



Waste Management Plan

Developed in collaboration with:



December 2004

Preface

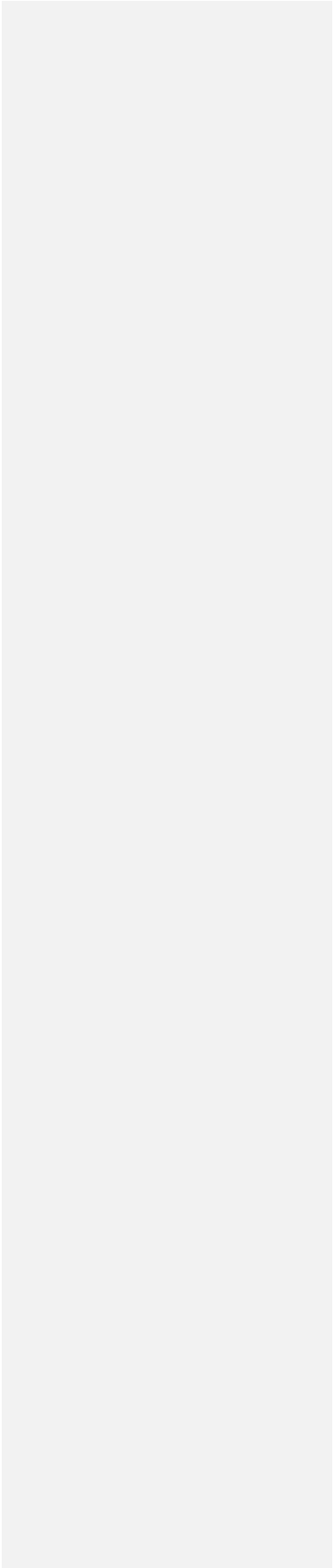
Under the Local Government Act (LGA), all territorial authorities are required to adopt a Waste Management Plan (WMP) before June 2005. The LGA also prescribes the matters that the WMP must include.

Given this legislative requirement, the Invercargill City Council, Gore District Council and Southland District Council (collectively referred to as WasteNet Councils) have collaborated with Environment Southland to jointly develop this WMP for each WasteNet Council.

This document is the WMP. This WMP has been notified, using the special consultation procedure, as the proposed WMP of each WasteNet Council. The WMP was formally adopted by each of the WasteNet Councils in December 2004.

Environment Southland has no mandatory requirement to adopt a WMP. Therefore, although they have collaborated in the WMP's development, they have not formally adopted it.

This WMP covers solid, liquid and gaseous waste, as well as inefficient resource use (ie wastage).



Status – Final
Filepath – \\ntserver2\d\$\Data\Data District Assets\AHenderson\Docs.NJorgensen\SHARED\ES Solid Waste\Waste Management Plan\r_WMP_Final.doc



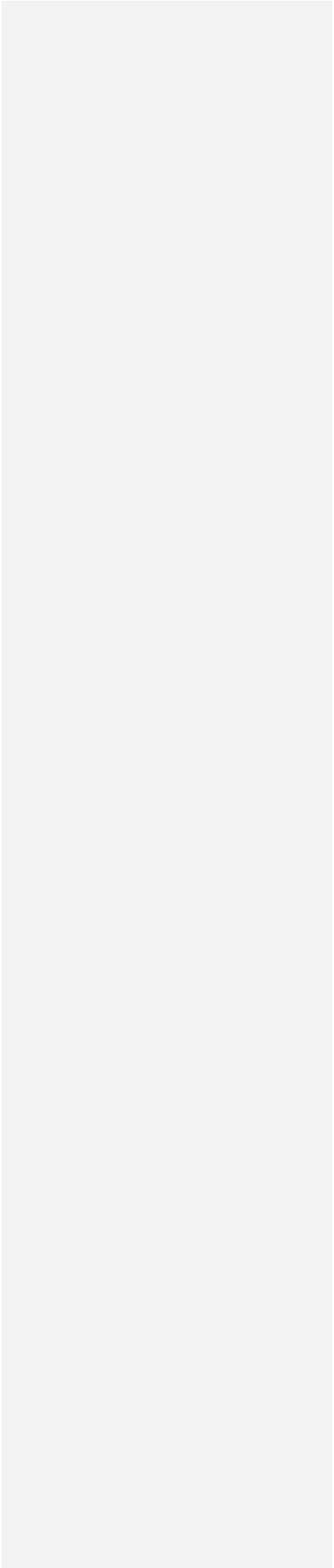
Waste Management Plan

Contents

Preface

1.	The Southland Spirit	1
2.	Drivers For A Waste Management Plan.....	3
2.1	Local Government in Southland	3
2.2	Legislative Requirement	3
2.3	Linkage to Long Term Council Community Plan and Annual Plan	4
2.4	New Zealand’s Sustainable Development Programme.....	5
2.5	New Zealand Waste Strategy	5
2.6	Towards ‘Zero Waste’	5
2.7	Towards Resource Stewardship and Sustainability	6
2.8	The Way Forward For Waste Management in Southland.....	7
3.	Vision	9
4.	Guiding Principles	11
5.	Waste Management Plan Objectives.....	13
6.	Action Plans.....	15
6.1	Introduction	15
6.2	Management Structures and Council Plans	18
6.3	Monitoring, Information Management and Reporting.....	20
6.4	Waste Management Services	23
6.5	Resource Management.....	31
6.6	Resource Stewardship and Waste Minimisation	35
6.7	Education and Promotion.....	38
6.8	Cost Recovery and Funding	42
	Glossary.....	45
	List of Abbreviations	49

Appendix A – Southland Resources and Waste Overview



Status – Final
Filepath – \\ntserver2\d\$\Data\Data District Assets\AHenderson\Docs.NJorgensen\SHARED\ES Solid Waste\Waste Management Plan\r_WMP_Final.doc

1. The Southland Spirit

The spirit of Southland emerges from "the soul of its ancient fiords, its unspoilt bush and beaches, its heritage and identity, their energy and expertise and the warmth of its people"¹ and is represented by the Southland Spirit of a Nation logo (Figure 1.1).

Southland is fortunate to have a relatively unspoilt environment, which provides a vibrant mix and ready supply of physical and natural resources. The land is productive and offers some of the most distinctive landscapes in New Zealand. The rivers, lakes and sea are generally clean by world standards and the air quality is higher than many other parts of New Zealand.

Southland enjoys a dynamic social, economic and cultural lifestyle. The resident population at the time of the 2001 census was 91,002, of which 49,833 resided in Invercargill City, 12,456 in Gore District and 28,716 in Southland District. Agriculture, forestry and fishing have traditionally formed the region's economic base. However, Southland is also home to a diversity of manufacturing and is one of the fastest growing tourist regions in New Zealand.

Despite such a vibrant environmental, social, cultural and economic setting, Southland still has problems that need addressing. Utilisation of Southland's resources has the potential to generate waste (solid, liquid and/or gas) and result in inappropriate or inefficient use of resources ("wastage"). To place this in context, an overview of Southland's resources and their use and the resultant generation of waste have been provided in Appendix A.

Southland and the rest of the world face the challenge of using resources whilst ensuring that our environment and our health are not harmed, in both the short and long term, through inefficient resource use, or by the waste generated. This Waste Management Plan (WMP) has been developed to meet this challenge.

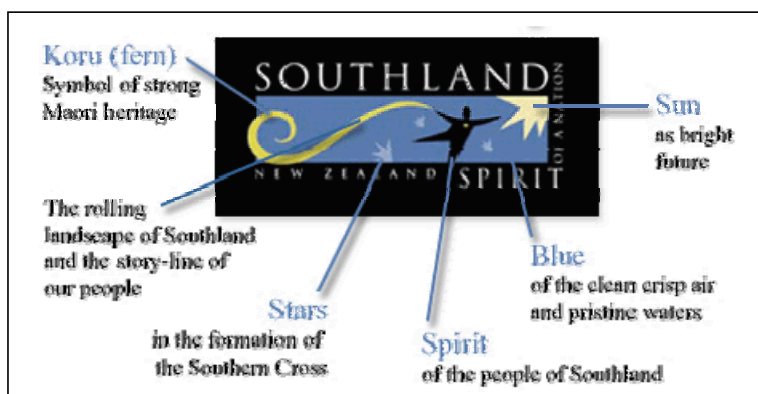
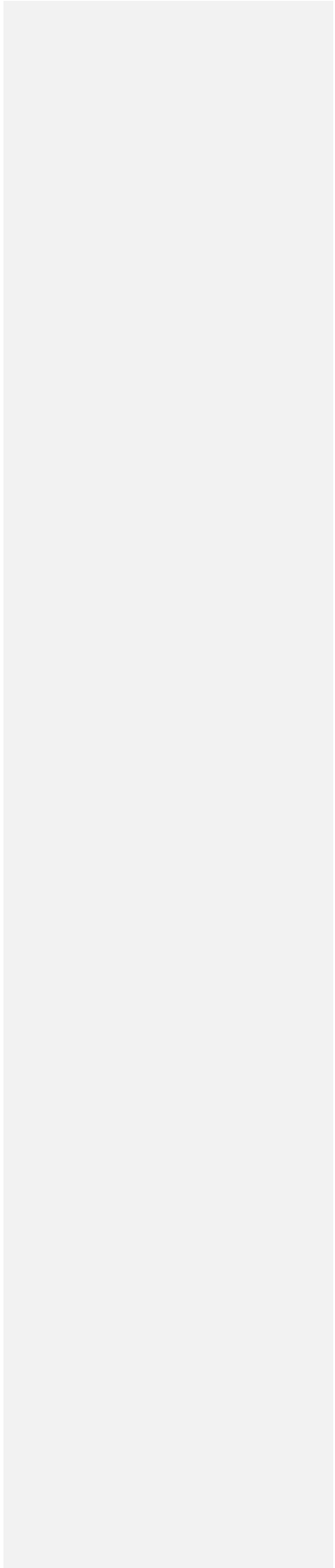


Figure 1.1: Elements of the Southland Spirit of a Nation Logo

¹ Taken from the Southland Spirit of a Nation website. Southland Spirit of a Nation is the official brand chosen by the local authorities to both capture and promote the lifestyle and personal qualities of Southlanders.



Waste Management Plan



2. Drivers For A Waste Management Plan

2.1 Local Government in Southland

There are three territorial authorities (Invercargill City Council, Gore District Council and Southland District Council) and one regional authority (Environment Southland, ES) in Southland. Southland's territorial authorities are collectively referred to as WasteNet Councils.

In developing this WMP, the WasteNet Councils have collaborated with ES.

2.2 Legislative Requirement

The Local Government Act 2002 requires local authorities *"to promote the social, economic, environmental, and cultural well-being of communities, in the present and for the future"* and promotes collaboration and cooperation between local authorities.

Every territorial authority is required to prepare a WMP under Part XXXI of the Local Government Act 1974². Section 537 requires that the WMP must consider, in order of priority, the reduction, reuse, recycling, recovery, treatment and/or disposal of waste. The waste hierarchy required by s.537 is inherent in the WMP, although it has been placed within the more modern context of resource stewardship. Section 538 requires a territorial authority to provide for the effective and efficient waste management within the territory. A territorial authority is required to consult with its community through the Special Consultative Procedure before adopting its statutory WMP.

Regional authorities are not required to prepare a WMP but can adopt a Plan if considered desirable.

Other legislative and regulatory requirements that territorial authorities are required to consider with respect to waste management include:

- Resource Management Act 1991
- National Environmental Standards
- Building Act 1991
- Energy Efficiency and Conservation Act 2000
- Hazardous Waste and New Organisms Act 1996
- Health Act 1956
- Litter Act 1979
- Regional Policy Statement and Regional Plans
- District Plan
- Local Bylaws.

² Part XXXI of the Local Government Act 1974 (Amendment No. 4), which was not repealed by LGA 2002

2.3 Linkage to Long Term Council Community Plan and Annual Plan

Under the LGA 2002, each local authority is required to prepare a Long Term Council Community Plan, which is structured around the Council’s activities (eg governing, planning, regulatory services, utility services, amenity services, and civil defence and emergency services). The Long Term Council Community Plan must cover a period not less than ten years. In addition, each local authority must prepare an Annual Plan each year³, which includes a proposed annual budget.

Implementation of the territorial authority’s statutory WMP will be coordinated directly through their “Activity” Plans (and hence the Long Term Council Community Plan and Annual Plan). Some of the actions contained within this WMP may be incorporated directly into the “Activity” Plans. A flow chart illustrating the links between the territorial authority’s statutory WMP, “Activity” Plans, Long Term Council Community Plan and Annual Plans is provided in Figure 2.1. The territorial authority’s Assessments of Water and Sanitary Services (which are also required under the LGA) are also linked to their “Activity” Plans.

Figure 2.1 also shows the ongoing collaboration and cooperation between other WasteNet Councils and ES in the development of the WMP. In addition, it shows that ES has in place waste management policy, principally under the Resource Management Act, (which includes, but is not limited to, that currently contained in the Regional Policy Statement, Regional Solid Waste Management Plan and the Regional Effluent Land Application Plan).

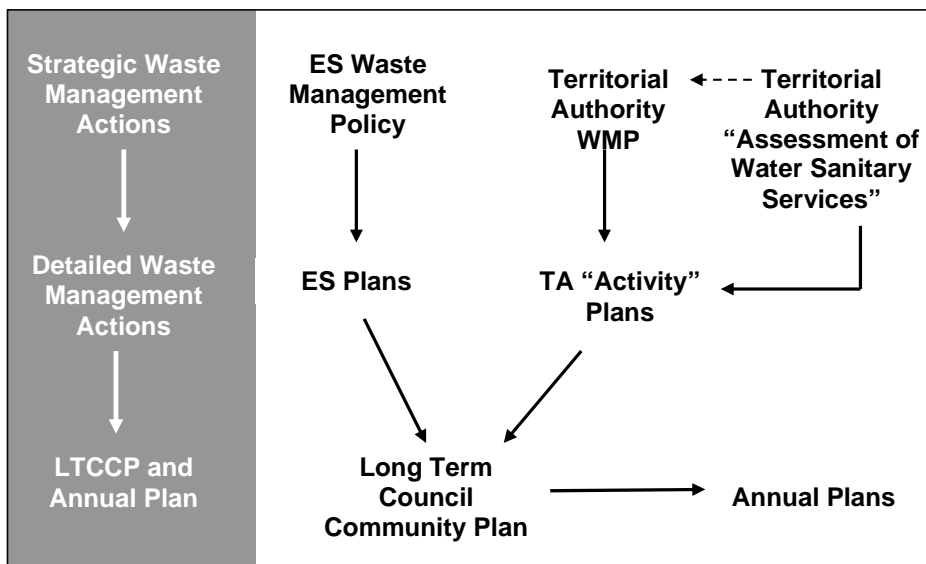


Figure 2.1: Linkage of Council’s Waste Management Activities

³ Except in the year that the LTCCP is adopted

2.4 New Zealand's Sustainable Development Programme

In January 2003, the Government released its programme of action for sustainable development in New Zealand, where sustainable development is defined as being “*development which meets the needs of the present without compromising the ability of future generations to meet their own needs*”.

The Government have a vision for New Zealand of:

- “*A land where diversity is valued and reflected in our national identity*”
- *A great place to live, learn, work and do business*
- *A birthplace of world-changing people and ideas*
- *A place where people invest in the future.*”

Four programmes of action have been developed to work towards achieving this vision. These are:

- quality and allocation of freshwater
- energy
- sustainable cities
- investing in child and youth development.

These programmes set the direction of Government and will be implemented by Government working collaboratively with the wider community. To be consistent with these programmes, a WMP should incorporate the philosophy of sustainable development and include relevant components of the programmes of action.

2.5 New Zealand Waste Strategy

In March 2002, the Government published the New Zealand Waste Strategy⁴. This strategy provides a vision for New Zealand moving “*towards zero waste and a sustainable New Zealand*”. The strategy is predominately focused on solid and liquid wastes. It sets out national targets for waste minimisation, organic wastes, hazardous waste, construction and demolition wastes and waste disposal. Whilst there is presently no statutory provision that obligates a territorial authority to adopt the strategy or any of its provisions, it is recommended by central government that local authorities take account of it in their WMPs.

2.6 Towards ‘Zero Waste’

The Zero Waste New Zealand Trust has a vision of “Zero Waste” (to landfill) by 2020. The concept of “Zero Waste” is focussed on activities that minimise the quantity of solid waste that is disposed of to landfill, ie reducing, reusing, recycling and resource recovery activities. Many local authorities in New Zealand have adopted the philosophy of Zero Waste and have become Zero Waste Councils through the Trust.

⁴ Prepared jointly by the Ministry for the Environment and Local Government New Zealand, the document says that it has its origins in the Government’s commitment to reducing the waste stream, and local government’s desire for more effective and efficient waste management and minimisation

The WasteNet Councils have all adopted the following:

“Council adopts the philosophy of working towards Zero Waste through effective education, waste prevention, minimisation and recycling.

This will be done in co-operation with other WasteNet Councils in Southland and other Zero Waste Councils through out New Zealand, with recognition of the life cycle environmental, social, economic and cultural effects of waste. It will focus on protecting Southlands’ natural resources from the adverse effects of all forms of waste. This is to be reviewed in 2015.”⁵.

In adopting this policy, the Councils wished to acknowledge that in the future, approaches and/or technology could change. Therefore, it is desirable to ensure that such policy also accommodated the ability to implement current best practice.

2.7 Towards Resource Stewardship and Sustainability

The concept of sustainability and the idea of resource stewardship are enshrined in many of the country’s newer pieces of legislation, including the Resource Management Act, the LGA 2002, and the Energy Efficiency and Conservation Act 2000. To be consistent with these pieces of legislation, a WMP should incorporate the concepts of sustainability and resource stewardship.

In December 2003, the Centre for Advanced Engineering published *“Resource Stewardship and Waste Minimisation – Towards a Sustainable New Zealand”*. Resource stewardship reflects recognition of the need to assume greater responsibility for use of resources and associated creation of waste. This recognition is implicit in the concept of sustainable development, ie the need for society to develop in a way that *“meets the needs of the present without compromising the ability of future generations to meet their own needs”*⁶. This concept is represented graphically in Figure 2.2.

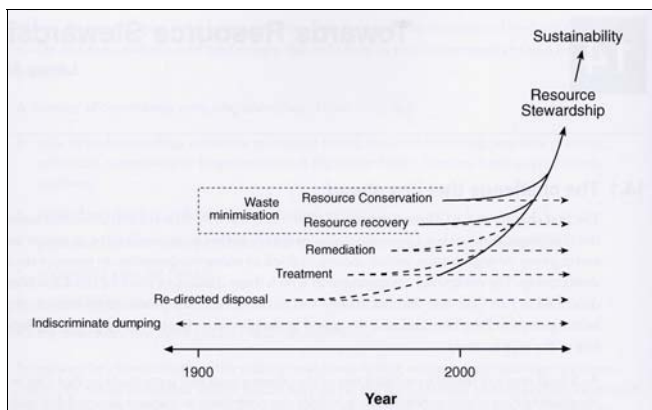


Figure 2.2: Resource Stewardship Presented as the Ultimate Aim of All Waste-related Concepts and Approaches⁷

⁵ Taken from the WAG resolution recorded in the meeting minutes of 27 April 2004

⁶ WCSO, 1987 from *“Resource Stewardship and Waste Minimisation – Towards a Sustainable New Zealand”*

⁷ Ibid, p.226

2.8 The Way Forward For Waste Management in Southland

WasteNet Councils and ES have worked together to develop the WMP for the region as a whole. The WMP has been developed under the LGA. However, it has a broader scope than that required by the Act. The WasteNet Councils and ES agreed that this WMP should encompass the philosophy of sustainability, New Zealand Waste Strategy, Zero Waste, resource stewardship and waste minimisation.

To achieve this, the broad definition of waste used in this WMP is:

- any solid material, liquid, or gas that is discarded or discharged by its owner; or
- the action or process of wasting resources, which may include useless expenditure or consumption, extravagant or ineffectual use, or the consumption or using up of material, energy or time.

The general structure of this WMP is given in Figure 2.3. It contains:

- The vision, which is the overarching goal of each Council with respect to waste management
- guiding principles, which are the key philosophies that will direct each Council as it implements its WMP (and other related policies)
- WMP objectives, which are the key objectives of each Council with respect to this WMP
- Action Plans, where similar waste management activities are grouped together under one action plan. Specific issues, objectives and methods are outlined under each Action Plan.

Each Action Plan is designed to achieve one or more of the WMP objectives. By achieving these WMP objectives Southland will move towards realising its vision.

Monitoring and review are an inherent part of implementing any plan. Methods for monitoring and reviewing implementation of the WMP are included under the Action Plans, rather than as a separate section in this WMP.

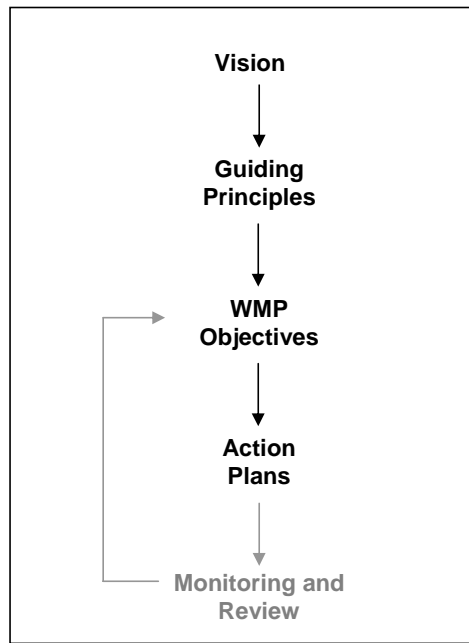


Figure 2.3: Outline of Waste Management Plan (WMP)

3. Vision

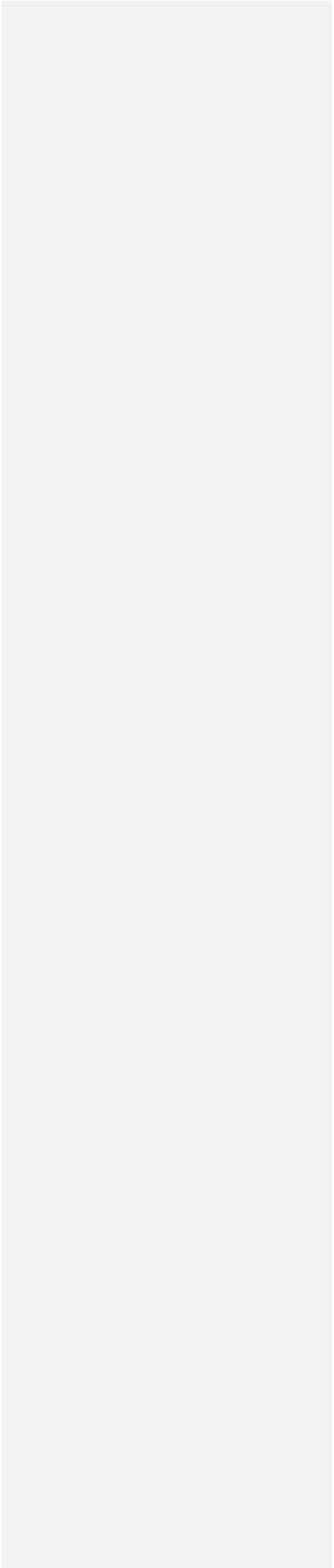
A sustainable Southland through the utilisation of the concepts of resource stewardship and waste minimisation.

The vision incorporates the Council's philosophy of working towards zero waste through effective education, waste prevention, minimisation and recycling. This will be done in co-operation with the other WasteNet Councils, ES and other Councils throughout New Zealand, with recognition of the life-cycle environmental, social, economic and cultural effects of waste. It is aimed at encouraging people to use all resources more efficiently and at a sustainable rate as well as protecting Southland's natural resources from the adverse effects of all forms of waste.

Achieving this vision will require the focused accumulation of knowledge about waste in Southland. A key requirement is an upgraded information base that will provide a foundation for resource allocation and use and for recording outcomes, which includes monitoring waste management and minimisation activities and results.



Waste Management Plan



4. Guiding Principles

Seven principles⁸ will guide the policy, decision making and actions of the Council as it seeks to implement their WMP. These principles have been adapted from the New Zealand Waste Strategy and are in line with the Organisation for Economic Cooperation and Development principles for strategic waste prevention. They are:

- **Sustainable Management**

Managing the use of Southland's resources such that people are able to meet their own needs, without compromising others needs, both now and into the future.

- **National and Global Citizenship**

Being responsible by considering the consequences of our actions in using resources including in terms of the generation, management, reuse, treatment and disposal of wastes, which has the potential to extend beyond the borders of Southland and New Zealand.

- **Kaitiakitanga and Stewardship**

Ensuring that as members of society we are responsible for looking after the environment, and for the impact of products we use and wastes made, used and discarded and we have a duty to leave the environment in the same or an improved state for future generations. For iwi, it is recognised that they have a cultural responsibility for stewardship of resources, known as kaitiakitanga.

- **Extended Producer Responsibility**

Producers have a degree of responsibility for the environmental, social, cultural and economic impact of their products. This responsibility extends throughout a product's life-cycle, from production through to final disposal.

- **Full-Cost Pricing**

The environmental, social and cultural effects of production, distribution, consumption, reuse, treatment and disposal of goods and services should be consistently costed. These costs should be charged as closely as possible to the point at which they occur.

- **Life-Cycle Principle**

Products and substances should be designed, produced and managed so all environmental, social and cultural effects are accounted for and minimised during generation, use, recovery, reuse, treatment and disposal.

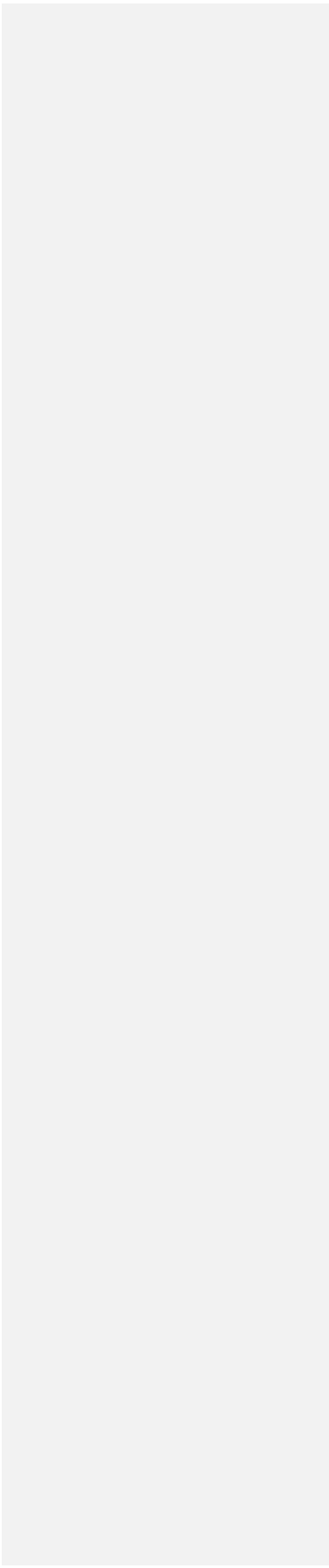
- **Precautionary Principle**

Where there is a threat of serious or irreversible damage, lack of full scientific certainty should not be a reason for postponing cost-effective measures to prevent environmental degradation or potential adverse health effects.

⁸ Principles have been adapted from "The New Zealand Waste Strategy" (March 2002) and "Draft Bay of Plenty Regional Waste Strategy" (February 2004)



Waste Management Plan



5. Waste Management Plan Objectives

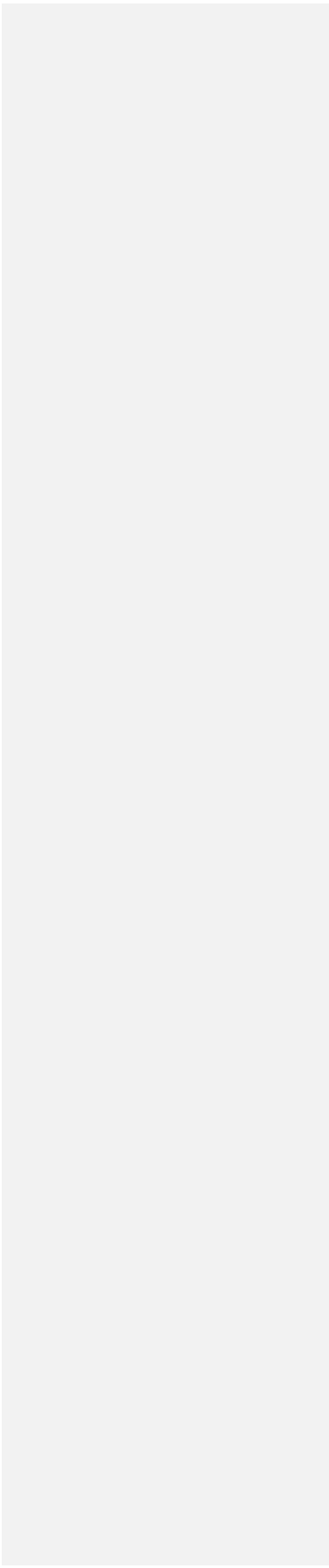
The Council requires a Plan for the integrated management of waste (in its broad definition) now, and to facilitate future waste management. The Plan must provide the best management options considering economic, social, cultural and environmental perspectives.

The **objectives** of the WMP are to:

- ensure that waste management activities throughout the region are coordinated and integrated
- ensure consistency of policy whilst recognising differences amongst the Councils and their associated communities
- encompass the purpose and principles of the Local Government Act 2002 (which includes ensuring the social, economic, environmental and cultural well-being of communities in the present and for the future), including meeting the requirements of the Local Government Act 1974 (Part XXXI) with regards to waste management.
- encompass the principles of the New Zealand Waste Strategy
- encompass the concepts and practices of resource stewardship.



Waste Management Plan



6. Action Plans

6.1 Introduction

6.1.1 Development of Action Plans

The Action Plans within this WMP have been developed collaboratively by the WasteNet Councils and ES based on their preliminary consultation with interested parties. They have been developed as a means of progressively achieving the WMP objectives (outlined in Section 5) and as a step towards achieving the vision.

The Action Plans are a work in progress. The methods contained within the Actions Plans will be implemented progressively as part of Council's Long Term Community Council Plan, "Activity" Plan and Annual Plan process. They will also be reviewed from time to time.

6.1.2 Seven Waste Management Categories

Similar waste management activities have been grouped together, resulting in the seven broad waste management groups or categories. These categories are briefly described as:

- **Management Structures and Council Plans:** A holistic, integrated approach is needed to resource stewardship and waste minimisation and associated activities within Council as well as between local authorities in the Southland region.
- **Monitoring, Information Management and Reporting:** One of the basic tenets of resource stewardship and waste minimisation is that it is difficult to manage what you don't measure⁹. There is currently good information available about how much solid waste we dispose of at the Southland Regional landfill. However, efficient and effective waste management requires further information about how much waste we generate, how much waste (other than solid waste) we dispose of, the effects of waste on the receiving environment and wastage.
- **Waste Management Services:** A coordinated, integrated approach is needed to ensure the efficient and effective delivery of waste management services within Council, amongst local authorities in the Southland region and nationally.
- **Resource Management:** Southland's natural and physical resources (including water, air, soil, land) need to be managed holistically to ensure that cross media effects are considered, resources are used efficiently and at a sustainable rate, and waste generation is minimised. Such management requires an understanding and knowledge of the region's resources. Energy sources and their use also needs to be managed to ensure that there is a secure, affordable energy supply for Southland whilst minimising adverse environmental impacts from energy production and use.
- **Resource Stewardship and Waste Minimisation:** An understanding of the concepts and principles of resource stewardship and waste minimisation is needed within Council, industry and the wider communities in Southland.
- **Education and Promotion:** General knowledge and understanding of broad waste management issues is needed within Councils, industry and the wider communities in Southland.

⁹ Centre of Advanced Engineering (2003) "Resource Stewardship and Waste Minimisation"

- **Cost Recovery and Funding:** The environmental, social, cultural and economic costs and benefits of generating and disposing of waste needs to be considered when setting charges. Such a charging regime is likely to provide a driver to minimise waste generation and is fair to the wider community.

Action Plans have been developed for each of the seven waste management categories. Each Action Plan was developed to achieve one or more of the WMP objectives, as a step towards realising the vision. This is shown in Figure 6.1.

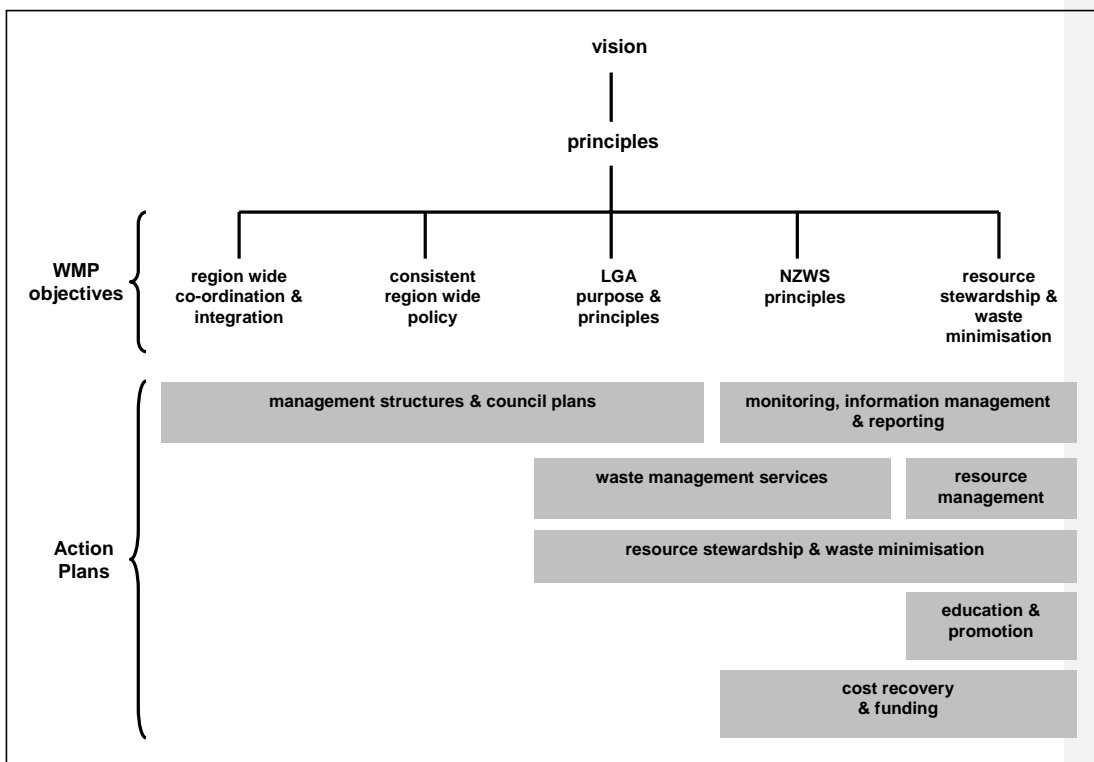


Figure 6.1: Linkages between Vision, Principles, WMP Objectives and Action Plans

6.1.3 Structure of Action Plans

Under each of the seven Action Plans, specific issues and objectives have been identified and then methods have been developed to address these issues and achieve these objectives.



The general structure of each Action Plan consists:

- **Definitions**, which describes the waste management category
- **Background**, which outlines “issues”, or matters that are viewed as being of significant waste management concern (for this category) in the district or region as a whole and need to be resolved¹⁰
- **Specific Objectives**, which are the resolution of a particular issue or set of issues (for this category). They are the desired result, end state, situation or condition that is aimed for¹¹
- **Specific Methods**, which are the practical actions that will be taken to achieve the stated objectives (for this category)¹². The methods are number sequentially throughout the Action Plans.

The WMP is the same for each WasteNet Council and one or more of these Councils may have already implemented some of the methods given in this plan. In addition, implementation of these Action Plans will be carried out by each Council through their Long Term Council Community Plan, “Activity Plans” and Annual Plans. This may mean that implementation approaches between Councils may vary.

¹⁰ Definition of issue used in the Regional Policy Statement for Southland.

¹¹ Definition of objective used in the Regional Policy Statement for Southland.

¹² Definition adapted from definitions for policy and method used in the Regional Policy Statement for Southland.

6.2 Management Structures and Council Plans

6.2.1 Definitions

Management structures are the organisational structures, both formal and informal, of Council.

Council Plans include the plans developed and implemented by the Council under both the Local Government Act 2002 and the Resource Management Act 1991.

6.2.2 Background

Broad issues with respect to Council management structures and plans are:

- the need for an organisational structure and its communication to have a holistic, integrated approach to resource stewardship and waste minimisation
- the need to further develop regional and district council cooperation to enhance resource stewardship and waste minimisation by, for example:
 - , consistent regional policy about resource stewardship and waste minimisation
 - , coordinated delivery of services (eg solid and hazardous waste disposal services)
 - , coordinated approach to environmental, resource and waste monitoring and data presentation
 - , integrated trade-waste controls and managed their implementation
 - , watershed management of soil and water resources within the context of resource stewardship and waste minimisation
 - , optimising use of financial, staff and specialist resources by joint use of technology and systems
 - , consideration of a dedicated resource stewardship and waste management position
- the need to determine who has control about aspects of waste management and who sets the direction, eg New Zealand Waste Strategy and National Environmental Standards.

6.2.3 Management Objectives

The Council's aim is to:

- effect efficient and effective organisation structures that work in a coordinated, holistic and integrated way on resource stewardship and waste minimisation
- integrate and simplify (while being consistent with desired community outcomes) Council interfaces with communities, industry and others
- further develop regional and district council cooperation to enhance resource stewardship and waste minimisation
- achieve effective planning for resource stewardship and waste minimisation
- meet legislative requirements (eg under the LGA, Resource Management Act and Building Act)
- advocate for:
 - clarification of roles and responsibilities at central, regional and local level, particularly in the area of resource stewardship and waste minimisation
 - a focus on the sustainable management of resources which as a consequence should assist in reducing the environmental effects of waste

- the Hazardous Substances and New Organisms Act to include the management of hazardous substances such that the generation of waste is minimised
- establishment of central government mechanisms and systems that facilitate the disposal of hazardous wastes such that the environment is not adversely affected
- a central agency that has explicit responsibility for coordinating resource stewardship, waste minimisation and waste management activities.

6.2.4 Management Methods

1. The Council will review the workability of its organisational structure (both formal and informal) with respect to the integration and cooperation of different Council departments involved in resource stewardship, waste minimisation and management activities (eg planning, engineering, education, consents). The review will include an assessment of workability and interfaces from the broader community perspective.
2. After review the Council will implement strategies to address identified issues and improve workability of its organisational structure with respect to resource stewardship, waste minimisation and management (eg hold cross discipline meetings).
3. In collaboration with other WasteNet Councils and ES, progressively and, where possible, jointly implement the WMP and monitor the progress towards achieving the WMP objectives.
4. The Council will nominate a person within Council to take the responsibility of implementing and monitoring the WMP in the District.
5. The Council will make provision in its Annual Plan to progressively implement the WMP.
6. The WasteNet Councils in collaboration with ES will jointly undertaken an internal review of the WMP every 3 years, or earlier if required, as Councils have increased their information base and improved their understanding of the region's waste issues. The review will assess whether the provisions of the WMP continue to be appropriate.
7. The Council will continue to work with the other WasteNet Councils and ES to look at broad waste issues and develop joint strategies to address these issues, when appropriate.
8. The Waste Advisory Group will monitor and if appropriate provide input (via submissions as part of the publicly notified process) into the Long Term Council Community Plan, Annual Plans, Regional Plans and District Plans with regards to matters of relevance to the WMP.
9. The WasteNet Councils, in collaboration with ES, will jointly review any new regulatory provisions and guidelines broadly related to resource stewardship and waste minimisation in the context of existing documents to ensure Councils take a consistent and integrated approach and understand where their responsibilities lie.
10. The Council will, from time to time, review and update Bylaws relating to waste management to take account of the provisions of this Plan and any amendments to it.

Also see Methods 98 and 114 (Section 6.7.4).

6.3 Monitoring, Information Management and Reporting

6.3.1 Definitions

Monitoring refers to any existing or planned monitoring programmes, including those to monitor environmental effects (resource consents, and State of the Environment studies), waste generation, resource allocation and use, and progress in achieving waste minimisation and resource recovery targets.

Information refers to any data or other information that is held by Council and is obtained from ongoing monitoring programmes.

Management refers to how information is stored and managed by Council.

Reporting refers to the way that information is reported by Council.

4.1.26.3.2 Background

Formatted: Bullets and Numbering

It is considered that there is a need to build on existing knowledge about the state of Southland in terms of waste issues and associated environmental effects. Monitoring data are available from monitoring programmes required by resource consent conditions. However, there is a need for these data to be managed in an integrated manner (such as a catchment approach), rather than on a case-by-case basis, and be readily accessible.

Broad issues with respect to monitoring, information, management and reporting relate to:

- a need for adequate and accessible knowledge resources, understanding and expertise. An example is a growing need for greater knowledge and understanding of quantity and quality of existing groundwater resource
- a need for good social, cultural and economic monitoring data as well as environmental data
- obtaining the co-operation of industry and businesses in providing information and handling commercially sensitive information
- understanding adverse effects of waste and how to prioritise these effects
- understanding waste generation associated with different land use practices
- understanding cross media effects as well as cross boundary issues (eg inter-district and regional issues)
- understanding the full economic, social and environmental implications of meeting current and proposed performance standards, guidelines and strategies, including national environmental standards and the New Zealand Waste Strategy, in order to rationalise implementation and prioritise actions in accordance with need
- a need for a consistent approach for presentation, definitions, and terminology. Such an approach will improve understanding and minimise confusion
- managing information in a way that is integrated, able to be built upon, easy to obtain, compatible with any regional and national systems and easy to compare with national standards.

- the need to report on resource stewardship and waste minimisation such that it presents:
 - , the whole, current picture (ie what is known and what is not known)
 - , historical information as it may have a bearing on interpreting current information
 - , comparisons with national and regional standards and guidelines
 - , information about resources
- developing and managing monitoring programmes, information management systems and reporting systems with sufficient support and resources (ie staffing and funding)
- developing effective and cost-efficient monitoring and reporting systems to measure Council's progress in implementing the WMP and achieving targets as well as to identify new issues
- the need for within Council, inter-district and regional management systems for these data and the information, and the presentation of these in a readily communicable way.

6.3.3 Monitoring and Information Objectives

The Council's aim is to:

- enable good, sound decisions to be made based on a good understanding of waste quantities, resource use and the actual costs
- collect good environmental, social, cultural and economic monitoring data and information within the district in an efficient and effective way
- collect good monitoring of resource use and waste minimisation in public and private activities within the district (ie measure performance of resource recovery)
- monitor costs and benefits of resource use and waste minimisation, including their variability
- ensure that district, regional and national monitoring and reporting information systems are compatible and consistent (this will enable direct comparison)
- utilise existing information sources (from both the public and the private sector) as much as possible to minimise duplication of previous work
- consider the total waste stream but focus on areas perceived to be of immediate concern
- adopt a precautionary approach where no information is available
- undertake a risk analysis of waste management and develop priorities for action areas based on this
- set appropriate in-district targets for environmental standards and waste minimisation based on data
- continually review and verify information and information management systems.

6.3.4 Monitoring and Information Methods

11. In collaboration with other WasteNet Councils and ES, review what information is held and what additional information is needed to understand:
 - residual solid waste generation, composition and disposal (residential and commercial)
 - quantities and composition of solid waste diverted from final disposal (eg greenwaste, recyclables, resource recovery and material used as daily cover in landfill)

- quantities and nature of hazardous waste generated and disposed of
 - rural and peri-urban wastewater generation, treatment and disposal (on-site systems and small community systems)
 - quantity and quality (eg nitrogen levels) of existing groundwater and surface water resources in the region's catchments.
12. After Council's review, advocate to Central Government for focussed research to be funded and carried out to fill key information gaps that have been identified.
 13. In collaboration with other WasteNet Councils and ES, develop and implement relevant and consistent regional information systems for managing monitoring data obtained through the resource consent process (identifying environmental trends and consent compliance) and provided by other sources (eg publicly and privately funded research programmes).
 14. Work with industry and businesses to obtain appropriate data (eg solid waste generation, wastewater, air discharge, water usage) and incorporate it into appropriate information management systems, whilst ensuring any commercially sensitive information is handled appropriately.
 15. On a regular basis Council will review and verify the information and systems by which information is gathered and managed.
 16. Advocate to Central Government for the continuance of national databases, such as the landfill census and the national waste data report.

6.4 Waste Management Services

6.4.1 Definitions

Waste management services refer to the infrastructural services provided by the Council and other parties to manage solid waste, liquid waste, gaseous waste and hazardous waste.

6.4.2 Background

Under the LGA 1974, territorial authorities are required to ensure the effective and efficient waste management within the territory. An integrated, holistic approach is needed when providing waste management services as well as when setting performance standards and guidelines for resource use or discharges. Such an approach is especially important when considering cross-media effects, for example removing waste from the solid waste stream by incineration (ie changing it from a solid waste to gaseous waste and a different solid waste).

6.4.3 Waste Management Services Objectives

The Council's broad aim is to:

- achieve consistent standards of environmental performance, set within its social, cultural and economic framework for waste treatment and disposal within the region
- adopt comprehensive standards and guidelines covering resource stewardship and waste minimisation as well as the transport, storage and disposal of waste with hazardous properties within the region
- adopt the philosophy of targets in New Zealand Waste Strategy and implement targets that are appropriate and achievable within the region
- be a leader in the community in the delivery of efficient and effective waste management practice
- provide environmentally, socially, culturally and economically sustainable waste management services to meet community expectations and to fulfil their legislative responsibilities (eg under LGA 1974, LGA 2002)
- follow a system of integrated waste management within the district
- follow a system of integrated and coordinated waste management programmes with other Councils and the private sector, where beneficial to the region as a whole
- provide services in collaboration with other Councils and the private sector where they are better and/or more cost effective option for the district.

In terms of specific types of waste, the Council aims to:

- **solid waste:**
 - improve the management of human and animal waste
 - reduce the incidence of illegal dumping of rubbish (or “fly-tipping”)

- **reticulated wastewater system:**
 - continue to ensure appropriate management and operation of wastewater treatment plants and minimise adverse effects of treated wastewater and residual discharges into the receiving environment
 - ensure appropriate management systems for sewage sludge
- **on-site wastewater systems:**
 - develop a consistent approach for managing on-site systems in Southland
 - integrate the building and resource consent processes for on-site systems
 - improve the management and operation of on-site systems
 - assess the environmental effects of on-site systems and remedy any adverse effects
- **cleanfill:**
 - develop a consistent approach for managing cleanfills in Southland
 - improve the management and operation of cleanfills
 - encourage the separation of cleanfill and refuse
- **organic solid waste:**
 - encourage the separation and reprocessing of all organic waste, including greenwaste and kitchen waste
- **hazardous and special waste:**
 - develop a consistent approach for managing hazardous and special waste in Southland
 - ensure the safe collection, reuse and/or disposal of hazardous and special waste
 - minimise the quantity of hazardous and special waste produced
 - increase the quantity of hazardous and special waste diverted from landfill
- **trade waste:**
 - continue to ensure appropriate management of trade waste in Southland
 - integrate and improve the efficiency of the processes by which trade wastes are managed by WasteNet Councils
 - recover Council costs associated with trade waste
 - promote cleaner technology and waste minimisation measures
 - encourage the use of alternative treatment and disposal options for trade waste where appropriate
- **stormwater:**
 - ensure the appropriate management of contaminated and uncontaminated stormwater. Such management includes the avoidance of contaminating “clean” stormwater
- **contaminated sites:**
 - manage and, over a period of time, remediate contaminated sites in the region
 - recover any Council costs associated with contaminated sites, where possible
- **gaseous waste:**
 - encourage practices that minimise gaseous waste (with respect to quantity as well as contaminant concentration).

6.4.4 Waste Management Services Methods

General Waste Management

17. In collaboration with other WasteNet Councils, carry out an analysis of New Zealand Waste Strategy targets for waste (ie organic wastes, special wastes, construction and demolition wastes, hazardous waste, organochlorines, trade wastes and waste disposal) in a Southland context. This analysis will include:
- an assessment of the social, environmental, cultural and economic costs of meeting these targets
 - an assessment of which targets are measurable and practical to implement in Southland
 - rationalising realistic timeframes for meeting targets in Southland.
18. In collaboration with other WasteNet Councils and ES, compile and maintain a database of waste generated by medium and large scale industries in the region that is compatible with national waste databases.

Also see Methods 120, 121 and 124 (Section 6.8.4).

Solid Waste

19. In collaboration with other WasteNet Councils and ES, continue to ensure that solid waste collection services and solid waste reception facilities (such as transfer stations and resource recovery parks) are suitable for the regions needs and are operated according to best practice.
20. Implement the Waste Acceptance Protocol that forms part of the Agreement for Waste Disposal Services for the Southland Region (a contract between WasteNet Councils and the regional landfill operator, AB Lime Limited).
21. In collaboration with other WasteNet Councils and ES, continue to ensure that the regional landfill facility is operating according to resource consent conditions, current best practice and the provisions of the Agreement for Waste Disposal Services.
22. In collaboration with other WasteNet Councils and ES, continue to ensure that sites used for disposal of solid waste generated from production land farming (also called production land landfills) and offal pits are operated according to resource consent or permitted activity standards.
23. In collaboration with other WasteNet Councils, investigate sustainable and environmentally, economically, socially and culturally acceptable reprocessing and/or disposal options for animal waste (including animal carcasses) in the region.
24. In collaboration with other WasteNet Councils, develop and adopt a litter bylaw.
25. Council will consider nominating one person within Council to be responsible for identifying instances of illegal dumping and burning of rubbish and enforcing penalties (provided in litter bylaw and the RMA) by pursuing action required to prosecute.

Also see Methods 125 (Section 6.8.4).

Reticulated Wastewater Systems

26. Review existing reticulated wastewater systems in the district, investigate options for upgrading any substandard systems and prioritise necessary upgrading in the district (while being consistent with Assessment of Water and Sanitary Services).
27. In collaboration with other WasteNet Councils and ES, investigate sustainable environmentally, economically, socially and culturally acceptable reprocessing options and/or final disposal options for sewage sludge in the region. This investigation should include an assessment of potential markets for reprocessed products and the opportunities for beneficial use of biosolids.
28. In collaboration with other WasteNet Councils and ES, advocate to Central Government to investigate sustainable environmentally, economically, socially and culturally acceptable reprocessing and beneficial use options and/or final disposal options for sewage sludge.

On-site Wastewater Systems

29. In collaboration with other WasteNet Councils and ES, review existing regulatory provisions and guidelines for on-site wastewater systems, including
 - District Plan
 - Regional Effluent Land Application Plan for Southland
 - Council's Long Term Council Community Plan
 - Long Term Council Community Plan for ES
 - Building Act (eg Building permit) and acceptable and alternative solutions provided under the Building Code
 - Australian / New Zealand Standards, including standards for on-site domestic wastewater treatment units
 - Ministry for the Environment publication "Sustainable Wastewater Management: A Handbook for Smaller Communities".
30. After the review, implement any necessary changes to the District Plan and, where appropriate, advocate for changes to the Regional Effluent Land Application Plan for Southland, the proposed Regional Freshwater Plan and the Building Act.
31. In collaboration with other WasteNet Councils and ES, review existing information and determine what, if any, additional monitoring programmes are required to assess the cumulative effects of on-site systems on the physical, cultural and social environment, especially in areas where there are clusters of these systems. Existing information sources include monitoring data collected through resource consent and building consent conditions.
32. In collaboration with other WasteNet Councils and ES, investigate the option of ES delegating its responsibilities for issuing resource consents for on-site systems (as provided for under the RMA) to the Council.
33. Consider integrating resources with other WasteNet Councils, ES and within the Council so that one Council unit is ultimately responsible for on-site wastewater systems. This unit may be a

person or group of people in Council and would serve as a point of call for all applications that involve on-site system(s) and queries regarding such systems.

34. Develop a list of existing on-site wastewater systems (both consented and unconsented) and on-site wastewater system service providers (designers, manufacturers, builders) in the district.
35. In collaboration with other WasteNet Councils and ES, encourage on-site system owners to permit Council staff to audit their on-site system(s) to improve the overall performance of on-site systems in the district.
36. Continue to ensure that on-site systems (both existing and future) are operated according to resource consent or permitted activity standards and, when necessary, take appropriate enforcement action.

Also see Methods 107 and 111 (Section 6.7.4).

Cleanfills

37. In collaboration with other WasteNet Councils and ES, review existing regulatory provisions and guidelines for cleanfill management, including
 - District Plan
 - Regional Solid Waste Management Plan for Southland
 - Building Act (eg demolition permit, waste management plan for activity)
 - Ministry for the Environment publication "A Guide to the Management of Cleanfills".
38. After the review, implement necessary changes to the District Plan and, where appropriate, advocate for changes to the Regional Solid Waste Management Plan for Southland and the Building Act.
39. Consider integrating resources with other WasteNet Councils and ES so that one Council unit is ultimately responsible for cleanfill management. This unit may be a person or group of people in Council and would serve as a point of call for queries regarding new cleanfills as well as existing cleanfills.
40. In collaboration with other WasteNet Councils, review practicability of the Council licensing cleanfill sites or cleanfill operators or both.
41. Maintain a register of existing cleanfills (both consented and unconsented) and cleanfill operators in the district.
42. Encourage cleanfill owners and operators to permit Council staff to audit their cleanfill operation(s) to improve the overall management of cleanfill in the district.
43. Continue to ensure that all cleanfills are operated according to resource consent or permitted activity conditions (including conditions related to waste acceptance criteria) and, when necessary, take appropriate enforcement action.

Also see Method 108 (Section 6.7.4).

Organic Solid Waste

44. In collaboration with other WasteNet Councils, investigate options for collecting and reprocessing organic waste (including greenwaste and kitchen waste) for the region or part of the region. Collection options may include kerbside collection and providing a separate kitchen waste area at Council transfer stations. Reprocessing options may or may not include a combined greenwaste and kitchen waste option.
45. Consider providing a separate greenwaste area at all Council transfer stations and encourage any private operators to provide separate greenwaste areas at private transfer stations.
46. In collaboration with other WasteNet Councils, install signage at all organic waste collection areas to educate the public about contamination issues associated with such waste treatment and disposal.
47. In collaboration with other WasteNet Councils, continue to provide lower charges for recyclable organic matter at all collection areas and at a consistent level across the region.

Also see Method 110 (Section 6.7.4).

Hazardous and Special Waste

48. In collaboration with other WasteNet Councils and ES, review existing regulatory provisions and guidelines for hazardous waste management, including
 - Resource Management Act
 - Regional Solid Waste Management Plan for Southland
 - Hazardous Substances and New Organisms Act 1996 and amendments
 - Ministry for the Environment publications such as “*Landuse Planning Guide for Hazardous Facilities*”, “*Strategy for Improving the Workability of Hazardous Substances Provisions of the Hazardous Substances and New Organisms Act*”, and “*Guidelines for the Management of Hazardous Waste – Modules 1 & 2*”
 - Centre for Advanced Engineering publications such as “*Management of Hazardous Waste*”
 - The Waste Acceptance Protocol and other procedures related to hazardous waste management adopted by the Councils party to the Joint Waste Disposal Agreement for the Southland region.
49. After the review, implement necessary changes to the District Plan and advocate for changes to the Regional Solid Waste Management Plan for Southland.
50. In collaboration with other WasteNet Councils and ES, investigate options and cost implications of a regional hazardous waste management system, including collection, tracking, monitoring, treatment, reuse and/or disposal that are practicable and comply with the Hazardous Substances and New Organisms Act.
51. After the investigation, implement an appropriate regional hazardous waste management system.
52. In collaboration with other WasteNet Councils and ES, consider nominating one point of contact for all hazardous waste queries in the region.

53. In collaboration with other WasteNet Councils, ES and national initiatives, investigate setting up regional collection programmes for waste oil, batteries, tyres and unwanted agrichemicals. Such programmes would require the development of safe and environmentally sound local drop off points (eg local transfer station).
54. Advocate to Central Government for the Hazardous Substances and New Organisms Act to include the management of hazardous substances such that the generation of hazardous waste is minimised.

Also see Methods 109 and 112 (Section 6.7.4).

Trade Waste

55. In collaboration with other WasteNet Councils, review and, if appropriate, implement the provisions of the Model General Trade Waste By-laws (based on New Zealand Standard Model General Bylaws, Part 23-Trade Waste) or any replacement standard.
56. In collaboration with other WasteNet Councils and ES, consider nominating one point of contact for all trade waste queries in the region.
57. In collaboration with other WasteNet Councils, compile a database of quantity and composition of trade waste generated by medium to large organisations and the main way that these wastes are generated and disposed of. Resources to complete this database include:
- Ministry for the Environment publication “*What’s in Your Waste? A Resource for Trade Businesses*”
 - monitoring data obtained by conditions of Trade Waste Permit
 - targeted survey of trade waste dischargers.
58. In collaboration with WasteNet Councils and industry, investigate and promote waste minimisation, cleaner production, resource recovery, alternative treatment and alternative disposal options for trade waste.

Also see Method 127 (Section 6.8.4).

Stormwater

59. In collaboration with other WasteNet Councils and ES, rationalise the management of stormwater in Southland with respect to economic, environmental, social and cultural effects. This may include investigating stormwater and sewage separation projects, upgrading stormwater systems, or the development of management guidelines or codes of practice.

Contaminated Sites

60. In collaboration with other WasteNet Councils and ES, continue to develop and maintain a database of contaminated sites that includes associated monitoring and ownership information. Where possible, the database will utilise existing information and be consistent with national guidelines (such as the Ministry for the Environment’s “*Contaminated Land Management Guidelines: No. 1-5*”).



61. In collaboration with other WasteNet Councils and ES, decide on and implement a management strategy for contaminated sites in the region.

Also see Method 128 (Section 6.8.4).

Gaseous Waste

Broad methods for achieving the Council's gaseous waste objectives are given in Section 6.5, Air.

6.5 Resource Management

6.5.1 Definitions

Resource management refers to managing the use of the region's natural and physical resources, including water, air, soil, land and energy.

Utilisation of these resources has the potential to result in inappropriate or inefficient use of resources as well as generate waste. For this reason, resource management is an important aspect of waste management in the broader context.

1-1-26.5.2 Background

Formatted: Bullets and Numbering

The overriding purpose of the Resource Management Act 1991 “*is to promote the sustainable management of natural and physical resources*”¹³. Sustainable management, in the context of this Act, means managing resources such that people's social, economic and cultural well-being as well as their health and safety are provided for. However, in achieving this objective, the potential for resources to sustain future generations must be maintained; the life supporting capacity of air, water, soils and ecosystems must be safeguarded; and, adverse effects on the environment must be avoided, remedied or mitigated.

To achieve its purpose, the Act details the differing duties, function and processes for agencies, including regional council and territorial authorities, responsible for its implementation. Regional councils have specific responsibilities for the management of the water, the coast, air, hazardous substances, and other resources that are of regional importance. A territorial authority's principal responsibility under the Resource Management Act is the management of the land within its district.

In addition, the LGA 2002 provides for local authorities “*to play a broad role in promoting the social, economic, environmental, and cultural well-being of their communities, taking a sustainable development approach*”¹⁴. The LGA 2002 also promotes that local authorities collaborate and cooperate with other local authorities and bodies to promote or achieve priorities and desired outcomes while also making efficient use of resources.

Broad issues with respect to resource management relate to:

- the need for a holistic, integrated approach in managing the region's natural and physical resources
- understanding cross-media effects, eg impacts of groundwater takes for irrigation purposes on nearby surface water flows, and considering these effects when managing resources
- understanding cumulative effects, eg impacts of several discharges into one river, and effects of point and non point source discharges
- obtaining sufficient knowledge about a resource to be able to manage it effectively
- the need for water conservation and energy efficient practices in the region.

¹³ Section 5 of the Resource Management Act 1991

¹⁴ LGA 2002, s3 (d)

6.5.3 Resource Management Objectives

The Council's broad aim is to:

- ensure environmentally, socially, culturally and economically sustainable resource management practices to meet community expectations and to fulfil legislative responsibilities
- promote the sustainable, efficient and equitable allocation and use of resources in Southland
- encourage regional coordination and integration of resource management, where practical and beneficial
- adopt a precautionary approach when managing resources, where insufficient information is available.

In terms of specific types of resources, the Council's aim is to:

- **freshwater:**
 - maintain freshwater quality (with respect to use of freshwater as well as discharges to freshwater) to meet all appropriate needs, eg maintaining quality of drinking water supply
 - promote the concept that water is a resource
 - encourage practices that conserve water
- **energy:**
 - be consistent with the purpose and principles of the Energy Efficiency and Conservation Act 2000
 - encourage energy efficient, energy conservation and sustainable practices in Southland, eg purchasing local materials, using insulation
 - promote the use of renewable sources of energy
- **air:**
 - collaborate with other Councils to develop airshed management practices to ensure air quality is managed to meet all appropriate needs
 - encourage practices that minimise emissions to air (with respect to quantity as well as contaminant concentration)
- **land (with respect to development):**
 - encourage sustainable development practices in Southland.

6.5.4 Resource Management Methods

Freshwater

62. In collaboration with other WasteNet Councils and ES, review existing and proposed regulatory provisions and guidelines for freshwater use and allocation including
- District Plan
 - Regional Policy Statement
 - Department of Prime Minister and Cabinet report "Sustainable Development for New Zealand: Programme of Action"
 - Proposed Regional Freshwater Plan for Southland.

63. After the review, implement necessary changes to the District Plan and support ES to develop a regional watershed (catchment) management strategy for freshwater.
64. In collaboration with other WasteNet Councils and ES, collate monitoring data and other information sources to determine current nature (quality and quantity) of groundwater and surface water resources in Southland.
65. Based on existing data, determine what, if any, additional monitoring programmes are required to maintain a better picture of the state of Southland's environment.
66. Based on existing or additional monitoring programmes, identify and investigate ways of mitigating major sources of freshwater contamination.
67. In collaboration with other WasteNet Councils and ES, investigate water conservation methods, water saving technology and water reuse schemes (eg collecting rainwater for toilet flushing).

Also see Methods 110 and 129 (Section 6.7.4 and Section 6.8.4).

Energy

68. In collaboration with other WasteNet Councils and ES, review existing and proposed regulatory provisions and guidelines for energy efficiency including
 - District Plan
 - Regional Policy Statement
 - Building Standards and Building Code
 - Energy Efficiency and Conservation Act 2000
 - National Energy Efficiency and Conservation Strategy
 - Department of Prime Minister and Cabinet report "*Sustainable Development for New Zealand: Programme of Action*".
69. After the review, implement necessary changes to the District Plan and advocate for changes to the Building Code (eg building consents require an energy conservation design approach such as solar orientation, solar water heating, and higher standards for insulation).
70. In collaboration with other WasteNet Councils and ES, carry out an analysis and rationalisation of the NEEC targets for energy efficiency in a Southland context.
71. Based on the analysis, adopt targets for energy efficiency that are measurable and practical for Southland without being overly costly.
72. In collaboration with other WasteNet Councils and ES, investigate, develop and implement mechanisms to reach energy efficiency targets.
73. Council will carry out an energy audit of Council facilities, including those occupied by Council contractors, and investigate ways of improving energy efficiency inhouse.
74. Based on audit and investigations, Council will implement energy saving mechanisms inhouse and promote findings of audit to community.

75. In collaboration with other WasteNet Councils and ES, encourage and support major industries to carry out energy efficiency audits and implement appropriate energy saving mechanisms.
76. Advocate to Central Government to support research and innovation in renewable energy technology.

Also see Method 110 (Section 6.7.4).

Air

77. In collaboration with other WasteNet Councils and ES, review existing and proposed regulatory provisions and guidelines for air quality standards, including
 - District Plan
 - Regional Air Quality Plan for Southland
 - Building Standards (eg design standards for wood burners)
 - National Environmental Standards (which will come into effect on 1 October 2004)
 - Ministry for the Environment publications including "*Ambient Air Quality Guidelines: May 2002 Update*".
78. After the review, implement necessary changes to the District Plan and, where appropriate advocate for changes to the Regional Air Quality Plan for Southland and the Building Act.
79. Support ES to develop airshed management strategy (as described in Ministry for the Environment Guidelines) for managing air quality, particularly in the urban environment and industrial clusters.
80. In collaboration with other WasteNet Councils and ES, consider nominating one point of contact for all air emission complaints (eg about heat, odour, particulates) in the region.

Land Development

81. In collaboration with other WasteNet Councils and ES, review existing and proposed regulatory provisions and guidelines for land development and subdivision with regard to associated implications for inefficient resource use and potential waste generation implications. The review shall include
 - District Plan
 - Regional Policy Statement
 - Building Act
 - Ministry for the Environment publications, including "*People, Places, Spaces – A Design Guide for Urban New Zealand*"
 - Department of Prime Minister and Cabinet report "*Sustainable Development for New Zealand: Programme of Action*"
 - proposed Urban Design Protocol (to be launched October 2004).
82. After the review, if necessary implement any changes to the District Plan and, where appropriate advocate for changes to any other relevant regulatory provisions.
83. Council will continue to address issues of planning, development, subdivision and service delivery in Southland whilst considering environmental, social, cultural and economic matters.

6.6 Resource Stewardship and Waste Minimisation

6.6.1 Definitions

Resource stewardship refers to the management of material after it has been extracted from the natural and physical environment in a manner that improves the optimisation of material use and *minimises waste*¹⁵.

1.1.26.6.2 Background

Formatted: Bullets and Numbering

It is considered that there is currently a general lack of understanding of the concepts and principles of resource stewardship in industry and the wider community. Initiatives in the last few decades have had too large a focus on waste solutions or “end-of-the pipe” solutions (eg recycling) and not enough of a focus on waste minimisation (eg reducing use of packaging).

Broad issues with respect to resource stewardship and waste minimisation relate to:

- the need for knowledge in areas such as:
 - resources used and consequential waste
 - resource recovery (resources created out of waste), the quality, risks and consequences of using such resources
- differences in values for and understanding of waste and environmental conservation
- the need for skilled, innovative and dedicated people in Southland
- a high proportion of materials used for manufacturing not ending up as saleable product
- most saleable products being discarded after only one use
- the need for drivers for business to achieve best waste minimisation practice
- the need for government leadership, technical resources and market purchase support for sustainable product design
- the need for inter-sector co-ordination and leadership at a national level on business sustainability issues
- the need for co-ordination between government departments, academia, and business sector projects and research
- the voluntary nature of guidelines, as compared to standards
- legislative requirements sometimes being limited to new development or activities
- understanding the full economic, social and environmental implications of pursuing the NZWS targets, and prioritising actions with respect to meeting these targets in a Southland context
- understanding waste implications of growth and development (eg impacts of tourism).

¹⁵ Stone, L. ed. (December 2003) “*Resource Stewardship and Waste Minimisation – Towards a Sustainable New Zealand*”, Centre for Advanced Engineering, Christchurch.

1.1.36.6.3 Resource Stewardship Objectives

Formatted: Bullets and Numbering

The Council's aim is to:

- develop and implement tools and techniques to enhance resource stewardship and reduce waste generation by local government, businesses and individuals
- promote the practical understanding in the community of the life-cycle effects of waste through consumption
- reduce barriers to recycling and using recovered materials in Southland
- develop and implement economic drivers to change wasteful behaviour
- promote and adopt policies that, as far as practicable reflect full cost, life-cycle accounting
- develop policies that, as far as practicable, effect efficient allocation and effective use of resources
- rationalise an implementation programme based on the results of monitoring within the region, the NZWS targets and other needs of the region, whilst considering economic, social, cultural and environmental implications.

1.1.46.6.4 Resource Stewardship Methods

Formatted: Bullets and Numbering

Further resource stewardship and waste minimisation methods are included in other sections of this WMP and are not repeated in this section.

84. In collaboration with other WasteNet Councils and ES consider “green” purchasing policies, which favour products produced using cleaner production technologies and/or have recycling potential and/or contain a recycled content while also assessing life cycle environmental costs and benefits of such products.
85. In collaboration with other WasteNet Councils and ES, investigate further recycling and reuse systems for the region. This investigation may include collection options, reprocessing technologies, sustainable markets for products, cooperating with territorial authorities outside of the Southland region, cooperating or supporting industry and/or community lead initiatives.
86. In collaboration with other WasteNet Councils and ES, investigate resource recovery alternatives as they become available, considering costs, applicability to local conditions, practicality and environmental, social and cultural impacts. Alternatives may include solid waste initiatives, recycling treated wastewater as irrigation water, reusing waste oil.
87. Based on the results of investigations, develop and implement resource recovery initiatives in the region.
88. In collaboration with other WasteNet Councils and ES, support and promote the development of a waste exchange network for businesses and the wider community to exchange and reuse waste materials.
89. In collaboration with other WasteNet Councils and ES, carry out in-house waste audits of waste generation and resource use (eg solid waste generation, water usage).

90. Based on the results of the audits, develop and implement in-house waste minimisation, efficient resource use and extended producer responsibility programmes.
91. In collaboration with other WasteNet Council and ES, encourage businesses and organisations to carry out waste audits and, where possible, implement practical and sustainable waste minimisation programmes and cleaner production technologies.
92. WasteNet Councils and ES will consider providing opportunities to make it easier for industry, business, community groups and the wider community to initiate resource stewardship and waste minimisation activities (eg providing lower cost interim resource consents).
93. In collaboration with other WasteNet Councils and ES, investigate options for providing short term funding assistance to help setup community based recycling and reuse programmes.
94. In collaboration with other WasteNet Councils and ES, advocate to Central government to continue to work with industry to develop extended producer responsibility schemes and to tighten waste minimisation standards and regulations.
95. In collaboration with other WasteNet Councils and ES, advocate for a nationwide public information and education programme targeted at resource stewardship, efficient use of resources and waste minimisation.

Also see Methods 1, 2, 8 and 9 (Section 6.2.4), Methods 17, 23, 27, 28, 44, 50, 53 and 58 (Section 6.3.4), Methods 68-76 (Section 6.5.4), Methods 96-98, 104, 105, 110, 113-118 (Section 6.6.4) Methods 119-123, 125, 126 and 129 (Section 6.8.4).

6.7 Education and Promotion

6.7.1 Definitions

Education and promotion refers to initiatives of Council, industry and the wider community to increase community knowledge about waste management, resource stewardship and waste minimisation. It also includes initiatives of Council and industry to increase the skill and resource base of the region.

1.1.26.7.2 Background

Formatted: Bullets and Numbering

Broad issues with respect to education and promotion relate to:

- the need for a general knowledge and understanding within the community about resource stewardship and broad waste management issues
- the need for skilled people and a wide range of resources for resource stewardship and waste management
- the potential benefits of joint training, education and information sharing programmes, including industry and business.

1.1.36.7.3 Education Objectives

Formatted: Bullets and Numbering

The Council's aim is to:

- increase the communities general understanding of "waste" in the broad sense and waste issues
- enhance community understanding of resource stewardship, waste management issues and cost recovery
- encourage individual and collective efforts towards resource stewardship and waste minimisation
- raise awareness of good waste management practices in accordance with the broad principles of this plan
- promote and disseminate regional and local education material to targeted sectors in the community
- increase the skill and resource base (with respect to resource stewardship and waste management) of Council, local industry and the wider community.

Formatted: Bullets and Numbering

1.1.46.7.4 Education Methods

Some methods given in this section should be read in conjunction with other parts of this WMP, as indicated.

General Education Methods

96. In collaboration with other WasteNet Councils and ES, consider nominating one person to act as the Waste Education and Promotion Coordinator for the region.
97. In collaboration with other WasteNet Councils and ES, decide on the roles and responsibilities of the Waste Education and Promotion Coordinator for the region. These may include:
 - liaising with WasteNet Councils and ES
 - developing and implementing an ongoing coordinated education and promotion programme for the region
 - when appropriate, developing and implementing individual education and promotion programmes for a particular district
 - being the first point of call for all general enquiries about waste matters, including waste minimisation and cleaner production
 - ensuring all education material contains an appropriate level of detail and is in an appropriate format for the intended audience
 - liaising with schools and relevant community groups to increase community knowledge and enlist support (eg providing information resources to teachers on waste, organising visits to resource recovery centres)
 - when appropriate, advocating to central government for a nationwide education programme about specific issues (eg energy efficiency).
98. In collaboration with other WasteNet Councils and ES, establish a regional database of information and advisory services on waste issues, waste management and resource efficiency methods (not technical) for both industrial and domestic sectors. Access may be by phone inquiry, internet or visit to Council. (*See Section 6.2*)
99. In collaboration with other WasteNet Councils and ES, facilitate a coordinated public information programme to support the implementation of the WMP. This programme may include a handout summarising WMP principles and key actions, where to obtain a copy of WMP and contact details of Council staff member.
100. In collaboration with WasteNet Councils and ES, develop a website to support the implementation of the WMP and educating the public about broad waste issues. The existing WasteNet website (www.wastenet.org.nz) could be updated and maintained to fulfil this purpose. A link to ES would need to be added to the website.
101. In collaboration with other WasteNet Councils and ES, carry out a survey to find out which education strategies (eg website, handouts, newspaper articles, radio, television, refuse bags) are the most effective in each district.

102. In collaboration with other WasteNet Council, adopt a common visual style or logo for all combined council services and promotional material so that a consistent message is reinforced through repetition. One option is the existing WasteNet logo.
103. Develop annual plan and budget for promotional and educational work in collaboration with other WasteNet Councils and ES.
104. In collaboration with other WasteNet Councils and transfer station operators, develop and install signage at transfer stations and recycling drop off points to educate the wider community about the importance of minimising contamination (eg sorting waste correctly), reuse and recycling. *(See Section 6.6)*
105. WasteNet Councils and ES will maintain active membership of appropriate associations (eg WasteMINZ and RONZ).

Training Workshops

106. Hold regional training workshops to educate appropriate Council staff from WasteNet Councils and ES on broad waste issues, the philosophy of WMP and the general programme for implementing the WMP.
107. In collaboration with other WasteNet Councils and ES, facilitate training workshops and promote the benefit of Council carrying out audits of on-site systems with owners to improve the overall performance of on-site systems in the district. *(See Section 6.4, On-site Wastewater Systems)*
108. Hold regional training workshops to educate staff from WasteNet Councils, staff from ES, cleanfill operators and cleanfill owners on best cleanfill practice recommended by the Ministry for the Environment (such as having waste acceptance criteria and recording quantity, source and description of incoming material) as well as environmental risks of not following this practice. *(See Section 6.4, Cleanfills)*
109. Hold regional training workshops to educate Council staff and appropriate people in industry on requirements of HSNO Act, including appropriate documentation, packaging controls, codes of practice for particular substances, certified approved handlers, certified sites, and emergency management plans. *(See Section 6.4, Hazardous and Special Waste)*

Information Material

110. In collaboration with other WasteNet Councils and ES, prepare information material to educate the community about:
 - the broad definition of waste used in this WMP, broad waste issues, resource stewardship and waste minimisation. *(See Section 6.6)*
 - “green” purchasing policies, ways to minimise waste generation and reduce resource use. *(See Section 6.6)*
 - resource recovery methods for organic waste (eg home composting of greenwaste and kitchen waste, worm farms). *(See Section 6.4, Organic Waste and Section 6.6)*

- water conservation techniques (eg fixing leaky taps, use of low water use toilets). (*See Section 6.5, Freshwater*)
 - methods and benefits of insulating existing domestic dwellings (eg insulate hot water cylinders, insulate roof, floors and walls, use of thermal curtains). (*See Section 6.5, Energy*)
 - the benefits of purchasing energy efficient and durable appliances, including brief life-cycle analysis and direct cost savings to user. (*See Section 6.5, Energy*)
111. In collaboration with other WasteNet Councils, ES and on-site system service providers, prepare information material to educate on-site system owners on the importance of regular system maintenance and to provide contact details of Council staff representative and service providers. The information material will be mailed to owners of existing systems and given to owners of new systems. (*See Section 6.4, On-site Wastewater Systems*)
112. In collaboration with WasteNet Councils and ES, prepare information material to educate Council staff, public (domestic waste) and industries (commercial waste) about nature of hazardous waste, associated risks, and location of drop-off points and disposal facilities. (*See Section 6.4, Hazardous and Special Waste*)
113. In collaboration with other WasteNet Councils, ES and providers of recycling and reuse programmes, prepare information material to educate the wider community about the importance of minimising contamination (eg rinsing bottles, removing labels, nature of material that can be recycled). (*See Section 6.6*)

Promotion

114. The Council will liaise regularly with relevant community groups and industry to promote efficient and effective waste management and to enlist support to the concepts of resource stewardship and waste minimisation. (*See Section 6.2 and Section 6.6*)
115. In collaboration with other WasteNet Councils and ES, promote the success of Council and community based recycling and reuse programmes in local newspapers. (*See Section 6.6*)
116. In collaboration with other WasteNet Councils and ES, recognise and publicise the achievements of outstanding groups, schools, businesses and industries that implement desirable waste management practices (eg extended producer responsibility, cleaner production, community worm farms).¹⁶ (*See Section 6.6*)
117. In collaboration with other WasteNet Councils and ES, promote the environmental and financial benefits of in-house waste minimisation and efficient resource use programmes to industry and the wider community. (*See Section 6.6*)
118. In collaboration with other WasteNet Councils, publicise reasons for cost recovery charges and benefits of services provided so that the community can make informed decisions about managing their waste. (*See Section 6.6 and Section 6.8*)

¹⁶ Environment Southland bestows Environment Awards annually for desirable environmentally friendly practices

6.8 Cost Recovery and Funding

6.8.1 Definitions

Cost recovery and funding refers to method(s) by which Council will fund the cost of providing waste management, resource management, resource stewardship and waste minimisation services. Such methods include user pays charges and rates.

4.1.26.8.2 Background

Formatted: Bullets and Numbering

Broad issues with respect to cost recovery and funding relate to:

- the need for accurate pricing and charging: social, environmental and economic costs of generating and disposing of waste are not always covered by price of waste treatment and disposal. This gives waste generators little motivation to reduce the quantity of waste they generate and dispose of and is also unfair to those who generate little waste or otherwise reduce the quantity of waste they dispose of
- the need for Council contracts to include drivers to reduce waste: some local authorities have sunk significant capital in solid waste infrastructure, so diverting waste to other uses can add to their total costs, or have long-term fixed waste contracts with private firms that lock them into paying for the disposal of a set amount of waste whether they generate it or not
- understanding the full economic, social and environmental implications of meeting current and proposed performance standards, guidelines and strategies (such as the proposed NES for air emissions, landfill management and cleanfill management and the New Zealand Waste Strategy NZWS), in order to prioritise actions in accordance with need.

4.1.36.8.3 Cost Recovery Objectives

Formatted: Bullets and Numbering

The Council's aim is to:

- have all waste treatment and disposal facilities account for full, life-cycle cost of development and operation (including environmental, social and cultural costs), and ensure charging policies reflect these costs transparently and, where practicable, directly. Such facilities include wastewater treatment facilities, landfills and cleanfills. Council will also recover costs associated with contaminated sites when possible
- increase understanding that the community has to pay for waste management
- have an equitable spread of costs, ie balancing public good and user pays pricing mechanisms
- balance affordability with acceptable level of risk to community and environment.

Formatted: Bullets and Numbering

1.1.46.8.4 Cost Recovery Methods

Some methods given in this section should be read in conjunction with other parts of this WMP, as indicated.

119. Follow appropriate accounting procedures that enable the Council to identify the true costs of each aspect of its waste management and waste minimisation procedures and which will aid it in determining appropriate methods of cost recovery.
120. In collaboration with other WasteNet Councils, adopt user pays charges which reflect true costs of waste disposal (eg solid waste management costs, hazardous waste handling, trade waste handling, wastewater treatment costs) and resource use (eg water treatment costs) where appropriate. *(See Section 6.4 and Section 6.6)*
121. In collaboration with other WasteNet Councils, review waste collection and waste disposal charges to encourage waste producers to separate waste, reuse and recycle as much as possible. *(See Section 6.4 and Section 6.6)*
122. In collaboration with other WasteNet Councils, investigate options for placing levies on a range of waste management services and/or resource management activities to fund waste minimisation and resource stewardship initiatives (eg levy on tradewaste to fund cleaner production audits). *(See Section 6.6)*
123. In collaboration with other WasteNet Councils and ES, investigate options for developing a revolving regional trust scheme to fund resource stewardship and waste minimisation business initiatives (eg energy saving devices, products made from recycled). One option is a scheme like Recovered Materials Foundation. *(See Section 6.6)*
124. Continue to use direct user charges (either user pays charges or rate based charges) for disposal services (including solid waste, hazardous waste, trade waste and wastewater) and domestic refuse collection services. *(See Section 6.4)*
125. In collaboration with other WasteNet Councils, consider establishing a regionally consistent charging regime for waste disposal services, where appropriate. The charging regime should enable each Council to recover the costs of waste management if doing so is considered appropriate from a social, cultural, economic and environmental perspective. *(See Section 6.4, Solid Waste)*
126. Recover costs for waste minimisation via a combination of rates and changes on waste disposal charges, where direct user charges for waste minimisation services cannot be implemented or are insufficient to cover costs. *(See Section 6.6)*
127. In collaboration with other WasteNet Councils, investigate options for recovering costs associated with trade waste. Options could include charges based on quantity discharged and/or concentration and nature of contaminants. This investigation should include an assessment of environmental, social, cultural and economic effects of recovering actual costs (eg loss of industry verses cost to Council). *(See Section 6.4, Trade Waste)*



128. In collaboration with other WasteNet Councils and ES, recover any Council costs for contaminated site management where possible. *(See Section 6.4, Contaminated Site)*
129. In collaboration with other WasteNet Councils, investigate installing water meters on domestic properties in urban areas and on all businesses and introducing a user charge for water usage. *(See Section 6.5, Freshwater)*

Glossary

This glossary is included to assist in understanding the terms used in this WMP. An asterisk () has been used to indicate where the definition comes from the NZWS. Other sources are indicated by footnote.*

action plans	A plan of action for a specific waste management category to achieve one or more of the broad WMP objectives.
“activity” plans	A document to support the Long Term Council Community Plan, particularly the community outcomes, describing all aspects of the management of an activity (as outlined in Schedule 10 of the LGA 2002). Information contained in the document includes – levels of service; asset information; demand forecasting; operation and maintenance requirements; capital development, renewal and disposal; risk management; and, long term financial planning.
best practice	The best method (as recognised by practitioners in New Zealand or internationally) based on the current state of technical knowledge for preventing or minimising adverse environmental, social, cultural and economic effects. ¹⁷
biosolids	Sewage sludges or sewage sludges mixed with other materials that have been treated and/or stabilised to the extent that they can be safely and beneficially applied to land. They have significant fertilising and soil conditioning properties because of the nutrient and organic matter that they contain. ¹⁸
cleaner production	Practice in which all phases of a life-cycle of a product or a process are considered with the objective of reducing adverse environmental impacts by improving resource efficiency and reducing waste. ¹⁹
cleanfills	Waste disposal sites that accept only “cleanfill” or inert material. Inert material is material that has no putrescible, pollutant, inflammable or hazardous components. ²⁰
contaminated sites*	Land areas where hazardous substances are in concentrations above those occurring naturally and are a risk to human health or the environment.
disposal	final deposit of waste on land set apart for the purpose ²¹

¹⁷ Adapted from the Regional Policy Statement for Southland.

¹⁸ From mfe.govt.nz webpage where they refer to the NZWWA’s “Guidelines for the Safe Application to Land in New Zealand”

¹⁹ Adapted from the Regional Solid Waste Management Plan for Southland and the NZWS.

²⁰ *ibid.*

extended producer responsibility*	The onus is put on businesses to look for, and capitalise on, opportunities for resource conservation and pollution prevention throughout a product's life-cycle, including disposal.
gaseous waste*	Gases and small particles carried by air. It includes dust, fumes, smoke and vapour.
green waste*	Garden waste, which is a type of organic waste.
guiding principles	Key philosophies that will direct Council as they implement the WMP (and other related policies).
hazardous waste	Any solid, liquid, semi-solid, contained gas (or any combination thereof) waste material, which because of its quantity, concentration, or chemical characteristics poses a substantial present or potential danger to human or animal health, or the environment. Such waste may be reactive, flammable, corrosive, toxic, pathogenic, carcinogenic, mutagenic, bioconcentrative, radioactive or persistent in the environment. ²²
issue	Matter that is viewed as being of significant waste management concern (for a specific waste management category) in the district or region as a whole and needs to be resolved. ²³
kaitiakitanga*	Guardianship over the land and its resources. It expresses an integrated view of the environment and recognises the relationship between everything within it.
landfill	A site used for the controlled deposition of solid waste onto or into land. ²⁴ There are a number of categories of landfill, including cleanfills and sanitary municipal solid waste landfills.
liquid waste*	Waste generated in, or converted to, a liquid form for disposal.
method	The practical action(s) that will be taken to achieve one or more of the stated objective(s) (for a specific waste management category). ²⁵
non-point source discharge	A diffuse discharge of contaminants to air, water and land which may not be attributed to an individual site or activity. ²⁶

²¹ Interpretation from s.537 of the Local Government Act.

²² Regional Solid Waste Management Plan for Southland.

²³ Regional Policy Statement for Southland.

²⁴ Adapted from the Regional Solid Waste Management Plan for Southland and the NZWS.

²⁵ Adapted from the definitions for method and policy from the Regional Policy Statement for Southland.

objective	The resolution of a particular issue or set of issues (for a specific waste management category). It is the desired result, end state, situation or condition that is aimed for. ²⁷
organic waste*	Includes garden (ie greenwaste) and kitchen waste, food process wastes and sewage sludge.
point source discharge	A discharge from specific and identifiable sources, onto or into land, air, a water body or the sea. ²⁸
precautionary approach	A precautionary approach is one that adopts prudent foresight, and involves the making of judgement based on existing knowledge and understanding. ²⁹
recovery	Extraction of materials or energy from waste for further use or processing; and includes, but is not limited to, making materials into compost. ³⁰
recycling	Reprocessing of waste materials to produce new products. ³¹
reduction	Lessening waste generation. ³²
reuse	Further using of products in their existing form for their original purpose or a similar purpose. ³³
sewage sludge*	A by-product of sewage collection and treatment processes.
solid waste*	All waste generated as a solid or converted to a solid for disposal. It includes wastes like paper, plastic, glass, metal, electronic goods, furnishings, garden and other organic wastes.
special waste*	Wastes that cause particular management and/or disposal problems and need special care. Examples include used oil, tyres, end-of-life vehicles, batteries and electronic goods.
stewardship*	Everyone has a duty of care on everyone (government, business and the community) for waste prevention and resource recovery.
stormwater*	Rainwater runoff that is channelled through drains from roads and urban properties into waterways and the sea.

²⁶ Regional Solid Waste Management Plan for Southland.

²⁷ Regional Policy Statement for Southland

²⁸ Ibid.

²⁹ Ibid.

³⁰ Interpretation from s.537 of the Local Government Act.

³¹ Interpretation from s.537 of the Local Government Act.

³² Interpretation from s.537 of the Local Government Act.

³³ Interpretation from s.537 of the Local Government Act.

trade waste*	Liquid wastes generated by business and disposed of through the sewerage system.
treatment	In relation to waste, subjecting the waste to any physical, biological, or chemical process to change the volume or character of that waste so that it may be disposed of with no or reduced significant adverse effect on the environment. ³⁴
waste management plan	In relation to a district, any plan for the management of waste in the district, being a plan developed after consideration, in the following order of priority, of the following methods (which methods are listed in order of their importance): (a) reduction: (b) reuse: (c) recycling: (d) recovery: (e) treatment: (f) disposal. ³⁵
waste management category	Similar waste management activities have been grouped together for the purpose of this WMP.
waste minimisation*	All activities aimed at preventing, reducing, re-using or recycling waste.
waste prevention*	Practices that avoid and reduce the generation of waste.
waste	Any solid material, liquid or gas that is discarded or discharged by its owner or the action or process of wasting resources.
WasteNet Councils	Southland territorial authorities (Invercargill City Council, Gore District Council and Southland District Council) are collectively referred to as WasteNet Councils.
wastewater*	By-product of sewage, and liquid trade waste collection and treatment processes.
WMP objectives	Key objectives of Council with respect to this WMP.

³⁴ Interpretation from s.537 of the Local Government Act.

³⁵ Interpretation from s.537 of the Local Government Act.

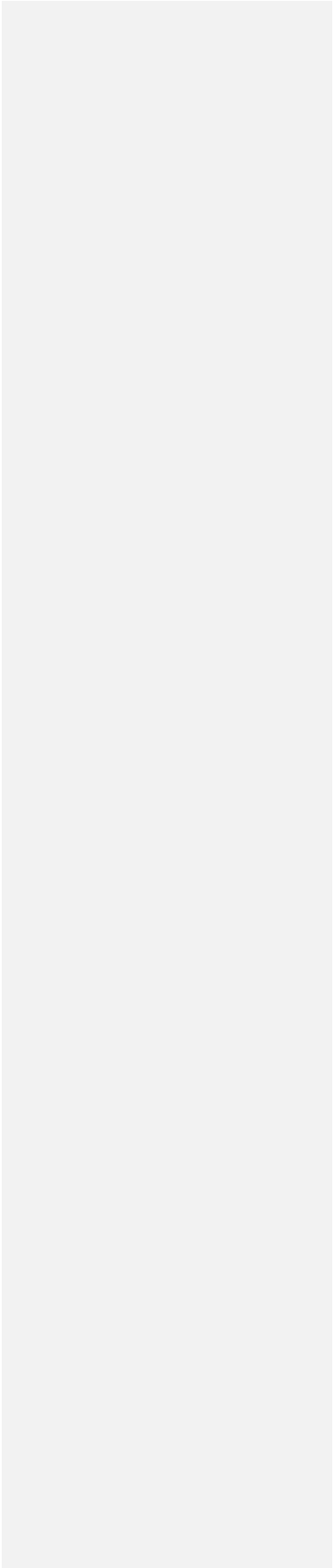
List of Abbreviations

The following abbreviations may have been used in this WMP.

EECA	Energy Efficiency and Conservation Act 2000
ES	Environment Southland (brand name for the Southland Regional Council)
HSNO	Hazardous Substance and New Organisms Act 1996
JWDA	Joint Waste Disposal Agreement
LGA	Local Government Act
LTCCP	Long Term Council Community Plan
NEEC	National Energy Efficiency and Conservation Strategy
NES	National Environmental Standard
NZWS	New Zealand Waste Strategy
OECD	Organisation for Economic Cooperation and Development
RMA	Resource Management Act 1991
SCP	Special Consultative Procedure
TA	Territorial Authority (eg Invercargill City Council, Gore District Council and Southland District Council)
TAS	Territorial Authorities of Southland (refer TA above)
WAG	Waste Advisory Group
WMP	Waste Management Plan

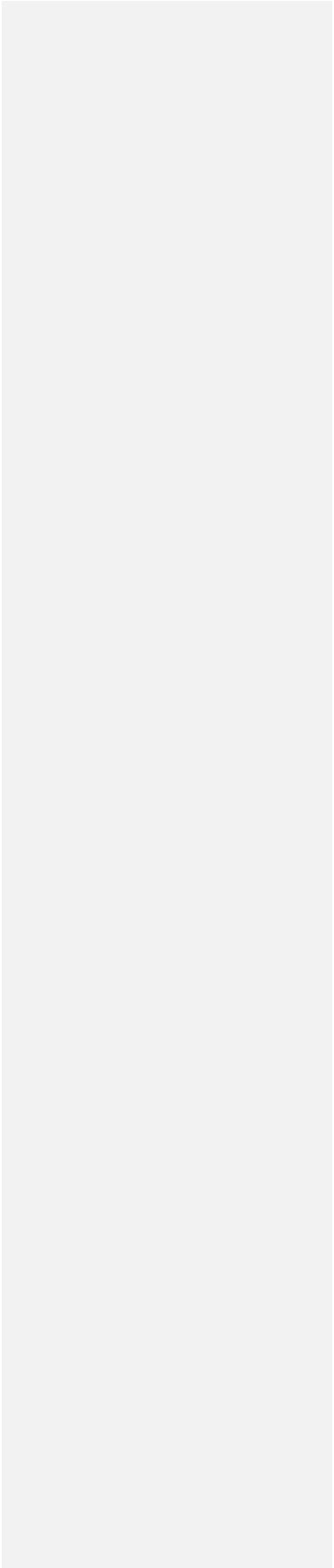


Waste Management Plan



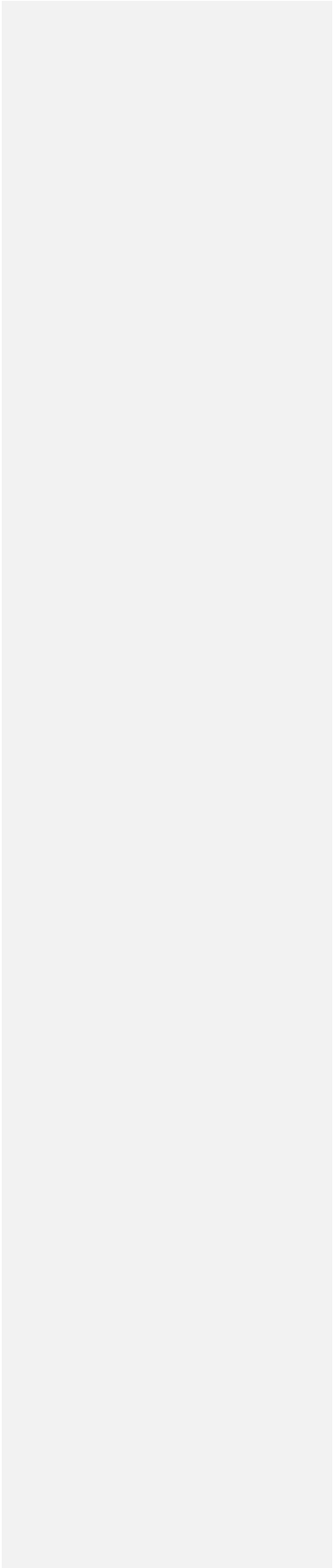


Appendix A – Southland Resources and Waste Overview





Waste Management Plan





Introduction

This Appendix provides an overview of Southland's resources, their use and resultant generation of waste as well as the legislative controls in Southland that aim to manage resource utilisation. Much of this information has been taken from the Regional Policy Statement for Southland.

Resource Management Legislation and Plans

The Resource Management Act 1991 (RMA) is the primary piece of legislation that manages resource use in New Zealand. Under the RMA, Regional Authorities have specific responsibilities for the management of regionally significant resources (ie water, air, soil, coastal areas and other resources of regional importance). Territorial Authorities responsibility is the management of land based activities within their District.

The following plans, prepared under the RMA, are currently of relevance to waste management within Southland:

- Regional Policy Statement for Southland
- Regional Solid Waste Management Plan for Southland
- Regional Effluent Land Application Plan for Southland
- Regional Air Quality Plan for Southland
- Proposed Coastal Plan for Southland
- Proposed Freshwater Plan for Southland
- District Plans for Gore District Council, Invercargill City Council and Southland District Council.

These plans will be reviewed and possibly modified in time.

Southland and Its Resources³⁶

Introduction

The Southland region covers an area of approximately 2.3 million hectares. To Maori, Southland is known as "Murihiku" which means the end of the tail, referring to the Region's location at the southern end of the South Island of New Zealand.

The main urban settlements of the region are Te Anau, Tuatapere, Otautau, Riverton, Lumsden, Winton, Invercargill, Bluff, Oban, Maitai and Gore.

³⁶ Chapter 2 – The Region, "Regional Policy Statement for Southland"

Physical Region

Within Southland there is a range of landscape forms, including plains; rolling hills in bush and pasture; vegetated, barren or snow covered mountains; harbours; rocky bluffs and sandy beaches. These landscapes also feature a considerable ecological diversity.

The region has less sunshine and a greater than average number of frosts than the rest of New Zealand. Annual average rainfall ranges from approximately 800mm to 1,500mm (except for Fiordland, with average of 6,300mm for Milford).

Southland is very well endowed with soils suitable for farming, horticulture and forestry and also has a considerable mineral wealth.

Air quality in the region is generally higher than many other parts of New Zealand, although there are localised air quality issues.

There are four major rivers within the region – the Mataura, Oreti, Aparima and Waiau. The major lakes within the region are Lakes Te Anau (second largest lake in New Zealand), Manapouri, Monowai, Hauroko (deepest lake in New Zealand), and Poteriteri. This water resource, mainly within the Waiau River catchment, has been developed to generate electricity from hydro generation. In addition there are a considerable groundwater resource.

Economic Activity

Primary, secondary and tertiary industries all contribute to the economic well being of the region. Primary industry is largely characterised by agriculture, forestry, fishing/aquaculture and mining/quarrying. To place this in perspective, as at 30 June 1993, farms covered 1,242,020 hectares (ie over 50% of the total land area in Southland) and Southland farmers used 342,951 tonnes of solid fertiliser in that year (ie 12.6% of the national total). At that time, commercial forests covered an estimated 45,511 hectares (ie just under 2% of the total land area in Southland).

Secondary industry in Southland is largely connected with processing products from the agricultural, fishing and forestry industries. In addition, there is also a manufacturing industry, with one of the most significant being the Tiwai Point Aluminium Smelter. Annual production from this plant in 1993 was about 270,000 tonnes of aluminium.

In terms of tertiary industry, the tourism and recreation sector has been and continues to be very important to the region, with the National Parks (ie Fiordland and Rakiura) amongst the significant attractions in the region.

Southland and Its Waste

Overview

The nature of the resources within the region and their use, characterise the nature of the waste generated. For some sources of waste or categories of waste, it is easier to ascertain waste quantities and associated waste effects.

For example, solid waste quantities are monitored at the new Southland Regional Landfill which started operation in June 2004. At this stage, the estimated quantity of solid waste going to landfill is 55,000 tonnes per annum.

For other sources and/or categories of waste, it is not so easy to quantify. It is for this reason that the WMP contains a number of Action Plans, principally contained in Section 6.3 (Monitoring, Information Management and Reporting), that aim to develop an understanding of the region's waste management needs.

Southland United Council Waste Survey

In the past there have been attempts to try and place some context on the nature and volume of waste within the region. One of these was the Southland United Council Waste Survey carried out in the late 1980's and contained in Appendix B of Regional Solid Waste Management Plan for Southland. This survey predominantly focussed on solid waste.

Parts of that appendix, as an example, are reproduced below.

Industry / Waste Type	Annual Quantity	Landfill Location	Other Disposal
Aluminium / General	1,000 m ³	Tiwai	-
Aluminium / Cathodes - Hazardous	-	-	Stored
Region / Asbestos	10 m ³	Invercargill & Various	-
Automobile Wrecking / Scrap	160 m ³	Invercargill & Gore	Plus 100 m ³ recycled
Cardboard / Card	550 tonnes	-	recycled
Chemical Fertiliser / Awarua General	500 m ³	Awarua	-
Chemical Fertiliser / Awarua Hazardous	100 m ³	Some to Awarua	Sewage
Coal / Ohai Fines	40,000 tonnes	-	Stored
Fish Processing / Bluff Hazardous	50 m ³	Invercargill	-
Grain / Gore Husk	700 tonnes	Gore	Some recycled
Hospital / Invercargill General	275 m ³	Invercargill	-
Hospital / Invercargill Hazardous	20 m ³	-	Combusted
Paper Mill / Maitua General & Byproduct	200 m ³	Some to Maitua	50 m ³ recycled
Sawmill / Sawdust	20,000 m ³	-	Stored
Woodchip / Awarua Fine Chips	20,000 m ³	-	Stored
Woolscour / Invercargill Sludges	30 m ³	Invercargill	20 m ³ to sewage

Waste Generation Analysis

In November 2002, the Southland District Council made publicly available the "Waste Generation Analysis" summary report of a project they commissioned MWH to undertake. The project attempted to focus on all waste (liquid, solid and gaseous) generated within their District.

The analysis was based around the types of waste that would be generated from: agriculture, forestry, fishing, mining, manufacturing (ie industry), construction, the retail sector, transportation, the residential sector, tourism, nature itself and other wastes such as contaminated sites.

Using available information, which was not always directly relevant, estimates were made on the quantity of different waste types within each sector. As an example, published figures for the number of dairy cattle in Southland were multiplied by the average amount of effluent generated by an individual animal. The resultant figure gave a total quantity of dairy stock effluent in Southland. For all the data generated, assumptions were then made about what proportion of the effluent went to the three identified receiving environments of land, water (or the sea, if applicable) and air.

As a result of this exercise, the manufacturing (63.2% at 56.2 Mt/yr), agricultural (20.8% at 18.4 Mt/yr) and forestry (13.2% at 12 Mt/yr) sectors were identified as those producing the highest proportion of waste within Southland. The most significant specific wastes (in terms of weight only) were considered to be: manufacturing wastewater and sludges (43.5 Mt/yr); manufacturing stormwater (12.4 Mt/yr); forestry wastewater and stormwater discharges (10.5Mt/yr); dairy shed effluent (5.9 Mr/yr); and dairy effluent (4.4 t/yr).

It was also estimated that the land received 35% of waste (by weight) while water, either freshwater or coastal water, received around 62% of waste (by weight).

Having calculated an estimate of waste quantities, an attempt was then made to identify the actual risks of the waste type in terms of potential and actual effects on the environment. Each type of waste was assessed against the following criteria: the area of the three different receiving environments that would be affected; the waste character in terms of quantity and toxicity; effects on the social environment in terms of loss of amenity and public perception; and the ability to manage the waste in terms of – can monitoring define the impact?, can the impact be controlled? and can the impact be improved?

Each of the above criteria was weighted. Then, an assessment for each waste type against the above criteria was undertaken, based on a sliding scale of zero to five (where zero equated to no effect and 5 to a significant effect). When all of these factors were added together, scores for the 89 types of waste ranged from a minimum of 24.8 to a maximum of 123. Given this assessment, the most significant waste types, in terms of potential environmental effects, were identified as:

- manufacturing chemicals
- manufacturing wastewater sludges
- dairy stock effluent
- dairy shed effluent
- forestry wastewater/stormwater
- retail trade waste
- manufacturing hazardous waste
- transport oils/grease/hydrocarbons
- agriculture air emissions (vehicles)



Waste Management Plan

- transport air emissions
- manufacturing stormwater
- residential sewage (septic tank)
- residential sewage (reticulated)
- tourism sewage (reticulated and onsite)
- manufacturing air emissions (heat, odour and dust).

However, in undertaking this “*Waste Generation Analysis*” it was acknowledged that the assessment was subjective. Irrespective of this subjectivity, it is considered that this exercise did result in a general identification of the types of waste that have the most potential for significant effects on the environment.