This is a true and correct copy of the Regional Plan: Waste for Otago.

This copy of the Regional Plan: Waste for Otago is deemed to be operative on Saturday, 9 July 2022.

The Common Seal of the Otago Regional Council was hereto affixed in the presence of:

Cr Andrew Noone
Chairperson

Cr Gretchen Robertson
Co-Chairperson, Strategy and Planning Committee

Regional Plan: Waste for Otago

ISBN 978-0-908324-80-4

Otago Regional Council
Updated to 9 July 2022

Cronicle of key events

Key event	Date notified	Date decisions released	Date operative
Regional Plan: Waste for Otago			April 1997
Plan Change 1 (Dust suppressants and landfills) to the Regional Plan: Waste	6 July 2020	30 November 2021 4 March 2022 30 May 2022	9 July 2022

Chairperson's Foreword

It gives me great pleasure to present this Regional Plan: Waste, the Otago Regional Council's first full plan developed under the Resource Management Act.

The Regional Plan: Waste ushers in a new era for waste management in Otago and sets out clear directions in the vital areas of waste minimisation, and in the management of landfills, contaminated sites and hazardous substances and wastes. This Plan provides an integrated approach to these waste issues, the aim of which is to reduce the adverse effects associated with Otago's waste stream.

This integrated approach encompasses the elements of reduce, reuse and recycle with careful consideration of the appropriate management and disposal of the waste that is generated. Every product needs to be considered in a life-cycle manner with respect to waste.

This issue of waste is a crucial one for all of us in Otago. It is estimated that each New Zealander produces more than 660 kg of waste each year. The fact is that waste is everyone's problem and we must work together to bring about a reduction in the amount generated. Reducing the amount of waste must be our first priority.

While prepared by the Otago Regional Council, this Plan belongs to the region. It was developed following extensive consultation carried out over a number of years, with the community, Otago's city and district councils and those involved in waste management.

This and following regional plans on the Coast, Land, Water and Air, provide specific planning frameworks to address environmental issues in Otago under the policy umbrella of the Regional Policy Statement. These documents will provide a comprehensive management direction for the natural and physical resources of our region.

May I take this opportunity to express the Otago Regional Council's sincere thanks to all those involved in the Plan's development. Your involvement, support and interest has assisted us greatly in preparing this Regional Plan.

Louise Rosson
Chairperson

Users' Guide

The Regional Plan: Waste for Otago deals with Otago's significant regional waste management issues. It provides objectives, policies and methods of implementation in order to address those issues. Each of the issues, objectives and policies is accompanied by explanations and principal reasons.

The Plan is divided into eleven parts as follows:

1. Introduction
2. Statutory Framework
3. Manawhenua Issues
4. Waste Minimisation
5. Contaminated Sites - including rules
6. Hazardous Substances and Hazardous Wastes - including rules
7. Landfills - including rules
8. Cross-boundary Issues
9. Monitoring
10. Glossary
11. Appendices

In order to reflect the inter-related nature of these sections, a reference system has been used within the Plan to provide a linkage between chapters, and between issues, objectives, policies and methods within each chapter:

- Each of the issues is referenced through to the relevant objectives and policies within each chapter;

- Each of the objectives is referenced through to the relevant policies within each chapter; and

- Each of the policies is referenced through to the relevant methods within each chapter.

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Introduction

1.1 Extent of Plan

Waste is any contaminant, whether liquid, solid, gaseous, or radioactive, which is: discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an adverse effect on the environment. The term waste includes all unwanted and economically unusable by-products at any given place and time, and any other matter which may be discharged, accidentally or otherwise, to the environment.

Waste management is the transportation, resource recovery, recycling, storage, treatment and disposal of wastes including management systems to ensure that environmental effects are avoided, remedied or mitigated. Waste management also encompasses measures to avoid waste generation.

Integrated waste management involves:

- avoidance or reduction in the amount of waste generated;
- reuse and recycling of wastes; and
- waste transportation, storage, treatment, and disposal.

Waste matter may break down quickly in the environment or it may persist for long periods, leading to an accumulation of products and by-products as it breaks down. Wastes may also have a cumulative effect on the environment in general and on human, plant, and animal health in particular.

This Plan seeks to implement a waste strategy dealing with all stages in the life cycle of waste. To the extent that it is practicable, this Plan considers cross-media effects on air, water and land. Other issues relating to liquid and gaseous wastes will be considered in other regional plans on Coast, Water, Air and Land, which the Otago Regional Council is preparing. During their preparation, consistency between them and this Plan will be ensured.

Common to all three types of waste (solid, liquid and gaseous) are issues associated with:

(a) Waste minimisation and cleaner production - which relates to reducing the amount of waste that is generated, and the adoption of production methods that give rise to less adverse environmental effects.

(b) Contaminated sites - sites at which hazardous substances occur at concentrations above background levels and where assessment indicates that they pose, or are likely to pose an immediate or long term hazard to human health or the environment.

(c) Hazardous Substances and Hazardous Wastes - compounds, in their present form or after reaction to some other substance, which if used, stored, transported or disposed of in an inappropriate manner can pose a risk to human health or the environment.

As this is the first regional plan prepared in Otago on waste, it is desirable to also have regard to these issues, and to provide for their general consideration.

Waste issues include the production, collection, treatment and disposal of non-hazardous domestic, commercial, and industrial solid wastes (commonly referred to as "refuse"). This includes all forms of urban and rural waste which fall into this category. This type of waste is largely disposed of in landfills (designed as either large-scale public facilities or small-scale private facilities such as farm tips) and comprises such products as plastic, glass, metal, paper, packaging, and organic material.

The key issues with respect to waste management are waste minimisation, recycling/reuse, refuse collection services, refuse disposal techniques, litter control and illegal tipping. Refuse disposal techniques include the management of landfills in such a way that adverse environmental effects such as leachate discharges from the disposal site, smoke, and litter are minimised or prevented.

1.2 The need for this plan

The functions of the Otago Regional Council under the Resource Management Act 1991 include waste management. The Regional Policy Statement for Otago recognises waste as an issue of regional significance. The generation of waste, the opportunities for its reuse and recycling, and the need to dispose of waste, all give rise to resource management issues that require a regional overview and regional coordination.

Under Section 63 of the Resource Management Act, the Otago Regional Council may prepare a regional plan to assist it in carrying out its functions. Section 65 of the Resource Management Act requires the Otago Regional Council to consider whether it should have a regional plan to deal with waste issues. After consultation, and having regard to the purpose of the Resource Management Act, other methods available, the arguments for and against a regional plan dealing with waste, and after having carried out an evaluation of the likely benefits and costs of the principal alternative means, the Otago Regional Council is satisfied that such a regional plan is necessary to give effect to the purpose of the Resource Management Act, and the most appropriate means of dealing with regional waste issues.

1.3 Purpose of this plan

The purposes of this Plan are to:

- reduce the quantity of waste that is produced in Otago;
- adopt a regionally coordinated approach to waste minimisation, contaminated sites, and the collection, storage, treatment and disposal of hazardous substances and hazardous wastes, and outline responsibilities for Otago's waste management;
- encourage waste minimisation as a key strategy in the management of Otago's wastes;
- ensure that waste which cannot be reused or recycled, is disposed of in such a way that adverse environmental and health impacts are minimised;
- recognise cultural values in the management of waste;
- increase public awareness of Otago's waste issues; and
- encourage on-going monitoring of Otago's waste issues and their management.

1.4 Operation of this plan

This Plan will apply throughout the Otago region, excluding the coastal marine area. The Otago region was constituted under the "Local Government (Otago region) Reorganisation Order 1989". It is shown in Figure 1, and comprises the districts of the:

(a) Dunedin City Council
(b) Central Otago District Council
(c) Clutha District Council
(d) Queenstown-Lakes District Council, and
(e) Part of the district of the Waitaki District Council.

1.5 Contents of this plan

This Plan has been divided into the following parts:

Chapter 1 sets out the purpose of the document and provides background information relevant for its understanding.

Chapter 2 acknowledges the statutory framework under which this Plan is

prepared, referring to the relevant provisions of the Resource Management Act, the relationship of this Plan to other resource management documents, the relevance of other legislation, and the roles of the statutory agencies involved with waste.

Chapter 3 describes the Manawhenua perspective. Their concerns are identified, with overall objectives related to those concerns. Policies and methods flowing from those concerns and objectives are included in parts 4 - 7, where specific issues are dealt with.

Chapter 4 considers waste minimisation, focusing on the means by which the level of waste generated within Otago can be reduced.

Chapter 5 examines contaminated sites and the framework under which these will need to be managed.

Chapter 6 discusses hazardous substances and hazardous wastes. Existing legislation dealing with these issues is presently being reviewed, but until that review is complete the Otago Regional Council is required to carry out its legislative responsibilities.

Chapter 7 deals with landfills and the issues associated with that activity. In particular, this Plan seeks to ensure that the adverse effects from existing and future landfills are avoided, remedied or mitigated. This chapter covers farm landfills, offal pits, co-disposal landfills, cleanfill landfills, greenwaste landfills, and discharges from silage production and composting.

Chapter 8 considers cross-boundary issues and the means by which these can be resolved.

Chapter 9 provides for monitoring of resource consents, the environment and the policies in this Plan.

Glossary defines the terms used in this Plan.

Appendices
Chapters 4 to 8 of the document identify relevant resource management issues, and contain objectives, policies, methods and, where appropriate, rules. In order to reflect the inter-related nature of parts of the Plan, a reference system has been used to provide linkages between parts and between issues, objectives, policies and methods within each part:

- Each issue, objective and policy is referenced to other relevant issues, objectives or policies in other parts of this Plan.
- Each of the issues is referenced through to the relevant objectives and policies within that chapter.
- Each of the objectives is referenced through to the relevant policies and methods within that chapter.
- Each of the policies is referenced through to the relevant methods within that chapter.

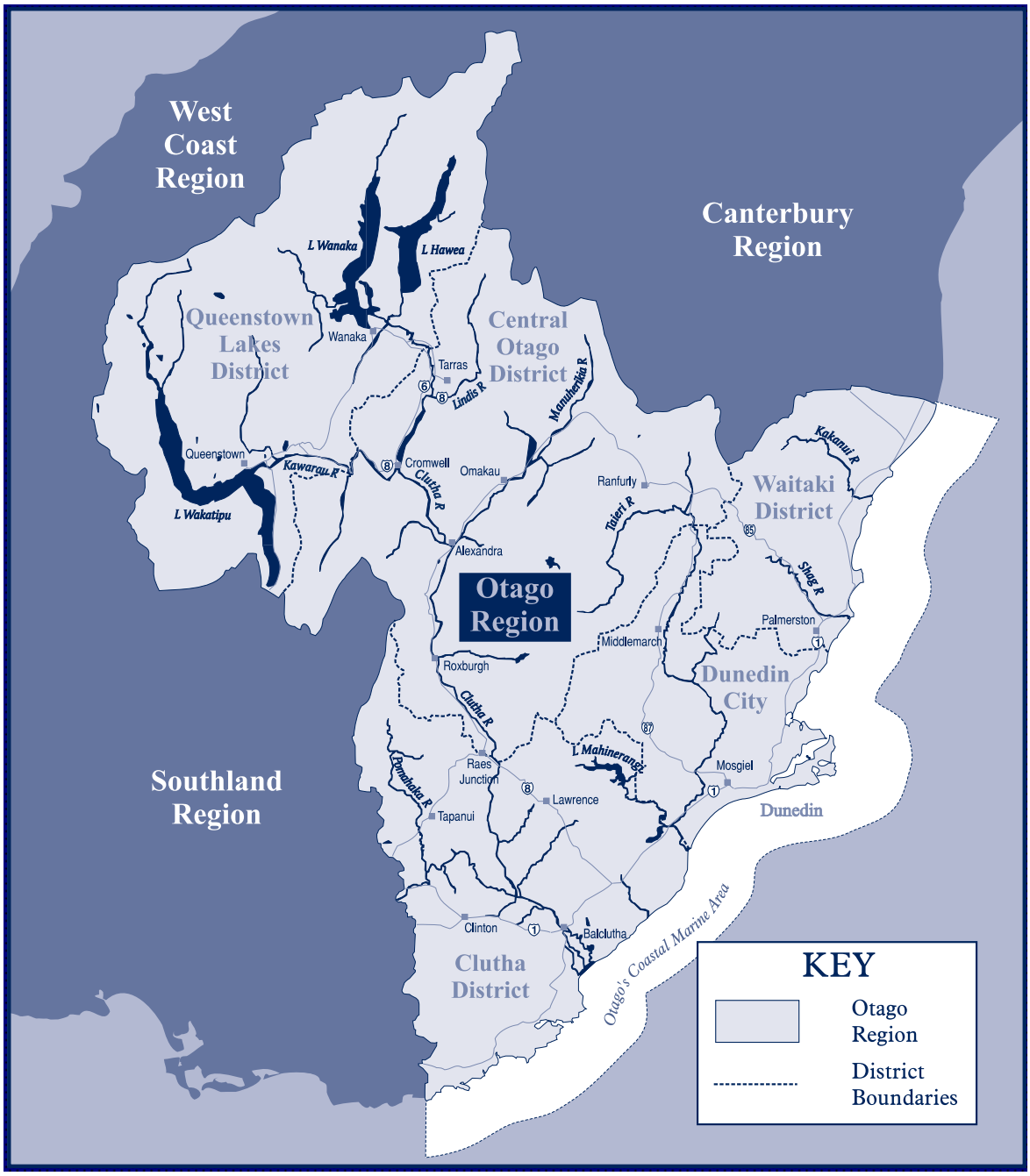


Figure 1: The Otago Region

1.6 Integrated management

The purpose of this Plan, like the Regional Policy Statement for Otago, is to promote sustainable management of the natural and physical resources of the region. This requires an integrated approach, taking an all-embracing, holistic view of resource management. It requires that decision-making about any particular resource take into account the likely effects on other natural and physical resources. It also requires an approach that meets the social, economic and cultural needs of the people and communities of Otago, now and in the future.

Integrated management includes:

(a) Integration of management responses across management agencies - recognising that although different agencies have varying functions, powers and duties under the Resource Management Act, coordination of their actions is necessary to promote sustainable management in the region, particularly in areas of shared responsibility.

(b) Integration toward shared environmental outcomes - recognising that the resolution of key resource management issues which will affect Otago's future will be more effective and efficient if management agencies work together for common goals.

(c) Integration of management responses across resource systems - Recognising that natural and physical resources must be treated as parts of complex and inter-connected bio-physical systems affecting each other.

(d) Integration of actions across a range of time scales - recognising that the effects of human activities in the environment can be temporary or permanent, may have already occurred, may be happening now, may happen some time in the future and may be cumulative over time.

(e) Integration of decision-making with community participation - recognising that the values and beliefs of society, particularly those of Iwi, must play an important part in natural and physical resource management.

(f) Integration of methods to be used to implement policies - recognising that there is usually more than one way of implementing policies in an efficient and effective way.

(g) Integration across individual decisions - recognising that if each decision about the use of, or effects on, a resource is made in isolation, by the time that the accumulated effects are seen as a problem it may be too late to take remedial action.

This Plan seeks specifically to integrate management of:

- waste minimisation;
- contaminated sites;
- hazardous substances and hazardous wastes; and
- waste disposed to landfills.

Integration of air, water and land resources is only partly achieved by this Plan, being limited to the effects of waste management on those resources. Full integration will be achieved once the Otago Regional Council completes regional plans on air, water, coast and land. The provisions in this Plan are a necessary first stage in the integrated management of all waste in Otago.

1.7 Consultation

The preparation of this Plan is the culmination of work that has been carried out over a number of years.

Prior to the establishment of regional councils, the Coastal North Otago United Council and the Clutha Central Otago United Council both sought to coordinate waste management disposal within their respective areas. Both United Councils prepared Regional Solid Waste Management Plans in 1989. The plan for Clutha / Central Otago was completed but not adopted by the constituent authorities. The plan for Coastal North Otago was finalised and adopted by the constituent authorities.

In March 1992 the Otago Regional Council released the **"Waste Management Issues and Options Discussion Paper"** and in November 1992 the Council released a discussion document **"Visions for Otago"**, both of which promoted an integrated approach to waste management and waste minimisation. A workshop convened by the Otago Regional Council in April 1992 sought to identify Otago's waste issues and to develop policies to address them. The proceedings of the workshop were summarised in the document **"Waste Management Project"** prepared by students of the Master of Regional and Resource Planning Programme, University of Otago, in July 1992.

The preparation of the Regional Policy Statement for Otago in October 1993 provided the opportunity to bring together all previous work carried out and to provide for the integrated management of waste within the regional resource management framework. This Plan implements the objectives and policies of the Regional Policy Statement for Otago within a more detailed framework.

As required by clause 3 of the First Schedule to the Resource Management Act, this Plan has been prepared in consultation with government agencies, territorial authorities and Manawhenua of Otago.

The focus of the consultation in preparing the Proposed Regional Plan: Waste was through the Otago Regional Council's Technical Waste Advisory Committee. This Committee was chaired by an Otago Regional Councillor, and comprised staff representatives of the territorial authorities of Otago, the Otago Regional Council, statutory government agencies and Manawhenua. The matters considered by that Committee, and the recommendations that it made were instrumental in determining the content of this Plan.

All of the above-mentioned reports, and reports and minutes of the Technical Waste Advisory Committee are available for inspection from the offices of the Otago Regional Council.

1 INTRODUCTION

2

Statutory Framework

2.1 Part II of the Resource Management Act 1991

The purpose of the Resource Management Act, as stated in Section 5, is to promote the sustainable management of natural and physical resources.

While waste is not a natural or physical resource, the inappropriate management of waste, at all stages of the waste cycle, can result in adverse effects on the environment. These effects may result in the natural and physical resources of the Otago region not being managed in a sustainable way.

Section 6 of the Resource Management Act requires that in preparing, administering and implementing this Plan, matters of national importance are recognised and provided for, including:

(a) The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development;
(b) The protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development;
(c) The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna;
(d) The maintenance and enhancement of public access to and along the coastal marine area, lakes and rivers;
(e) The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.

Similarly, Section 7 of the Resource Management Act provides that particular regard be had to:

(a) Kaitiakitanga;
(b) The efficient use and development of natural and physical resources;
(c) The maintenance and enhancement of amenity values;
(d) Intrinsic values of ecosystems;
(e) Recognition and protection of the heritage values of sites, buildings, places, or areas;
(f) Maintenance and enhancement of the quality of the environment;
(g) Any finite characteristics of natural and physical resources;
(h) The protection of the habitat of trout and salmon.

Where relevant, the above matters contained within Sections 6 and 7 of the Resource Management Act are included within this Plan. It is also necessary to have regard to these provisions in considering any resource consents that may be required.

Section 8 of the Resource Management Act requires the Otago Regional Council to take into account the principles of the Treaty of Waitangi, and this is particularly relevant in relation to the management of the region's natural and physical resources.

Manawhenua consider that all ancestral taoka contain a mauri (a value which binds the spiritual and physical elements of taoka). When something dies the mauri is no longer able to bind the physical and spiritual elements together and therefore give life - without mauri nothing can survive. Kai Tahu, over many centuries, have developed a set of rules and practices to sustain the mauri of all things - this custom is known as tikanga ("to practice that which is right").

Manawhenua philosophy advocates the non-contamination of areas of mahika kai (food resources) and wahi tapu. This is especially important in terms of human toeka (human wastes). The spiritual nature of wahi tapu requires that they be free from wastes of any kind.

Recognising the requirements of Section 8 of the Resource Management Act this Plan includes a specific chapter on Manawhenua issues.

2.2 Restrictions on the use of land

Section 9 of the Resource Management Act provides that:

> *9(3) No person may use any land in a manner that contravenes a rule in a regional plan or a proposed regional plan unless that activity is -*
>
> *(a) Expressly allowed by a resource consent granted by the regional council responsible for the plan; or*
>
> *(b) Allowed by Section 20 (certain existing lawful uses allowed).*

Within this section the word "use" includes *"any deposit of any substance in, on, or under the land "*. Therefore, where this Plan provides for the control of the adverse effects of activities, or of the activities themselves, no use may be undertaken unless a resource consent is granted, or the use has existing use rights.

2.3 Discharge of contaminants

Section 15 of the Resource Management Act deals with the discharge of contaminants. It states:

> *15(1) No person may discharge any -*

(a) Contaminant or water into water; or
(b) Contaminant onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water; or
(c) Contaminant from any industrial or trade premises into air; or
(d) Contaminant from any industrial or trade premises onto or into land -

unless the discharge is expressly allowed by a rule in a regional plan and in any relevant proposed regional plan, a resource consent, or regulations.

(2) No person may discharge any contaminant into air, or into or onto land, from -
(a) Any place; or
(b) Any other source, whether moveable or not, -

in a manner that contravenes a rule in a regional plan or proposed regional plan unless the discharge is expressly allowed by a resource consent or allowed by Section 20 (certain existing lawful activities allowed).

Contaminant is defined in the Resource Management Act to include:

any substance (including gases, liquids, solids, and micro-organisms) or energy (excluding noise) or heat, that either by itself or in combination with the same, similar, or other substances, energy or heat-
(a) When discharged into water, changes or is likely to change the physical, chemical, or biological condition of water; or
(b) When discharged onto or into land or into air, changes or is likely to change the physical, chemical, or biological condition of the land or air onto or into which it is discharged.

The effect of Section 15(1) of the Resource Management Act therefore is to restrict the following, unless provided for by a regional plan, regulations or a resource consent:

(a) The discharging of any contaminants either into water, or onto or into land in such a way that they could enter water; and

(b) The discharging of any contaminants into air, or onto or into land, from any industrial or trade premises.

These restrictions would apply to waste being disposed of from urban and rural properties, such as refuse and offal, and to municipal refuse disposal facilities.

Section 15(2) of the Resource Management Act has the effect of restricting those discharges that are contrary to any rules in this Plan, unless they have existing use rights or have been approved by a resource consent.

Section 418 of the Resource Management Act provides for transitional provisions with respect to Section 15. The manner in which they are interpreted by this Plan is outlined in Section 7.1.

2.4 Content of regional plans

Section 67(1) of the Resource Management Act specifies the content of regional plans. This requires this Plan to state:

(a) The issues to be addressed in the plan; and
(b) The objectives sought to be achieved by the plan; and
(c) The policies in regard to the issues and objectives, and an explanation of those policies; and
(d) The methods being or to be used to implement the policies, including any rules; and
(e) The principal reasons for adopting the objectives, policies, and methods of implementation set out in the plan; and
(f) The information to be submitted with an application for a resource consent including the circumstances in which the powers under Section 92 may be used; and
(g) The environmental results anticipated from the implementation of these policies and methods; and
(h) The processes to be used to deal with issues which cross local authority boundaries, and issues between territorial authorities and between regions; and
(i) The procedures to be used to review the matters set out in paragraphs (a) to (h), and to monitor the effectiveness of the plan as a means of achieving its objectives and policies; and
(j) Any other information the regional council considers appropriate; and
(k) Such additional matters as may be appropriate for the purpose of fulfilling the regional council's functions, powers, and duties under this Act.

These matters have determined the structure and content of the various parts of this Plan. In the context of Section 67 of the Resource Management Act the following terminology has been adopted in this Plan:

- A resource management **issue** occurs when an activity creates an environmental effect requiring some form of intervention. If there is no effect, there is no issue. The extent to which those issues are significant is dependent on the values held by people and

communities in relation to natural and physical resources, activities and the environment.

- An **objective** is the desired result, end state, situation, or condition that is aimed for.

- A **policy** is the course of action to achieve the desired result. It is what needs to be done to achieve the objective.

- A **method** is the practical action by which a policy is implemented. It is what needs to be done to put the policy into effect.

- An **anticipated environmental result** is the intended result or outcome on the environment as a consequence of implementing the policies and methods.

Section 67(2) of the Resource Management Act also specifies that this Plan shall not be inconsistent with:

(*a*) *Any national policy statement or New Zealand coastal policy statement; or*
(b) Any water conservation order; or
(c) The regional policy statement or any other regional plan of the region concerned.

The provisions of the New Zealand Coastal Policy Statement, which is the only national policy statement at the time of completing the development of this Regional Plan: Waste, have been taken into account in its development. The provisions of the Proposed Regional Policy Statement for Otago, which is subject to appeals at the time of completing this Regional Plan, have also been taken into account. It is noted however that the provisions within the Waste Chapter of the Proposed Regional Policy Statement for Otago are not subject to any appeals.

2.5 Relationship to other resource management documents

This Plan fits within a framework of national, regional and local resource management plans and other documents as shown in Figure 2.

As noted above, regional plans must not be inconsistent with those documents prepared at the national level.

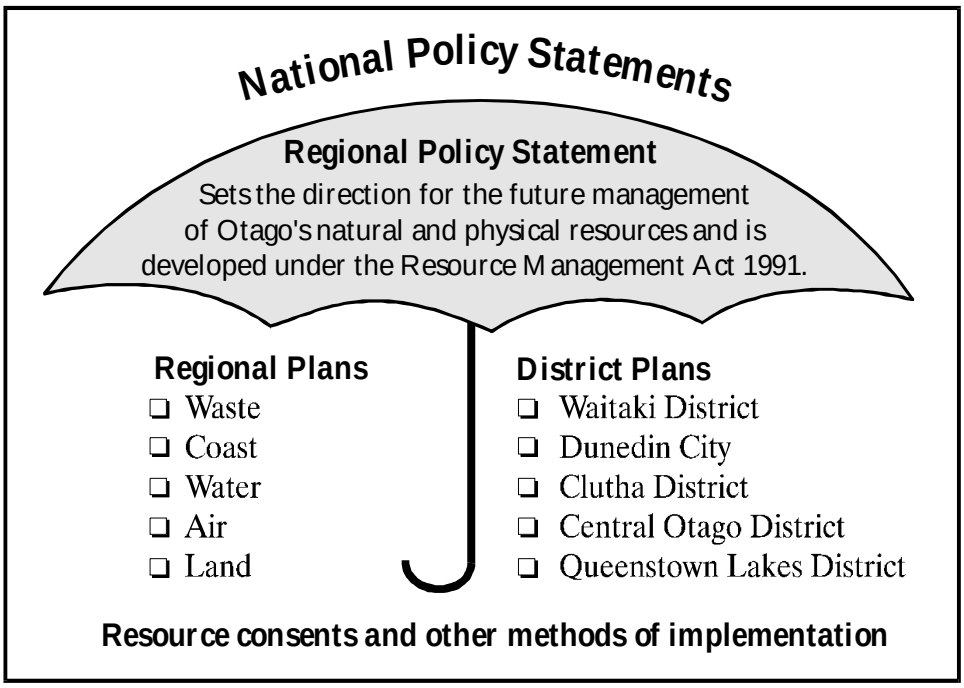


Figure 2: Resource Management Framework

At the regional level the Regional Policy Statement for Otago provides an overview and the means of achieving integrated sustainable management of the region's natural and physical resources. It is a statement of intent as to how regional resource management issues can be addressed, and while it has statutory power it only describes, rather than prescribes, methods which could be used to attain the stated objectives. This Plan seeks to implement the objectives and policies of the Regional Policy Statement for Otago.

In preparing this Plan the Otago Regional Council is also required to have regard to management plans and strategies prepared under other Acts, Iwi management plans, relevant entries in the Historic Places Register, regulations made under the Resource Management Act and the operative and proposed policy statements and plans of adjoining regional councils.

Discussions have been held with appropriate agencies to ensure that, where appropriate, matters contained in these other documents have been had regard to. To facilitate consistent administration within the Waitaki District, the contents of this Plan and the draft Landfill Regional Plan for the Canterbury Region have been the subject of meetings at a staff level between the councils concerned.

Plans for the Otago region must not be inconsistent with one another or the Regional Policy Statement for Otago. District plans must not be inconsistent with regional plans or the Regional Policy Statement for Otago.

At present, the Otago Regional Council has made a commitment to preparing five regional plans for Otago: the Regional Plan: Land, the Regional Plan: Water, the Regional Plan: Air, the Regional Plan: Coast, and this Plan, the Regional Plan: Waste. This commitment is identified in the methods of the Regional Policy Statement for Otago. Other plans may be prepared from time to time as is considered necessary and appropriate.

Outside of the formal resource management framework, other documents can be prepared, such as accords, guidelines and codes of practice. These can be used to achieve resource management objectives.

2.6 Section 32 of the Resource Management Act

Section 32 of the Resource Management Act requires councils to be objective in preparing regional plans, and in particular in determining objectives, policies and methods, having regard to alternatives that may be available and the reasons for and against options, including their costs and benefits. The Otago Regional Council has considered these matters in preparing this Plan and is satisfied that the selected objectives, policies and methods are necessary in achieving the purpose of the Resource Management Act and are the most appropriate means having regard to their efficiency and effectiveness.

The explanations and reasons for objectives, policies and methods contained in this Plan demonstrate that consideration has been given to the Section 32 requirements of the Resource Management Act and further supporting reports are available from the Otago Regional Council relating to the preparation process and matters that have been considered.

The technology in dealing with waste is changing over time. Knowledge is also expanding in terms of the effects of various methods of disposal. Where the Otago Regional Council becomes aware of other suitable techniques or options that may be applicable to waste management, it will assess those and if appropriate, introduce a change to this Plan.

2.7 Other relevant legislation

There is other legislation which deals with waste management. There are, for example, provisions dealing with waste generally in the following legislation:

- Building Act 1991
- Employment Act 1992
- Health Act 1956
- Health and Safety in Employment Act 1992
- Land Drainage Act 1908

- Litter Act 1982
- Local Government Act 1974
- Public Works Act 1991
- Rivers Board Act 1908
- Soil Conservation and Rivers Control Act 1941

The Resource Management Act, the Regional Policy Statement for Otago and this Plan do not replace, but complement, this other legislation. Some legislation deals specifically with the management of hazardous substances. Organisms designated as pests are dealt with in the Biosecurity Act 1993. The Meat Act 1981 and the Food Act 1981 have waste management implications for the industries governed by these statutes.

Other hazardous substances are the subject of specific legislation such as the Atomic Energy Act 1945, the Animal Remedies Act 1967, the Asbestos Regulations 1983, the Dangerous Goods Act 1974, the Medicines Act 1981, the Pesticides Act 1979, and the Radiation Protection Act 1965.

The Marine Pollution Act 1974 covers pollution of coastal and internal navigable waters. It gives particular emphasis to the control of oil spills.

The Electricity Act 1992 and Gas Act 1992 deal with energy production and distribution including safety, storage and reticulation.

Firearms and explosives are dealt with by the Arms Act 1983 and Explosives Act 1957, and regulations made under those Acts.

Most legislation contains offence provisions. In some cases the Crimes Act 1961 or Summary Offences Act 1981 may also apply. Major pollution events may create an emergency requiring action under the Civil Defence Act 1983.

Reserves and other conservation land are protected by specific legislation such as the Reserves Act 1977, Conservation Act 1987, Historic Places Act 1983, National Parks Act 1980, the Wild Animals Control Act 1977 and the Wildlife Act 1953.

2.8 Roles of different agencies in waste management

2.8.1 Under the Resource Management Act

The Otago Regional Council and Otago territorial authorities have waste management responsibilities under the Resource Management Act. The Otago Regional Council has adopted a

regionally coordinated approach to waste minimisation, contaminated sites, the collection, storage, treatment and disposal of hazardous substances and hazardous wastes, and the disposal of waste to landfills.

As a consequence of the provisions of the Regional Policy Statement for Otago, district councils and the Dunedin City Council have responsibility within their own areas for the preparation of objectives, policies and methods relating to the control of the use of land for the purpose of the prevention or mitigation of any adverse effects of the storage, use, disposal or transportation of hazardous substances and hazardous wastes. As appropriate, through this Plan and other regional plans, the Otago Regional Council will develop objectives, policies, rules and other methods relating to the use of land for the purpose of the prevention or mitigation of any adverse effects of the storage, use, disposal or transportation of hazardous substances and hazardous wastes regarding:

(a) The location of hazardous facilities or pipelines for the bulk conveyance of hazardous substances in relation to groundwater infiltration areas, or in close proximity to surface water resources, or in close proximity to the coastal marine area, or on soils particularly valued for their primary productive capability; or

(b) Situations where the actual or potential effects may be of regional significance.

The Ministry for the Environment, regional councils and territorial authorities also have waste management functions under other legislation. Other agencies also have a waste management role. Nothing in the Resource Management Act, the Regional Policy Statement for Otago or this Plan can impinge on the responsibilities of those agencies outside of the Resource Management Act. Reference is only included to them here to improve knowledge and understanding of the roles of the respective agencies.

Under the Resource Management Act, the Minister for the Environment is able to set national policy guidelines and standards. The Minister also monitors the achievements of regional and territorial authorities under the Resource Management Act, and provides advice and information.

The Otago Regional Council is responsible for the control and management of the effects from the discharge or disposal of waste. The Otago Regional Council considers applications for discharges of contaminants into water and air, and onto land. The Otago

Regional Council also administers aspects of waste management through General Authorisations, notified under Section 22 of the Water and Soil Conservation Act 1967 which are provided for as permitted activities within the Transitional Regional Plan. These include discharges from septic tanks, swimming pools, stormwater, and in certain circumstances, farm wastes.

The Otago Regional Council also monitors the effects of waste treatment and disposal within Otago, and provides advice and information. As part of its regional role in environmental issues, the Otago Regional Council operates a 24 hour Pollution Hotline, to initiate responses to pollution events as they occur. The Otago Regional Council manages and coordinates the clean-up of pollution spills.

The functions of territorial authorities relevant to waste management under Section 31 of the Resource Management Act include:

The establishment, implementation, and review of objectives, policies, and methods to achieve integrated management of the effects of the use, development, or protection of land and associated natural and physical resources of the district;

The control of any actual or potential effects of the use, development, or protection of land, including ... the prevention or mitigation of any adverse effects of the storage, use, disposal, or transportation of hazardous substances and hazardous wastes;

These functions can be achieved through the preparation of district plans, which includes an ability to make rules.

2.8.2 Other legislation and agencies

Outside of the Resource Management Act regional council functions relevant to waste include:

(a) Management of organisms designated as pests under the Biosecurity Act 1993;

(b) Civil defence; and

(c) Powers to establish regional waste disposal facilities for hazardous substances and hazardous wastes, and to contribute to territorial authority works of regional benefit under the Local Government Act 1974.

Outside of the Resource Management Act the functions of territorial authorities relevant to waste include:

(a) Local Government Act 1974 powers relating to:

- Any works of benefit to the district
- Sewage disposal and stormwater drainage
- Regulation of trade waste
- Refuse collection and disposal
- Public health and welfare powers
- Fire prevention
- By-law making powers; and

(b) The Building Act 1991 with particular emphasis on ensuring that buildings are safe and sanitary;

(c) Civil defence;

(d) Dangerous goods;

(e) Dog Control and Hydatids Act 1982; and

(f) Litter Act 1979.

Other agencies with functions relevant to waste include:

(a) The Department of Conservation, particularly in the coastal marine area and conservation estate.

(b) The Occupational Safety and Health Service of the Department of Labour, administering legislation dealing with explosives, dangerous goods, and health and safety in employment.

(c) The Ministry of Health, with a policy making and monitoring role in public health issues.

(d) The Public Health Commission, which is charged with improving and protecting public health and with purchasing public health services. These may be acquired under purchase agreements with the Regional Health Authorities or directly with health providers. The administration of health legislation such as the Health Act 1956, Medicines Act 1981, Toxic Substances Act 1979, and Food Act 1981 is shared by territorial authorities with medical officers of health and health protection officers appointed by the Director General of Health, but employed by

health providers under contract to the Public Health Commission or Regional Health Authorities.

(e) The Ministry of Agriculture administering the Biosecurity Act 1993 and national pest management strategies.

(f) The Fire Service and Police who deal with emergencies involving hazardous substances, dangerous goods and toxic substances. The Police may assist other regulatory agencies in the discharge of their duties and has a law enforcement role which complements the regulatory agencies.

(g) Civil aviation, maritime and land transport authorities are responsible for overseeing and enforcing legislation governing the transport of hazardous substances and hazardous wastes.

This list is not exhaustive, but serves to indicate the range of organisations with an interest in waste issues. It can be expected too, that in the near future, changes will occur in the range of functions carried out by these organisations. For example, the government developed the Hazardous Substances and New Organisms Act 1996 which superseded, in whole or in part, the Animal Remedies Act 1967, Animals Act 1967, Dangerous Goods Act 1974, Explosives Act 1957, Pesticides Act 1979, Plant Variety Rights Act 1987 and Toxic Substances Act 1979. The Hazardous Substances and New Organisms Act 1996 has resource management implications which affects the roles and powers of agencies involved in hazardous substances and hazardous waste management.

2.9 Review and changes

The Resource Management Act provides for this Plan to stay operative for up to 10 years. At the end of that period the Resource Management Act requires a review of this Plan.

Like the environment, resource management is dynamic. Changes will occur. Some of these will be foreseen and intended. Others will not be foreseen and will be unexpected. Some will happen as a consequence of policy decisions and actions contained in this Plan. Others will occur despite the best endeavours of this Plan, and those who seek to administer and implement it.

As changes occur to the environment it will be desirable to make amendments to this Plan in order to respond to new issues and conditions. This can be done either in part by introducing a change to the document, or in full by way of a total review. Any person may apply for a change to a regional plan, or the Otago Regional Council itself may initiate a change to this Plan. Situations which may give rise to the Otago Regional Council initiating a change to this Plan include:

(a) Changes to the law (such as the Hazardous Substances and New Organisms Act);

(b) The results of monitoring the environment;

(c) The results of monitoring the effectiveness of this Plan;

(d) Advances in technology or techniques in the production, recycling, reuse and recovery of wastes; and

(e) Greater knowledge of the effects of waste management practices.

In addition, as the Otago Regional Council prepares other regional plans, on resources such as water and air, matters will likely arise which will result in the need to amend some of the provisions of this Plan. Similarly, as district plans are prepared it may be appropriate to reconsider some of the matters contained within the Regional Policy Statement for Otago and this Plan. Where assessment indicates that alterations are required to the document this will be achieved by introducing a formal change, and adopting the consultative procedures set out in the First Schedule of the Resource Management Act.

2.10 Enforcement

The provisions of this Plan became operative on 1 April 1997, following the consideration of submissions lodged to the Plan, and the resolution of any appeals lodged in response to the decisions of the Council on those submissions.

The Otago Regional Council is responsible for the enforcement and administration of this Plan. This will be achieved through education and by adopting the statutory procedures set out in the Resource Management Act.

Where appropriate the Otago Regional Council is able to enforce the provisions of this Plan by way of abatement notices, enforcement orders and prosecutions.

2.11 Status of activities

The rules within this Plan determine the status of any particular activity and determine whether a resource consent is required before that activity can be carried out. A resource consent is required for any activity which the Plan specifies as being a controlled activity, a discretionary activity or an activity which does not comply with the provisions of the Plan, this being a non-complying activity. The Plan also specifies permitted activities.

2.11.1 Permitted activity

Activities which are specified as permitted activities can occur without the need to obtain a resource consent, if they are able to comply with the conditions stated within the Rule.

2.11.2 Controlled activity

A controlled activity is an activity which the Otago Regional Council will grant a resource consent for. That consent may include conditions relating to the matters which the Otago Regional Council has stated that it will exercise its control over.

2.11.3 Discretionary activity

A discretionary activity is an activity over which the Otago Regional Council has retained its discretion as to whether it will grant the resource consent or not. The Otago Regional Council will, in considering any application for a discretionary activity, be guided by the policies contained within the Plan, the Proposed Regional Policy Statement for Otago and the requirements of the Resource Management Act. Conditions may be included on any resource consent granted.

2.11.4 Non-Complying activity

A resource consent is also required for any activity that would otherwise not comply with this Plan, this being termed a non-complying activity. A resource consent may either be granted or declined.

2.12 Information requirements

Applications for resource consents must comply with the requirements of Section 88 of the Resource Management Act. Additional information may

be required by the Otago Regional Council in order to be able to assess the effects of an application. These general requirements are identified in the rules of this Plan.

2.13 Provision of further information

Pursuant to Section 92 of the Resource Management Act, the Otago Regional Council may at any reasonable time before the hearing of a resource consent application, by written notice to the applicant, require the applicant to provide further information. Due to the variable nature and site-specific aspects of activities associated with waste management it is difficult to define all of the required information until closer investigation of a specific application has been conducted. Accordingly, the applicant may be required to supply further information where it is necessary to enable the Otago Regional Council to better understand the nature of the activity in respect of which the application for a resource consent is made, the effect it will have on the environment, or the ways in which any adverse effects may be mitigated.

2.14 Notification of consents

Whether an application for a resource consent required by the rules of this Plan will be notified or not will be determined by the Council in accordance with Section 94 of the Act. Notification will be in the manner prescribed by Section 93 of the Act.

The Ngai Tahu Claims Settlement Act 1998 (NTCSA) contains statements, called statutory acknowledgements, by Te Runanga o Ngai Tahu, of the particular cultural, spiritual, historic and traditional association of Ngai Tahu with specific areas in the Otago region.

The statutory acknowledgements and the areas to which they relate are set out in the Schedules of the NTCSA.

The effect of the statutory acknowledgements is set out in Part 12 of the NTCSA.

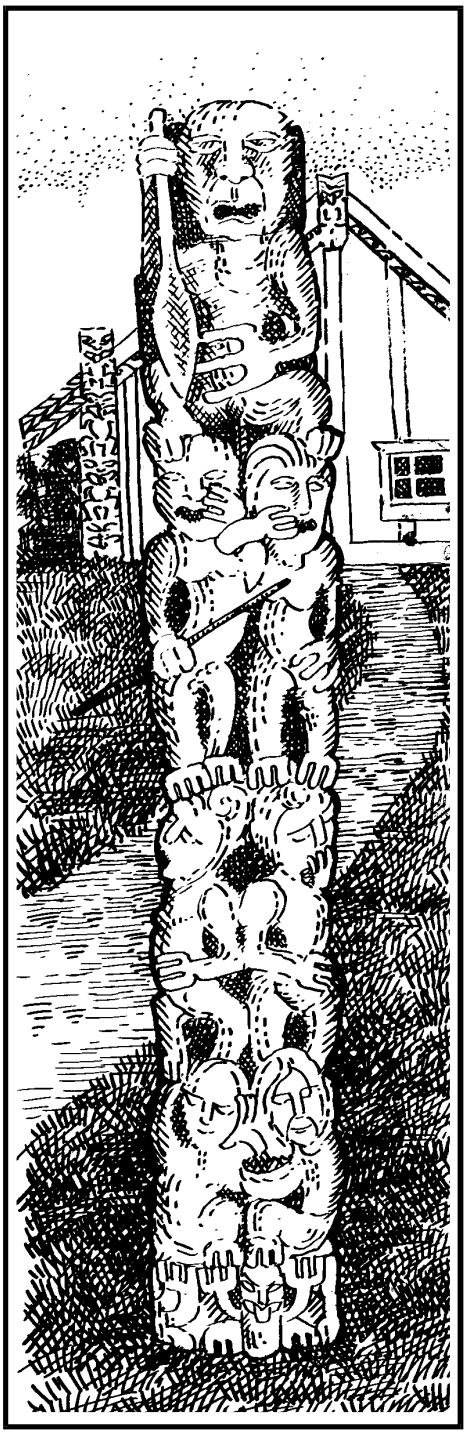
Under Section 208 of the NTCSA, local authorities must have regard to the statutory acknowledgements in deciding whether Te Runanga o Ngai Tahu is an affected person whose written approval must be obtained for a non-notified resource consent application, or must be served with a notified application for a resource consent.

Section 211 of the NTCSA enables Ngai Tahu to cite these acknowledgements in submissions or in proceedings before consent authorities or the Environment Court. A statutory acknowledgement is not binding on the consent authority or Court, but may be taken into account.

This note is for the purpose of public information only and does not form part of the Plan. It is required by Section 220 of the Ngai Tahu Claims Settlement Act 1998.

3

Manawhenua Issues



3.1 Introduction

HE WHAKATAUKI
E hara i te mea
No inaianei te aroha
Na nga tupuna
I tuku iho, i tuku iho

There is no greater thing
than that which is
handed down with love
from the ancestors.

MIHI
Tenei mihi tuatahi ki te Atua te timatanga me te mutunga na nga mea katoa kei runga te whenua me te rangi.

Tenei mihi tuarua ki a tatou tupuna a mua a ra no ratou i tukua mai etahi taoka, tikanga ranei, mo te hanga a te Ao, me te putanga mai a nga punawai tena koutou tena koutou.

Ka mihi hoki ki a koutou ma nga kanohi ora e nga iwi o nga hau e wha, tenei whakaaro pai me aroha ki a koutou katoa.

Firstly, greetings to the creator, the beginning of all things in heaven and on earth.

Secondly, greetings to our ancestors who have gone before, by whom have been conveyed treasured values and ideas that have sustained the generations, and provided guidance in the creation of the world and its resources.

Thirdly, greetings to all people, you who are the living evidence of your ancestors, greetings.

The Manawhenua of Otago are the Kai Tahu. Traditional Kai Tahu resource management practices embody principles that are central to sound waste management and sound use of natural and physical resources.

To the Kai Tahu the environment is the sum of many parts, and each part must be protected from adverse effects of waste treatment and disposal.

As a result of this, Kai Tahu principles in relation to waste management are that:

(a) Recognition be given to the spiritual and customary importance of waahi tapu, (sacred sites) waahi taoka (treasured resources) mahika kai (places where food is produced), wairua (life principle) and mauri (life force) of Kai Tahu.

(b) Essential elements of kaitiakitanga (that provides the basis for the Kai Tahu view on waste management) should be embodied in the present day management of Otago's waste stream.

3.1.1 Mauri

Kai Tahu maintain that all elements of the environment possess a mauri or "life force", be they mountain, flora, or fauna, their quality and sanctity is to be carefully protected from degradation. The mauri is an extinguishable value, the loss of which is recognised by its degraded state, the loss of life supporting values, and at worst, irreversible breakdown.

Mauri binds the spiritual and physical elements of resources together, enabling their existence within the bounds of their own creation. When something dies, the mauri is no longer able to bind the physical and spiritual elements together and thereby give life.

Without mauri, nothing can survive. To Kai Tahu it is essential therefore that the mauri not be lost and not be degraded.

3.1.2 Treaty of Waitangi

The Kai Tahu claim to the Waitangi Tribunal makes specific reference to the loss and alienation of the Iwi from many of their traditional taoka, through pollution and inappropriate management of the natural and physical resources. Manawhenua claim that customary rights and responsibilities over their taoka have never been extinguished.

It is important that decisions made under the Resource Management Act be made with an awareness of these issues where they exist, and, as far as possible, care should be taken not to prejudice the relationship of Manawhenua with ancestral taoka, nor further exacerbate matters which are the subject of Treaty of Waitangi claims.

3.1.3 Environment

All elements of the environment possess their own mana (importance) independent of human influence. To Kai Tahu, the mana of a resource is regarded in the same way as the mana of an important person, and treated with equal respect.

Whakapapa is imbued with powerful values that bind the people to the natural and physical resources. In tradition the very source of whakapapa took its beginnings from water, hence the spiritual importance of water to the culture of Kai Tahu; from water came life.

Kai Tahu consider that their beginnings from the earliest times are intertwined with the origins of all natural resources, a spiritual realm. All resources are regarded as taoka, for which each generation is custodian for the generations to come.

Some aspects and features of the environment are endowed with tapu, such places provide cultural and tribal markers which, together with whakapapa, mesh the people with the traditional landscape, providing both physical, historic, spiritual and emotional links.

Kai Tahu consider that past waste management practices have failed to acknowledge or take into account Maori values, and consequently Kai Tahu have been separated from taoka through waste practices.

3.1.4 Kaitiakitanga

To Iwi, the importance of *maintaining equilibrium* of the environment is central to the role of kaitiakitanga. Each generation has an obligation to exercise guardianship. Kaitiakitanga need not be in conflict with development but, in essence, seeks to protect and preserve the special characteristics of the various elements of the environment, to recognise the holistic nature of the natural world of which people are but one part, and to protect the spiritual and physical wellbeing of one's own.

The exercise of kaitiakitanga recognises the following broad principles of tikanga (lore):

- ***Taha wairua:*** The spiritual dimension that binds the people to the taoka through tradition and history;

- ***Taha Hinengaro:*** Significance to the mental wellbeing of the Iwi through the ability to exercise cultural customs, traditional knowledge and practice custodial care of the taoka; and
- ***Taha Tinana:*** The practical nourishment of the physical and economic needs of communities from the natural resources.

3.1.5 Management

Maintaining the balance between the main elements of kaitiakitanga is central to the objectives of Maori environmental management systems. This is governed by the use of the concepts of:

- ***Kawa:*** protocol and customs, learnt from childhood;
- ***Tapu:*** spiritual protection;
- ***Noa:*** unrestricted; and
- ***Rahu:*** restrictions for a limited or indefinite period.

These concepts are an essential component of Te Ao Maori (the Maori world) and the belief system of Kai Tahu. Every member of the community understood and shared the responsibility of living by these customs to avoid adverse effects on the environment.

3.2 Manawhenua issues

The Manawhenua consider that the following resource management issues should be dealt with in this Plan:

3.2.1 Kai Tahu values have not always been recognised and considered when deciding on options for waste management.

Explanation
Areas of significance to Kai Tahu such as waahi tapu, taoka and mahika kai must be protected from the adverse effects of waste discharges in order to maintain the cultural and spiritual integrity of these places. The Treaty of Waitangi establishes a partnership in the management of Otago's resources which needs to be recognised in the management of wastes.
Objectives 3.3.3, 6.3.2
Policies 4.4.1, 5.4.1, 6.4.12, 7.4.1

3.2.2 There is a continuing depletion and contamination of areas of traditional mahika kai resources.

Explanation
The continued degradation of mahika kai resources through inappropriate waste management indicates a lack of implementation and monitoring of performance standards designed to ensure that the quality of discharges remains within levels acceptable to mahika kai values.
Objectives 3.3.1, 3.3.2
Policies 4.4.1, 5.4.1, 6.4.12, 7.4.1

3.2.3 Decisions on waste management are made in isolation, without regard to a holistic approach and reference to Manawhenua values.

Explanation
Decisions on the management of Otago's wastes that are made in isolation from information relevant to Iwi values fail to provide a comprehensive framework for ensuring that access to resources, such as water, for traditional uses is maintained or enhanced.
Objective 3.3.4
Policies 4.4.1, 5.4.1, 6.4.12, 7.4.1

3.2.4 The loss or degradation of mauri from many of Otago's natural and physical resources is occurring as a result of inappropriate waste disposal or containment.

Explanation
The loss of the mauri from natural and physical resources represents both spiritual and physical loss to Kai Tahu, leading to alienation from specific resources, for example, being unable to take food for human consumption, or to be confident that the food chain is not contaminated. The loss of mauri constitutes a loss to present and future generations.

The loss of living taoka (resources) or tapu, (treasures) constitutes a direct loss to the Manawhenua and indirectly, the wider community. Restoration of the mauri (life force) may be achieved provided the causes of degradation are removed or avoided.
Objective 3.3.2
Policies 4.4.1, 5.4.1, 6.4.12, 7.4.1

3.2.5 There is an apparent lack of respect for Takaroa (guardian of the waterways).

Explanation
Cultural concepts have been absent from waste management practices in the past. Waterways can be likened to blood vessels in the human body. The consequences of injecting harmful substances are no different for either.
Objective 3.3.1
Policies 4.4.1, 5.4.1, 6.4.12 , 7.4.1

3.2.6 There is an apparent lack of respect for Papatuanuku (Mother Earth).

Explanation
General attitudes to the land resource indicates a lack of understanding of the values that Kai Tahu have for the land. Land is likened to the life-giving body of the woman Papatuanuku. It is therefore culturally insensitive to dispose of waste inconsiderately about the land.
Objective 3.3.1
Policies 4.4.1, 5.4.1, 6.4.12, 7.4.1

3.2.7 Natural and physical resources are being contaminated by the discharge of pollutants from and associated with wastes.

Explanation
The long term build-up of contaminants in and on some land and water sites is of concern to Kai Tahu and counter to the cultural concepts of sustainable resource management. Kai Tahu consider that the community has been slow to grapple with waste issues, preferring to adopt an "out of sight, out of mind" attitude.
Objective 3.3.1
Policies 4.4.1, 5.4.1, 6.4.12, 7.4.1

3.2.8 Kai Tahu have been separated from their taoka (resources) by waste management practices that are unsympathetic to cultural concepts or the wishes of the Manawhenua .

Explanation
Kai Tahu have witnessed the gradual degradation and loss of resources important to them, especially mahika kai and places of historic and spiritual significance through inappropriate waste management.
Objective 3.3.3
Policies 4.4.1, 5.4.1, 6.4.12, 7.4.1

3.2.9 There is an apparent lack of concern for the environment and heritage of future generations in current approaches towards waste management.

Explanation
Manawhenua are long term residents, having endured over 1,000 years. As a result, visions are framed in general terms of welfare and heritage. Many methods of waste disposal have compounding and increasing adverse effects on the environment. To Kai Tahu, today's waste management practices appear to incorporate only short term goals and fail to embrace long term strategies protecting waahi tapu, waahi taoka and the environment for future generations.
Objective 3.3.3
Policies 4.4.1, 5.4.1, 6.4.12, 7.4.1

3.2.10 Mana tikanga (long living custom and values) has suffered, through unfamiliarity or ignorance, from inappropriate waste management practices.

Explanation
Kai Tahu mana (authority or influence) has suffered due to indifference and lack of recognition given to the cultural values of the indigenous culture of the region. Mana is intrinsically linked with upholding customs and exercising kaitiakitanga (guardianship) of a kind which is beneficial to people and their host environment.
Objective 3.3.1
Policies 4.4.1, 5.4.1, 6.4.12, 7.4.1

3.2.11 Kai Tahu have been isolated from decisions on waste management.

Explanation
Kai Tahu consider that contrary to the provisions of the Treaty of Waitangi, they have been excluded from the process of decision-making in Otago and have been forced to endure the lowering of their mana through being unable to exercise kaitiakitanga and related responsibilities.
Objective 3.3.4
Policies 4.4.1, 5.4.1, 6.4.12, 7.4.1

3.2.12 Information on sites used for treatment and disposal of wastes is inadequately coordinated and not available to the public.

Explanation
A lack of information, for example, whether areas of mahika kai are degraded through waste disposal practices, compromises Iwi access to resources for traditional purposes.
Objective 3.3.2
Policies 4.4.1, 5.4.1, 6.4.12, 7.4.1

3.3 Manawhenua waste objectives

3.3.1 To ensure that the quality of Otago's natural and physical resources is not degraded by wastes.

Explanation
The Otago Regional Council recognises and accepts that not only can waste degrade the environment, but where degradation occurs it is contrary to the values of Kai Tahu and has impacts on their traditions. It is desirable therefore that appropriate waste strategies are adopted to minimise the need to dispose of waste, and to prevent the contamination of natural and physical resources.
Policies 4.4.1, 5.4.1, 6.4.12, 7.4.1

3.3.2 To protect the mauri of Otago's natural and physical resources and restore the mauri of waste-affected resources.

Explanation
Mauri is an indicator of environmental health, and it is appropriate to incorporate this concept into this Plan, and to have regard to it in considering proposals for the managing of waste. Where the mauri of resources has been adversely effected, consideration is required of the means that may be available to restore that mauri.
Policies 4.4.1, 5.4.1, 6.4.12, 7.4.1

3.3.3 To ensure waste management practices are compatible with Kai Tahu values.

Explanation
The practices of Kai Tahu, based on traditional values, avoid contaminating food producing resources, sacred and important places and water. Implementing these values will result in the sustainable management of natural and physical resources, while

meeting the statutory requirements of the Resource Management Act.
Objective 6.3.2
Policies 4.4.1, 5.4.1, 6.4.12, 7.4.1

3.3.4 To adopt a holistic approach to waste management which integrates Kai Tahu cultural concepts.

Explanation
The Resource Management Act requires the adoption of a holistic approach to the managing of waste. Within that framework it is appropriate and necessary to consider values important to Kai Tahu, for example, by avoiding archaeological sites, mahika kai, urupa and spiritually significant places when siting waste disposal sites, as well as protecting the integrity of the receiving environment. Positive involvement of Kai Tahu at an early stage in any planning and decision making affecting resources will substantially reduce the risk of offending cultural values.
Policies 4.4.1, 5.4.1, 6.4.12, 7.4.1

Principal reasons for adopting Manawhenua waste objectives

Manawhenua concerns with waste management develop from cultural values bestowed on natural and physical resources by the Tangata Whenua, through traditional practices of settlement, food gathering and lore. The indigenous cultural ties associated with natural and physical resources rely on waste management practices that do not degrade the environment.

Inappropriate waste management can lower the quality of enjoyment of resources and restrict access to traditional uses of the resources by Otago's indigenous people. The Manawhenua objectives adopted in this Plan reflect and acknowledge the close ties Kai Tahu have with Otago's natural and physical resources. By adopting these objectives the entire Otago region will benefit, not just Kai Tahu. There will be increased access to resources that are not compromised by contamination or degradation through inappropriate waste management.

The policies and methods to give effect to these objectives are contained in Chapters 4 - 8 of this Plan.

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.

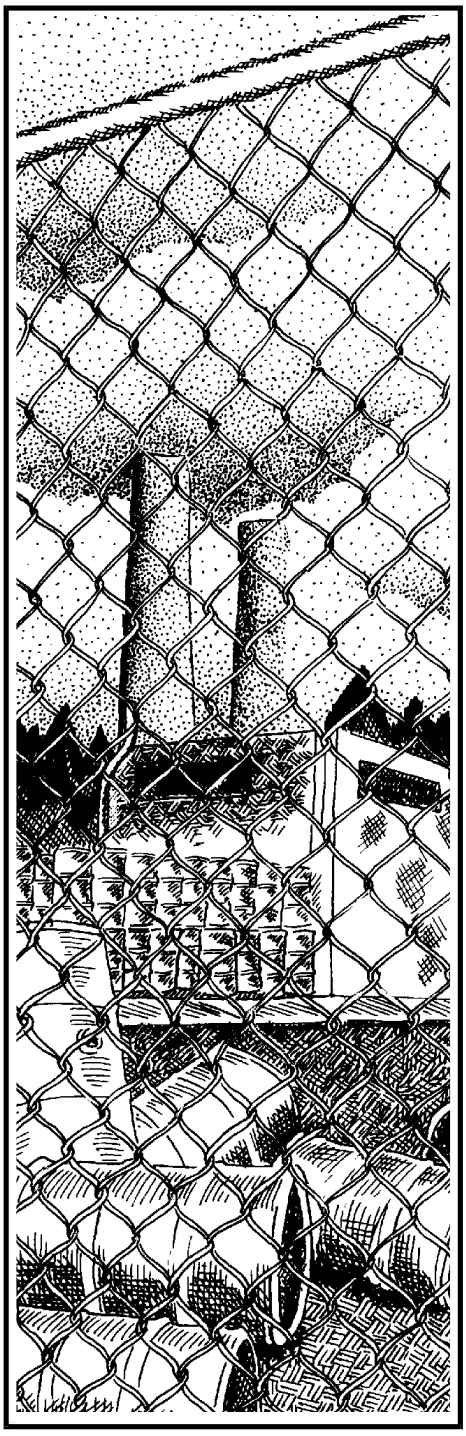
4.6.2 A reduction in the quantities of waste being disposed of into the environment.

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.

5

Contaminated Sites



5.1 Introduction

For the purpose of this Plan, a contaminated site is a site at which hazardous substances occur at concentrations above background levels and where assessment indicates it poses, or is likely to pose an immediate or long term hazard to human health or the environment. This Chapter of the Plan considers the discharge of hazardous substances or wastes onto or into land or water, and issues associated with remedying or mitigating the adverse effects of those contaminant discharges. While operating landfills may contain hazardous wastes, they are considered in Chapter 7 of this Plan.

Contamination can occur as a result of industrial agricultural or commercial activities, by accident, and at sites used for the processing, storage or disposal of hazardous substances or hazardous wastes.

Sites can be contaminated some distance from the source as a result of the discharge of hazardous wastes.

Contaminated sites can include land used for timber treatment, tanning, waste disposal, agricultural chemicals, gasworks facilities, mining, paint and pharmaceutical manufacturing, hydrocarbon storage and distribution and railway yards.

Over 300 contaminated sites were identified in Otago in a survey completed in 1992 by Worley Consultants ("*Potentially Contaminated Sites in New Zealand: A Broad Scale Assessment"*). Of those sites, seventy-seven were existing or closed timber treatment plants.

Potentially a further 200 contaminated sites are identifiable. These include sites where hazardous substances have been stored, such as service stations and gasworks. There are undoubtedly other sites which have not yet been identified.

The environmental effects associated with contaminated sites can include loss of vegetation and habitat, and threats to local communities and ecosystems. The value of land and its potential for rural, urban or recreational uses can be markedly reduced by the adverse environmental effects of contaminated sites.

Other concerns associated with contaminated sites arise from groundwater contamination, residential development of former industrial, commercial or agricultural land, and the abandonment of industrial land or waste disposal sites. Such sites need to be assessed prior to development for other uses, especially for residential or agricultural purposes.

The Resource Management Act provides for the management of contaminated sites at five levels:

1. The discharge of contaminants to land, air and water is regulated through regional plans, discharge permits and illegal discharge offences. Unless provided for in a regional plan, discharges require consent by virtue of the provisions of Section 15 of the Resource Management Act.

2. Any deposit of a substance in, on or under land, and the carrying out of activities which disturb that land, is deemed by Section 9 of the Resource Management Act to be a use of land, which can be managed by a regional council, where it gives rise to an issue of regional significance.

3. Under the provisions of Section 314 of the Resource Management Act the Environment Court may require the owner or occupier of any land to take action, that in the opinion of the Court, is necessary to avoid, remedy, or mitigate any actual or likely adverse effect on the environment or to ensure compliance by or on behalf of that person with the Resource Management Act, any regulations, a rule in a plan or a proposed plan, a requirement for a designation or a heritage order, or a resource consent.

4. In certain cases where immediate preventative or remedial action is required to prevent a likely adverse effect on the environment, emergency works can be undertaken, and any reasonable expense incurred in doing so can be recovered from the owner of the site.

5. A general duty to avoid, remedy, or mitigate adverse effects, as provided by Section 17 of the Resource Management Act.

Central and local government agencies have statutory powers to deal with contaminated sites under other legislation, such as the Toxic Substances Act 1979 and the Health Act 1956. These provisions however are not comprehensive, and as a consequence the Otago Regional Council has assumed the principal responsibility for dealing with contaminated sites within Otago. The Otago Regional Council will, in carrying out its responsibilities, work together with other government agencies and territorial authorities and the landowner or occupier of the contaminated site.

5.2 Contaminated sites issues

5.2.1 The number and location of many contaminated sites in Otago is unknown.

Explanation
In the past, poor records have been kept indicating where substances that give rise to contamination have been stored, used or disposed of. In part this arises because in the past it was not known that future problems would arise. As a consequence, the location of contaminated sites is not documented in any reliable manner, and it is not known where all contaminated sites are, and where contaminated sites could occur in the future. Once found, there is presently no means of ensuring that future landowners are aware of the nature of contamination that has taken place, the extent of any work carried out to remedy or mitigate the contamination, and the effects on the future range of activities that can be carried out on the site.
Objectives 5.3.1, 5.3.2
Policy 5.4.2, 5.4.5

5.2.2 Contaminated sites can be both an immediate and long term threat to the environment.

Explanation
Contamination of sites in Otago has occurred over many years and is due to many causes. The presence of some contaminants can pose both immediate or long term threats to human health, plants and animals, and to the amenity of the land and water. Certain contaminants may also have a detrimental impact on the integrity of building and service structures. The adverse effects that arise will differ in every case, and from site to site in terms of their nature, scale, hazard and importance. Given the number and distribution of contaminated sites within the region, it is apparent that the identification and investigation of those sites, and the carrying out of remedial and mitigating works, where required, is a matter of regional significance.
Objectives 5.3.1, 5.3.2
Policies 5.4.1 - 5.4.5

5.2.3 The storage and use of hazardous substances, and the storage and disposal of hazardous wastes may have both on-site and off-site environmental effects.

Explanation
While most effort to date has focused on locating and treating sites previously contaminated, it is also necessary to ensure that future contamination of sites is avoided or, where it does occur, the effects are remedied if possible, or mitigated.
Objectives 5.3.1, 5.3.2
Policies 5.4.1 - 5.4.5

5.3 Contaminated sites objectives

5.3.1 To avoid, remedy or mitigate any adverse effects of contaminated sites.

Explanation
Contamination can reduce the ability of resources to support life. The life-supporting capacity of Otago's resources must be protected and enhanced to ensure future generations may enjoy the potential of these resources. Effective treatment of these sites requires a knowledge of past practices, types of chemicals used, and the location of the activities which may have resulted in the contamination. Where contaminated sites are identified, they should be contained and managed in such a way that any adverse effects on the surrounding land, water or air resources are avoided, remedied or mitigated.
Policies 5.4.1 - 5.4.5
Methods 5.5.1 - 5.5.7
Rule 5.6.1

5.3.2 To avoid further site contamination.

Explanation
Improved handling and disposal of hazardous substances and hazardous wastes, and better management of on-going industrial, agricultural or commercial activities will decrease the likelihood of site contamination. Management practices must prioritise the prevention or minimisation of site contamination.
Policies 5.4.1 - 5.4.5,6.4.1
Methods 5.5.1 - 5.5.7

Principal reasons for adopting contaminated sites objectives

Contaminated sites can be classed into two types; those which exist and have already been identified, or have yet to be found, and those which could occur in the future. It is sound resource management planning to have separate objectives for each. The first, to respond to an existing problem, and the second to seek to avoid the creation of problems in the future.

5.4 Contaminated sites policies

5.4.1 To recognise and provide for the relationship Kai Tahu have with Otago's natural and physical resources through:

(a) Carrying out investigations of, and works to remedy and mitigate, contaminated sites in a manner which takes into account Kai Tahu cultural values;
(b) Protecting waahi tapu and waahi taoka, and access to them by Kai Tahu, from the effects of contamination;
(c) Acknowledging that future generations will inherit the results of work carried out to remedy or mitigate contaminated sites; and
(d) Maintaining consultation with Kai Tahu on issues relating to site contamination.

Explanation
A holistic approach to the management of contaminated sites, and to discharges that can result in contamination, requires consideration of Kai Tahu values. By doing so, the mauri of natural and physical resources, and sites of significance to Kai Tahu, will be protected and enhanced. By continuing consultation with Kai Tahu about contaminated sites, and by having regard to Iwi resource management plans, the Manawhenua will be able to give effect to customary kaitiakitanga.
Method 5.5.7

5.4.2 To locate and investigate contaminated sites in Otago.

Explanation
Contaminated and potentially contaminated sites have been detected throughout the region. Locating these sites and other sites, identifying the source of contamination, and investigating their past history will require coordination of expertise and effort on a regional basis. In some instances, it will be landowners, occupiers or the public who will identify potentially contaminated sites. Due to the number of contaminated sites in the Otago region it will be necessary to prioritise the order of contaminated site investigations.
Methods 5.5.1 - 5.5.3

5.4.3 To contain contaminated sites and rehabilitate them to the extent that is practicable having regard to the use to which the land is to be put.

Explanation
When a contaminated site is identified, it will be necessary to determine:

(a) the degree to which contaminants are contained within that site; and
(b) risks posed by the contaminated site.

As a first priority it will be necessary to ensure that contaminants are contained within the site, and are not adversely affecting water or air. As a second priority consideration will be needed to identify rehabilitation that can take place, having regard to the risks posed by the contaminant, the use to which the land is to be put, and the practicalities of rehabilitation.

The Otago Regional Council will seek to work with landowners and occupiers to encourage action which may be appropriate to be carried out. If the local authority or a consent authority is not satisfied with the degree of action taken, they can, if they wish, apply to the Environment Court for an enforcement order under Section 314 of the Resource Management Act, requiring the landowner or occupier to carry out work which the Court considers necessary to avoid, remedy or mitigate any actual or likely adverse effects on the environment.

A long term monitoring programme may be required with regard to some contaminated sites to determine whether any adverse environmental effects arise in the future.
Methods 5.5.2 - 5.5.4, 5.5.6

5.4.4 To apply the Australia and New Zealand Conservation Council (ANZECC) "*Guidelines for the Assessment and Management of Contaminated Sites*" (January 1992) as a guide to determine the most appropriate course of action for a particular contaminated site.

Explanation
Whether clean-up is required, and to what extent, depends on the nature and scale of contamination, the existing land use, potential land uses, and on the actual or potential impact on the surrounding environment. The Guidelines draw a distinction between contamination which may require clean-up activity to remedy the polluting effects and those sites where no work is required.
Method 5.5.2

5.4.5 To prepare and maintain a register outlining details of sites which are contaminated.

Explanation
As the Otago Regional Council obtains information on contaminated sites this information can be included on a register, and made available for use by territorial authorities and the public.
Methods 5.5.2, 5.5.3

Principal reasons for adopting contaminated sites policies

In order to meet the purposes of the Resource Management Act, the Otago Regional Council considers that action is required to respond to the resource management issues that arise within contaminated sites. For the reason that contaminated sites can adversely affect the environment, and its ability to sustain life, it is considered inappropriate and irresponsible to do nothing. Existing contaminated sites must be found. When they are located an assessment will need to be carried out in an appropriate manner to determine what action, if any, should then be taken. Until such an assessment is undertaken no decision can be made regarding site safety, and any action that may be required. The purpose and intent of policies 5.4.1 and 5.4.2 is to achieve these ends. The Otago Regional Council will seek to have work carried out to ensure that contaminants are contained on affected sites, and sites are rehabilitated to the extent practical to provide for their future use, and that is the basis of Policy 5.4.3.

Policy 5.4.5 seeks to ensure that any information held by the Otago Regional Council with regard to sites which are found to be contaminated is available to territorial authorities and the public. In determining whether any action should be taken, once a contaminated site is located, regard will need to be given to the actual and potential effects on the environment. An independently prepared and acknowledged technical guideline should be used to avoid debate between landowners, the Otago Regional Council and any other persons who may have an interest. To date, the only internationally acceptable guideline is that prepared in 1992 by ANZECC and for that reason it will be used by the Otago Regional Council as a basis for assessment, and this is the rationale of Policy 5.4.4.

Where similar processes are duplicated by sector groups, it is desirable to adopt standards which are suitable for that particular sector group. These can take the form of guidelines or codes of practice. Codes of practice adopted by industry are a more effective means, as the industry concerned undertakes to ensure that members and operators implement the agreed standards. Codes of practice result in better protection for the environment and are preferred by the Otago Regional Council.

5.5 Contaminated Sites Methods

In meeting the objectives and carrying out the policies relating to contaminated sites the Otago Regional Council will:

5.5.1 Conduct investigations, and respond to information supplied by the public, to identify contaminated sites in Otago.

5.5.2 When sites which may be contaminated are located:

(a) Consult with the landowner and occupier;
(b) Request a preliminary investigation into the nature and extent of contamination, including its source;
(c) Encourage, and in cases where resource consents are submitted, require use of the ANZECC "Guidelines for the Assessment and Management of Contaminated Sites", (January 1992) to determine appropriate action. In carrying out such an assessment regard should be had to the "National Rapid Hazard Assessment for Contaminated Sites";
(d) Encourage the landowner or occupier to carry out any works that may be required to remedy or mitigate any adverse environmental effects, and to monitor the site. In cases where no action is taken, and where actual or potential adverse effects may arise, consideration may be given to seeking an enforcement order pursuant to Section 314 of the Resource Management Act;
(e) Require resource consents where:
    (i) Contaminants are continuing to be discharged;
    (ii) Contaminants are emanating from the site, or entering water; or
    (iii) Works are to be undertaken disturbing the site, which could result in adverse effects arising.
(f) Where appropriate, include it on the Otago Regional Contaminated Sites Register; and
(g) Remove sites from the Otago Regional Contaminated Sites Register which cease to have any actual or likely adverse effects on the environment.

5.5.3 Compile and maintain an Otago Regional Contaminated Sites Register (as confirmed by Method 5.5.2) containing the following information:

(a) The location and legal description of the site;
(b) The nature and extent of contamination;
(c) Any work carried out, or to be carried out, to remedy or mitigate any adverse environmental effects;
(d) Any conditions imposed on resource consents relating to work being carried out on the site;
(e) Details of monitoring to be undertaken;
(f) Any restrictions applying to the use of the land; and
(g) Any other information the Otago Regional Council considers relevant.

Copies of the Register will be supplied to territorial authorities for the express purpose of enabling incorporation of details onto Land, Property and Project Information Memoranda; and ensuring that in the administration of district plans regard is had to any site contamination.

5.5.4 Encourage territorial authorities to develop appropriate resource management techniques (eg district rules) in order to enable activities to be carried out without land use consents where practicable to remedy and mitigate the adverse environmental effects of contaminated sites, and to avoid future contamination of sites.

5.5.5 Adopt appropriate resource management techniques in any regional plans that are prepared, in order to avoid, remedy and mitigate the adverse effects of the discharge of contaminants.

5.5.6 Initiate, or support, the preparation and adoption of codes of practice, and education programmes that will prevent the occurrence of contaminated sites.

5.5.7 Maintain a consultation protocol with Manawhenua on the approach and practices being adopted by the Otago Regional Council in dealing with contaminated sites. This will include providing information on potentially contaminated and contaminated sites.

Principal reasons for adopting contaminated sites methods

In order to achieve the objectives and policies set out above it will be necessary for a number of methods to be adopted, ranging from supplying information to regulation. By itself no single method will achieve the objectives stated above, but together there is an opportunity for that to be done.

5.6 Contaminated site rules

5.6.1 Hazardous wastes at contaminated sites (discretionary activity)

1. The disturbance of land; or

2. The discharge of hazardous waste into water; or

3. The discharge of hazardous waste onto or into land in circumstances that may result in that hazardous waste (or

any other hazardous waste emanating as a result of natural processes from that hazardous waste) entering water; or

4. The deposit of any hazardous waste, in, on or under land; or

5. The discharge of hazardous waste into air at or from a contaminated site;

is a discretionary activity.

5.6.1.1 Information requirements

In addition to the information required by Section 88 of the Resource Management Act, the following information is required to be submitted with an application for a resource consent under this rule:

(a) An assessment in terms of the ANZECC "Guidelines for the Assessment and Management of Contaminated Sites" (January 1992) providing reasons why no remedial or other action should be taken; and

(b) An environmental monitoring programme to assess the environmental effects of contaminants on the site.

A separate resource consent may also be required from the relevant territorial authority.

Principal reasons for adopting contaminated sites rules

Under the provisions of Sections 9(3) and 15 of the Resource Management Act no person may undertake any activity on contaminated land, or discharge any hazardous waste in, on or under the land in a manner which contravenes a rule in a regional plan or proposed regional plan unless the activity is expressly allowed by a resource consent, or is an existing use allowed by Section 10 or 10A of the Resource Management Act.

Hazardous wastes are the wastes most likely to restrict the use of land or adversely effect the environment, and as a consequence it is desirable that consideration be given to:

(a) Whether any remedial work should be carried out;

(b) Monitoring for adverse effects; and

(c) The means by which future owners of the site can be made aware of the deposit on the land, and the effects of that deposit. In addition to inclusion on the Otago Regional Contaminated Sites Register may be appropriate to record relevant information on the title of the property.

5.7 Anticipated environmental results

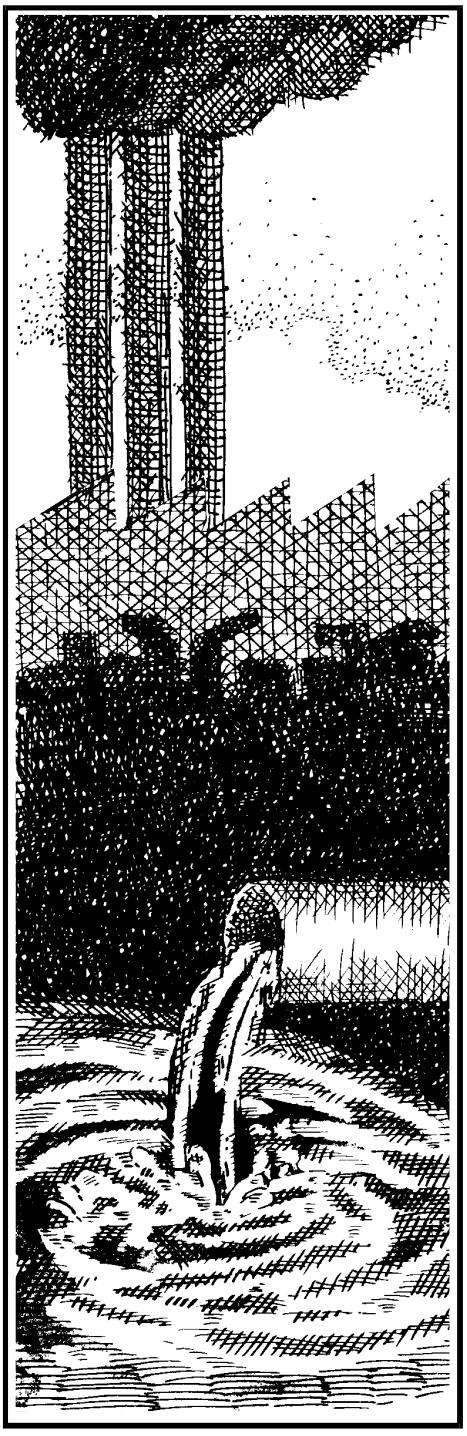
5.7.1 Contaminated sites of risk to the environment are located and assessed.

5.7.2 Immediate and long-term protection of the environment from contaminated sites is achieved.

5.7.3 New contaminated sites are not created.

6

Hazardous Substances and Hazardous Wastes



6.1 Introduction

Hazardous substances are substances which impair human, plant or animal health, or which may adversely affect the health or safety of any person or the environment, whether or not they are contained in or form part of any other substance or thing. Hazardous waste includes hazardous substances which have not been used and require disposal, the residue of hazardous substances which have been used, and require disposal, and waste material containing hazardous substances.

Hazardous substances, while posing a potential threat to the environment can be of benefit to society. They include pesticides, batteries, cleaners, printing inks, petrol, oil and paint, and are used by local businesses in the process of manufacturing products or providing services.

Hazardous substances are more of a problem after use, either when surplus amounts are stored inappropriately, or are to be disposed of. It is at this time that there is a greater risk of adverse effects on the environment, and for that reason the Otago Regional Council considers that it is more important to focus on the storage, transportation and disposal of hazardous wastes than on hazardous substances. However, reducing the use of hazardous substances where practical alternatives exist, will assist in reducing levels of hazardous waste.

6.1.1 Roles of agencies

The management of hazardous substances and hazardous wastes is a very complex area. A large number of agencies have responsibilities at different stages of the life cycle of hazardous substances and there is little coordination between them.

Hazardous substances are presently regulated under the Explosives Act 1957, administered by the Occupational Safety and Health Service of the Department of Labour, the Dangerous Goods Act 1974, administered by territorial authorities, the Toxic Substances Act 1979, administered by the Toxic Substances Board, and the Pesticides Act 1979, administered by the Pesticides Board. Some hazardous substances are regulated under the Animal Remedies Act 1967, and administered by the Animal Remedies Board.

These statutes are to be replaced by the Hazardous Substances and New Organisms Act 1996. The aim of the proposed Act is to provide a comprehensive and consistent approach to the management of all hazardous substances and new organisms. It establishes a new statutory body, the Environment Risk Management Authority (ERMA) to assess and develop controls for the importation, manufacture, development, and release within New Zealand of hazardous substances and new organisms.

The new body was foreshadowed in Part XII of the Resource Management Act. This set up a body called the Hazardous Control Commission. The body was never formally established and Part XII of the Resource Management Act never came into force.

Under the Resource Management Act, territorial authorities and regional councils have responsibilities for controlling the use of land related to hazardous substances. Section 62(1)(ha) of the Resource Management Act requires that regional policy statements shall state for the region or any part of the region, which local authority shall have responsibility within its own area for developing objectives, policies and rules relating to the control of the use of land for the prevention or mitigation of any adverse effects of the storage, use, disposal and transportation of hazardous substances, and may state particular responsibilities for particular hazardous substances; but if no responsibilities for hazardous substances are identified in the regional policy statement the regional council shall retain responsibility for the hazardous substance.

In terms of Section 62(1)(ha) of the Resource Management Act, the Regional Policy Statement for Otago indicates that:

(a) Territorial authorities have responsibility within their own areas for the preparation of objectives, policies and rules relating to the control of the use of land for the purpose of the prevention or mitigation of any adverse effects of the storage, use, disposal or transportation, with respect to all hazardous substances.

(b) The Otago Regional Council, as appropriate, through a regional plan, will develop objectives, policies, rules and other methods relating to the use of land for the purpose of the prevention or mitigation of any adverse effects of the storage, use, disposal and transportation of hazardous substances regarding:

- The location of hazardous facilities or pipelines for the bulk conveyance of hazardous substances in relation to groundwater infiltration areas, or in close proximity to surfacewater resources, or in close proximity to the coastal marine area, or on soils particularly valued for their primary productive capability; or
- Situations where the actual or potential effects may be of regional significance.

6.1.2 Types of hazardous wastes

Typical types of hazardous waste identified in the Otago region include:

6.1.2.1 Unused agricultural / horticultural chemicals

Unused agricultural/horticultural chemicals (agrichemicals) may be stored on farms, orchards, nurseries, or in urban areas. These have the potential to cause environmental damage if containers are broken or poorly sealed. Unlabelled containers are also a problem.

It is difficult to accurately assess the amount and types of unwanted agrichemicals within Otago. Most chemicals are freely available and quantities dispersed throughout the region are rarely verifiable. Also, some of the chemicals being stored long term may actually be used at some time in the future.

6.1.2.2 Waste oil

Waste oil accounts for possibly the largest quantity of low toxicity waste generated. All motor vehicle users generate waste oil and it is also produced wherever machinery is used. Oil has adverse environmental effects on any receiving waters or land. The toxicity of oil derives from heavy metal additives or combustion products.

The Waste Lubricating Oil Survey of Otago (Otago Regional Council 1991) estimated that 700,000 litres of waste oil are generated in Otago annually. Of this, 250,000 litres are re-refined for fuel, and a further 200,000 litres are re-refined for lube use. Due to the availability of cheaper overseas oil the volume re-refined for lube use in Otago has significantly decreased over recent years. There are also problems in the refining process, as disposal of acid tar is required.

Over 200,000 litres of waste oil per year is disposed of by inappropriate or unknown methods, or is being stored prior to treatment or disposal. Waste oil has been disposed of into the ground, burnt, or spread over roads as a dust suppressant.

Re-refining waste oil for use as a fuel for industrial use can potentially use much of the waste oil produced in the South Island.

6.1.2.3 Medical wastes

The composition of medical waste has changed in recent years owing to changes in surgical and clinical procedures as well as an increase in the use of disposable items with sterile packaging. The increase in the use of disposable items can be attributed to concerns about infection and the fact that disposable items are generally cheaper to purchase than reusable items.

Medical wastes are defined by the Health Care Waste Management Standard NZS 4304:1990 into the following categories:

(a) General medical wastes - These are non-problematic, being similar to domestic wastes. They are divided into ordinary and kitchen wastes;

(b) Special medical wastes - These are hazardous, or aesthetically obnoxious, and require special attention to ensure safe disposal. They include:

  (i) anatomical waste including any associated swabs and dressings;

  (ii) soiled dressings and contaminated wastes;

  (iii) materials other than those to be recycled;

  (iv) disposal items such as syringes, hypodermic, and plastic articles such as probes, tubes, urine containers, bed pans, gloves, masks, syringe bottles, broken glass, etc;

  (v) sharps such as needles, scalpels, razor blades etc;

  (vi) specific wastes needing special disposal methods;

  (vii) wastes from laboratories and post-mortems waste other than that classified in the first three items above;

  (viii) pharmaceutical and chemical wastes; and

  (ix) wastes other than the above that are defined in Appendix A of NZS 4304:1990.

(c) Cytotoxic wastes (affects cell division processes); and

(d) Radioactive wastes.

These wastes are produced by a range of facilities including hospitals, doctors' surgeries, dental surgeries, blood transfusion centres, medical research establishments, nursing homes, private homes where patients are being treated, pharmacies, veterinary clinics and boarding kennels. The major generators of this waste in Otago are hospitals. Most waste from hospitals and dental surgeries and some waste from doctors' surgeries is collected and disposed of by high temperature incineration. Medical wastes not collected are disposed of into general refuse.

Since the late 1980s, high temperature incineration has been the favoured treatment for special wastes in Otago. At the time of its introduction it was the only adequate treatment technology available. Recently however, other technologies have been developed. These include treatment autoclaving, which involves steam sterilisation prior to managed disposal to a co-disposal landfill.

The management of medical wastes must comply with the Health Care Waste Management Standard NZS 4304:1990. This standard has been prepared to rationalise and recommend methods for the management of health care wastes within New Zealand. The Standard has three objectives:

(a) To identify and define health care wastes;

(b) To offer guidance to designers and operators of establishments responsible for generating such wastes to enable them to be safely and economically disposed of; and

(c) To indicate preferred methods for the disposal of health care wastes.

In relation to treatment prior to disposal of health care wastes, Paragraph 14.2.3 of NZS 4304:1990 considers autoclaving of special medical waste as a possibility. Within Otago autoclave treatment is only considered appropriate for a portion of special medical wastes and its success is very much dependent on the waste segregation within the medical facility. Inadequate waste segregation may pose potential adverse environmental effects, in that sharps, cytotoxics or body parts may accidentally undergo autoclave treatment and then disposal to a landfill. To avoid, remedy or mitigate any adverse effects associated

with special medical waste being disposed of at landfills, incineration of special medical waste is the only acceptable form of treatment.

6.1.2.4 Radioactive wastes

No radioactive waste should be disposed of without first consulting the National Radiation Laboratory.

The quantity of radioactive wastes produced in New Zealand is small on an international scale. In Otago the majority of radioactive waste originates from laboratories and hospitals where it is used primarily for diagnostic tests and treatment.

The disposal of radioactive waste in New Zealand is restricted by the Radioactive Protection Regulations 1982.

6.1.2.5 Other significant sources of hazardous wastes

Other significant sources of hazardous wastes are generally confined to the industrial sector, and result from, for example, building construction, dielectric fluids in electrical equipment, timber treatment plants, tanneries and mining processes.

Particular problem wastes include batteries, Polychlorinated biphenyl (PCB) containing materials, (Chlorofluorcarbons) CFCs and HCFCs and asbestos. It is noted that the Ministry of Health and Department of Labour should be contacted prior to any work involving asbestos being carried out.

6.1.3 The Management of Hazardous Waste

The process for the management of potentially hazardous wastes includes:

- collection;
- storage;
- treatment; and
- disposal.

Figure 3 shows a methodology for evaluating the waste production process and the management of potentially hazardous waste. The importance of cleaner production and waste minimisation is

recognised in Chapter 4 of this Plan. A significant matter of concern that is identified in Figure 3 is the degree of pre-treatment which should be provided prior to disposal of hazardous waste. This Plan adopts the philosophy that pre-treatment should be provided to a level which will prevent or minimise the adverse effects on the environment.

The main means of disposing of hazardous wastes are incineration, co-disposal, exportation of hazardous waste unsuitable for disposal in New Zealand, and the unacceptable disposal to the sewer or stormwater systems.

In the majority of situations co-disposal landfills are recognised as the preferred method of hazardous waste disposal in New Zealand. Co-disposal involves the disposal of appropriate hazardous wastes by mixing them, in an informed and pre-determined manner, with municipal refuse, to use the attenuation and bio-chemical processes operating within the landfill to reduce the environmental impact from the mixed waste to an insignificant level. Many hazardous wastes can be co-disposed without treatment. However, the suitability of wastes for disposal at a co-disposal landfill must be considered on a case by case basis.

Incineration on the other hand is the best available method for the total destruction of some types of hazardous waste. As yet though there is only one facility in New Zealand (Auckland) for the incineration of hazardous waste.

At some stage in their life cycle most hazardous substances require transport, during which people and the environment may be at risk from accidental release of a hazardous waste. Transport may be by air, sea, rail, or road, and may involve anything from small quantities to the haulage of bulk material such as tanker loads of petrol or LPG. Practices for the safe transport of waste hazardous substances are outlined in NZS 5433:1988 “Code of Practice for the Transport of Hazardous Substances on Land.” The Transport Act 1962 and the Health and Safety in Employment Act 1992 are also relevant. All of these provisions are, however, currently under review.

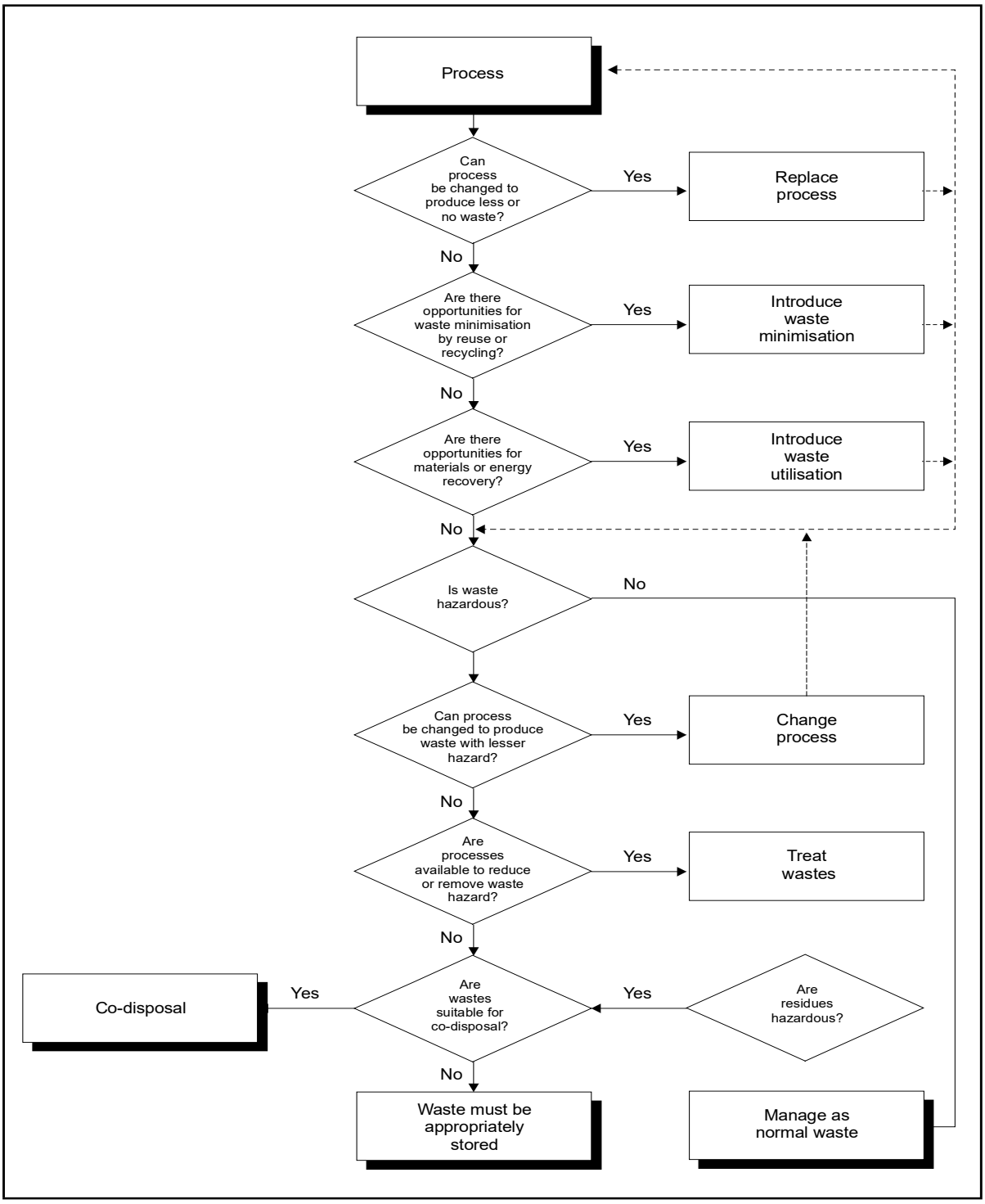


Figure 3: Evaluation of a waste producing process and the management of potentially hazardous waste.
(Adapted from Ministry for the Environment (1993) New Zealand Waste Hazardous Substances Handbook, Figure 3.1 & 3.2).

6.2 Hazardous substances and hazardous waste issues

6.2.1 There is insufficient information on hazardous substances and hazardous waste within Otago.

Explanation
In the past, the quantities and types of hazardous substances used or produced have rarely been inventoried, and their location, including the site of disposal, has rarely been recorded. Currently there is no system in place for tracking hazardous substances produced in the region or for monitoring their associated storage or disposal. For example, there may be significant amounts of unused agricultural chemicals stored in Otago. Some of this may be at risk in rusting or leaking containers, in areas prone to flooding, or in water supply areas. In addition, quantities of unused or partially used hazardous substances have been disposed of into landfills in containers liable to leak into the surrounding soil and groundwater. All of these actions are likely to give rise to adverse environmental effects.
Objectives 6.3.1, 5.3.2
Policies 6.4.2, 6.4.3

6.2.2 There is a lack of awareness or implementation of appropriate management practices for the transportation, storage and use of hazardous substances, and the collection, storage, treatment and disposal of hazardous waste.

Explanation
Industrial, commercial, and private users of hazardous substances are generally poorly informed about the appropriate means of handling, using and disposing of hazardous substances. Disposal into sewerage and stormwater systems or into landfills, excluding approved co-disposal landfills, is not appropriate for many types of substances. While transport operators have requirements to comply with, to ensure safe movement of hazardous substances throughout the region, controls do not apply to the same degree to other aspects of hazardous substance use and storage. Little information or guidance is given to the public either. Where accidental spills do occur special procedures need to be implemented in order that environmental contamination does not occur.

There is also a need for improved practices of spray application of hazardous substances to prevent the incidence of spray drift occurring from areas of application. Careful use of hazardous substances will also reduce wastage and losses to the environment. By obtaining and using only the required amounts of a substance, there will be less wastage and less storage of hazardous substances

throughout the region. Waste minimisation and cleaner production also have a role prior to any treatment or disposal.
Objectives 6.3.1, 6.3.2
Policies 6.4.1, 6.4.7, 6.4.8

6.2.3 There is insufficient use of alternatives to hazardous substances.

Explanation
Alternatives to hazardous substances that will achieve the same purposes without adverse environmental and health risks may be available. Their further development and use could be promoted and encouraged.
Objective 6.3.1
Policy 6.4.6

6.2.4 Facilities for the disposal of hazardous wastes in Otago are inadequate.

Explanation
Correct disposal of hazardous wastes requires an integrated regional programme to ensure that the community has access to appropriate facilities. For some hazardous wastes there is no safe disposal option presently available in New Zealand, and as a consequence it will be necessary to provide safe storage facilities until disposal can be arranged, or new technology can be developed. Further investigation is required in order to determine whether such facilities should be provided for in Otago or shared with other regions.
Objectives 6.3.1, 6.3.2
Policies 6.4.1, 6.4.7, 6.4.11

6.2.5 Hazardous substances and hazardous wastes have an adverse effect on the environment.

Explanation
Adverse environmental effects, such as the contamination of water or soils, can result from spills, unsuitable storage, inappropriate usage and disposal. This includes agricultural chemicals and the spreading of waste oil on roads.
Objectives 6.3.1, 6.3.2
Policies 6.4.1 - 6.4.12

6.2.6 Hazardous substances and hazardous wastes can adversely effect waahi taoka, waahi tapu and mahika kai thus affecting the customary relationship Manawhenua hold with their resources.

Explanation
Contamination of resources by hazardous substances and hazardous wastes is offensive to Manawhenua, physically making sites unsuitable for food gathering, or ecologically resulting in flora and fauna being unfit for human consumption, and culturally and spiritually affecting the values and mauri of an area.
Objective 6.3.2
Policy 6.4.12

6.3 Hazardous substances and hazardous waste objectives

6.3.1 To avoid, remedy and mitigate the risk to the environment and human health from hazardous substances and hazardous wastes.

Explanation
Otago's environment, including its communities, must be protected from the adverse effects of hazardous substances and hazardous wastes, associated with legitimate activities, or which arise by way of accidents.
Policies 6.4.1 - 6.4.12
Methods 6.5.1 - 6.5.25
Rules 6.6.1 - 6.6.4

6.3.2 To avoid, remedy and mitigate the harmful effects of hazardous substances and hazardous wastes on traditional water, land and mahika kai values of importance to Kai Tahu.

Explanation
Kai Tahu have an inherent interest in maintaining the environment's ability to sustain life. Traditional values rely on uncontaminated natural resources for their utilisation and enjoyment.
Policy 6.4.12
Method 6.5.24

Principal reasons for adopting hazardous substances and hazardous wastes objectives

Adverse effects on natural and physical resources, such as the contamination of water or soils, and impacts on social and cultural values can result from spills, inappropriate storage of hazardous substances and the disposal of hazardous wastes, and the uncontrolled use of hazardous substances. The Resource Management Act requires that such adverse effects be avoided, remedied or mitigated, and this Plan seeks to do that.

6.4 Hazardous substances and hazardous waste policies

6.4.1 To promote the safe transportation, and the use, treatment, storage and disposal of hazardous substances and hazardous wastes in such a manner that avoids adverse environmental effects.

Explanation

Promotion can take a number of forms. Codes of practice accepted and adopted by industrial producers, users, and transporters of hazardous substances will encourage wise and safe management of the large quantities of hazardous substances handled by these groups. There are also various codes of practice already in existence, in addition to guidelines and New Zealand Standards, such as the NRL C1 Code of Safe Practice for the Use of Unsealed Radioactive Materials and the NRL C2 Code of Safe Practice for the Use of Sealed Radioactive Materials in Industry and the Health Care Waste Management Standard NZS 4304:1990.

Improved awareness and understanding of hazardous substance and hazardous waste issues can also result in more responsible use and handling of hazardous substances.

Methods 6.5.5, 6.5.6, 6.5.8 - 6.5.12, 6.5.17 - 6.5.25

6.4.2 To encourage the implementation of a standard system for collecting data on hazardous substances held, used and transported within Otago.

Explanation

In order to be able to better understand the amount of hazardous waste produced and to minimise any adverse effects on the environment, data on the sources, types and fate of hazardous substances is required. That data will be of most value if it is regionally and nationally consistent.

At the national level the Ministry for the Environment has developed the Waste Analysis Protocol as a tool for gathering

information on the waste stream in general, and as a consequence on hazardous substances also. The Protocol is nationally accepted and will be promoted by the Otago Regional Council as a basis for collecting information in the region.
Method 6.5.1

6.4.3 To promote a manifest and tracking system for highly hazardous substances and hazardous wastes.

Explanation
Tracking the movement of hazardous substances and hazardous wastes is one means of obtaining information on the location and quantities of the more toxic hazardous substances and hazardous wastes. Under the Health Act 1956, the Ministry of Health presently tracks the movement of PCB's and radioactive materials. Current legislation does not provide for other material to be tracked, although the proposed Hazardous Substances and New Organisms legislation could alter that. In the meantime the Otago Regional Council will promote the introduction of a tracking system for highly hazardous substances and hazardous wastes, and will work with all sectors to determine the appropriate means of tracking and the substances and wastes that should be tracked. The Otago Regional Council will offer its facilities for the storage of information. This may identify opportunities for reuse and recycling, and highlight particular resource management issues that need to be considered.
Method 6.5.2

6.4.4 To encourage and facilitate the reuse, recycling and recovery of hazardous substances.

Explanation
Reducing the disposal of wastes can be brought about through increasing the amount of reuse, recycling and recovery of hazardous substances. Waste is also minimised by ensuring that the right quantities of hazardous substances are purchased for the purpose intended. This is recognised in Chapter 4 of this Plan.
Methods 6.5.4, 6.5.5, 6.5.6, 6.5.11, 6.5.14, 6.5.20

6.4.5 To promote a reduction in the quantities of hazardous substances held and used in the community.

Explanation
Reductions in the volumes of hazardous substances within the region could reduce the adverse effects that arise from the storage and disposal of surplus hazardous substances. The Otago Regional Council will advocate to central government to reduce the use of hazardous substances while at the same time encouraging users to only purchase the amounts that they require. In some instances suitable alternative options may not exist, and in those instances the ability to reduce the quantities of hazardous substances held and in use may be limited.
Methods 6.5.3, 6.5.7

6.4.6 To promote the development and use of environmentally safe alternatives to hazardous substances.

Explanation
Safer alternatives to some hazardous substances, such as biological pest control and more environmentally friendly industrial processes are currently available or are being developed. The development and use of these alternatives should be encouraged where they are available and practical providing it is shown that environmental degradation will not occur.
Methods 6.5.3, 6.5.7, 6.5.16, 6.5.22

6.4.7 To promote regionally coordinated collection, storage, treatment and disposal of hazardous waste.

Explanation
Only through a regionally coordinated programme can the Otago community respond to initiatives to remove unused or unwanted hazardous substances from the environment. Safe collection, storage, treatment and disposal alternatives significantly reduce the risk of unwanted hazardous wastes being dumped or spilt into water or onto land.

The Otago Regional Council will develop a regional strategy for the collection, storage, treatment and disposal of hazardous waste. This will require investigating the needs of the region and determining the most appropriate means of providing for those needs. The outcome may be the identification of the need for a regional storage or disposal facility within Otago, or the sharing of facilities, within or outside Otago, with other regions. If an Otago facility is required, consideration will be necessary to determine if local government or some private operator should develop and maintain the facility. Resolution of that issue is outside the scope of this Plan.
Methods 6.5.5, 6.5.10, 6.5.14, 6.5.17, 6.5.20

6.4.8 To promote the treatment of hazardous wastes prior to disposal.

Explanation
There are a range of established treatment and disposal options that can be appropriately used in the management of hazardous wastes. By undertaking such treatment, the likelihood of long-term adverse effects will be reduced, and risks to public health can be minimised.
Methods 6.5.15, 6.5.23

6.4.9 To develop a coordinated response strategy for hazardous spills.

Explanation
The potential for major incidents involving hazardous substances and hazardous wastes, and the effects of such incidents can be minimised by good management, anticipation and proper planning. This will require response plans to be prepared at territorial, regional and national levels, and for their coordination to ensure all eventualities are provided for.
Methods 6.5.13, 6.5.21

6.4.10 To prevent waste oil being used as a dust suppressant and provide for the use of safer alternatives.

Explanation
In parts of Otago, waste oil has historically been used as a dust suppressant on roads. This practice can give rise to environmental contamination as a consequence of heavy metals and other noxious elements within the oil entering the ground in the areas treated, and water bodies where runoff occurs. Wind or traffic derived dust can spread the contamination and, depending on the nature of the substances, these can be a hazard to public health. Present technologies identify lead concentrations to be of greatest concern. With safer alternatives now more readily available, waste oil must not be applied as a dust suppressant.

Methods 6.5.3, 6.5.22, 6.5.25

6.4.11 To require:

(a) Special medical waste to be disposed of by high temperature incineration; and

(b) General medical waste to be treated, and disposed of in a manner which minimises risk to people and the environment.

Explanation
In order to avoid, remedy or mitigate the adverse effects resulting from medical wastes within Otago there is a need to ensure that adequate treatment and disposal is employed to effectively deal with medical wastes. In respect of special medical wastes it is considered that autoclaving treatment prior to disposal does not render such wastes completely innocuous.
Methods 6.5.15, 6.5.18

6.4.12 To recognise and provide for the relationship Kai Tahu have with Otago's natural and physical resources through:

(a) Providing for the management and disposal of Otago's hazardous substances and hazardous wastes in a manner which takes into account Kai Tahu cultural values; and
(b) Supporting hazardous waste disposal methods which avoid, remedy or mitigate adverse effects on the environment and the mauri of its natural and physical resources; and
(c) Protecting waahi tapu and waahi taoka from hazardous waste management practices; and
(d) Ensuring that Kai Tahu access to waahi tapu and waahi taoka is not compromised by waste management practices; and
(e) Acknowledging that future generations will inherit the results of good and bad waste management practices; and
(f) Maintaining consultation with Kai Tahu on issues relating to hazardous substances and hazardous waste management.

Explanation
Traditional Manawhenua values are especially sensitive to the quality of our environment. Hazardous substances and hazardous wastes have the potential to adversely affect Manawhenua use of natural and physical resources if these resources become contaminated or destroyed. Monitoring and evaluating the effects on traditional Manawhenua values will enable a holistic view of the adverse effects on the environment.
Method 6.5.24

Principal reasons for adopting hazardous substances and hazardous wastes policies

The management of hazardous substances and hazardous waste needs to be considered in a coordinated way, focusing on all stages from production to disposal. As a consequence, a range of policies is required to respond to the resource management issues that have been identified.

The legislative framework for the management of hazardous substances and hazardous wastes is not complete at this time, and as a consequence the Regional Policy Statement for Otago is the key document within the Region for the management of hazardous substances and hazardous wastes in a coordinated manner. This Plan seeks to implement the objectives and policies of the Regional Policy Statement for Otago, and to provide for relevant issues to be dealt with, to the extent possible, under existing legislation. For that reason, on some issues advocacy will be the main means of implementation.

6.5 Hazardous substances and hazardous waste methods

In meeting the objectives and in carrying out the policies relating to hazardous substances and hazardous wastes the Otago Regional Council will:

6.5.1 Promote the use of the Waste Analysis Protocol as a basis for tracking hazardous materials in Otago;

6.5.2 Promote a nationally consistent manifest system for tracking highly hazardous substances and hazardous wastes;

6.5.3 Promote the replacement of hazardous substances with non-hazardous substances and encourage the use of safer alternatives where appropriate and practicable;

6.5.4 Promote and facilitate reuse, recycling and recovery of hazardous substances, including unused chemicals and lubricating oil;

6.5.5 Promote the development and implementation of voluntary take-back schemes for:

- lubricating oils;
- timber treatment chemicals;
- pesticides;
- animal remedies;
- chlorinated solvents; and
- batteries;

6.5.6 Advocate to central government to promote the recycling and reuse of waste oil by the removal of positive disincentives (duty and tax) and the adoption of policies to promote reuse, on the basis of environmental damage resulting from dumping of this hazardous waste;

6.5.7 Encourage the use of waste audit procedures to identify and implement waste elimination opportunities;

6.5.8 Encourage the formation of industry groups to share information and develop industry guidelines on the safe use and storage of hazardous substances, and storage and disposal of hazardous wastes;

6.5.9 Encourage territorial authorities to adopt the New Zealand Standard Waste Water Bylaw (1995) to ensure that hazardous wastes that are discharged to the sewerage system are adequately controlled and minimised;

6.5.10 Encourage territorial authorities to ensure the safe storage of hazardous substances through by-laws, guidelines, or other provisions under other legislation as appropriate;

6.5.11 Encourage the oil industry to promote recycling and reuse of waste engine oil, to establish collection points at every service station in the region and to improve and upgrade waste oil re-refining capacity as necessary;

6.5.12 Provide public information on the safe use, handling and storage of household hazardous substances and safe disposal of household hazardous wastes;

6.5.13 Prepare, in conjunction with the territorial authorities, the Health Authorities and Emergency Services, a register of industries using and storing significant quantities of hazardous substances;

6.5.14 Undertake the collection of unwanted hazardous substances, such as agrichemicals;

6.5.15 Require pre-treatment of hazardous wastes, where practical and appropriate, prior to disposal;

6.5.16 Provide for the holding of joint hearings where resource consents are required from more than one agency on matters relating to hazardous substances and hazardous wastes;

6.5.17 The Otago Regional Council will:

(a) Provide a forum for the exchange of information, the identification of regional issues in hazardous substance management, and the development of regional solutions to those problems where appropriate;

(b) Develop appropriate contingency plans for dealing with hazardous substance spills; and

(c) Provide technical assistance to emergency services dealing with hazardous spills, including leaking of underground storage tanks;

6.5.18 Require as part of a resource consent application for facilities disposing of hazardous wastes, the preparation of hazardous waste facility management plans to address issues relating to the control of emissions and their effects;

6.5.19 Include complementary provisions on the discharge of hazardous substances and hazardous wastes to air and water in the Proposed Regional Plan: Air and for Otago the Proposed Regional Plan: Water for Otago respectively;

6.5.20 In consultation with territorial authorities, government agencies, industry and the public, prepare and promote a regional strategy for the collection, storage, treatment and disposal of hazardous wastes;

6.5.21 Invoke where necessary and appropriate the enforcement and emergency works procedures of the Resource Management Act to require the clean-up and restoration of the environment following any unauthorised discharge or spill, and for any associated costs to be met by the person or agency responsible for the discharge or spill;

6.5.22 Promote and encourage research into alternatives to the use of waste oil for suppressing dust;

6.5.23 Include a rule in this Plan which controls the discharge of dust suppressants;

6.5.24 Consult with Manawhenua on the appropriate approach towards, and effects on sites of significance to them, of hazardous substance and hazardous waste management in the Region;

6.5.25 Require, as part of any consent process, that the operators of hazardous waste disposal facilities record the source of material being disposed of.

Principal reasons for adopting hazardous substances and hazardous wastes methods

In order to achieve the objectives and policies set out above, it will be necessary for a number of methods to be adopted, ranging from the supply of information to regulation.

Promoting, encouraging and providing advice to bring about improved practices are considered to be important methods for reducing the adverse effects of such hazardous substances and wastes on Otago's environment. The maintenance of registers of industries using and storing hazardous substances and the collection of hazardous wastes such as agrichemicals will assist in understanding and further reducing the spread and impact of those wastes. Establishing and maintaining a capability to respond to accidental spills, and taking enforcement action regarding such spills where necessary, will assist in the minimisation of any adverse effects.

Rules are required in some situations where the discharge of hazardous substances or waste may result in adverse effects occurring. In such cases it may be necessary to include conditions on consents to avoid, remedy or mitigate any adverse effects. New Zealand standards will be used where appropriate.

6.6 Hazardous substances and hazardous waste rules

6.6.1 Operation of facilities for the treatment or disposal of hazardous wastes (discretionary activity)

1. The discharge of any contaminant into or on to land; or

2. The discharge of any contaminant into water;

3. The discharge of any contaminant into air; or

4. The discharge of water into water,

in the course of, or as a result of, the treatment or disposal of hazardous wastes is a discretionary activity.

Information Requirements
In addition to the information required by Section 88 of the Resource Management Act, a hazardous waste facility management plan in the form prescribed by Appendix 1 is required to be submitted with an application for resource consent under this rule.

6.6.2 Discharge of dust suppressants (permitted activity)

The discharge of a dust suppressant onto or into land is a permitted activity, provided that:

(a) The dust suppressant is not a hazardous substance; or

(b) The dust suppressant is approved under the Hazardous Substances and New Organisms Act 1996 and the use and discharge of dust suppressant is undertaken in accordance with all conditions of the approval; and

(c) The discharge does not produce an objectionable odour, or a conspicuous oil or grease film, scum or foam in any:

- **(i) Lake, river or natural wetland; or**
- **(ii) Drain or water race that flows to a lake, river, natural wetland or coastal marine area; or**
- **(iii) Bore or soak hole; and**

(d) The discharge is not undertaken in a manner that results in ponding or overland flow that enters any:

- **(i) Lake, river, natural wetland or coastal marine area; or**
- **(ii) Drain or water race that goes to any lake, river, natural wetland or coastal marine area.**

6.6.3 Discharge of dust suppressants (discretionary activity)

The discharge of a dust suppressant onto or into land is a discretionary activity where:

(a) The discharge is not permitted by Rule 6.6.2; and

(b) The dust suppressant is not waste oil.

6.6.3.1 Assessment matters

In considering any application under this rule, in addition to the matters listed in Section 104 of the Resource Management Act, the Otago Regional Council will have regard to, but not be restricted by, the following matters:

(a) The location of the activity relative to any water body and areas prone to erosion, inundation or subsidence;

(b) The location of the activity relative to areas of cultural or historic significance;

(c) The characteristics, composition and volume of substances being discharged and of any likely by-products occurring from the degradation of these substances;

(d) The mitigation measures and safeguards to be undertaken to prevent or reduce the actual and potential adverse environmental effects; and

(e) Means by which the above matters will be monitored, including land adjoining areas being sprayed, any water body, including the frequency and locations of monitoring.

6.6.4 Discharge of waste oil

Except as provided for by Rules 6.6.1, 7.6.1 or 7.6.2, the discharge of waste oil onto or into land or into water is a prohibited activity.

Principal reasons for adopting hazardous substances and hazardous wastes rules

The discharge of hazardous wastes into or onto land, and into water and air, can have a significant adverse effect on Otago's natural and physical resources. Because of the potential for significant adverse effects to occur, the discharge of such hazardous wastes requires control.

6.7 Anticipated environmental results

6.7.1 Production and use of hazardous substances and disposal of hazardous wastes is reduced in Otago.

6.7.2 The toxicity of hazardous wastes in Otago is reduced.

6.7.3 The adverse effects of discharges from the use of hazardous substances are controlled.

6.7.4 The adverse effects of the disposal of hazardous wastes are controlled.

6.7.5 The adverse effects of accidental discharges of hazardous substances are controlled.

6.7.6 The use of waste oil as a dust suppressant is avoided, and the adverse effects of the use of other dust suppressant are avoided, remedied or mitigated.

7

Landfills

7.1 Introduction

Facilities for disposing of wastes to the ground have been variously described as landfills, tips, or dumps, without reference to the degree of environmental safeguards employed in their management, nor to the types of waste deposited into them. Characteristics of landfills can vary greatly, from small, privately owned farm offal pits and landfills to illegal dumping areas, and large scale municipal landfills. For the purpose of this Plan, the term "landfill" is used to refer to a site used for the disposal of solid wastes onto or into land.

While reducing, reusing or recycling wastes is the desired order of progression in a waste management strategy, there will always be a certain amount of waste requiring disposal to landfills. Landfills are the usual end point for wastes which have no potential for recovery.

Landfills have traditionally been classified by the types of waste they accept - domestic, commercial or industrial. This however does not recognise the dynamic nature of waste. In this Plan landfills include the following types:

- Co-disposal;
- Farm;
- Clean fill;
- Offal pit;
- Greenwaste;

and the term "landfill" generically refers to all landfills, including the above types, unless specified otherwise.

Landfills are also categorised into three different states:

- Closed;
- Operating; or
- New.

Each type and state of landfill requires a specific kind of management to prevent adverse environmental effects occurring or to mitigate these where they already exist.

A landfill should not be treated as a storage or disposal facility but as a physical, chemical and biological reactor. While past concerns have focused on the health aspects of waste collection and disposal, regard must also be given to adverse environmental effects such as water contamination, site contamination, and management of the site once the landfill has been closed.

It is likely that landfills will be an integral part of the waste stream for many years, therefore management should be directed towards improving landfill quality and reducing adverse environmental effects. It cannot necessarily be assumed that because a landfill is small, its effects on the

environment will be minor.

Long term strategies for management and development of landfills are essential to meet the purpose of the Resource Management Act to achieve the sustainable management of natural and physical resources. Within the Otago region, territorial authorities put considerable energy and resources into determining their solid waste strategies and they have been actively reducing the number of landfills as a result. This will not only ensure that those facilities that are retained are able to be better managed, but it will also enable closure of sites which may not be totally suitable for landfill purposes.

This Chapter of the Plan also considers the leachate discharges from composting and silage production, because these are potentially similar to landfill discharges.

Section 15 of the Resource Management Act requires, unless a regional plan provides otherwise, that activities such as landfills and composting and silage production operations obtain a resource consent if those activities result in a discharge of contaminants to:

- Air; or
- Water; or
- Land; or
- Land in circumstances where a contaminant is likely to enter water.

The rules of this Chapter of the Plan provide for landfills, and composting and silage making activities in the following way:

	Permitted	**Controlled**	**Discretionary**
Cleanfill landfills	Rule 7.6.3		Rule 7.6.4
Offal Pits	Rule 7.6.5	Rule 7.6.6	Rule 7.6.7
Farm landfill	Rule 7.6.8		Rule 7.6.9
Greenwaste landfills	Rule 7.6.10		Rule 7.6.11
Composting	Rule 7.6.12		Rule 7.6.13
Silage production	Rule 7.6.14		Rule 7.6.15

A transitional regime has been developed within Rules 7.6.1 and 7.6.2 for landfills other than those identified above, as follows:

For a closed landfill

1. Any landfill closed before 1 October 1991 will not require a resource consent, but may be considered a contaminated site on the Otago Regional Contaminated Sites Register and be subject to Rule 5.6.1 if it is discharging contaminants.

2. Any landfill closed between 1 October 1991 and 1 October 1994 was permitted until 1 October 1996, after which time it required:
   (a) A resource consent under Rule 7.6.2, and
   (b) A landfill closure plan.

3. Any landfill closed after 1 October 1994 will be assessed in accordance with Rule 7.6.1 as if it were an operating landfill.

For an operating landfill

1. Any landfill operating before 1 October 1991 was permitted until 1 April 1995 after which time it required the following:
   (a) A resource consent under Rule 7.6.1; and
   (b) A landfill development and management plan if it will be in operation past 1 October 1997; or
   (c) A landfill closure plan if it is to close by 1 October 1997.

For a new landfill

1. Any new landfill established after 1 October 1991 requires the following:
   (a) A resource consent under Rule 7.6.1; and
   (b) A landfill development and management plan if it will be in operation past 1 October 1997; or
   (c) A landfill closure plan if it is to close by 1 October 1997.

7.2 Landfill issues

7.2.1 Otago has a large number of landfills, widely dispersed throughout the region.

Explanation

All landfills may be sources of contamination, to varying degrees, irrespective of their size. Monitoring and managing landfills is a problem if numbers are high and they are scattered throughout the region. The more sites there are in Otago, the greater the potential risk of adverse environmental effects.

Objective 7.3.2
Policies 7.4.3, 7.4.7, 7.4.8

7.2.2 There are inappropriately sited landfills in Otago.

Explanation
Landfills, have been located in inappropriate places, such as close to water bodies, above groundwater supplies, adjacent to incompatible activities or in areas where there is a considerable adverse effect on the amenities of the area. Discharges from landfills are potential sources of contamination. In many cases there is a lack of knowledge of what has been placed into these landfills and as a consequence there may be a need to monitor some sites.

Objectives 7.3.1, 7.3.2
Policies 7.4.3, 7.4.7, 7.4.11, 7.4.11A

7.2.3 Some landfills in Otago are not managed to appropriate standards.

Explanation
Management of Otago's landfills must ensure the avoidance, remedy and mitigation of adverse environmental effects that could occur from unwise management. These include discharges to land, water and air. While this Plan seeks to manage all discharges arising from landfills, the complex nature of discharges to air, and the need for a consistent approach across activities, means that detailed standards relating to such discharges will be subject to the provisions of the Regional Plan: Air for Otago.

In part some of the inappropriate management practices undertaken at existing landfills arise because there is insufficient awareness and implementation of landfill management guidelines. Improved landfill management procedures have been developed, for example by the Ministry for the Environment, to minimise the adverse environmental effects of landfills. If the adverse environmental effects are to be avoided, remedied or mitigated then the adoption and use of appropriate management practices as set out in guidelines will be required. Particular attention needs to focus on hazardous wastes, such as medical wastes, and methods used to pre-treat them, and either store them or dispose of them. In some instances, however, landfill managers are not familiar with appropriate methods of landfill management.
Objectives 7.3.1, 7.3.2
Policies 7.4.3, 7.4.4, 7.4.6, 7.4.7, 7.4.11, 7.4.11A

7.2.4 Uncontrolled, unmanaged or illegal landfills give rise to adverse environmental effects.

Explanation
Discharges to water, land and air are more likely to arise in the case of landfills which are uncontrolled, unmanaged or illegal. At such landfills, hazardous wastes are not subject to appropriate management practices and are potentially more of a danger to the environment. In addition such landfills are unsightly. Where they do arise it is the public who frequently bear the cost of clean-up.
Objective 7.3.2
Policies 7.4.1 - 7.4.4, 7.4.8

7.2.5 Few of Otago's landfills have been planned within a long term strategy or management plan, including post-closure management.

Explanation
Past landfill management has been directed towards maintaining the landfill's ability to accept waste. Only recently have resources been directed towards the control of leachate during the life of the landfill and after. Closed landfills may release leachate after they have stopped operating. They also continue to produce methane gas which could pose a hazard if it is unable to dissipate away from the landfill. For this reason it will be necessary to require post-closure management plans for landfills, excluding farm, cleanfill, and greenwaste landfills and offal pits.
Objectives 7.3.1, 7.3.2
Policies 7.4.6, 7.4.10

7.2.6 There is little information on the types and quantities of hazardous wastes disposed into co-disposal landfills.

Explanation
Management of co-disposal landfills has not always included monitoring the types and quantities of hazardous wastes deposited during the life of the co-disposal landfill. Co-disposal landfills in smaller, rural areas have rarely been monitored to check what has been deposited into them.
Objectives 7.3.1, 7.3.2
Policy 7.6.5

7.2.7 Disposal of offal can give rise to adverse environmental effects.

Explanation
The very nature of offal means that adverse effects such as contamination of groundwater and increase in odour resulting from its disposal can occur.
Objective 7.3.1
Policies 7.4.3, 7.4.4, 7.4.6, 7.4.10

7.2.8 Discharges from composting of organic material and silage production can give rise to adverse effects.

Explanation
While composting of organic material is an alternative to disposal, and a form of recycling, it can, together with silage production result in discharges to land, water and air. Of concern is leachate discharge, particularly from silage production. Odour can also be a problem, but the complex nature of discharges to air means that detailed standards relating to such discharges will be the subject to the provisions of the Regional Plan: Air for Otago.
Objective 7.3.3
Policies 7.4.3, 7.4.4

7.3 Landfill objectives

7.3.1 To avoid, remedy or mitigate the adverse environmental effects arising from the discharge of contaminants at and from landfills.

Explanation
Adverse environmental effects may occur through toxic leachate or gases which originate from landfills. Such leachate can move into surface or groundwater supplies as well as onto adjacent land or into the air, rendering these resources unsuitable for other uses, or unsafe. The adverse environmental effects of landfills can be avoided by adopting methods for disposal other than landfills. The adverse effects can be remedied or mitigated by siting landfills appropriately, and implementing sound management practices. Some material such as offal is inappropriate to dispose of into landfills other than offal pits, and alternative means are required to deal with this issue.
Policies 7.4.1 - 7.4.11A
Methods 7.5.1 - 7.5.16
Rules 7.6.1 - 7.6.11

7.3.2 To eliminate illegal, uncontrolled, unmanaged, poorly managed and poorly located landfill sites.

Explanation
The illegal dumping of waste is an offence against the Resource Management Act. As with uncontrolled and unmanaged landfills, illegal dumping can give rise to adverse effects, such as discharges and visual unsightliness. Sites that are poorly located or poorly managed can also give rise to adverse effects. Where action cannot be taken to improve the operation of such landfills in the future, it is appropriate to seek their closure and the construction of more environmentally acceptable facilities.
Policies 7.4.2, 7.4.3, 7.4.6 - 7.4.9, 7.4.11, 7.4.11A
Methods 7.5.1 - 7.5.3, 7.5.10, 7.5.11, 7.5.14, 7.5.16
Rules 7.6.1 - 7.6.11

7.3.3 To avoid, remedy or mitigate the adverse effects of discharges from composting and silage production.

Explanation
Composting and silage production discharges can give rise to adverse effects. Of particular concern is the contamination of groundwater. Management of these activities is therefore required.
Policies 7.4.3, 7.4.4
Methods 7.5.5, 7.5.6, 7.5.10, 7.5.14, 7.5.15
Rules 7.6.2 - 7.6.15

Principal reasons for adopting landfill objectives

Landfill discharges are potentially damaging to the environment and may be a significant source of contamination. The localised nature of landfill operations enables control of discharges close to or at the source of contamination. It is likely that landfills will remain a component of the waste stream in the future so the primary objective of landfill management must be to ensure that adverse environmental effects are minimised.

7.4 Landfill policies

7.4.1 To recognise and provide for the relationship Kai Tahu have with Otago's natural and physical resources through:

(a) Providing for the management and disposal of Otago's wastes in a manner that takes into account Kai Tahu cultural values; and
(b) Supporting waste disposal methods which avoid, remedy or mitigate adverse effects on the environment and the mauri of its natural and physical resources; and
(c) Protecting waahi tapu and waahi taoka from waste management practices; and
(d) Ensuring that Kai Tahu access to waahi tapu and waahi taoka is not compromised by waste management practices; and
(e) Acknowledging that future generations will inherit the results of good and bad waste management practices; and
(f) Maintaining consultation with Kai Tahu on issues relating to landfill management.

Explanation
Traditional manawhenua values are especially sensitive to the quality of our environment. Hazardous wastes have the potential to adversely affect manawhenua use of natural and physical resources if these resources become contaminated or destroyed. Monitoring and evaluating the effects on traditional manawhenua values will enable a holistic view of the adverse effects on the environment to be achieved.
Method 7.5.1

7.4.2 Take action against illegal landfills and waste dumping.

Explanation
Illegal landfills and waste dumping are an offence against the provisions of the Resource Management Act, and the community has an expectation that statutory authorities will take action to stop such practices and, in appropriate cases, prosecute offenders.
Method 7.5.14

7.4.3 To ensure that landfills and discharges from silage production and composting operations are sited at locations and managed in a manner whereby adverse effects on the environment are avoided, remedied, or mitigated.

Explanation
The effects of landfills and discharges from silage production and composting operations on the environment, as well as on iwi, cultural, conservation, historic and amenity values will vary depending on their size and location. Such issues must be considered when deciding on landfill locations and when assessing any resource consents for continuation of landfill operations.

Landfills, and composting and silage production discharges must be sited away from resources at risk of contamination such as surface and groundwater supplies. Territorial authorities will consider, to the degree that they consider appropriate, other locational aspects of landfills and discharges from silage production and composting in their district plans.
Methods 7.5.1 - 7.5.16
Rules 7.6.1 - 7.6.15

7.4.4 To monitor discharges to land, water, and air from new, operating and closed landfills, and from silage production and composting.

Explanation
On-going monitoring of discharges from new, operating and closed landfills, and from silage and composting sites will provide a means of ensuring that environmental degradation of natural and physical resources is not occurring, as well as ensuring that management techniques are appropriate for the site.

Cleanfill landfills, farm landfills, offal pits, greenwaste landfills, silage production and composting operated in conformity with the rules for permitted activities in this Plan are unlikely to give rise to any significant adverse environmental effects, and as a consequence it is unnecessary to require their operators to monitor them. The Otago Regional Council nevertheless considers that in order to monitor the effectiveness of the rules, an accurate location for any farm landfill or any offal pit on a factory farm must be supplied before the activity is permitted.
Methods 7.5.7, 7.5.8, 7.5.9, 7.5.10, 7.5.11, 7.5.16
Rules 7.6.1, 7.6.2, 7.6.4 - 7.6.9, 7.6.11, 7.6.13, 7.6.15

7.4.5 To identify and quantify waste inputs into operating, and new landfills.

Explanation
Improved awareness of the components and quantities of waste, especially hazardous waste, entering landfills will ensure that management is appropriate for the types of waste received. Suitable management will avoid the release of contaminants to the environment and minimise adverse environmental effects.
Method 7.5.9
Rule 7.6.1

7.4.6 To require that all new, operating, and closed landfills are managed in compliance with approved management and post-closure procedures.

Explanation
Leachate discharges from landfills to soil and water resources are a major cause of contamination and must, where practical, be prevented to ensure that the environment is not adversely affected. These discharges may not be detected for many years and the effects may continue past the life of the landfill. Such concerns arise from large as well as smaller landfills.
Methods 7.5.7, 7.5.8
Rules 7.6.1, 7.6.2, 7.6.6, 7.6.7

7.4.7 To upgrade where possible or close those existing landfill sites causing adverse effects.

Explanation
Where contamination has been linked to particular landfills, these should be managed in order that such contamination is remedied and avoided in the future. If this cannot be done it may be appropriate to close the landfill concerned.

Ongoing monitoring may be necessary to ensure that any adverse effects are effectively mitigated.
Methods 7.5.2, 7.5.7, 7.5.8, 7.5.11, 7.5.16
Rules 7.6.1, 7.6.2, 7.6.4, 7.6.7, 7.6.9, 7.6.11, 7.6.13, 7.6.1

7.4.8 To promote alternatives to landfills as a means of waste disposal.

Explanation
Landfills occupy space, require management to avoid adverse effects, and are expensive to operate. Landfills should be considered only where other alternatives such as waste minimisation, cleaner production, recycling, or other methods of waste disposal have failed or are impracticable to implement.

The Otago Regional Council will also promote the use of options other than landfills for waste disposal, where it can be shown that adverse effects will not arise.
Method 7.5.12
Rule 7.6.1

7.4.9 To have regard to the environmental effects of offal pits in determining their location and management.

Explanation
Inappropriate location and management of offal pits can give rise to adverse effects, particularly on water quality. The larger the pit, the greater the potential for adverse effects to arise.

To avoid adverse effects on water quality, offal pits will need to be sited above water tables. In some cases, where water tables are particularly high, this will mean that the construction of the traditional offal pit five metres or so into the ground is inappropriate. In such situations, and for emergencies such as stock smothers, the digging of a shallow trench and mounding of dirt above ground may be the most appropriate method of disposal.
Methods 7.5.6, 7.5.8
Rules 7.6.5 - 7.6.7

7.4.10 To extend the time by which resource consents are required to 1 October 1996 for landfills operating at 1 October 1991, which were closed by 1 October 1994.

Explanation
Recognising the efforts being made by territorial authorities to obtain approvals for those landfills currently operating, and the burden that obtaining approvals for closed landfills as well would place on operators and Otago Regional Council staff, it is appropriate to extend the period for obtaining consents for closed landfills. Attention and effort is required to focus on those sites which are more likely to be having continuing adverse effects.
Rule 7.6.2

7.4.11 To avoid significant adverse effects of discharges and otherwise minimise the adverse effects of discharges from new and operating landfills on the environment outside a landfill footprint (as indicated in Figure 5-1 of the Waste Management Institute New Zealand's *Technical Guidelines for Disposal to Land* August 2018), by requiring that:

(a) the siting, design, construction, operation and management of new landfills, and operating and closed landfills to the extent that the Guidelines are applicable, is in accordance with the Waste Management Institute New Zealand's *Technical Guidelines for Disposal to Land* (August 2018); and

(b) a site-specific management plan is prepared and implemented in accordance with the Waste Management

Institute New Zealand's *Technical Guidelines for Disposal to Land* (August 2018) that includes (but is not limited to):

(i) methods for leachate management, collection, treatment and disposal;

(ii) methods for stormwater capture and control from both off-site and on-site sources; and

(iii) methods to minimise contamination of the receiving environment; and

(iv) controls to manage hazardous waste and avoid any discharge of hazardous wastes or the leaching of contaminants from hazardous wastes.

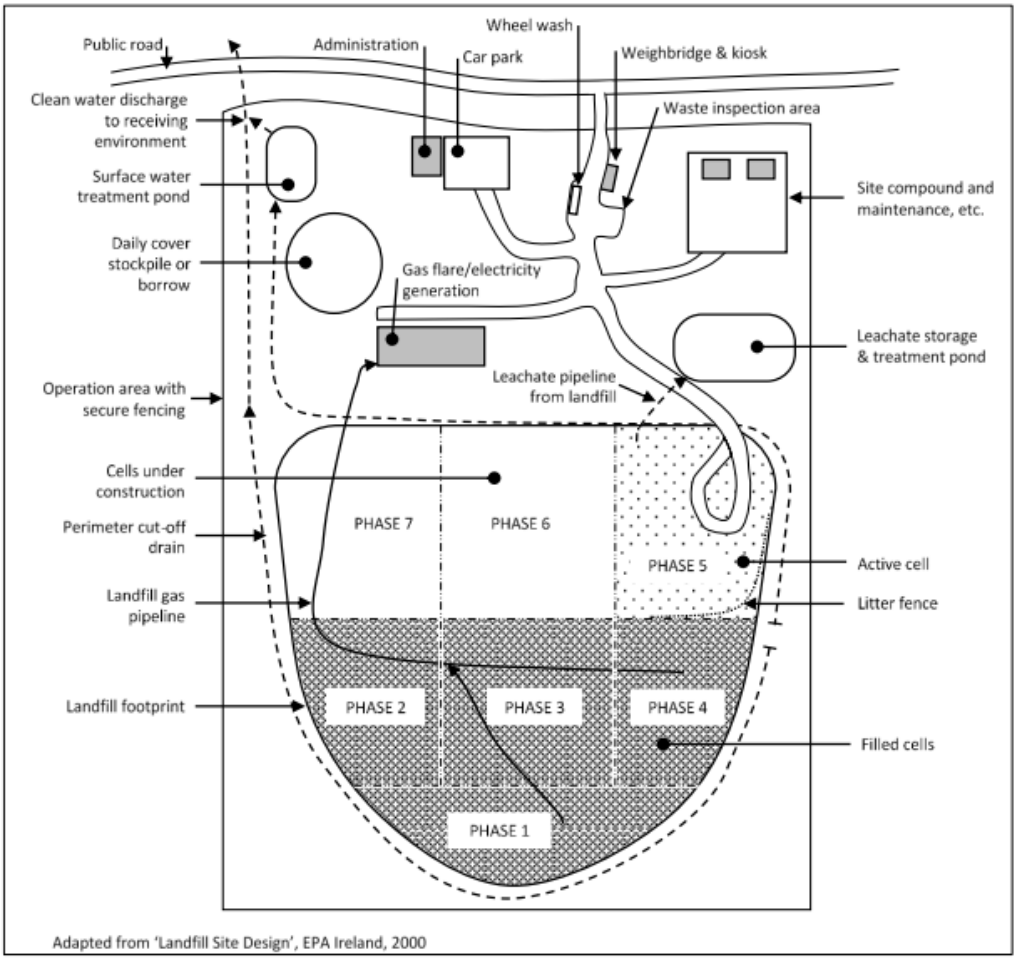


Figure 4: Operational Plan for a Landfill Site
(Adapted from the Waste Management Institute New Zealand's *Technical Guidelines for Disposal to Land* August 2018, Figure 5-1)

7.4.11A The discharges at and from new and operating landfills within 13km of airports defined as Nationally Significant Infrastructure are to be assessed with regard to:

(a) siting;

(b) classes of landfills;

(c) preparation and implementation of management plans;

in order to prevent the landfill increasing the existing risk of bird strike.

Advice note: For the purpose of Policy 7.4.11A, the reference to "airports defined as Nationally Significant Infrastructure" includes any airport (but not its ancillary commercial activities) used for regular air transport services by aeroplanes capable of carrying more than 30 passengers.

Principal reasons for adopting landfill policies

Landfills provide a necessary function for the disposal of wastes, and silage production and composting provide for the reuse of materials. However, they all have adverse effects on the environment and the potential to impact on cultural, amenity, and heritage values. As a consequence, a range of actions will be appropriate and the policies above provide the basis for a coordinated approach to management.

Monitoring discharges will provide an ongoing audit of how well management systems are performing and where changes are required to ensure that adverse environmental effects are minimised or avoided. Monitoring of inputs to landfills will also enable management programmes to adjust depending on the types and quantities of waste being deposited into the landfill.

7.5 Landfill methods

In meeting the objectives and in carrying out the policies relating to landfills, silage production and composting the Otago Regional Council will:

7.5.1 Consult with the manawhenua on the approach towards, and effects on sites of significance to them, of landfill management in Otago;

7.5.2 Advocate that territorial authorities rationalise the number of operating landfills within their districts;

7.5.3 Advocate that territorial authorities make provision for refuse disposal facilities within their districts so as to avoid the need for illegal dumping;

7.5.4 Advocate that territorial authorities include in their district plans objectives, policies and methods on those parts of landfill operations that are the responsibility of those authorities under Section 31 of the Resource Management Act;

7.5.5 Provide for the holding of joint hearings where resource consents are required from more than one agency on matters relating to landfills, discharges from silage production and composting;

7.5.6 Provide standards for landfills, composting and silage operations to meet, in order to avoid discharges to water;

7.5.7 Require management plans for all landfills (excluding cleanfill landfills, offal pits on production land, farm landfills and greenwaste landfills) and for offal pits on industrial or trade premises, excluding factory farms, describing the methods to be taken to avoid, remedy or mitigate any adverse environmental effects;

7.5.8 Require landfill closure plans for all landfills (excluding cleanfill landfills, offal pits on production land, farm landfills and greenwaste landfills) and for offal pits on industrial and trade premises, excluding factory farms, closed by 1 October 1997, describing the methods to be taken to avoid, remedy or mitigate, and monitor for, any long-term adverse environmental effects;

7.5.9 Require operators of operating and new landfills to monitor waste being disposed of at the landfill, having regard to the Waste Analysis Protocol in order to assess the type of material being deposited and to ensure that appropriate disposal techniques are being adopted;

7.5.10 Carry out audit monitoring of landfills, and discharges from silage production and composting, to assess the extent of their adverse effects on the environment;

7.5.11 Require operators of operating and new landfills to monitor discharges from the site;

7.5.12 Investigate, evaluate and, where appropriate, promote alternatives to the disposal of waste at landfills;

7.5.13 Provide an ongoing role in promoting and coordinating appropriate landfill management within the region;

7.5.14 Use enforcement procedures to:

(a) Require owners/operators of landfills, and composting and silage operations, to remedy any adverse environmental effects of those operations; and

(b) Close landfills, silage production and composting operations where owners/operators are unable to meet acceptable environmental standards of operation; and

(c) Require the closing and remediation of sites used for illegal landfill operations;

7.5.15 Include Objectives, Policies and Methods in the Regional Plan: Air for Otago dealing with discharges to air from landfills, and composting and silage operations; and

7.5.16 Work with territorial authorities to identify the location of past community landfills to establish whether any adverse environmental effects require avoiding, remedying or mitigating.

Principal reasons for landfill methods

The Otago Regional Council, in fulfilling its responsibilities under the Resource Management Act, must consider and use appropriate methods to minimise or avoid adverse environmental effects. The scale of impact of effects from landfills may be assessed in part by the size or type of landfill. The above methods make provision for the scale of adverse effects anticipated on a site by site basis.

The above methods also provide a range of opportunities for the Otago Regional Council and territorial authorities to use when considering aspects of landfill management on a district or regional scale. The methods in this Plan provide for varying degrees of managing environmental effects depending on particular circumstances.

7.6 Landfill rules

Discharges of waste onto or into land except as permitted by or under this Plan, a resource consent, or regulation, are non-complying activities.

7.6.1 New or operating landfills [excluding cleanfill landfills, offal pits, farm landfills and greenwaste landfills] (discretionary activities)

1 The discharge of any contaminant into or onto land; or

2 The discharge of any contaminant or water into water; or

3 The discharge of any contaminant into air,

as a result of the operation of any landfill (except for a cleanfill landfill, offal pit, farm landfill, or greenwaste landfill covered by Rules 7.6.3 to 7.6.11) are discretionary activities, provided that no burning of waste is undertaken.

7.6.1.1 Information requirements

In addition to the information required by Section 88 of the Resource Management Act, the following information is required to be submitted with an application for resource consent under this rule:

(a) If the landfill is to close by 1 October 1997 a landfill closure plan in the form prescribed by Appendix 3; or
(b) Otherwise a site-specific management plan prepared in accordance with the Waste Management Institute New Zealand's *Technical Guidelines for Disposal to Land* (August 2018).

7.6.1.2 Assessment matters

In considering any application under this rule, in addition to the matters listed in Section 104 of the Resource Management Act, the Otago Regional Council will have regard to, but not be restricted by, the following matters:

(a) Odour control;
(b) Potential contamination of soil or water;
(c) Means to monitor the above;
(d) The extent to which the landfill proposal reflects the industry standard for landfills, as represented in the Waste Management Institute New Zealand's *Technical Guidelines for Disposal to Land* (August 2018);
(e) The location of the landfill relative to any water body, areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance;
(f) The characteristics, composition and volume of substances being discharged and of any likely by-products occurring from the degradation of these substances;

(g) The characteristics of the receiving environment including the current and likely future uses of that environment including residential activities;
(h) The mitigation measures, safeguards, and contingency plans to be undertaken to prevent or reduce the actual and potential adverse environmental effects including on residential activities;
(i) Provisions for the handling of any noxious waste, including medical waste, and the degree of pre treatment that will be required prior to accepting such wastes; and
(j) The landfill management plan or landfill closure plan prepared for the site.

7.6.2 Landfills that closed between 1 October 1991 and 1 October 1994 [excluding cleanfill landfills, offal pits, farm landfills and greenwaste landfills] (discretionary activity)

1 The discharge of any contaminant into or onto land;

2 The discharge of any contaminant or water into water; or

3 The discharge of any contaminant to air,

when occurring as the result of a landfill that closed between 1 October 1991 and 1 October 1994 (except for a cleanfill landfill, offal pit, farm landfill, or greenwaste landfill covered by Rules 7.6.3 to 7.6.11) are a permitted activity until 1 October 1996, from which time they became a discretionary activity.

Where a resource consent application for a landfill covered by this rule was submitted before 1 October 1996, discharges will be a permitted activity until the application for resource consent has been finally determined.

A landfill (except for a cleanfill landfill, offal pit, farm landfill, or greenwaste landfill covered by Rules 7.6.3 to 7.6.11) that closes after 1 October 1994 is subject to Rule 7.6.1.

7.6.2.1 Information requirements

In addition to the information required by Section 88 of the Resource Management Act, a landfill closure plan in the form prescribed by Appendix 3 is required to be submitted with an application for resource consent under this rule.

Assessment Matters
In considering any application under this rule, in addition to the matters listed in Section 104 of the Resource Management Act, the Otago Regional Council will have regard to, but not be restricted by, the following matters:

(a) The adverse effects on land, water and air arising from any discharges;
(b) The action that is to be taken to avoid, remedy or mitigate any adverse effects of any discharges;
(c) The monitoring programme to be implemented;
(d) The means to advise prospective purchasers of the property of the landfill operation; and
(e) The location of the landfill relative to any water body, areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance.

7.6.3 Cleanfill landfills (permitted activity)

The discharge of any contaminants into or onto land when occurring as the result of cleanfill landfills is a permitted activity, provided that no sediments enter into any water body.

7.6.4 Cleanfill landfills (discretionary activity)

The discharge of any contaminant into or onto land when occurring as the result of a cleanfill landfill which does not comply with Rule 7.6.3, is a discretionary activity.

7.6.4.1 Assessment matters

In considering any application under this rule, in addition to the matters listed in Section 104 of the Resource Management Act, the Otago Regional Council will have regard to, but not be restricted by, the following matters:

(a) The location of the cleanfill landfill relative to any water body, and areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance;
(b) The adverse effects on land, water and air arising from any discharges;
(c) The action that is to be taken to avoid, remedy or mitigate any adverse effects of any discharges; and
(d) The monitoring programme to be implemented.

7.6.5 Offal pits on production land or factory farm (permitted activity)

1 The discharge of any contaminant into or onto land;

2 The discharge of any contaminant or water into water; or

3 The discharge of any contaminant to air,

when occurring as the result of an offal pit on production land or factory farm is a permitted activity provided that:

(a) The accurate location of any offal pit on a factory farm is provided to the Otago Regional Council;
(b) It is dug in a manner so as to avoid groundwater seepage into the pit;
(c) It is not constructed within 100 metres, horizontally, of a well used to provide water for domestic purposes or drinking water for livestock;
(d) Leachate from the offal pit does not enter any water body;
(e) It is not constructed within 50 metres, horizontally, of any river, lake, stream, pond, wetland or mean high water springs;
(f) Only dead animal matter and perishable household wastes are disposed of into the pit;
(g) No dead animal material originating from an industrial or trade premise (excluding a factory farm) is to be disposed of into the pit;
(h) It is not dug within 50 metres, horizontally, of a property boundary; or
(i) The offal pit does not cause a nuisance and is not noxious, dangerous, offensive, or objectionable beyond the boundaries of the property.

7.6.6 Offal pits on industrial or trade premises, excluding factory farms (controlled activity)

1 The discharge of any contaminant into or onto land;

2 The discharge of any contaminant or water into water; or

3 The discharge of any contaminant to air,

when occurring as the result of an offal pit on industrial or trade premises (excluding factory farms) is a controlled activity, provided that:

(a) It is dug in a manner so as to avoid groundwater seepage into the pit;
(b) It is not constructed within 100 metres, horizontally, of a well used to provide water for domestic purposes or drinking water for livestock;
(c) Leachate from the offal pit does not enter any water body;
(d) It is not constructed within 50 metres, horizontally, of any river, lake, stream, pond, wetland or mean high water springs;
(e) The offal pit shall not be used for the disposal of hazardous wastes or any other toxic matter, sewage, or animal effluent;
(f) Only offal generated on the property is to be disposed of into the pit;
(g) It is not dug within 50 metres, horizontally, of a property boundary; or
(h) The offal pit does not cause a nuisance and is not noxious, dangerous, offensive, or objectionable beyond the boundaries of the property.

7.6.6.1 Information requirements

In addition to the information required by Section 88 of the Resource Management Act, the following information is required to be submitted with an application for resource consent under this rule:

(a) If the offal pit is to close by 1 October 1997 a landfill closure plan in the form prescribed by Appendix 3;
(b) Otherwise a management plan in the form prescribed in Appendix 2.

7.6.6.2 Assessment Matters

In considering an application under this rule the Otago Regional Council will exercise its control over the following matters:

(a) The adverse effects on land, water and air arising from any discharges;
(b) The location of the offal pit relative to any water body, areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance;
(c) The action that is to be taken to avoid, remedy or mitigate any adverse effects of any discharges;
(d) The monitoring programme to be implemented; and
(e) The means to advise prospective purchasers of the property about the landfill operation.

7.6.7 Control of offal pits not in accordance with Rules 7.6.5 or 7.6.6 (discretionary activity)

1 The discharge of any contaminant into or onto land;

2 The discharge of any contaminant or water into water; or

3 The discharge of any contaminant to air,

when occurring as the result of an offal pit operated other than in accordance with Rule 7.6.5 or Rule 7.6.6 is a discretionary activity.

7.6.7.1 Information requirements

For industrial and trade premises, excluding factory farms, in addition to the information required by section 88 of the Resource Management Act, the following information is required to be submitted with an application for a resource consent under this rule:

(a) If the offal pit is to close by 1 October 1997 a landfill closure plan in the form prescribed by Appendix 3;
(b) Otherwise a management plan in the form prescribed in Appendix 2.

7.6.7.2 Assessment Matters

In considering any application under this rule, in addition to the matters listed in Section 104 of the Resource Management Act, the Otago Regional Council will have regard to, but not be restricted by, the following matters:

(a) The adverse effects on land, water and air arising from any discharges;
(b) The location of the offal pit relative to any water body, areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance;
(c) The action that is to be taken to avoid, remedy or mitigate any adverse effects of any discharges; and
(d) The monitoring programme to be implemented.

7.6.8 Farm landfills (permitted activity)

1 The discharge of any contaminant into or onto land;

2 The discharge of any contaminant or water into water; or

3 The discharge of any contaminant to air,

when occurring as the result of a farm landfill is a permitted activity provided that:

(a) Its accurate location is provided to the Otago Regional Council;
(b) It is dug in a manner so as to avoid groundwater seepage into the pit;
(c) It is not dug within 100 metres, horizontally, of a well used to provide water for domestic purposes or drinking water for livestock;
(d) Leachate from the landfill does not enter any water body;
(e) It is not constructed within 50 metres, horizontally, of any river, lake, stream, pond, wetland or mean high water springs;
(f) The farm landfill shall not be used for the disposal of hazardous waste or any other toxic matter, sewage, offal, or animal effluent;
(g) Only waste generated on the property is disposed of into the farm landfill;
(h) It is not constructed within 50 metres, horizontally, of a property boundary;
(i) The farm landfill does not cause a nuisance and is not noxious, dangerous, offensive, or objectionable beyond the boundaries of the property; and
(j) No burning of waste is undertaken.

7.6.9 Farm landfills (discretionary activity)

1 The discharge of any contaminant into or onto land;

2 The discharge of any contaminant or water into water; or

3 The discharge of any contaminant to air,

when occurring as the result of a farm landfill which does not comply with Rule 7.6.8 is a discretionary activity.

7.6.9.1 Assessment matters

In considering any application under this rule, in addition to the matters listed in Section 104 of the Resource Management Act, the Otago Regional Council will have regard to, but not be restricted by, the following matters:

(a) The location of the farm landfill relative to any water body, areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance;

(b) The adverse effects on land, water and air arising from any discharges;
(c) The action that is to be taken to avoid, remedy or mitigate any adverse effects of any discharges; and
(d) The monitoring programme to be implemented.

7.6.10 Greenwaste landfills (permitted activity)

1 The discharge of any contaminant into or onto land;

2 The discharge of any contaminant or water into water; or

3 The discharge of any contaminant to air,

when occurring as a result of any greenwaste landfill is a permitted activity, provided that:

(a) Only greenwaste is disposed of at the greenwaste landfill;
(b) Any excavation is dug in a manner so as to avoid groundwater seepage into the pit;
(c) It is not dug within 100 metres, horizontally, of a well used to provide water for domestic purposes or drinking water for livestock;
(d) Any leachate produced from the greenwaste landfill does not enter any water body;
(e) The greenwaste landfill is not positioned within 50 metres, horizontally, of any river, lake, stream, pond, wetland or mean high water springs;
(f) The greenwaste landfill does not cause a nuisance and is not noxious, dangerous, offensive, or objectionable beyond the boundaries of the property.

7.6.11 Greenwaste landfills (discretionary activity)

1 The discharge of any contaminant into or onto land;

2 The discharge of any contaminant or water into water; or

3 The discharge of any contaminant to air,

when occurring as a result of a greenwaste landfill operated other than in accordance with Rule 7.6.10 is a discretionary activity.

7.6.11.1 Assessment matters

In considering any application under this rule, in addition to the matters listed in Section 104 of the Resource Management Act, the Otago Regional Council will have regard to, but not be restricted by, the following matters:

(a) The location of the greenwaste landfill relative to any water body, areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance;
(b) The adverse effects on land, water and air arising from any discharges;
(c) The action that is to be taken to avoid, remedy or mitigate any adverse effects of any discharges; and
(d) The monitoring programme to be implemented.

7.6.12 Composting (permitted activity)

1 The discharge of any contaminant into or onto land;

2 The discharge of any contaminant or water into water; or

3 The discharge of any contaminant to air,

when occurring as the result of composting of organic material is a permitted activity provided that:

(a) Any excavation is dug in a manner so as to avoid groundwater seepage into the pit;
(b) The activity is not undertaken within 100 metres, horizontally, of a well used to provide water for domestic purposes or drinking water for livestock;
(c) Any leachate produced from compost does not enter any water body;
(d) The composting is not undertaken within 50 metres horizontally, of any river, lake, stream, pond, wetland or mean high water springs;
(e) The composting is undertaken on the property from which the majority of the material is sourced;
(f) The composting does not cause a nuisance and is not noxious, dangerous, offensive, or objectionable beyond the boundaries of the property.

7.6.13 Composting (discretionary activity)

1 The discharge of any contaminant into or onto land;

2 The discharge of any contaminant or water into water; or

3 The discharge of any contaminant to air,

when occurring as the result of the composting of organic material other than in accordance with Rule 7.6.12 is a discretionary activity.

7.6.13.1 Assessment matters

In considering any application under this rule, in addition to the matters listed in Section 104 of the Resource Management Act, the Otago Regional Council will have regard to, but not be restricted by, the following matters:

(a) The location of the composting relative to any water body, areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance;
(b) The adverse effects on land, water and air arising from any discharges;
(c) The action that is to be taken to avoid, remedy or mitigate any adverse effects of any discharges; and
(d) The monitoring programme to be implemented.

7.6.14 Discharges from silage production (permitted activity)

1 The discharge of any contaminant into or onto land;

2 The discharge of any contaminant or water into water; or

3 The discharge of any contaminant to air,

when occurring as a result of silage production is a permitted activity provided that:

(a) Any excavation is dug in a manner so as to avoid groundwater seepage into the pit;
(b) The silage stack or pit is not within 100 metres horizontally, of a well used to provide water for domestic purposes or drinking water for livestock;
(c) Leachate from the silage stack or pit does not enter into any water body;
(d) Any silage stack or pit established after 2 February 1996 is not within 50 metres horizontally, of any river, lake, stream, pond, wetland or mean high water springs;
(e) Silage production is undertaken on production land;

(f) The silage stack or pit is not located within 50 metres, horizontally, of a property boundary excluding road boundaries; or

(g) The silage stack or pit does not cause a nuisance and is not noxious, dangerous, offensive or objectionable beyond the boundaries of the property.

7.6.15 Discharges from silage production (discretionary activity)

1 The discharge of any contaminant into or onto land;

2 The discharge of any contaminant or water into water; or

3 The discharge of any contaminant to air,

when occurring as a result of silage production other than in accordance with Rule 7.6.14 is a discretionary activity.

7.6.15.1 Assessment matters

In considering any application under this rule, in addition to the matters listed in Section 104 of the Resource Management Act, the Otago Regional Council will have regard to, but not be restricted by, the following matters:

(a) The location of the silage production relative to any water body, areas prone to erosion, inundation or subsidence, and areas of cultural, conservation or historic significance;
(b) The adverse effects on land, water and air arising from any discharges;
(c) The action that is to be taken to avoid, remedy or mitigate any adverse effects of any discharges; and
(d) The monitoring programme to be implemented.

Principal reasons for adopting landfill rules

Section 15 of the Resource Management Act requires a resource consent for the discharge of contaminants in a number of situations. Where the Otago Regional Council has considered that the adverse effects of such discharges will be minor, as a result of compliance with any condition, then such a discharge has been permitted under this Plan.

Transitional provisions have been provided for landfills (excluding cleanfill landfills, offal pits, farm landfills and greenwaste landfills) that closed between 1 October 1991 and 1 October 1994 in order that operators can concentrate on gaining resource consents for those landfills that will continue to operate.

The Otago Regional Council is satisfied that any of the adverse effects on

the environment described in Section 70(c) to (g) of the Resource Management Act, as a result of discharges of contaminants, will be avoided by the relevant provisions of the permitted activity rules above for cleanfill landfills, offal pits, farm landfills, greenwaste landfills, silage production and the composting of organic material.

While silage production and composting are not landfill operations, adverse effects may arise from their discharges of a similar nature to discharges from landfills. For this reason these activities are included within this Chapter.

Any landfill that was closed prior to 1 October 1991 may be considered a contaminated site in terms of Rule 5.6.1.

7.7 Anticipated environmental results

7.7.1 There is a reduction in the adverse effects resulting from landfill sites, composting operations and silage stacks or pits.

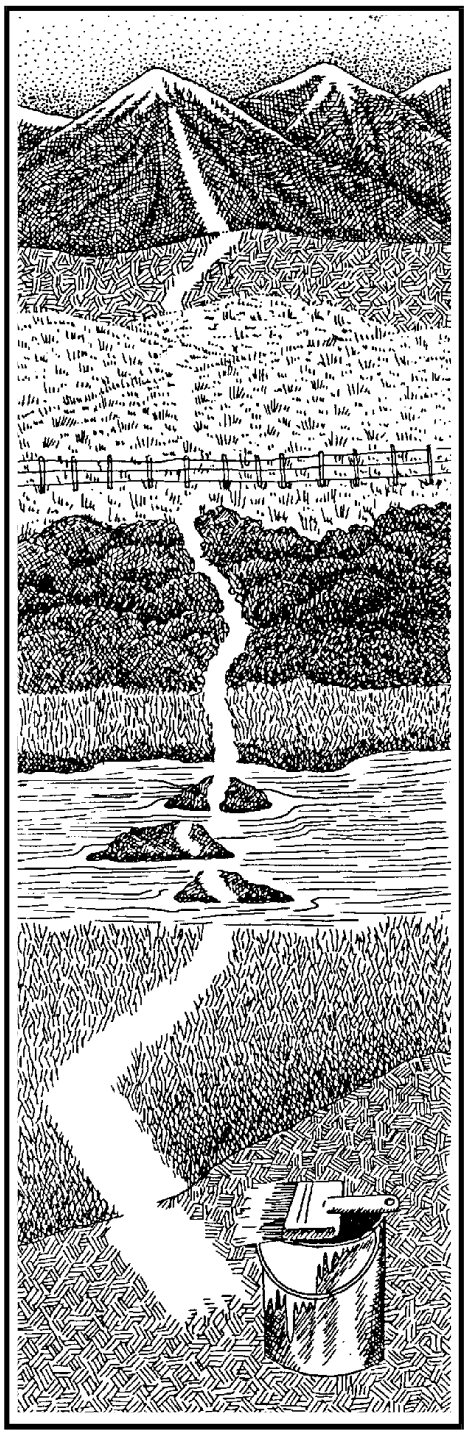
7.7.2 Discharges are prevented from entering any water body from landfills, including cleanfill landfills, offal pits, farm landfills and greenwaste landfills, and from silage pits and stacks and composting operations.

7.7.3 There is an elimination of illegal, uncontrolled, unmanaged and poorly located landfills, silage stacks or pits and composting operations.

7.7.4 There is a reduction in the amount of waste disposed of to landfills through increased use of alternatives to reduce, recycle or reuse materials.

8

Cross Boundary Issues



8.1 Issues

This Plan identifies and considers a number of cross-boundary issues. These can be grouped into three types:

8.1.1 Between territorial authorities

Within the Otago region cross-boundary issues can arise between territorial authorities. These include the following matters:

(a) The construction and operation of landfills to be used by two or more territorial authorities;
(b) The movement of wastes and substances (particularly hazardous substances and hazardous wastes) across territorial boundaries;
(c) Facilitation and possibly operation of solid waste reuse or recycling facilities; and
(d) Provision of educational material regarding waste disposal practices.

8.1.2 Between Otago and neighbouring regions

The cross-boundary issues between Otago and its neighbouring regions, (Southland, West Coast and Canterbury) are the same as those between the territorial authorities noted above.

In addition, cross-boundary regional issues arise within the Waitaki District that is contained within two regions, Otago and Canterbury. For administrative purposes it would be desirable to apply the same policies and methods (including rules) to all of the Waitaki District. That is not possible for the reason that issues of regional significance differ between Otago and Canterbury. However in preparing this Plan, and in determining rules for implementation, the Otago Regional Council has consulted with the Canterbury Regional Council in order to achieve consistency where this is appropriate, and can be justified on resource management grounds.

8.1.3 Between the Otago region and the rest of New Zealand

On some issues there is a need for national consistency. This is achieved primarily through national legislation that seeks to apply common requirements and regulations across the entire country, in order to provide uniformity and consistency on those issues which the Government considers require such an approach.

Those cross-boundary issues that arise at the national level are:

(a) Compliance with government legislation and policies;
(b) Compliance with international conventions;
(c) The applicability of techniques such as economic instruments; and
(d) The storing and disposal of some hazardous wastes.

On some of these matters, such as the latter, investigation is required at a national level to ensure that any action taken is efficient and effective. This can be done without government intervention, although on such matters involvement of central government is desirable.

On other matters, such as those relating to legislation, action by government will be required.

8.2 Approach to cross boundary issues

The Otago Regional Council will adopt the following approaches in responding to cross-boundary issues.

8.2.1 Territorial - regional liaison

The Otago Regional Council will liaise with territorial authorities over waste minimisation issues, the control of contaminated sites, the operation of facilities for the treatment or disposal of hazardous wastes, and the management of landfills, and discharges from composting and silage production.

8.2.2 Joint hearings

Section 102 of the Resource Management Act provides for instances where joint hearings may be held. Joint hearings will also be held, where appropriate, with the relevant territorial authority when considering applications for resource consents for contaminated sites.

8.2.3 Inter-regional liaison

The elected representatives, the chief executives, senior staff, and technical staff, each meet with their counterparts in other regions on a regular basis in order to identify matters of mutual interest.

These meetings provide the opportunity for matters of interest nationally, and with adjoining regions to be considered.

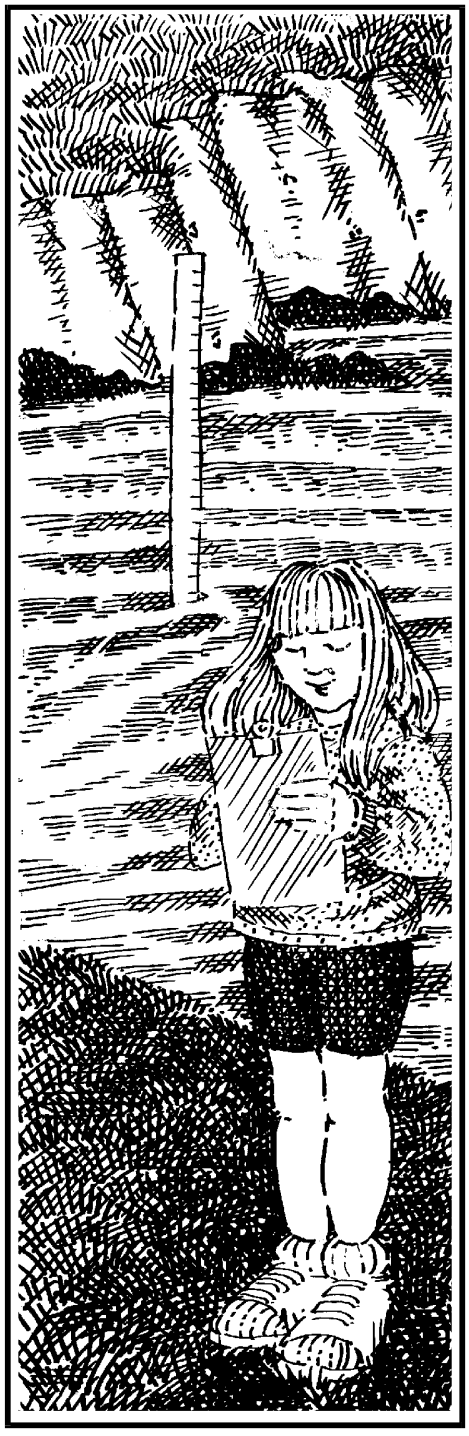
Where matters arise that require resolution between particular adjoining regional councils, special meetings can be arranged.

8.2.4 Advocating to government

Where the Otago Regional Council considers that matters are best dealt with at national level the Council will advocate the taking of action directly with central government.

9

Monitoring



9.1 Introduction

Under Section 35 of the Resource Management Act the Otago Regional Council has the responsibility to monitor:

- The state of the regional environment to the extent that is appropriate to enable the Otago Regional Council to effectively carry out its functions (baseline monitoring);
- The suitability and effectiveness of any policy statement or plan for the region (process monitoring); and
- Compliance of resource consents (compliance monitoring).

This monitoring will be undertaken in terms of the framework set out in the Regional Policy Statement for Otago. Section 67(1)(i) of the Resource Management Act also requires the Otago Regional Council to monitor the effectiveness of this Plan in achieving the stated objectives and policies.

These requirements give rise to a number of matters which are appropriate to monitor as part of this Plan. These are set out in the following section.

9.2 Monitoring programme for this Plan

In order to meet the objectives and policies of the Regional Policy Statement for Otago and this Plan, it will be necessary to monitor the following factors:

9.2.1 Waste minimisation

1 The quantity and make-up of refuse being disposed of at landfills within the region. (Policies 4.4.2 - 4.4.4; Method 4.5.3) Generally, consent holders will be required to supply this information to the Otago Regional Council for aggregation and assessment;

2 The frequency and type of requests received by the Otago Regional Council for information and technical assistance. (Method 4.5.1);

3 The frequency and type of territorial authority, industry and public internal waste audits. (Method 4.5.5);

4 Action taken by the Otago Regional Council to promote waste minimisation, including:

(a) Publicity, Otago Regional Council publication reports and advertising. (Methods 4.5.4, 4.5.8);

(b) Education and information dissemination. (Method 4.5.2);
(c) Advocacy to central government. (Methods 4.5.6, 4.5.7);
(d) Community initiatives. (Method 4.5.10); and

5 Degree of consultation with Kai Tahu. (Policy 4.4.1; Method 4.5.9).

9.2.2 Contaminated sites

In order to determine the effectiveness of the policies of this Plan relating to site contamination, and to enable an assessment of action taken by the Otago Regional Council, the following matters will be monitored:

1 Numbers of contaminated sites located and investigated. (Policies 5.4.2, 5.4.7; Methods 5.5.1, 5.5.2);

2 Action taken in response to contamination of sites. (Policies 5.4.3 - 5.4.5; Methods 5.5.1 - 5.5.3);

3 Numbers of applications submitted for contaminated sites, including their outcome. (Method 5.5.5);

4 The environmental effects arising from contaminated sites. Generally consent holders will be required to supply this information to the Otago Regional Council for aggregation and assessment;

5 Action taken by Otago Regional Council, including:

(a) Submissions to territorial authorities on provisions included in district plans. (Method 5.5.4);
(b) Involvement with the preparation of codes of practice. (Method 5.5.6);
(c) Inclusion of objectives, policies and methods in other regional plans in relation to contaminated sites. (Method 5.5.5);
(d) Any enforcement action taken; and

6 Degree of consultation with Kai Tahu. (Policy 5.4.1; Method 5.5.8).

9.2.3 Hazardous substances and hazardous wastes

1 Numbers of applications submitted in relation to hazardous waste discharges including their outcome. (Policy 6.4.11; Methods 6.5.15, 6.5.16, 6.5.18, 6.5.23, 6.5.25);

2 Action taken by the Otago Regional Council, including:

(a) Publicity, Otago Regional Council publications, reports and advertising. (Policies 6.4.1 - 6.4.8, 6.4.10; Methods 6.5.1 - 6.5.5, 6.5.7, 6.5.12, 6.5.17);
(b) Preparation of a hazardous spills response strategy. (Policy 6.4.9; Method 6.5.20);
(c) Submissions to territorial authorities on provisions included in district plans. (Policy 6.4.12, Methods 6.5.10, 6.5.17);
(d) Advocacy to central government. (Method 6.5.6);
(e) Action on registers of storing significant quantities of hazardous substances and contaminated sites. (Method 6.5.13);
(f) Any collection of hazardous substances. (Method 6.5.6, 6.5.11);
(g) Inclusion of objectives, policies and methods in other regional plans in relation to hazardous substances and hazardous wastes. (Method 6.5.19);
(h) The outcome following the preparation of a regional strategy for the storage and disposal of hazardous substances. (Method 6.5.20);
(i) Any enforcement action taken and emergency works. (Method 6.5.21);
(j) Encouraging action by territorial authorities or industry groups. (Methods 6.5.8, 6.5.9, 6.5.11, 6.5.22); and

3 Degree of consultation with Kai Tahu. (Policy 6.4.12; Method 6.5.24).

9.2.4 Landfills

1 Numbers of applications submitted for landfills, discharges from silage production and composting, including their outcome. (Policies 7.4.3 - 7.4.10; Methods 7.5.5 - 7.5.11);

2 Location of any farm landfill or any offal pit on a factory farm. (Policy 7.4.5);

3 Location of past community landfills. (Method 7.5.16);

4 Results from audit monitoring of landfills, discharges from silage production and composting. (Method 7.5.10);

5 Action taken by the Otago Regional Council, including:

(a) Publicity, Otago Regional Council publication reports and advertising. (Policy 7.4.8; Method 7.5.12);
(b) Investigations and research. (Method 7.5.12);
(c) Education and information dissemination. (Method 4.5.2);
(d) Advocacy to territorial authorities. (Methods 7.5.2 - 7.5.4);
(e) Advocacy to central government. (Methods 4.5.6, 4.5.7);
(f) Inclusion of objectives, policies and methods in the Regional Plan: Air for Otago in relation to landfills, composting and silage production discharges. (Method 7.5.15); and

6 Degree of consultation with Kai Tahu. (Policy 7.4.1; Method 7.5.1); and

7 Enforcement and other offences. (Policy 7.4.2; Method 7.5.14).

9.2.5 Other monitoring

In addition to the above the Otago Regional Council will need to also monitor changes in:

(a) Technology
As new technology becomes available, particularly with regard to new methods of disposing of waste, the Otago Regional Council will need to consider these to determine whether they are methods that should be promoted within Otago.

(b) Knowledge
While the understanding of waste practices, for example the depositing of hazardous waste into the ground, has been extended considerably in the past twenty years, it would be unwise to assume that there is full understanding of the environmental effects of all aspects of waste management. The Otago Regional Council, will need to assess new information that becomes available in order to determine whether changes are required to waste management practices within the region or to this Plan.

(c) Legislation

Changes to legislation, such as that relating to hazardous substances and new organisms, may have a considerable impact upon:

(i) the roles and responsibilities of the statutory agencies involved in waste management; and

(ii) the manner in which waste management is administered, with the possibility of new recording and monitoring systems being put in place.

Other legislative amendments may also necessitate changes to this Plan, and for that reason they will need to be monitored closely.

9.3 Biennial waste monitoring report

Each second year, in preparing its Annual Report, the Otago Regional Council will consider a Biennial Waste Monitoring Report, setting out the matters referred to in Section 9.2 of this Plan, together with an assessment of any action that may be warranted.

The Biennial Waste Monitoring Report will be prepared in consultation with Kai Tahu.

A copy of the Biennial Waste Monitoring Report will be made available to the public.

10

Glossary

Terms marked with a ϕ are terms defined in the Resource Management Act 1991

The Act	Unless expressly stated otherwise, means the Resource Management Act 1991 (including any amendments thereto).
Amenity valuesϕ	Means those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes.
ANZECC	Australia and New Zealand Environment and Conservation Council, comprising ministers for the environment of Australian states, New Zealand and Papua New Guinea.
BOD	Biochemical Oxygen Demand. Used as a measure of organic pollution. The measured amount of oxygen required by acclimatised micro-organisms to biologically degrade the organic matter in wastewater.
Cleanfill	Generally a natural material such as clay, soil, and rock, and such other materials as concrete, brick or demolition products that are free of combustible or organic materials and are therefore not subject to biological or chemical breakdown.
Cleanfill landfill	A landfill used solely for the disposal of cleanfill.
Cleaner production	The conceptual and procedural approach to production that demands that all phases of the lifecycle of a product or of a process should be addressed with the objective of prevention or minimisation of short and long-term risks to humans and to the environment.
Closed landfill	A landfill which is no longer receiving waste.
COD	Chemical Oxygen Demand.
Co-disposal	The disposal of appropriate hazardous wastes by mixing them, in an informed and pre-determined manner, with municipal refuse, so as to use the attenuation and biochemical processes operating within the landfill to reduce the environmental impact from the mixed waste to an insignificant level.

Co-disposal landfill — A landfill used for the disposal of special hazardous wastes in combination with community wastes. Leachate and gaseous omissions from a co-disposal landfill should not be materially different from those generated from an operating landfill managed by a territorial authority.

Composting — The biological reduction of organic waste to a relatively stable product.

Contaminant[ϕ] — Includes any substance (including gases, liquids, solids and micro-organisms) or energy (excluding noise) or heat, that either by itself or in combination with the same, similar, or other substances, energy or heat:

(a) When discharged into water, changes or is likely to change the physical, chemical, or biological condition of water; or

(b) When discharged onto or into land or into air, changes or is likely to change the physical, chemical, or biological condition of the land or air onto or into which it is discharged.

Contaminated site — A contaminated site is a site at which hazardous substances occur at concentrations above background levels and where assessment indicates it poses, or is likely to pose an immediate or long term hazard to human health or the environment.

Controlled activity[ϕ] — An activity which -

(a) Is provided for, as a controlled activity, by a rule in a plan or proposed plan; and

(b) Complies with standards and terms specified in a plan or proposed plan for such activities; and

(c) Is assessed according to matters the consent authority has reserved control over in the plan or proposed plan; and

(d) Is allowed only if a resource consent is obtained in respect of that activity.

Discharge[ϕ] — Includes emit, deposit and allow to escape.

Discharge permit — A consent to do something (other than in the coastal marine area) that otherwise would contravene Section 15 [of the Resource Management Act 1991].

Discretionary activity[ϕ]

Any activity -

(a) Which is provided for, as a discretionary activity, by a rule in a plan or proposed plan; and

(b) Which is allowed only if a resource consent is obtained in respect of that activity; and

(c) Which may have standards and terms specified in a plan or proposed plan; and

(d) In respect of which the consent authority may restrict the exercise of its discretion to those matters specified in the plan or proposed plan for that activity.

Ecosystem

A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.

Effect[ϕ]

Unless the context otherwise requires, the term "effect" includes:

(a) Any positive or adverse effect; and

(b) Any temporary or permanent effect; and

(c) Any past, present, or future effect; and

(d) Any cumulative effect which arises over time or in combination with other effects -

regardless of the scale, intensity, duration, or frequency of the effect, and also includes -

(e) Any potential effect of high probability; and

(f) Any potential effect of low probability which has a high potential impact.

Environment[ϕ]

Includes:

(a) Ecosystems and their constituent parts, including people and communities; and

(b) All natural and physical resources; and

(c) Amenity values, and

(d) The social, economic, aesthetic and cultural conditions which affect the matters stated in paragraphs (a) to (c) of this definition or which are affected by those matters.

Eutrophication Process by which water (usually freshwater) becomes rich in nutrients, causing excessive plant growth which kills animal life by deprivation of oxygen.

Farm landfill A landfill situated on production land in which the disposal of waste generated from that land takes place, not including any dead animal material or any waste generated from any industrial or trade process on that production land.

Greenwaste Vegetative material. The material may include soil that is attached to plant roots and shall be free of hazardous substances and wastes.

Groundwater Water that occupies or moves through pores, cavities, cracks, and other spaces in crustal rocks.

Hazardous substance Any substance:

(a) With one or more of the following intrinsic properties:

  (i) Explosiveness;

  (ii) Flammability;

  (iii) A capacity to oxidise;

  (iv) Corrosiveness;

  (v) Toxicity, (both acute and chronic);

  (vi) Ecotoxicity, with or without bioaccumulation; or

(b) Which on contact with air or water (other than air or water where the temperature or pressure has been artificially increased or decreased) generates a substance with any one or more of the properties specified in paragraph (a) of this definition.

Hazardous waste Includes:

(a) A hazardous substance which has not been used and requires disposal; or

(b) The residue of a hazardous substance which has been used and requires disposal; or

(c) Waste material containing a hazardous substance.

Highly hazardous substance or waste

Any substance or waste belonging to any of the categories described in Appendix 4 of this Plan, unless such wastes or substances do not possess any of the hazardous characteristics listed in Appendix 5 of this Plan.

Industrial or trade premises$^{\phi}$

Means:

(a) Any premises used for any industrial or trade purposes; or

(b) Any premises used for the storage, transfer, treatment, or disposal of waste materials or for other waste management purposes, or used for composting organic materials; or

(c) Any other premises from which a contaminant is discharged in connection with any industrial or trade process -

and includes any factory farm; but does not include any production land.

Intractable waste

Any hazardous waste that does not degrade naturally into non-hazardous residues over time when released into the environment, and for which there is no present environmentally acceptable method of treatment or disposal currently available in New Zealand. It should be noted that not all hazardous wastes are intractable wastes.

Kai Tahu

Descendants of Tahu, the tribe.

Kaitiakitanga$^{\phi}$

The exercise of guardianship and, in relation to a resource, includes the ethic of stewardship based on the nature of the resource itself.

Landfill

A site used for the deposit of solid wastes onto or into land.

Leachate

A liquid contaminant resulting from the liquid being exuded from or percolated through some more-or-less solid matter.

Local authority

A regional council or territorial authority.

Manawhenua

Those with rangatiritanga for a particular area of land or district.

Method

The practical action by which a policy is implemented.

Mitigate	To make or become less severe or harsh. To moderate.
New landfill	A site to be used as a landfill.
Non-complying activity	An activity (not being a prohibited activity) which: (a) Contravenes a rule in a plan or proposed plan; and (b) Is allowed only if a resource consent is obtained in respect of that activity.
Non-point source discharge	Runoff or leachate from land, onto or into land, air, a water body or the sea.
Objective	The desired result, end state, situation or condition that is aimed for.
Offal	Waste comprised of dead animal matter.
Offal pit	A disposal hole excavated for the purpose of disposing of offal.
Operating landfill	Any landfill that is currently accepting solid waste for disposal.
PCB	Polychlorinated biphenyl.
PCP	Pentachlorophenol.
Permitted activity$^{\phi}$	Any activity that is allowed by a plan without a resource consent if it complies in all respects with any conditions (including any conditions in relation to any matter described in Section 108 or Section 220 [of the Resource Management Act]) specified in the plan.
Point source discharge	A discharge from a specific and identifiable source, onto or into land, air, a water body or the sea.
Policy	The course of action to achieve the objective.
Production land$^{\phi}$	(a) Means any land and auxiliary buildings used for the production (but not processing) of primary products (including agricultural, pastoral, horticultural, and forestry products) (b) Does not include land or auxiliary buildings used or associated with prospecting, exploration, or mining for minerals or used for factory farming, - and "Production" has a corresponding meaning.

Recycling The return of discarded waste materials to the production system for utilisation in the manufacture of goods, with a view to the conservation as far as practicable of non-renewable and scarce resources.

Resource consent[ϕ] Means:

(a) A consent to do something that otherwise would contravene Section 9 or Section 13 (in [the Resource Management] Act called a "land use consent");

(b) A consent to do something that otherwise would contravene Section 11 (in [the Resource Management] Act called a "subdivision consent");

(c) A consent to do something in a coastal marine area that otherwise would contravene any of Sections 12, 14 and 15 (in the [Resource Management] Act called a "coastal permit");

(d) A consent to do something (other than in a coastal marine area) that otherwise would contravene Section 14 (in the [Resource Management] Act called a "water permit");

(e) A consent to do something (other than in a coastal marine area) that otherwise would contravene section 15 (in the [Resource Management] Act called a "discharge permit");

And includes all conditions to which the consent is subject.

Solid waste The combination of domestic, industrial and commercial waste including non-hazardous special wastes, also known as community waste.

Takaroa Guardian of the waterways.

Territorial authority A city or district council.

Waste Any contaminant, whether liquid, solid, gaseous, or radioactive, which is: discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an adverse effect on the environment and which includes all unwanted and economically unusable by-products at any given place and time, and any other matter which may be discharged, accidentally or otherwise, to the environment.

Waste oil	Any oil that has been refined from crude oil, or any synthetic hydrocarbon oil, that has been used, and as a result of such use, has become unsuitable for its original purpose due to the presence of impurities or contaminants or the loss of original properties.
Waste analysis protocol	A system developed by the Ministry for the Environment to provide a database/knowledge on New Zealand's waste stream.
Waste management	The transportation, resource recovery, recycling, storage, treatment and disposal of wastes, including management systems to ensure that environmental effects are avoided, remedied or mitigated. Waste management also encompasses measures to avoid waste generation.
Waste minimisation	The modification of existing processes or behaviour to reduce waste production to a minimum.
Water body$^{\phi}$	Means fresh water or geothermal water in a river, lake, stream, pond, wetland, or aquifer, or any part thereof, that is not located within the coastal marine area.

11

Appendices

Appendix 1

Matters to be included in a Hazardous Waste Facility Management Plan

1 General description of the site, including topography, natural water sources, and geotechnical investigations.

2 Description of the operation of the disposal facility.

3 Types of waste to be treated or disposed of.

4 Assessment of environmental effects including assessment of alternatives to the disposal of waste at the landfill.

5 Any implications of site management and operation of landfill for Iwi.

6 A manifest system identifying types and quantities received including the source, and where within the landfill any hazardous wastes are placed.

7 Identification of discharges and environmental effects and the safeguards in place to avoid or reduce the environmental effects.

8 Sensitivity of the receiving environment.

9 Procedures for monitoring (including detection of leakage of contaminants in contravention of resource consent) and controlling adverse effects of spillages and leachate on groundwater and any water body, as well as the monitoring and control of odours.

10 Outline of proposals to report to the Otago Regional Council regarding environmental compliance.

11 Outline of emergency response procedures and contingency plans including:

- Power failure;
- Fire; and
- Emergency contacts.

Appendix 2

Matters to be included in Management Plan

1 General description of the site, including topography, natural water sources, and geotechnical investigations.

2 Works to be undertaken to establish the offal pit.

3 Description of the waste collection, treatment, and disposal system.

4 Projected life of the offal pit.

5 Reinstatement and possible end use of the site.

6 Closure and after-care including ongoing monitoring of leachate discharges and management of surface runoff, stormwater control, and site remediation.

7 Assessment of environmental effects including assessment of alternatives to the disposal of waste at the offal pit.

8 Any implications of site management and operation of offal pit for Iwi.

9 For hazardous wastes, a description of wastes which are acceptable and unacceptable, and wastes which can only be accepted under special (specified) conditions.

10 For hazardous wastes, an outline of a manifest system identifying types and quantities received including the source, and where within the site any hazardous wastes are to be placed.

11 Identification of discharges and environmental effects and the safeguards in place to avoid or reduce the environmental effects.

12 Sensitivity of the receiving environment.

13 A description of how litter, vermin and birds will be controlled.

14 Water control including stormwater and leachate.

15 Description of procedures for monitoring (including detection of leakage of contaminants in contravention of resource consent) and controlling adverse effects of spillages and leachate on groundwater and any water body, as well as monitoring and control of odours.

16 Outline proposals for audit and reporting to the Otago Regional Council regarding environmental compliance.

17 Identification of corporate environmental performance standards, national or industry group codes of practice, or other recognised environmental safety standards with which the operation of the facility will comply, and a description of the means for auditing compliance.

18 Identification of management responsibilities for compliance with resource consents and environmental regulatory requirements.

19 Outline of emergency response procedures and contingency plans including:
- Power failure;
- Fire; and
- Emergency contacts.

20 Outline of contingency plans to restore or remedy any potential adverse environmental effects caused by the operation of the offal pit, including effects that may arise after waste disposal operations have ceased and details of proposed environmental trigger/action levels for implementation of the preferred contingency options.

Appendices:

- Aerial photograph or drawing showing the site layout
- Staged management plans
- Final landform plan

Appendix 3

Matters to be included in Landfill Closure Plan

1 General description of the landfill site, including topography, natural water sources, geotechnical investigations.

2 Description of the waste collection, treatment, and disposal system that has operated on the site, including, where known, the likely composition of material in the landfill.

3 End use of the site.

4 After-care including ongoing monitoring of leachate discharges and management of surface runoff, stormwater control, and site remediation.

5 Any implications of site management and operation of landfill for Iwi.

6 Identification of discharges and environmental effects and the safeguards in place to avoid or reduce the environmental effects.

7 Proposals for audit and reporting to the Otago Regional Council regarding environmental compliance.

Appendices:

- Aerial photograph or drawing showing the site layout
- Staged management plans
- Final landform plan

Appendix 4

Categories of wastes to be controlled

A Waste streams

Y1 Clinical waste from medical care in hospitals, medical centres and clinics;
Y2 Waste from the production and preparation of pharmaceutical products;
Y3 Waste pharmaceuticals, drugs and medicines;
Y4 Waste from the production, formulation and use of biocides and phytopharmaceuticals;
Y5 Waste from the manufacture, formulation and use of wood preserving chemicals;
Y6 Waste from the production, formulation and use of organic solvents;
Y7 Waste from heat treatment and tempering operations containing cyanides;
Y8 Waste mineral oils unfit for their originally intended use;
Y9 Waste oils/water, hydrocarbons/water mixtures, emulsions;
Y10 Waste substances and articles containing or contaminated with polychlorinated biphenyls (PCBs), polychlorinated terphenyls (PCTs) or polybrominated biphenyls (PBBs);
Y11 Waste tarry residues arising from refining, distillation and any pyrolytic treatment;
Y12 Waste from production, formulation and use of inks, dyes, pigments, paints, lacquers, varnish;
Y13 Waste from production, formulation and use of resins, latex, plasticisers, glues/adhesives;
Y14 Waste chemical substances arising from research and development or teaching activities which are not identified and / or are new and whose effects on man and / or the environment are not known;
Y15 Waste of an explosive nature;
Y16 Waste from production, formulation and use of photographic chemicals and processing materials;
Y17 Waste resulting from surface treatment of metals and plastics; and
Y18 Residues arising from industrial waste disposal operations.

B Constituents

Y19 Metal carbonyls;
Y20 Beryllium; beryllium compounds;
Y21 Hexavalent chromium compounds;
Y22 Copper compounds;
Y23 Zinc compounds;
Y24 Arsenic; arsenic compounds;
Y25 Selenium; selenium compounds;
Y26 Cadmium; cadmium compounds;
Y27 Antimony; antimony compounds;
Y28 Tellurium; tellurium compounds;
Y29 Mercury; mercury compounds;

Y30 Thallium; thallium compounds;
Y31 Lead; lead compounds;
Y32 Inorganic fluorine compounds excluding calcium fluoride;
Y33 Inorganic cyanides;
Y34 Acidic solutions or acids in solid form;
Y35 Basic solutions or bases in solid form;
Y36 Asbestos (dust and fibres);
Y37 Organic phosphorous compounds;
Y38 Organic cyanides;
Y39 Phenols; phenol compounds including chlorophenols;
Y40 Ethers;
Y41 Halogenated organic solvents;
Y42 Organic solvents excluding halogenated solvents;
Y43 Any congener of polychlorinated dibenzo-furan;
Y44 Any congener of polychlorinated dibenzo-p-dioxin; and
Y45 Organohalogen compounds other than substances referred to in this appendix (eg, Y39, Y41, Y42, Y43, Y44).

C Wastes requiring special consideration

Y46 Wastes collected from households;
Y47 Residues arising from the incineration of household wastes;
Y48 Radioactive substances;
Y49 Contained gases.

Source: Corresponds to the classification system from "*Our Waste Our Responsibility*" [Centre for Advanced Engineering, 1993, Part 3, Appendix A, pages 240 - 241]

Appendix 5

List of hazardous characteristics

UN Class*	Code	Characteristics
1	H1	**Explosives** An explosive substance or waste is a solid or liquid substance or waste (or mixture of substances or wastes) that is, in itself, capable by chemical reaction of producing gas at such a temperature and pressure, and at such a speed, as to cause damage to the surroundings.
3	H3	**Flammable liquids** The word "flammable" has the same meaning as "inflammable". Flammable liquids are liquids, or mixtures of liquids, or liquids containing solids in solution or suspension (for example, paints, varnishes, lacquers, etc, but not including substances or wastes otherwise classified on account of their dangerous characteristics) which give off a flammable vapour at temperatures of not more than 61°C.
4.1	H4.1	**Flammable solids** Solids, or waste solids, other than those classed as explosives, which under conditions encountered in transport are readily combustible, or may cause or contribute to fire through friction.
4.2	H4.2	**Substances or wastes liable to spontaneous combustion** Substances or wastes that are liable to spontaneous heating under normal conditions encountered in transport, or to heating up on contact with air, and then being liable to catch fire.
4.3	H4.3	**Substances or wastes which, in contact with water, emit flammable gases** Substances or wastes which, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.
5.1	H5.1	**Oxidising substances** Substances or wastes which, in themselves are not necessarily combustible, but may, generally by yielding oxygen, cause or contribute to the combustion of other materials.

5.2	H5.2	**Organic peroxides** Organic substances or wastes which contain the bivalent O=O structure are thermally unstable substances which may undergo exothermic self-accelerating decomposition.
6.1	H6.1	**Poisonous substances** Substances or wastes liable either to cause death or serious injury or to harm human health if swallowed or inhaled or by skin contact.
6.2	H6.2	**Infectious substances** Substances or wastes containing viable micro-organisms or their toxins which are known or suspected to cause disease in animals or humans.
7	H7	**Radioactive material** Spontaneously emits radiation greater than background level. Includes alpha, beta, gamma, x-rays, neutrons, high energy electrons, protons and other atomic particles.
8	H8	**Corrosives** Substances or wastes which, by chemical action, will cause severe damage when in contact with living tissue, or, in the case of leakage, will materially damage, or even destroy, other goods or the means of transport; they may also cause other hazards.
9	H10	**Liberation of toxic gases in contact with air or water** Substances or wastes which, by interaction with air or water, are liable to give off toxic gases in dangerous quantities.
9	H11	**Toxic (delayed or chronic)** Substances or wastes, which, if they are inhaled or ingested or if they penetrate the skin, may involve delayed or chronic effects, including carcinogenicity. (See note).
9	H12	**Ecotoxic** Substances or wastes, which if released, present or may present immediate or delayed adverse impacts to the environment by means of bioaccumulation or toxic effects upon biotic systems. (See note).
9	H13	**Capable of yielding another material** Capable, by any means, after disposal, of yielding another material, eg, leachate, which possesses any of the characteristics listed above.

Corresponds to the hazard classification system included in the United Nations Recommendations on the Transport of Dangerous Goods (ST/SG/AC. 10/1/Rev.6, United Nations, New York, 1989)

Note: (1) In the above descriptions, where specific reference is made to conditions of transport in waste management, this should include all conditions of storage, transport and disposal.

(2) These categories, in the absence of specific tests, are considered to contain, but are not limited to, all wastes having as constituents any substances listed in the four schedules of the New Zealand Toxic Substances Regulations at or above the concentrations listed in the schedule to these Regulations.

The potential hazards posed by certain types of wastes are not yet fully documented; tests to quantitatively define these hazards do not exist. Further research is necessary in order to develop the means to characterise potential hazards posed to man or the environment by these wastes.

Source: Corresponds to the classification system from "*Our Waste Our Responsibility*", [Centre for Advanced Engineering, 1993, part 3, Appendix B, pages 243 - 244]