

# 4

## Waste Minimisation



## 4.1 Introduction

People create wastes. Based on Organisation for Economic Co-operation and Development (OECD) estimates it is likely that on average New Zealanders generate over 650 kilograms per person of solid waste annually (Statistics New Zealand “*Measuring Up, New Zealanders and the Environment*” 1993). If the amount of waste generated were reduced at its source, then there would be less material in the waste stream, and less material to be disposed of. For that reason waste minimisation should be given a high priority in the management of waste.

Waste represents an inefficient use of resources. Sustaining natural and physical resources requires that inefficient resource use be reduced. This has direct positive environmental consequences, both for the resources being inefficiently utilised in that they last longer, and for the state of the receiving environment into which the waste is being disposed. Using resources more efficiently will therefore help minimise waste.

The true costs associated with waste management have not been recognised, and have generally fallen on persons other than the generator of that waste. Greater recognition is needed of the life cycle of wastes. One means of achieving a reduction in the amount of waste generated is to make the generator of that waste more responsible for its management through its life cycle and for the costs associated with its ultimate disposal.

Waste minimisation refers to any methodology which can be used to minimise the production and toxicity of waste by modifying existing processes and behaviours. It also encompasses integrated waste management and cleaner production:

- Integrated waste management focuses on the concepts of reducing the amount of waste produced at source, reusing, recycling and recovering materials from the waste stream.
- Cleaner production involves minimising the raw materials and energy used in production, avoiding the generation of harmful wastes, and producing products and services which do not harm the environment during their use and disposal.

Importantly, waste minimisation can be implemented by any sector of society. Therefore a key part of waste minimisation is the provision of technical information to the public, interest groups, and the generators of waste, and the promotion and encouragement of waste minimisation.

Within Otago little information has been collected on the waste that is generated, and the waste that is disposed of to landfills. This is a difficulty faced by many regions within New Zealand, and because of this the Ministry for the Environment has prepared a Waste Analysis Protocol, which is promoted as a means to record and assess the waste entering landfills. The Protocol is proving to be a useful mechanism in obtaining data on waste disposal on a nationally consistent basis, and for providing information useful for developing strategies for waste minimisation.

## 4.2 Waste minimisation issues

### 4.2.1 Waste reduction, recycling and disposal within Otago occurs in an uncoordinated, ad-hoc manner.

#### **Explanation**

The statutory responsibility for the management and control of waste in Otago's waste stream lies with a variety of agencies. Under the Resource Management Act, the Otago Regional Council has a role in approving all discharges to the environment, while territorial authorities may assume responsibility for the collection, recycling and disposal of wastes under the Local Government Act 1974. All individuals and businesses have a role in waste management, particularly in implementing strategies to minimise waste. To improve the way that waste is managed through its life cycle there is need for a coordinated approach by all statutory agencies within the region, where the activities of those agencies could impact upon, or be impacted by, resource management aspects of waste.

*Objectives 4.3.1, 4.3.2*

*Policy 4.4.2*

### 4.2.2 A significant proportion of the waste generated in Otago may be avoidable.

#### **Explanation**

Each year Otago households and industries generate what appears to be unnecessary waste. Most of this is disposed of to landfills. The diversion of waste away from landfills, through the principles of integrated waste management, embodying the philosophies of reduction, reuse, recycling and recovery, is important as it will extend the life of the region's operating landfills, and place less pressure on the use of natural and physical resources.

Some packaging is made from material which only slowly biodegrades or which is not biodegradable at all. Due to the physical make-up of such material, disposal can be difficult and may result in environmental degradation.

Some waste material would potentially be recyclable if collection systems were in place and markets were found, for example, plastic bags from supermarkets, plastic wrappers from silage and haylage, and polystyrene packaging.

*Objective 4.3.1*

*Policies 4.4.2, 4.4.3*

### **4.2.3 Waste can have an adverse effect on the environment.**

#### **Explanation**

Waste by itself, and as it breaks down, gives rise to discharges to land, water and air. These can all adversely affect the environment, people and other life that relies upon it. Even where discharges do not occur, other adverse affects can arise, including visual impacts and hazards to wildlife, such as with plastic packaging. Toxic (hazardous) waste can have even greater adverse effects because of its increased toxicity.

By reducing the quantities and toxicity of waste in Otago through waste minimisation policies, significant adverse environmental effects will be avoided.

*Objective 4.3.1*

*Policies 4.4.1, 4.4.2*

## **4.3 Waste minimisation objectives**

### **4.3.1 To minimise the amount of waste generated at source in Otago.**

#### **Explanation**

Waste minimisation seeks to minimise the production and toxicity of waste, by reducing the amounts of waste produced at source, and by the adoption of cleaner production techniques. This includes:

- using resources and energy efficiently;
- producing environmentally sound products and processes; and
- avoiding or reducing waste, particularly hazardous waste.

*Policies 4.4.2 - 4.4.4*

### **4.3.2 To maximise the opportunities for the reuse, recycling and recovery of materials from the waste stream.**

#### **Explanation**

Prior to material being disposed of there are opportunities for it to be reused, recycled or recovered. The more this is done the less will be the need to dispose of “waste”.

*Policy 4.4.2*

## **Principal reasons for adopting waste minimisation objectives**

By focusing on the integrated waste management principles of reduction, reuse, recycling and recovery, the quantities of waste being discharged to the land, air and water in Otago may be significantly reduced.

In addition, there is a need to develop in the community greater personal responsibility for the reduction of waste. This may be achieved by increasing awareness of the adverse effects of waste and through promoting waste minimisation and recycling initiatives. It is unlikely that this will be achieved by regulation or other statutory provisions.

If households and businesses adopt the concept of waste minimisation and cleaner production, there will be reduced demand for natural resources, fewer adverse environmental effects of waste disposal, extension of the life of the region's operating landfills, and less need for new landfills. In addition, waste minimisation will not only produce benefits for the environment but also potential savings for industry.

## **4.4 Waste minimisation policies**

### **4.4.1 To recognise and provide for the relationship Kai Tahu have with natural and physical resources by:**

- (a) Acknowledging that future generations will inherit the results of good and bad waste management practices;**
- (b) Providing for the management of Otago's waste stream in a manner that takes into account Kai Tahu cultural values; and**
- (c) Maintaining consultation with Kai Tahu on issues relating to waste minimisation.**

#### **Explanation**

Waste minimisation is an issue of significance to Kai Tahu and future generations will be affected by decisions made as a consequence of this Plan. In such circumstances consideration of Kai Tahu values and views is appropriate and sound resource management.

*Methods 4.5.1 - 4.5.10*

### **4.4.2 To encourage, support and facilitate integrated waste management by (in order of priority):**

- (a) Minimising the effects on the environment by reducing the quantity and / or toxicity of material entering the waste stream;**
- (b) Reusing materials;**
- (c) Recycling materials, where practicable, that cannot be reused;**

- (d) **Recovering resources from materials in the waste stream; and**
- (e) **Disposing of the residual waste in an environmentally safe manner.**

#### **Explanation**

Integrated waste management is an internationally recognised and accepted framework for the minimisation of waste. It embodies the 'Five Rs' (Reduction, Reuse, Recycling, Recovery, and Residual Management). It provides for action on all aspects of waste management, from the time that material enters the waste stream to, and beyond, its disposal. A number of options are available to make use of waste material, in preference to disposing of it.

Under the Resource Management Act the Otago Regional Council cannot require that integrated waste management, and its components, be adopted. It will be necessary therefore to adopt alternative approaches such as education, to promote what is recognised as a sound and responsible philosophy for the management of waste.

*Methods 4.5.1 - 4.5.10*

#### **4.4.3 To gather information on the waste stream in the Otago region.**

##### **Explanation**

The gathering of information on the nature of the waste stream, including the composition of waste, volumes and source, could result in better management of waste, and assist in identifying areas where waste minimisation strategies could be implemented. The Waste Analysis Protocol developed by the Ministry for the Environment provides a nationally recognised tool for gathering and assessing information on waste being disposed of at landfills. When considering landfill consents this is one of the matters the Otago Regional Council will have regard to.

*Policies 6.4.2, 7.4.6.*

*Methods 4.5.1 - 4.5.3, 4.5.8, 6.5.1.*

#### **4.4.4 To encourage the composting of appropriate organic waste material.**

##### **Explanation**

Composting, on both a domestic and commercial scale, has the potential to reduce the volume of the waste stream. A significant proportion of the material disposed of in landfills, excluding offal pits, is organic. As well as producing a potentially valuable commodity, an increase in composting will significantly reduce the amount of material disposed of at landfills. Adverse effects (odour, nuisance and leachate) can arise from composting, and for

that reason it is desirable to require large scale composting operations to seek approval by way of a resource consent.

*Policy 7.4.4*

*Methods 4.5.4, 4.5.10*

*Rules 7.6.9, 7.6.10*

## **Principal reasons for adopting waste minimisation policies**

The policies in this section reflect the different components of a waste minimisation/cleaner production strategy. Reducing sources of waste and reusing and recycling waste reduces raw material consumption and the adverse environmental impacts of waste disposal. Cleaner production also reduces environmental impacts through minimising the use of raw materials and energy, avoiding the generation of hazardous wastes, and producing products which are not harmful during use and disposal.

A promotional and ‘increasing awareness’ stance is preferred to a regulatory approach as effective waste minimisation requires the cooperative of all sectors of the community.

## **4.5 Waste minimisation methods**

In meeting the objectives and carrying out the policies relating to waste minimisation the Otago Regional Council, in association with territorial authorities and other agencies, will:

- 4.5.1 In response to requests, make available information and technical advice on waste minimisation techniques.

This will be done in response to requests for information and advice, and as part of any publicity undertaken by the Otago Regional Council to promote waste minimisation, for example by encouraging the purchase of products with minimal packaging and discouraging the purchase of products which result in hazardous wastes resulting from their production, use or disposal.

- 4.5.2 Adopt a proactive approach through all forms of education and information dissemination to encourage waste minimisation practices.

- 4.5.3 Promote the implementation of information gathering to determine the content of the waste stream.

Major generators of waste will be encouraged to carry out waste audits, and consideration will be given to requiring operators of approved refuse disposal and transfer facilities to sample material

being disposed of. The Waste Analysis Protocol provides a nationally consistent methodology for doing this.

The Otago Regional Council will coordinate information at the regional level, identify trends, and publicise the results and opportunities for reuse and recycling.

- 4.5.4 Promote composting, primarily through Otago Regional Council publications, reports and advertising, and where appropriate at landfills when resource consent applications are being considered.
- 4.5.5 Promote internal waste audits by territorial authorities, industry and the public to assist in identifying and modifying waste generating practices.
- 4.5.6 Advocate to central government where a national response or national coordination is required, to use means which will lead to waste reduction and cleaner production.
- 4.5.7 Advocate to central government to research and implement economic instruments for waste minimisation.
- 4.5.8 Coordinate waste minimisation measures within the region and information that is available, and promote or facilitate waste minimisation.
- 4.5.9 Develop and maintain a consultation protocol with Manawhenua to deal with waste minimisation issues.
- 4.5.10 Support community initiatives aimed at reducing waste.

### **Principal reasons for adopting waste minimisation methods**

At the regional level it is neither efficient nor effective to regulate for the minimisation of waste, although in determining resource applications there is some opportunity to consider imposing conditions relating to information collection. Generally however, the role of statutory bodies in minimising waste is limited to supplying information, promoting and advocating.

Increasing the awareness of people within the Otago region is needed to change attitudes towards waste. No matter what programmes are in place there will be no progress in achieving waste minimisation until the Otago community, individually and collectively, takes responsibility for their own actions and change their attitudes towards waste. People cannot be expected to change their lifestyles to protect the environment until they

understand the part they are playing in its degradation and the part they can play in its improvement. While education programmes such as meetings, conferences, seminars and workshops are an excellent opportunity for people to get together to learn about waste minimisation, booklets and leaflets provide a simple means of learning about waste minimisation. There are a range of economic instruments available at a national, regional and local level under other legislation which could be implemented. This must be done in conjunction with education.

Central government needs to consider a national approach on such issues as silage wrapping or specific hazardous substances and hazardous wastes. Economic instruments could be employed by central government to avoid distortions in regional production and consumption patterns.

## **4.6 Anticipated environmental results**

The environmental results anticipated from the above policies and methods of implementation are:

- 4.6.1 A greater community awareness of and willingness to practice waste minimisation.
- 4.6.2 A reduction in the quantities of waste being disposed of into the environment.
- 4.6.3 An increased life of existing operating landfills.
- 4.6.4 A reduction in the adverse effects on the environment from waste disposal.

