activities.
- 3.18 The council conducted waste education activities jointly with other councils in the region. Its education activities focused on waste diversion.
- 3.19 The council measured how much waste it collected for recycling and disposal. Figure 9 shows the quantities of waste going to landfills and diverted through recycling.

Figure 9
Waste quantities managed by South Taranaki District Council

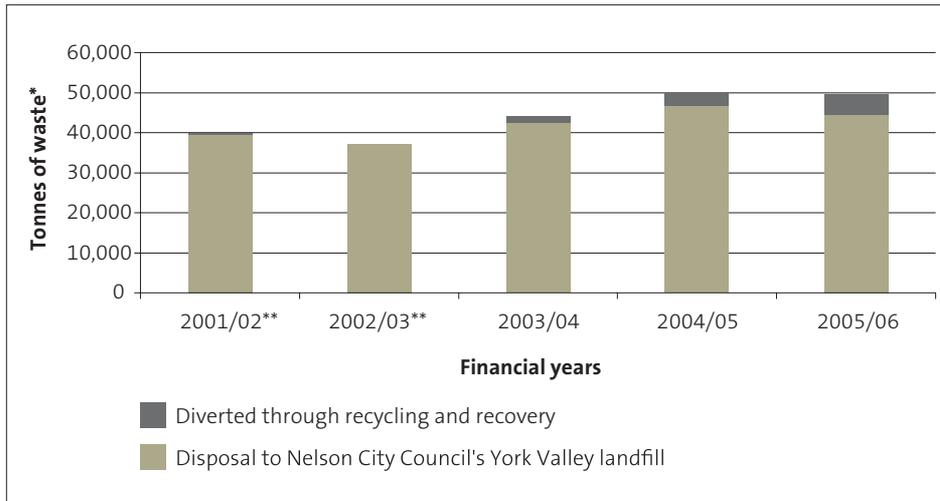


* Waste disposed of to the landfills is estimated from data collected for the 2005/06 financial year.

Nelson City Council

- 3.20 Nelson City Council prepared its first waste management plan in 2001. It adopted a subsequent plan in 2005.
- 3.21 The council was implementing its plan. It had assets, contracts, and resources in place to provide for collection, reuse, recycling, recovery, treatment, and disposal. It had spent some time setting up a domestic kerbside recycling programme and was looking at options for diverting more organic waste from landfills.
- 3.22 The council was setting up a waste education programme to encourage waste diversion.
- 3.23 The council measured how much waste it collected for recycling and recovery. It also measured how much waste was disposed of in the council-owned York Valley landfill.
- 3.24 Nelson City Council's York Valley landfill and Tasman District Council's Eves Valley landfill are close to each other. Nelson City Council staff told us it was difficult to predict how much waste the York Valley landfill would receive each year, as private operators from both districts could dispose of waste at either site. Figure 10 shows the amount of waste going to the York Valley landfill, and the amount diverted through recycling and recovery.

Figure 10
Waste quantities managed by Nelson City Council



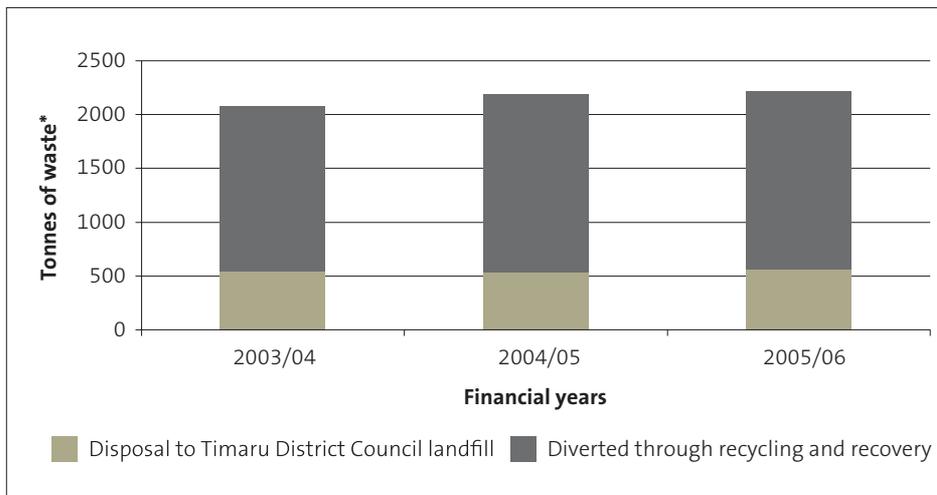
* The waste going to the landfill may come from within or outside of the district.

** A small amount of waste was diverted in these years.

Mackenzie District Council

- 3.25 Mackenzie District Council adopted a waste management plan in 1999. It had largely implemented its waste management plan, and had well-established assets, contracts, and resources for waste collection, reuse, recycling, recovery, and disposal.
- 3.26 The council employed a waste minimisation officer to deliver education activities. These activities focused on diverting waste.
- 3.27 The council measured how much waste was collected for recycling, recovery, and residual disposal. It also measured how much waste was managed by private operators in the district. Figure 11 shows the quantities of waste managed by the council that went to a landfill or was diverted through recycling and recovery.

Figure 11
Waste quantities managed by Mackenzie District Council

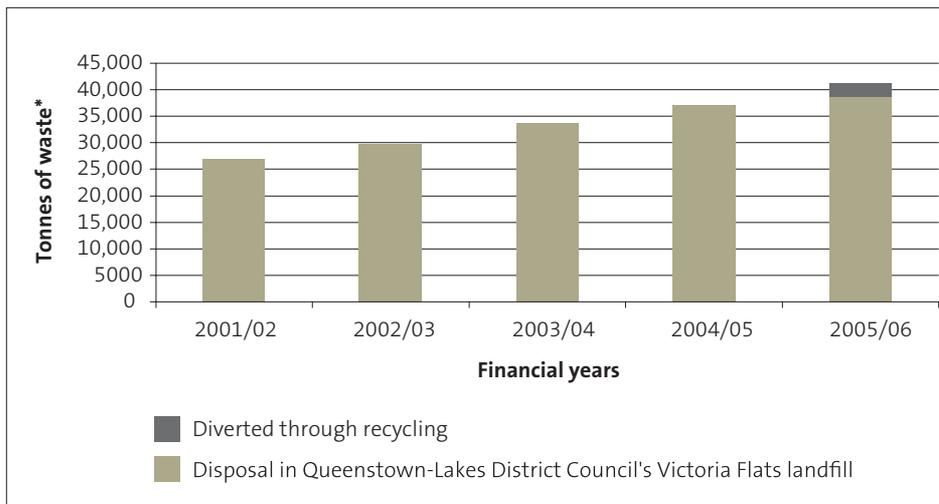


* This does not include waste managed by private operators within the district.

Queenstown-Lakes District Council

- 3.28 Queenstown-Lakes District Council adopted its first waste management plan in 2003 and was progressively implementing the plan. It had contracts and assets in place for collection, reuse, recycling, recovery, and disposal. It had further work to do in setting up recycling and recovery activities. In 2006, the council prepared a report that detailed its progress in implementing the waste management plan.
- 3.29 The council had a small number of waste education initiatives to encourage waste diversion.
- 3.30 The council measured how much waste it collected for disposal and recycling. It had a joint arrangement with Central Otago District Council for disposing of waste in the Victoria Flats landfill in the Queenstown-Lakes district. Queenstown-Lakes District Council kept a record of the amount of domestic waste each council took to the landfill, and of the total commercial waste that went to the landfill from both districts. Figure 12 shows the total amount of waste going to the Victoria Flats landfill.

Figure 12
Waste quantities managed by Queenstown-Lakes District Council



* The waste going to the landfill comes from the Central Otago and Queenstown-Lakes districts.

Implementation of waste management plans

Progress in implementing waste management plans

- 3.31 All six councils had adopted waste management plans.
- 3.32 Nelson City, North Shore City, Queenstown-Lakes District, and Rotorua District Councils were making steady progress in implementing their waste management plans.
- 3.33 Mackenzie and South Taranaki District Councils prepared their waste management plans some time ago. Their plans included methods to set up waste diversion systems, and they had done that. South Taranaki District Council was preparing a new waste management plan.
- 3.34 We were pleased to see that all six councils had implemented or were implementing their waste management plans.
- 3.35 Territorial authorities need to make sure that waste management plans are relevant to current and planned waste management activities and decisions.

Reviewing plan implementation

- 3.36 Most of the six councils had reviewed their progress in implementing waste management plans. They had used this information to better focus waste management activities, and in some cases used it to prepare new waste management plans.
- 3.37 The detailed review documents prepared by Queenstown-Lakes and Rotorua District Councils clearly identified the actions they had taken to implement their plans, and noted issues and further considerations that had arisen in the course of implementing the plan.
- 3.38 In our view, it is good practice for territorial authorities to review their progress in implementing their waste management plans. This is a transparent means of assessing:
- whether the plan is relevant and useful;
 - what work in the plan has been done and what actions still need to be completed or are ongoing;
 - the suitability of methods, objectives, and targets in the plan; and
 - how waste management plans and activities can be improved.

Providing for implementation of the plan through the long-term council community plan

- 3.39 The LTCCP is the main mechanism each territorial authority has for allocating resources to provide for waste management activities over the long-term. The LTCCP provides a basis for a territorial authority to be accountable to its community.
- 3.40 Waste management plans adopted by territorial authorities included the policies and activities they agreed to after consulting with their community.
- 3.41 We expected the LTCCPs to include information about waste management activities that was consistent with waste management plans. We also expected each LTCCP to contain a summary or copy of the waste management plan, as the Local Government Act 2002 requires.

Findings

- 3.42 All six councils included a summary or copy of their waste management plan within the LTCCP. Several could have provided clearer summaries. One summary was inconsistent with the council's waste management plan. In our view, others did not convey the main messages or policies from the relevant waste management plan.

- 3.43 For all six councils, the LTCCP included information about waste management activities and made financial provision for them. However, it was difficult in several cases to tell whether the activities in the LTCCP were intended to implement waste management plans because:
- the LTCCP did not describe the waste management services or activities the council would provide or perform;
 - the LTCCP did not clearly link the waste management plan to waste management activities within the LTCCP; or
 - the waste management plan was no longer relevant for some council waste management activities.
- 3.44 In our view, councils need to take more care integrating information from their waste management plan into their LTCCP. As the main accountability document, the LTCCP needs to reflect, albeit at a higher level, what the council has agreed to do in the waste management plan. If information in the LTCCP contradicts or is inconsistent with the waste management plan, it is not clear whether the waste management plan had been considered when the LTCCP was prepared.
- 3.45 Several LTCCPs and associated documents did not include all the information we expected about how the councils would assess changes in demand for waste services and the effect this would have on the capacity of a council's assets.
- 3.46 Territorial authorities must be able to assess changes in demand for waste services and whether any additional asset capacity will be required. They need this information to plan for future waste activities.

Progress in reducing or diverting waste from disposal in a landfill

- 3.47 As detailed in paragraph 1.10, the Local Government Act 1974 encourages territorial authorities to reduce waste generation in preference to diverting waste (through reuse, recycling, and recovery) or disposing of waste to a landfill.

Waste reduction

- 3.48 Most of the six councils were not actively seeking to reduce waste generated in their district. Instead, their focus was on managing waste through reuse, recycling, and recovery systems and on education, as well as disposing of the waste in landfills.

- 3.49 Reducing waste is an important waste management activity. It uses fewer resources and means there are smaller quantities of waste to manage. Figures 7-12 show that, in recent years, the total quantity of waste (that is, diverted waste and waste going to a landfill) managed by the six councils has remained steady or has increased.³
- 3.50 While data in this report show trends for only a short period of time, the data suggest that these councils – without intervention to reduce waste – can expect to deal with the same or increased quantities of waste in the future, whether they are disposing of waste in landfills or diverting it elsewhere.
- 3.51 Many of the councils advised us it was difficult to identify methods they could implement to reduce waste. Staff and councillors from several of the councils told us it was difficult for councils to reduce the quantity of waste generated on their own, and that leadership from central government was needed to address this issue.
- 3.52 We acknowledge that it is difficult for councils to reduce waste. We commend North Shore City Council for the initiative it has shown in preparing its EnviroSmart® programme to increase resource efficiency.

Diverting waste

- 3.53 All six councils had set up, or were setting up, facilities, contracts, and education initiatives to divert waste from landfills.
- 3.54 Mackenzie District, North Shore City, and Rotorua District Councils' waste diversion systems had been set up for some time. It was difficult to compare the three councils because they handled different quantities of waste and different parts of the waste stream, and gathered waste data differently.
- 3.55 All three councils showed good performance diverting waste. North Shore City and Rotorua District Councils were diverting significant quantities of waste from landfills, but Mackenzie District Council, dealing with smaller quantities of waste, diverted a high proportion from the landfill.
- 3.56 South Taranaki District Council had been diverting waste for some time, but it had recently changed its waste diversion arrangements. Nelson City Council had been diverting waste through recovery for some time, but had put recycling arrangements into place more recently. Queenstown-Lakes District Council was still setting up its waste diversion systems.
- 3.57 It was too early to comment on the diversion rates that South Taranaki District, Nelson City, and Queenstown-Lakes District Councils were achieving.

³ We have not assessed whether the councils had determined the reasons for trends in the quantities of waste they managed. However, we reviewed 2001 and 2006 census figures to see whether the population in each district had changed. There has been less than a 5% population change in most of the districts, except for the North Shore City Council (11% increase) and the Queenstown-Lakes District Council (35% increase).

Expanding waste diversion systems

- 3.58 Rotorua District Council had expanded its waste diversion capabilities. This had been helped by the willingness of the council to do so and by the innovation of the contractor.
- 3.59 Nelson City and North Shore City Councils were considering further activities to divert particular parts of the waste stream from landfills, but were taking a cautious approach while they considered the cost and operational requirements of these activities. The activities they were considering were in accordance with their waste management plans.
- 3.60 Improving waste diversion performance, whether by refining existing systems or by introducing further diversion activities, can bring benefits to territorial authorities. We were pleased to see the councils were considering the costs and operational requirements of doing so.

Disposing of waste in landfills

- 3.61 Despite all six councils achieving some waste diversion, large quantities of waste continue to go to landfills. All the councils expected to continue disposing of waste in landfills for the foreseeable future.
- 3.62 If there is no reduction in waste and only limited diversion of waste, large quantities of waste will continue going to landfills. Territorial authorities need to consider carefully the sustainability of this approach and its effect on community well-being.⁴
- 3.63 All six councils held some information about the landfill capacity available to them. Some had done detailed work to determine this, while others had estimated it roughly.
- 3.64 In our view, if territorial authorities continue disposing of waste in landfills, they need to have a good understanding of available landfill capacity so they have enough time to make alternative disposal arrangements if it becomes necessary.

Management practices

Waste management skills

- 3.65 Setting up and operating waste management systems often require specialist knowledge. Territorial authorities therefore need to determine the skills required to deliver planned waste management activities, and to decide how they will provide this.

⁴ The term community well-being is used in this report in the context of the Local Government Act 2002, which provides for local authorities to play a broad role in promoting the social, economic, environmental, and cultural well-being of their communities, taking a sustainable development approach.

- 3.66 It is important for territorial authorities with contracts in place to ensure that it is clear who is responsible for managing the contract. Territorial authorities need to ensure that contract managers have appropriate skills, and that contract management systems are in place.
- 3.67 Most of the six councils employed waste management staff, and had multiple contracts and contractors for waste management activities. For most of these councils, it was clear who was responsible for managing the contracts.

Data collection

- 3.68 The quantity of waste that territorial authorities manage through their facilities and/or contracts is sometimes different from the total quantity of waste generated within the district. This is because some waste is managed by private operators.
- 3.69 All six councils collected detailed information about the quantity of waste they or their contractors managed. Several of the councils could improve their data management practices.
- 3.70 Most of the councils had set up, or were setting up, systems to measure or closely estimate the quantity of waste managed by private operators, so they could determine the total quantity of waste generated in their district.
- 3.71 It is important for territorial authorities to hold detailed information on the waste they manage. They need this to assess the cost-effectiveness of current waste management practices, and to forecast expected costs and asset requirements for future waste activities.
- 3.72 It is useful for territorial authorities to hold information on the total quantity of waste generated in the district (in some cases, this may be the same as the quantity of waste they manage). This enables them to determine trends in waste generation, the proportion of the waste stream they are managing, and the effect of education programmes on businesses and residents using private waste operators.

Internal reporting on waste management

- 3.73 The six councils provided some reporting to councillors on solid waste activities, many on a regular basis. Reporting from several councils clearly linked current waste management activities to their waste management plan. This is an effective means of demonstrating how activities contribute to implementing the waste management plan.

- 3.74 Some waste management activity reports intended for councillors were very technical, and their key conclusions and recommendations were not clear. Reports need to be coherent, be pitched for a suitable level for their audience, and clearly state the main messages and any recommendations.

Public reporting on waste management

- 3.75 The Waste Strategy suggests that territorial authorities report progress on waste minimisation and management on an annual basis, using quantitative measures.
- 3.76 All six councils reported on waste management activities in their annual reports. All recent reports included quantitative information. The nature of this information varied from report to report, and could not be compared easily across the councils.

Our conclusions

- 3.77 All six councils were implementing their waste management plans. However, most of their waste management activities were directed at dealing with the waste that was generated, rather than with reducing the quantity of waste generated.
- 3.78 If there is no reduction in the amount of waste generated, territorial authorities can expect to continue to manage steady or increasing quantities of waste. We are not convinced that all of the six councils understood the demand this would place on some aspects of their waste management activities in the future.
- 3.79 Current waste management practices and policies have a strong influence on the quantity of waste that territorial authorities can expect to manage in the future and the ultimate destination of this waste. We encourage every territorial authority to consider carefully the sustainability of the approaches within waste management plans, and their effect on community well-being.

Part 4

Particular approaches to waste management

- 4.1 In this Part, we consider examples of particular approaches some territorial authorities had taken to waste management. We set out three case studies of:
- a territorial authority with a zero waste policy;
 - territorial authorities with joint waste management arrangements; and
 - territorial authorities converting landfill gas to energy.

Case study 1 – Implementing a zero waste policy

Introduction

- 4.2 About two-thirds of the waste management plans we assessed included a zero waste policy – that is, a long-term goal of not disposing of any waste in landfills.
- 4.3 This case study considers how a territorial authority with a zero waste policy – Ashburton District Council – was seeking to implement its policy.
- 4.4 Ashburton District Council adopted a zero waste policy in its *Waste Management Plan for Solid and Hazardous Waste 1999* and subsequently adopted a target of zero waste to landfills by 2015. It reconfirmed the plan in 2005.

Waste diversion facilities

- 4.5 At the time of our audit, Ashburton District Council had the following facilities for waste diversion:
- a large resource recovery park in Ashburton that provided extensive reuse, recycling, and recovery systems, and included an education centre and residual waste drop-off facilities. The reuse, recycling, recovery, and education activities at the recovery park were managed by Wastebusters Canterbury (a community trust); and
 - a smaller resource recovery park in Rakaia that provided reuse, recycling, and recovery systems and residual waste drop-off facilities for the local community. A volunteer group assisted with the recycling activities. This recovery park was set up in response to requests from a community group.
- 4.6 The recovery parks were independent of each other. Each park's reuse and recycling systems processed different types of material, and each park sourced its own markets for reused and recycled products.
- 4.7 Ashburton District Council has contract arrangements for collecting residual waste. The waste is transported to, and disposed of in, the Canterbury regional Kate Valley landfill in the Hurunui District.

Trials for further waste diversion

- 4.8 Ashburton District Council trialled a putrescible (organic waste – mainly food) diversion system in 2005/06. It evaluated the trial, concluded that it would support diverting putrescibles from the waste stream, and budgeted for further investigation to find a cost-effective way to collect and process putrescible material.
- 4.9 At the time of our audit, Ashburton District Council was trialling a drop-off facility for recyclable and reusable waste in Methven. It intended to evaluate this and carry out public consultation before deciding what waste management facilities would be provided in Methven on an ongoing basis.

Education programmes

- 4.10 Ashburton District Council had contracted Wastebusters Canterbury to deliver waste education programmes. The programmes included education at schools, and educating residents about waste issues and council services. Wastebusters Canterbury ran practical workshops and demonstrations (for example, worm farming and mosaic making) at the education centre.

Figure 13

Education centre at the Ashburton Resource Recovery Park



Contracting with a community trust

- 4.11 Ashburton District Council entered contracts with Wastebusters Canterbury, which had specialised waste management skills. The council took a staged approach to entering the contracts. This enabled the council and Wastebusters Canterbury, as partners, to:
- determine quantities of recyclables;
 - identify potential revenue streams;
 - determine required capital development for the recovery park;
 - integrate education activities with other Ashburton District Council waste management activities; and
 - understand their contractual obligations.

How does a zero waste policy fit with part-ownership of Kate Valley landfill?

- 4.12 Although Ashburton District Council had a zero waste policy, it was currently managing around 7000 tonnes of residual waste each year and expected to continue to dispose of waste in the landfill for some time.
- 4.13 Ashburton District Council is a shareholder (3%) in Transwaste Canterbury Limited (Transwaste), a joint venture company with other Canterbury councils and other companies. Transwaste owns and operates the Kate Valley landfill in the Hurunui District.
- 4.14 At face value, being a shareholder of a landfill appears inconsistent with Ashburton District Council's zero waste policy. However, landfill agreement documents acknowledged the importance of waste minimisation activities, and required Ashburton District Council to implement waste minimisation programmes so far as it was practicable and financially viable.
- 4.15 These are practical arrangements because they provide Ashburton District Council with a facility for disposing of waste in the short to medium term while supporting activities that reduced the quantity of waste they disposed of in a landfill.

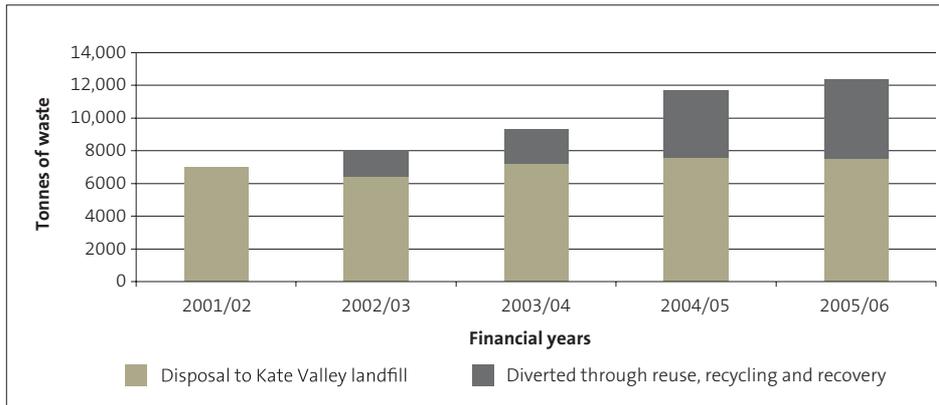
Measuring progress towards zero waste

- 4.16 Ashburton District Council measured and reported on progress towards zero waste through internal reports and through its annual report.
- 4.17 Figure 14 shows the quantity of waste Ashburton District Council was managing. This shows:

- an increasing percentage of waste was being diverted from landfill through programmes at resource recovery centres; and
- the overall mass of waste generated within the district (before any was diverted through recovery park activities such as recycling) had nearly doubled since 2001/02.

4.18 We note that it is difficult to determine how much waste has been reduced or diverted by households in response to waste education programmes (for example, through home composting or reusing items).

Figure 14
Measured trends in waste managed by Ashburton District Council



What progress has the Ashburton District Council made towards its target of zero waste?

- 4.19 Ashburton District Council has a target of zero waste to landfills by 2015. Council staff told us it will be difficult to meet this target within reasonable cost, but that it is a goal to aspire to.
- 4.20 In 2005/06, Ashburton District Council diverted 39% of the district’s total waste from the landfill. It has a further target in the *Ashburton District Community Plan 2006-2016* to increase this figure to 49% by 2010/11.
- 4.21 In our view, a target should express what a council expects to achieve. Councils need to take care in setting targets for zero waste, particularly where they are intended to be aspirational. However, the practice of setting intermediary targets (for example, Ashburton District Council’s target to increase waste diversion to 49% by 2010/11) would help a council to assess its progress in diverting waste over the short or medium term.

- 4.22 Ashburton District Council had taken an active role in reducing waste going to a landfill, and was continuing to reduce the percentage of waste disposed of in a landfill. It followed a number of practices that we consider contributed to this achievement. We set these out in paragraphs 4.23-4.27. Most of the people we spoke to strongly supported the zero waste policy.
- 4.23 We were advised that the council had carried out detailed solid waste planning at the same time as it prepared the 1999 waste management plan. It wanted to ensure that the plan would work, so there would be no need to repeat community consultation to change the plan. We consider detailed planning to be an important part of preparing a waste management plan. It is important for territorial authorities to understand the costs and practicalities associated with policy decisions when they prepare waste management plans. It is important for effective and efficient implementation for the initial waste management planning to be sound and well thought through.
- 4.24 In setting up waste management systems, Ashburton District Council recognised that it needed particular expertise, and provided for this by contracting specialised services from Wastebusters Canterbury. It is important for territorial authorities to assess the particular capabilities required for waste management activities, and to consider how they will provide for these. Examples of the different skills a territorial authority might require vary from contract management and data analysis to the ability to source markets for recyclable material.
- 4.25 Ashburton District Council had taken time to trial and evaluate waste management practices before setting them up. This was a sound approach, as it enabled the council to identify how it could be more effective in conducting particular activities.
- 4.26 We were pleased to see Ashburton District Council's ownership arrangements for Kate Valley landfill were not contrary to its zero waste policy. We expect territorial authorities with zero waste or similar policies to ensure that the contractual arrangements they enter into do not compromise their ability to implement these policies.
- 4.27 We note that the Ashburton District Council had taken account of requests from the community in providing particular waste services and activities, which is in keeping with the Local Government Act 2002.
- 4.28 However, despite the Ashburton District Council's substantial efforts to divert waste, total waste (that is, all waste before any is diverted through recovery park activities such as recycling) from the district had increased. The council told us that this increase was a result of significant development in the district. It was

continuing with its current waste management programmes and trialling new ones to increase the quantities of waste diverted.

Case study 2 – Territorial authorities with joint waste management arrangements

- 4.29 A number of territorial authorities had joint arrangements for various waste management activities. Twelve territorial authorities had prepared joint waste management plans, and a number had joint landfill arrangements or jointly funded activities to encourage waste reduction and diversion.
- 4.30 This case study considers two territorial authorities, Hastings District Council and Napier City Council, which had several joint waste management arrangements, including a joint waste management plan.
- 4.31 The joint waste management arrangements entered into by these two councils were (in chronological order):
- jointly owning the Omarunui landfill (1980s);
 - implementing a joint waste management plan, including joint waste minimisation activities (2000); and
 - preparing a new joint waste management plan (2006).

Joint ownership of the Omarunui landfill

- 4.32 The councils had a formal agreement for the joint landfill arrangement. This set out how the landfill would be governed, and set up a joint landfill committee comprising four Hastings District councillors and two Napier City councillors. The agreement also described how administration and operational decisions and reporting should occur.
- 4.33 For historic reasons, Hastings District Council owned 63.68% of the landfill and Napier City Council owned 36.32%. Council representation on the joint committee governing the landfill reflected ownership proportions.
- 4.34 The landfill was opened in 1988, and, at the time of our audit, the current landfill area – “Valley A” – was nearly full. Capital works were nearly completed for a landfill extension, “Valley D”, depicted in Figure 15.

Figure 15
New landfill development in “Valley D”



Joint waste management plan and waste minimisation arrangements

- 4.35 In 2000, Hastings District and Napier City Council prepared the joint *Solid Waste Management Plan*. Their plan identified some common practices for both councils. It provided for each one to set up its own systems for collecting and managing waste in its respective district, and for the two councils to share equally the cost of a waste minimisation officer.
- 4.36 The councils prepared an action plan in 2001 for implementing the joint waste management plan. The action plan identified actions and individual and joint accountabilities for each council in implementing the plan, including accountabilities for a waste minimisation position.
- 4.37 We did not find any formal agreement between the councils regarding the arrangements for the joint waste minimisation position, apart from information in the joint waste management plan. Two waste minimisation officers were appointed. They were based at the Hastings District Council and reported to the Omarunui joint landfill committee.
- 4.38 In 2006/07, Napier City Council reviewed whether it wished to continue with the joint arrangements for the waste minimisation officer positions and decided to withdraw as from March 2007.

New joint waste management plan

- 4.39 In 2006, Hastings District and Napier City Councils set up a working group, with councillor and staff representatives from both councils, to prepare a new joint waste management plan. The councils agreed on terms of reference for preparing the plan. Napier City Council adopted the plan in December 2006, at the same time that it decided to leave the joint waste minimisation officer arrangements. Hastings District Council delayed adopting the plan to check that it would still meet the district's requirements, given that there would not be a joint waste minimisation officer arrangement.
- 4.40 Reasons for preparing a joint waste management plan included joint ownership of the landfill, the close proximity of the councils, and the willingness of both to have a joint plan. Both councils identified benefits in preparing a joint waste management plan.
- 4.41 Many people we spoke with commented that preparing the new joint waste management plan worked well.
- 4.42 We were told that one limitation in preparing the joint plan was that the two councils had different waste management systems and did not always share the same policies – for example, Hastings District Council had a zero waste policy, but Napier City Council did not. The plan has addressed this by identifying the particular activities and policies or philosophies of each council. We were told that the differences between the two councils meant that common actions and outcomes needed to be stated broadly, to allow them to choose the extent to which they each pursued the activities and outcomes.

Are the arrangements working?

Landfill arrangement

- 4.43 The joint landfill arrangement had been in place for quite a few years. Both councils used the landfill, with each disposing of about 30,000 tonnes of waste a year. The landfill had been expanded through extensive capital works, so both councils had a facility they could continue to use for the next 9 to 10 years.
- 4.44 The joint arrangement had a formal agreement that provided a decision-making framework and clearly identified roles and responsibilities. We consider that this was important, as it afforded both councils certainty about how the arrangement would work.
- 4.45 Hastings District Council was responsible for day-to-day operation of the landfill. We were pleased to see that the formal agreement provided for both councils to have oversight of, and the ability to participate in, decision-making on landfill activities.

- 4.46 The arrangement was complicated by the different proportions of landfill ownership by the two councils. The ownership arrangements arose from historical circumstances, and it was unlikely that these would change.
- 4.47 We were advised that the landfill accepted waste from Hastings District and Napier City on a user-pays basis. The remaining life of the landfill will be determined by the quantity of waste to be disposed of. The councils had not set limits on how much waste could be disposed of in the landfill each year, but they had jointly sought to reduce the quantity of waste disposed of.
- 4.48 It is important for territorial authorities with joint landfill arrangements to consider how their waste management activities, and the activities of others using the landfill, will affect the remaining life of the landfill. If one territorial authority disposes of significantly more waste in the landfill than the other, it may disadvantage the other.
- Waste management plan and waste minimisation officer arrangements**
- 4.49 Both councils had made progress in implementing the 2001 joint waste management plan through the work of the jointly funded waste minimisation officers and in setting up their own waste management services.
- 4.50 Both councils agreed that it was practical to have a joint waste management plan, and prepared a second waste management plan together in 2006. However, as noted in paragraph 4.39, in late 2006, Napier City Council decided to withdraw from the joint waste minimisation officer arrangements.
- 4.51 We consider that the formal arrangements for joint waste minimisation officer activities were unclear.
- 4.52 In our 2004 report *Local Authorities Working Together*,¹ we identified practices for managing joint arrangements. We summarise these in Figure 16.

Figure 16
Considerations in managing joint arrangements

- When entering into a joint arrangement, local authorities should agree how they intend to work together.
- Local authorities should consider how the joint arrangement will be governed.
- Local authorities should agree at the outset how they will share any external costs.
- Where a joint arrangement has implications for staff, local authorities should consider how those implications are best managed.
- Throughout the life cycle of a joint arrangement and on completion, local authorities should review progress to ensure that key milestones, budgets, and timetables are being met.

¹ ISBN 0-478-18118-3.

New joint waste management plan

- 4.53 Hastings District and Napier City Councils prepared the 2006 waste management plan together. They set up a joint waste management plan working party, and agreed on terms of reference for preparing the plan. The plan was prepared by the working party, which comprised equal representation from both councils, and by the waste minimisation officers, positions that were funded equally by each council.
- 4.54 The arrangements made it clear who was responsible for preparing the waste management plan. The terms of reference did not identify how the work would be resourced. However, the nature of the arrangements provided for costs to be shared equally by the two councils.

Overlaps between arrangements

- 4.55 There was some overlap between the joint landfill arrangements and the joint waste minimisation arrangements, because activities from both arrangements were reported to the joint landfill committee. The committee was set up to govern landfill activities, and had formal powers in this respect. Its role in making decisions on waste minimisation activities was unclear.
- 4.56 We consider that territorial authorities entering more than one joint waste management arrangement need to consider the effect that each joint arrangement has on the other arrangements, and take action to manage these effects.

Case study 3 – Links between waste management plans and landfill gas-to-energy ventures

- 4.57 The breakdown of organic matter in landfills produces methane gas, a greenhouse gas. Regulations prohibit some landfills from discharging landfill gas to air, but provide for them to collect landfill gas and flare it or use it as an energy source.²
- 4.58 Sixteen percent of all territorial authority waste management plans said the authority had installed, or would consider installing, systems at their landfills to use landfill gas as an energy source.
- 4.59 Deciding to use landfill gas as an energy source instead of flaring it could have implications for future management of organic waste.
- 4.60 Territorial authorities considering ventures that use landfill gas as an energy source need to consider a variety of factors to determine whether the arrangement is practical and economically feasible. In our view, authorities should also take account of the direction provided in the Local Government Act 1974 and their own waste management plan when they consider proposals to use landfill gas as an energy source.

² Resource Management (National Environmental Standards Relating to Certain Air Pollutants, Dioxins, and Other Toxins) Regulations 2004.

- 4.61 This case study considers the fit between two territorial authority waste management plans and the authorities' ventures using landfill gas as an energy source.

Local Government Act 1974 and waste management plan considerations

- 4.62 Organic waste accounts for approximately a third of all landfill waste.³ The Waste Strategy encourages territorial authorities to divert organic waste from landfills.
- 4.63 The Local Government Act 1974 does not provide any direction specific to organic waste, but it encourages territorial authorities to give preference to methods for waste recovery over methods for disposing of waste in landfills.
- 4.64 Landfill gas production is dependent on organic material entering the landfill. Sufficient quantities of organic matter need to be present to ensure that there is enough methane for commercially viable energy production. However, territorial authority waste management plans often contain targets to reduce the amount of waste disposed of in landfills and/or include a policy of zero waste going to landfills.
- 4.65 Territorial authorities contemplating proposals for using landfill gas as a source of energy therefore need to consider:
- the implications these proposals have for future organic waste management practices; and
 - how the proposal fits with the authority's waste management plan and with the direction given by the Local Government Act 1974 and the Waste Strategy.

Hutt City Council

- 4.66 Hutt City Council is a minor shareholder (7%) in a joint venture to extract gas from the Silverstream landfill and generate electricity from it. Gas extraction and electricity generation have been occurring at the site for many years.
- 4.67 The council entered the landfill gas venture some time before the Waste Strategy or the council's waste management plan were prepared.
- 4.68 The council had done a detailed review of some aspects of the economic costs and benefits of diverting waste from the landfill after it had entered the landfill gas venture. This work estimated how diverting organic waste would affect landfill capacity, and the cost savings that would result from deferring capital works on a landfill extension if organic waste were to be diverted.
- 4.69 Hutt City Council's waste management plan (prepared jointly with Upper Hutt City Council) noted the current landfill gas venture and outlined the environmental benefits of this.

³ *The New Zealand Waste Strategy*, 2002, Ministry for the Environment, New Zealand, page 22.

- 4.70 The waste management plan also included organic waste diversion targets from the Waste Strategy and provided for the council to divert organic waste from landfill if the council found it economically, socially, and environmentally feasible to do so.
- 4.71 The council was aware of privately owned composting facilities in the district. The council provided education about diverting organic waste through recovery. It did not have facilities for green waste diversion.

Our comments

- 4.72 The landfill gas venture is historic, pre-dating the waste management plan, and comprises established infrastructure and management practices. The waste management plan provides for this.
- 4.73 Hutt City Council had done some work considering green waste diversion options, and had identified reasons for continuing current arrangements. However, this work was contained in different documents, and some of it was not documented. It would be useful for the council to collate this information so the evaluation of costs and benefits and the reasons for continuing with current arrangements is clear. We note that some of the cost/benefit information the council held was dated and that the council may wish to review it. Once collated, this information may be useful to help assess further organic waste diversion activities.
- 4.74 The waste management plan showed the council intended to continue with the landfill gas venture and would investigate organic waste diversion opportunities, but would adopt them only if they were economically feasible.
- 4.75 The plan included targets to divert organic waste from the landfill. We are not convinced of the usefulness of including these targets in the plan, particularly because the council did not have a clear method to achieve them.

Nelson City Council

- 4.76 Nelson City Council was party to a commercial agreement to extract gas from the York Valley landfill and use the gas as an energy source to help fuel steam boilers at Nelson Hospital. The complete system became operational in 2006.
- 4.77 Nelson City Council's 2001 waste management plan (including a zero waste policy) was in force when the council entered the agreement. Before entering the agreement, councillors debated whether such an agreement would conflict with the council's zero waste targets. They decided to pursue the venture on the basis that the agreement would not prevent them from diverting organic waste from disposal in a landfill in the future.

- 4.78 Nelson City Council prepared a new waste management plan in 2005. Both the 2001 and 2005 waste management plans discussed the merits of diverting organic waste from the landfill against having organic material within the landfill to create enough methane gas to use as an energy source.
- 4.79 The 2005 plan allowed for diversion of organic waste provided that it was no more expensive to do so than disposing of the waste in the landfill. The plan discussed the effect of organic waste diversion on landfill capacity, and committed the council to investigating diversion of further organic waste from the landfill.
- 4.80 The council had a green waste drop-off facility, and a contract arrangement for collected waste to be composted.
- 4.81 Council staff had prepared a comprehensive report on the options to manage organic wastes. The council planned further education and monitoring activities as a consequence of this.

Our comments

- 4.82 Nelson City Council was well positioned to continue both with the venture using landfill gas as an energy source and with organic waste diversion practices, as it had provided for both within its waste management plan.
- 4.83 We are pleased that Nelson City Council took account of waste management plan policies when considering and entering the arrangements to use the landfill gas as an energy source. This is in keeping with the purpose of having a waste management plan. We expect every territorial authority to take account of waste management plan policies when taking further decisions about organic waste management.
- 4.84 Nelson City Council's waste management plan included a summary of the effects of the council's organic waste management practices, including the landfill arrangements and diversion activities. The information contained in the summary was easy to understand and provides a useful reference for those considering Nelson City's organic waste issues.

Our conclusions for case study 3

- 4.85 Territorial authorities may find the cost of organic waste diversion is more expensive, at least in the short term, than disposing of it in landfills. The opportunity for potential economic benefits from using landfill gas as a source of energy may also influence any decision to dispose of organic waste in a landfill.

- 4.86 However, we expect all territorial authorities to consider the costs, benefits, operational requirements, and implications of any method before they adopt it. If they do not, they run the risk that the method they have chosen will not be compatible with other waste policies and activities the authority has committed to, or that the activity will not be feasible. This is particularly relevant to using landfill gas as an energy source, which can be contrary to a territorial authority's waste diversion targets, methods, and policies – particularly methods for organic waste diversion.
- 4.87 We acknowledge that it is complicated for territorial authorities to weigh up the costs and benefits of landfill gas arrangements and waste diversion activities.
- 4.88 Regulations prohibit some landfills from discharging landfill gas to air, but provide for them to collect and flare landfill gas or use it as an energy source. For territorial authorities that are considering proposals to use landfill gas as an energy source, we have listed some questions in Figure 17 that will help them identify how such a venture would fit with their waste management plan.

Figure 17**Questions for territorial authorities considering ventures that use landfill gas as an energy source**

- How will the venture affect organic waste activities and targets in the waste management plan?
- Is the venture compatible with any targets or policies in the plan for reducing the quantity of waste disposed of in a landfill?
- How will the venture affect landfill capacity, and what are the economic and other effects of this?
- What benefits will the venture bring to the territorial authority?
- Will the venture prevent the territorial authority from diverting waste away from the landfill in the future?

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