



# Canterbury Hazardous Waste Management Strategy

Part 1: Policy Framework

February 2006

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# **Canterbury Hazardous Waste Management Strategy**

Part I – Policy Framework

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February 2006



## Executive Summary

Currently within New Zealand there is no comprehensive or integrated statutory framework covering the management of hazardous waste. The Canterbury Hazardous Waste Management Strategy was produced in 2001 as part of the commitment by local authorities in Canterbury to improve the management of hazardous wastes.

The Strategy was reviewed in 2006 after five years of operation, and this document together with the implementation programme, outlines the councils' current commitment to the improvement of the management of hazardous waste.

Overseeing the implementation of the Strategy falls to the Canterbury Hazardous Waste Working Party co-ordinated by Environment Canterbury. The Strategy is primarily designed to provide direction for local authorities, but it will also provide guidance for generators and those individuals or organisations involved in the waste management industry.

Investigations of hazardous waste in Canterbury provide a basis of determining priorities within this strategy. These investigations prioritised hazardous wastes based on the potential to cause adverse environmental effects. Seven hazardous waste streams were recommended as a high priority for management, these are:

- Industrial Wastes,
  1. cyanide wastes,
  2. chlorinated solvent sludge wastes,
  3. metal processing wastes,
  4. boron and copper, chromium and arsenic timber treatment sludge wastes,
- agrichemical wastes,
- domestic hazardous wastes,
- waste oil.

The Strategy aims to address the issues relating to these wastes.

Part I of the Strategy outlines the hazardous waste management issues and the strategies that will be needed to address these issues. Part II outlines the implementation programmes for the next three years

The vision for hazardous waste management in Canterbury is:

**Zero hazardous waste by 2020**

**Hazardous wastes are wastes that exhibit properties such as corrosiveness, explosiveness, flammability, toxicity, ecotoxicity or capacity to oxidise, and have the potential to adversely affect human, animal or other species and natural resources.**

This vision of Zero Hazardous waste means that by the year 2020, materials that are currently viewed as wastes would be utilised as resources for other processes. If this cannot be achieved, then the hazardous properties of the material would be managed so that there are no significant actual or potential environmental effects, and therefore would not be a hazardous waste.

The long-term objective of this Hazardous Waste Management Strategy is:

**To eliminate the adverse effects of hazardous waste on the environment**

While there are benefits in reducing the volumes of hazardous wastes produced, the Strategy is based on progressively reducing and ultimately eliminating the adverse effects of hazardous waste on the environment as the reduction of waste volumes will not necessarily lead to a reduction in environmental effects. This objective will be met by improving waste management practices within the region and by applying the following waste management hierarchy;

- reduce,
- reuse,
- recycle,
- recover,
- residual management.

Although, the key element in hazardous waste management is the minimisation of hazardous waste being generated, there is an immediate and continuing requirement to manage the disposal of hazardous waste. As the amount of hazardous waste generated is reduced, there will be less waste to manage using other methods in the waste management hierarchy.

The implementation programmes cover the spectrum of the waste management hierarchy with some targeted to specific waste types and others generic to all hazardous wastes. Each programme is identified along with its proposed timeframe and external goods and services costs. As many programmes are dependent on the successful completion of another, not all programmes can be implemented at once. Therefore, commencement of the programmes is staggered across a number of years. Initially, emphasis will be given to programmes that are easily implemented and capable of making a significant improvement in hazardous waste management practices.

Monitoring will be undertaken to ensure that objectives are being met and outcomes produced. Future changes to legislation and regulations may also require the review of the hazardous waste management techniques employed in the implementation of this Strategy.

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# **1 Introduction**

## **1.1 Purpose of the Strategy**

This Hazardous Waste Management Strategy has been developed as part of the commitment by local authorities in Canterbury to work together to achieve integrated and environmentally sound management of hazardous wastes. It is not a statutory document but seeks to provide guidance for local authority statutory plans, service delivery and regulation. While the Strategy is primarily designed to provide direction for local authorities, it will also provide guidance for hazardous waste generators and those individuals or organisations involved in the waste management industry.

It is intended that the Strategy will be implemented and monitored by local authorities through relevant district and regional plans, appropriate bylaws, contractual arrangements, local authority service provision and related charging, and annual plan provisions.

In presenting this Strategy to local authorities, business and the community it is recognised that there is a need to progressively implement appropriate changes to move towards long-term economic, environmental and social sustainability. The strategy aims to promote these changes through the development of implementation programmes that will be considered in line with current sustainability philosophies.

## **1.2 Legislation for hazardous waste management**

There is currently no comprehensive or integrated statutory framework covering the management of hazardous waste as may be the case in many other OECD countries. The current management of hazardous waste in New Zealand is subject to a complex array of statutes, bylaws and regulations; policy documents and waste management plans, including the: Resource Management Act 1991, Local Government Acts 1974 and 2002, Health Act 1956 and Hazardous Substances and New Organisms Act 1996. A description of the relevant sections of these provisions is contained in Appendix A.

There are international agreements on hazardous waste to which New Zealand is a signatory. It is central government's responsibility to implement the requirements of these agreements. In complying with national provisions any international obligations to which New Zealand has committed, will be met.

Under the current statutory framework, territorial authorities and the Canterbury Regional Council, here after referred to as Environment Canterbury, have functions and powers to enforce legislation relevant to the management of hazardous waste, in particular, the Resource Management Act and Local Government Act. This enables regional and territorial local authorities to require appropriate standards for hazardous waste sites. It is envisaged, however, that the use of enforcement is not a primary method for implementation of this Strategy, but will complement the strategies and implementation initiatives identified.

The Ministry for the Environment currently has a number of initiatives relating to the management of hazardous wastes; an outline of these programmes is given within Appendix A. It is envisaged that any developments by the government in this area will provide a basis for this regional strategy, this would include links with national objectives if applicable.

### **1.3 Strategy development and responsibilities**

In 1996 a Joint Committee comprising representation from all territorial authorities in the Canterbury region was established to investigate options for integrated management of solid waste in Canterbury. Environment Canterbury was involved as an observer on the Joint Committee.

The primary purpose of the Joint Committee was to develop a management framework for solid waste, including waste minimisation and options for regional disposal. The Joint Committee also identified the need to work toward improved management of hazardous waste. In conjunction with the ongoing work of this Committee, Environment Canterbury co-ordinated investigations into hazardous waste management practices in the region, and this information has formed the basis for the development of this strategy.

The Joint Committee was reconstituted in to the Canterbury Waste Sub-committee, and a working party (Canterbury Hazardous Waste Working Party) was established to enable all Canterbury local authorities to work towards the development and implementation of this Strategy.

Responsibility for overseeing the implementation of the Strategy falls to the Canterbury Hazardous Waste Working Party (Working Party) co-ordinated by Environment Canterbury. This document is the first review of the original document that was published in 2001.

### **1.4 Regional co-ordination**

Co-ordinated management of hazardous waste within and beyond the region is needed to ensure:

- information flows freely and is developed with minimum duplication,
- hazardous waste management controls are used throughout the region,
- cross boundary issues are minimised,
- small resources are aggregated for maximum effect,
- a strong collective voice is established to advocate to central government about hazardous waste matters,
- all parties support and implement the Strategy, and
- the outcomes sought by implementing the Strategy can be monitored with the Strategy modified as necessary.

Three ways have been identified to ensure co-ordinated management of hazardous waste occurs in Canterbury:

- development of guidelines for use by local authorities,
- management of the strategy itself and its implementation,
- advocating to central government and other parties for appropriate hazardous waste management practices and controls.

### **1.5 Hazardous waste definition**

There are several definitions and classification systems for hazardous wastes in use internationally. In New Zealand there is currently no single, national definition for hazardous wastes. However, hazardous wastes are covered within the definitions of waste, contaminant and hazardous substances in relevant legislation (Resource Management Act 1991, Local Government Acts 1974 and 2002, Health Act 1956 and Hazardous Substances and New Organisms Act 1996).

For the purpose of this Strategy, the definition of hazardous waste is,

***Hazardous wastes are wastes<sup>1</sup> that exhibit properties such as corrosiveness, explosiveness, flammability, toxicity, ecotoxicity or capacity to oxidise, and have the potential to adversely affect human, animal or other species and natural resources.***

The Ministry for the Environment has developed a national working definition of hazardous waste.

*“The purpose of the working definition is to provide consistency in defining hazardous waste, for the purposes of resource consents, waste management planning, and other aspects of hazardous waste management. This is a ‘working’ definition, and does not have legal status”. MfE 2005*

When this definition has been finalised this strategy will adopt the national definition in preference to the one given above. The working definition is given in Appendix B.

## **1.6 Hazardous wastes covered by this Strategy**

The definition for hazardous wastes covered by this Strategy is very general and inclusive. Refinement of this definition may be required if the adopted definition is shown to be inadequate during the implementation of this Strategy. In addition, when a national definition for hazardous wastes is developed, this Strategy will adopt the national definition.

While this Strategy is aimed at management of hazardous wastes in Canterbury, at this stage it does not include management of trade wastes discharged to municipal sewerage systems, or sewage. However, any appropriate principles and methods proposed in this Strategy could be used in the consideration of management requirements for those wastes and applied at some future time. The Strategy will however, include, for the purposes of education, the reduction and management of hazardous wastes up until the point they are discharged to a reticulated municipal sewerage system (at which point they will be covered by a trade waste bylaw).

The Strategy does not cover the management of contaminated sites<sup>2</sup>. However, if waste material from contaminated sites was identified as hazardous, it would be included in the hazardous wastes covered by this Strategy. Finally, this Strategy does not cover radioactive waste, which is the subject of specific national legislation (Radiation Protection Act 1965).

## **1.7 Structure of the Strategy**

The Hazardous Waste Strategy comprises three parts, Part I contains the Policy Framework for the Strategy, Part II the Implementation Programme and Part III outlines how the Strategy will be monitored.

Part I contains the vision, objective and guiding principles for the Strategy. It then outlines the hazardous waste management issues and the strategies that will be needed to address these issues.

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<sup>1</sup> Wastes are materials which are unwanted or surplus to process requirements that the holder discards, or intends to, or is required to discard.

<sup>2</sup> Refer to the Canterbury Regional Council Contaminated Site Information Management Strategy, June 1999.

Part II has been constructed directly from the Part I strategies, the activities have been grouped into implementation programmes. Some address generic issues associated with hazardous wastes with an emphasis placed on priority hazardous wastes<sup>3</sup>, while others are specific to individual waste streams. It identifies the resourcing commitments of local authorities and the activities to be undertaken, to implement the Strategy.

## 1.8 Timeframes

The timetable for implementing the Strategy has been developed using financial years, 1 July through 30 June each year, based around a 3-year cycle to coincide with the development of each council's Long Term Council Community Plan (LTCCP).

The implementation programmes outlined are due to commence June 2006 with a review in 2008/09.

## 1.9 Monitoring and review

The Strategy has been reviewed, after it had been in operation for 5 years, to assess the need for changes to the vision, objectives, policies, priority wastes and the implementation programme. The vision, objectives and the priority wastes were not amended. However, changes have been made to some of the strategies in Section 4 to better reflect the current situation. This document contains these changes.

The Strategy is an approach to hazardous waste management in Canterbury that is intended to co-ordinate resources. However, it requires ongoing review to ensure that it is achieving its objectives and providing new goals and opportunities. The process of monitoring, reviewing and modifying future programmes will ensure that the strategy is continually improved. This will enable any changes required either internally (through the implementation plan) or externally (application of national directives etc.) to be addressed.

Monitoring of the programmes will be undertaken by the Staff Group who will report their findings to the Working Party. The monitoring will identify whether the targets, timeframes and budgets of the programmes have been met, and where appropriate, constraints and opportunities identified. This information will be used to improve subsequent programmes in order to ensure the most effective use of resources.

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<sup>3</sup> Based on information from regional investigations of hazardous waste. These investigations prioritised hazardous wastes on the potential to cause adverse environmental effects. Seven types of hazardous waste from several waste streams were recommended as a high priority for management, these are:

- Industrial wastes:
  1. cyanide wastes;
  2. chlorinated solvent sludge wastes;
  3. metal processing wastes; and
  4. boron, copper, chromium and arsenic timber treatment wastes,
- Agrichemical wastes,
- Domestic hazardous wastes,
- Waste oil.

## 1.10 Waste volumes and impacts

Information on current waste production within the region is limited. One report that was used in the initial development of the Strategy was the Canterbury Regional Council Technical Report titled “*Hazardous Waste Management Options for Canterbury Region*” November 1997 prepared by Opus International Consultants. The following information was taken from that report.

Cyanide Wastes	Chlorinated Solvents	Agrichemicals	Timber Treatment Sludges	Waste Oil	Household Hazardous Waste	Metal Processing Wastes
~8,200L/yr	~26.3 T/yr.	~60 T stockpiled ~10 T/yr.	CCA 26.8T/yr Boron 2.3T/yr	2780 – 3790 T/yr.	~95 T/yr.	Heavy metals ~56.5 T/yr. Organics 2,000 L/yr. Acid/alkali 18,000L/yr

The report provided an indication of volumes of wastes produced for each of the priority waste streams. Its data was predominately based on extrapolation of data derived from other regional studies and interviews and questionnaires with generators and TA officers. It was provided to give an indication of waste volumes at the time the investigation was undertaken.

In the 2000/2001 financial year, an attempt was made to update the figures in the above table. Hazardous waste treatment companies were approached and asked to provide figures on the amount and type of hazardous waste they treated. Most companies would only provide us with estimates of the total amount of hazardous waste treated and would not, for commercial reasons, separate it into individual waste streams. Therefore, the data we have on the amount of hazardous waste produced and treated by industry in Canterbury is incomplete.

As there is no requirement for hazardous waste generators or treatment companies to provide data on the amount of waste they produce or handle, the Working Party considered funds would be better spent focussing on other areas. However, the Working Party is conscious that accurate data on hazardous waste production and treatment is important when developing future implementation programmes.

For facilities that are owned by the councils, data on hazardous waste collected and disposed of, is available. The following table includes the last four years of data for domestic hazardous waste collected at TA transfer stations and agrichemical waste collected through the Canterbury Targeted Agricultural Chemical Collection.

Year	Agrichemicals	Domestic Waste Oil	Household hazardous waste
2001/2002	Not collected this year	41.01 T	Total 20.05 T <ul style="list-style-type: none"> <li>▪ Paints and Solvents 17.72 T</li> <li>▪ *Other 2.33 T</li> </ul>
2002/2003	2.85 T	74.28 T	Total 54.74 T <ul style="list-style-type: none"> <li>▪ Paints and Solvents 50.95 T</li> <li>▪ Garden Chemicals 0.46 T</li> <li>▪ Oxidisers 0.08 T</li> <li>▪ *Other 3.25 T</li> <li>▪ **LPG cylinders 54</li> </ul>
2003/2004	47.18 T	102.41 T	Total 75.78 T <ul style="list-style-type: none"> <li>▪ Paints and Solvents 67.6 T</li> <li>▪ Garden Chemicals 3.77 T</li> <li>▪ Oxidisers 0.0 T</li> <li>▪ *Other 4.41 T</li> <li>▪ ** LPG cylinders 40</li> </ul>
2004/2005	59.29 T	126.86 T	Total 102.38 T <ul style="list-style-type: none"> <li>▪ Paints and Solvents 85.63 T</li> <li>▪ Garden Chemicals 7.32 T</li> <li>▪ Oxidisers 0.03 T</li> <li>▪ *Other 9.4 T</li> <li>▪ ** LPG cylinders 50</li> </ul>

\* Includes a mixture of hazardous waste dropped at transfer stations

\*\* Number of cylinders collected not weight. LPG cylinders are not included in total.

Comparing these data with the 1997 figures we can see that the amount of household hazardous waste generate in Canterbury was an underestimate. This would have been due to the difficulty in obtaining accurate data on hazardous waste generation and disposal. However, it should also be noted that as more districts establish facilities for the collection and disposal of household hazardous waste and the service is promoted further, the figures provided above will increase.

The reduction of waste volumes will not necessarily lead to a reduction in adverse environmental effects. While there are benefits in reducing the volumes of hazardous wastes produced, the Strategy is based on progressively reducing and ultimately eliminating the adverse effects of hazardous waste on the environment. This objective will be met by improving waste management practices within the region, by applying waste minimisation techniques and regulating where appropriate.

### 1.11 Local authority contributions

In developing a local authority funding model to implement the Strategy, the key principle is that of the common benefit derived from the joint development and implementation of the programmes regardless of whether the waste type addressed by each programme is present in all districts or not. For example, a particular district may not have issues with a specific waste stream. However, they would contribute to the joint programme, on the basis that they would achieve cost-benefits in other programmes for those waste streams, which were present in the district.

Participating councils will meet their internal costs of implementing the Strategy. The following funding model has been adopted for sharing external goods and services costs associated with the various implementation programmes.

<b>Local Authority</b>	<b>Percentage Contribution for Each Council in Each Group</b>
Environment Canterbury	50%
Christchurch City Council	22%
Timaru District Council	7%
Waimakariri District Council	5%
Ashburton District Council, Selwyn District Council	4% (each)
Hurunui, Kaikoura, Mackenzie and Waimate District Councils	2% (each)

It differs from the funding model adopted by the Canterbury Waste Sub-committee for solid waste management that was based on population. The model above has a lower contribution by Christchurch City Council (CCC) in relation to the other territorial authorities if based on population. This is appropriate given that CCC provide key services in the region for management of hazardous waste at no cost to other authorities at present. The model also groups similar-sized authorities as having the same percentage contribution. Work will be undertaken to identify the internal costs of implementing the Strategy and this will be considered in determining the most appropriate funding model in the future.

With the development of implementation programmes for each financial year, the funding model will be reassessed and appropriate recommendations for modification made.

Note that the model is applicable to all programmes involving all the above councils in Canterbury. Where the Environment Canterbury has no legal mandate or discretion to be involved, shared funding will be split proportionally between the other councils on the basis of the Canterbury Sub-Committee Solid Waste Management Model.

Tables listing the programmes, provisional budgets and proposed local authority contributions are provided within Appendix C.

## 1.12 Acknowledgements

**This review was prepared for: Canterbury Hazardous Waste Working Party**

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# Part I – Policy Framework

## 2 Vision, objective and guiding principles

### 2.1 Vision

The vision for hazardous waste management in Canterbury is:

**Zero hazardous waste by 2020**

**Hazardous wastes are wastes that exhibit properties such as corrosiveness, explosiveness, flammability, capacity to oxidise, toxicity or ecotoxicity, and have the potential to adversely affect human, animal or other species and natural resources.**

This vision of Zero Hazardous waste means that by the year 2020, materials that are currently viewed as wastes would be utilised as resources for other processes. If this cannot be achieved, then the hazardous properties of the material would be managed so that there are no significant actual or potential environmental effects, and therefore would not be a hazardous waste.

### 2.2 Objective

The long-term objective of this Hazardous Waste Management Strategy is:

**To eliminate the adverse effects of hazardous waste on the environment**

- Including:
- i. to minimise risks to people, and the environment resulting from generation, storage, transport, treatment and disposal of hazardous waste; and
  - ii. to prevent the creation of contaminated sites from inappropriate management of hazardous waste.

### 2.3 Guiding principles of development and implementation

The following principles were used to guide the development of this Strategy and will be used in the development of decisions on its implementation.

#### 2.3.1 A regional approach

Local authorities in Canterbury through the Joint Local Authority Committee, identified the need to work together to achieve integrated management of hazardous waste in Canterbury. This regional approach recognises that there are issues relating to the management of hazardous wastes, which extend across territorial boundaries within the region, and across the regional boundary. While this approach should address the intraregional issues it will not necessarily address interregional ones. Therefore there is a requirement to work with other regions and MfE to establish national standards and systems.

### **2.3.2 Waste management hierarchy**

The management of hazardous wastes will use prioritised programmes, which reflect the following waste management hierarchy:

#### **Reduce - Reuse - Recycle - Recover - Residual Management**

### **2.3.3 Changing management requirements**

While the key element in hazardous waste management is the minimisation of hazardous waste being generated, there is an immediate and continuing requirement to manage the disposal of hazardous waste. As the amount of hazardous waste generated is reduced, there will be less waste to manage using other methods in the waste management hierarchy.

Future changes to legislation and regulations may require review of the hazardous waste management techniques employed in the implementation of this Strategy.

### **2.3.4 Consultation**

Consultation on the development and implementation of this strategy was undertaken in 2000, with specific stakeholder groups in the community including Tangata Whenua, in particular, with generators, transporters and disposers of hazardous wastes.

### **2.3.5 Treaty of Waitangi**

The principles of the Treaty of Waitangi will be taken into account in the implementation of this Strategy by identifying and responding to issues of significance to Tangata Whenua.

### **2.3.6 Charges**

Charges for council controlled hazardous waste management will be established to promote economic incentives/disincentives to maximise hazardous waste minimisation.

Any charges imposed should include a hazardous waste minimisation component, which should be redistributed as resourcing for programmes for elimination and reduction of hazardous waste through cleaner production, and other waste minimisation initiatives. However, when establishing charges for hazardous waste management the principle of generator pays needs to be evaluated against community benefit.

The fundamental principle is that the generators, handlers, disposers or owners of hazardous waste should pay the costs of waste services including social, environmental and economic costs. However, charges should not be an impediment to appropriate management of hazardous waste. Hence, there should be a distinction between commercial and domestic sources.

It is likely that generators will tend to dispose of their wastes within districts where charges are the lowest. In order to reduce the potential for inconsistent charging between Canterbury local authorities it is important that these charges be consistent throughout the region. Future co-operation through the Canterbury Waste Subcommittee could assist in managing these issues.

#### **Domestic sources**

It is important that producers of domestic hazardous waste are encouraged to separate their hazardous waste from their general refuse. Failure to do this is likely to lead to the inappropriate disposal of hazardous waste either to landfill, wastewater treatment plants, or directly to the environment.

For this reason there should be no charge to dispose of domestic hazardous waste at council controlled domestic hazardous waste drop off points. However, it is important that these facilities are not abused by commercial sources to place excessive costs on ratepayers. Therefore, limits should be placed on the amount of hazardous waste that can

be dropped off at one time. These limits should be set by individual councils in order to reflect their specific situation. As a guide, a limit of approximately 20 kg or 20L per vehicle, per visit, is deemed to be appropriate.

#### **Commercial sources**

The cost for the management of hazardous waste produced by the commercial sector should be met by the generators and not by ratepayers.

Any charge imposed should cover the full cost of recovery or treatment and disposal. It is also important that any hazardous waste charge includes a hazardous waste minimisation component, which should be redistributed as resourcing for programmes for elimination and reduction of hazardous waste through cleaner production, and other waste minimisation initiatives.

#### **2.3.7 Responsibility for waste**

Generators, handlers, disposers and owners of hazardous waste should ensure that waste is appropriately managed at all times.

#### **2.3.8 Priority waste requiring management**

Investigations<sup>4</sup> of hazardous waste in Canterbury provide a basis of determining priorities within this strategy. These investigations prioritised hazardous wastes based on the potential to cause adverse environmental effects. Seven hazardous waste streams were recommended as a high priority for management, these are:

- Industrial Wastes
  1. cyanide wastes
  2. chlorinated solvent sludge wastes
  3. metal processing wastes
  4. boron and copper, chromium and arsenic timber treatment sludge wastes
- agrichemical wastes,
- domestic hazardous wastes,
- waste oil.

Due to the work undertaken since the implementation of the Strategy, the risks posed to the Canterbury environment by agrichemical, domestic hazardous waste and used oil have been reduced. These programmes have focused on improving the management of specific areas of these priority wastes. However, it is important that the services installed to improve their management are maintained to ensure that these waste streams do not re-emerge as an issue in the future.

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<sup>4</sup> *Canterbury Regional Council Technical Report: Hazardous Waste Management Options for Canterbury Region November 1997 Report Number: U97/62/1*, Opus International Consultants; and *Regional Hazardous Waste Management Investigation, Canterbury Regional Waste Working Party, October 1996*, Royds Consulting.

### **3 Common issues**

This section identifies issues for hazardous waste management which are common throughout the waste management hierarchy. These issues have been grouped together to avoid repetition in the waste management hierarchy sections which follow.

#### **3.1 Effects on the environment**

1. The risk of adverse effects on the environment (including human health) resulting from the generation and management of hazardous wastes in Canterbury.
2. Community concern with effects on the environment from hazardous waste.
3. Concerns of Tangata Whenua about the effect of hazardous waste on taonga including soil, air, water, ancestral land, mahinga kai and sacred sites.
4. Ease of access to, and difficulties detecting, uncontrolled disposal locations, due to inadequate legislation and enforcement.

#### **3.2 Economic incentives/disincentives**

1. The cost to generators, disposers, or owners for disposal of hazardous waste, controlled or uncontrolled, can be less than the cost to reduce, reuse, recycle or recover hazardous waste.

#### **3.3 Information**

1. Insufficient information on the types, quantities and locations of hazardous waste.
2. Lack of awareness of what constitutes a hazardous waste. For example some wastes such as electronic waste or asbestos can contain hazardous substances that are only exposed when the item is broken or disposed of.
3. Lack of awareness of appropriate management for hazardous waste.
4. Limited information available to waste generators, handlers and disposers on options, and availability of options, for hazardous waste management.
5. Difficulty accessing information on techniques for reducing hazardous waste generation, and recycling, recovery and treatment of hazardous waste.
6. Possible technical limitations to reduction, reuse, recycling, recovery or disposal of some hazardous waste.
7. The sharing and co-ordination of information from lead agencies/authorities (e.g. central and local government) who deal with hazardous waste.

### **3.4 Management systems**

1. Hazardous wastes are not always being managed appropriately.
2. Hazardous waste management systems, which recognise differences in types and quantities of hazardous waste, are required.
3. Logistical constraints to management of numerous small quantities of hazardous waste distributed throughout the community.
4. Lack of integrated hazardous waste management systems in the Region which provide for the varying resources and requirements of territorial authorities.
5. Existing regulatory control measures are not yet consistently or effectively utilised throughout the Region, including the need to integrate hazardous waste management strategies with regional and district plans.
6. Lack of integrated legislation is impeding effective management of hazardous waste.
7. Programmes for some hazardous waste management will need local authorities to facilitate, promote and fund initiatives.
8. There will be insufficient resources to support all hazardous waste management programmes.
9. Barriers to reuse, recycling and recovery of hazardous wastes due to dispersed and small quantities of some hazardous wastes.
10. The safe transportation of hazardous wastes along identified transportation routes.
11. The Hazardous Substances and New Organisms Act 1996 contains controls that may improve the management of certain hazardous wastes

## **4 Common strategies**

This section identifies strategies which stem from the common issues identified in section 3. The strategies are appropriate for most of the following waste management hierarchy sections. These strategies have been grouped together to avoid repetition in the waste management hierarchy sections which follow.

### **4.1 General**

1. Ensure that the systems developed for the management of hazardous wastes are integrated, and reflect the hazardous waste management hierarchy.
2. Liaise with Tangata Whenua through each council's Waste Management Plan processes to identify issues of specific concern.
3. Local authorities will lead by example to their communities by applying the waste management hierarchy with respect to the management of their hazardous wastes

### **4.2 Information and advice**

1. Encourage the provision and co-ordination of information and advice between lead agencies.
2. Provide a regional hazardous waste information and advisory service to provide technical and practical assistance to producers and managers of hazardous wastes in Canterbury.
3. Promote public understanding and awareness of hazardous waste management by providing information to the community on hazardous waste management, options and availability of options, including self-management of hazardous waste.
4. Investigate the development of guidelines on the use of local authority powers, e.g., under the Local Government Acts (1974 and 2002) and Resource Management Act (1991), to achieve regional consistency in hazardous waste management systems including the use of bylaws, district and regional plan provisions, enforcement mechanisms and licensing.
5. Investigate the development of guidelines for local authorities on systems of incentives/disincentives to encourage appropriate hazardous waste management.
6. Investigate the development and implementation of a hazardous waste tracking system and adequacy of current licensing controls.
7. Evaluate national and international strategies, guidelines, practices and technologies for hazardous waste management, and consider use of these locally.

### **4.3 Resourcing**

1. Facilitate funding and promotion of programmes that will assist the implementation of this Strategy.
2. Develop criteria for assessment of resourcing requests for hazardous waste management programmes.

#### **4.4 Regulation**

1. Develop agreed methods on the use of local authority powers, e.g., under the Local Government Acts (1974 and 2002) and Resource Management Act (1991), to achieve regional consistency in hazardous waste management systems including the use of bylaws, district and regional plan provisions, enforcement mechanisms and licensing. Encourage the sharing of information to facilitate a consistent approach to the management of hazardous waste throughout the region.
2. Where appropriate use and promote the controls placed on the management of certain hazardous wastes by the Hazardous Substance and New Organism Act
3. Where appropriate, undertake or advocate to central government or other stakeholders, e.g., land owners/managers, waste operators, or local authorities, for changes to legislation and regulation for hazardous waste management.

#### **4.5 Management systems**

1. Where necessary and appropriate, ensure the collection and storage, of hazardous waste for reuse, recycling, recovery and/or disposal.
2. Utilise economic instruments to promote the waste management hierarchy where appropriate.
3. Improve the integration of hazardous waste management systems within the region.
4. To advocate for the provision of suitable routes for the transportation of hazardous waste through the Regional Land Transport Strategy.
5. Advocate for the establishment of a national hazardous waste manifest system by all generators, handlers and disposers of hazardous waste

## **5 Reduce**

### **5.1 Objective**

**To reduce<sup>5</sup> or eliminate at source the degree of hazard or quantity of hazardous waste produced.**

### **5.2 Issues**

1. Hazardous waste reduction programmes are dependent upon the co-operation of generators to implement.
2. Economic factors can impede the reduction of hazardous waste, e.g. capital investment, economies of scale or material substitution required.

### **5.3 Strategies**

1. Facilitate and promote hazardous waste reduction programmes for industry in the Region.
2. Provide information to the community on options and availability of options for reduction of hazardous waste.
3. Assess the need for regulatory controls to enhance the position of reduction in the hazardous waste management hierarchy.

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<sup>5</sup> The most effective way of managing hazardous waste is not to produce it. Waste minimisation aims to reduce, eliminate or minimise hazardous waste generation at each point in the production cycle. This can be done by analysing the design, manufacture and use of products in an effort to reduce the quantity and hazardous characteristics of waste produced during manufacturing and when the products reach the end of their useful lives.

## **6 Reuse**

### **6.1 Objective**

Maximise the reuse<sup>6</sup> of hazardous waste as close to the generation source as possible.

<b>Zero hazardous waste by 2020</b>
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### **6.2 Issues**

1. Unsuitability of most hazardous waste to be reused.
2. Limited market acceptance of reused hazardous waste.
3. Limited markets for reusing hazardous waste
4. There are potential liabilities for hazardous waste generators and reusers.

### **6.3 Strategies**

1. Ensure technical support on hazardous waste characteristics and suitability for reuse is provided for those hazardous wastes that can be reused
2. Identify legal requirements and potential liability associated with the reuse of hazardous waste and develop guidelines for the reuse of hazardous waste.
3. Local authorities will aim to stimulate the establishment and/or development of reuse opportunities where practicable for hazardous wastes.

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<sup>6</sup> Reuse is the repeated or continued use of hazardous wastes. Reuse of hazardous waste occurs with or without the waste being treated.

## **7 Recycle**

### **7.1 Objective**

**Maximise recycling<sup>7</sup> of hazardous wastes as close to their generation source as possible.**

### **7.2 Issues**

1. Uncertainty of the suitability of hazardous wastes for recycling.
2. Limited market acceptance of recycled hazardous waste.
3. Limited markets for recycled hazardous waste

### **7.3 Strategies**

1. Facilitate recycling of hazardous waste, including through the development and support of hazardous waste exchange programmes and/or drop off points.
2. Ensure technical support on hazardous waste characteristics and suitability for recycling is provided for in the operation of waste exchange programmes.
3. Local authorities will aim to stimulate the establishment and/or development of recycling opportunities for hazardous wastes.

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<sup>7</sup> Recycling is the processing of hazardous waste into new or different products, this could include treatment processes.

## **8 Recover**

### **8.1 Objective**

**Maximise the recovery<sup>8</sup> of hazardous wastes as close to their generation source as possible.**

### **8.2 Issues**

1. Limited suitability of hazardous waste for recovery due to waste characteristics e.g. not all hazardous waste has energy value.
2. Recovery of hazardous waste is dependent upon market demand and is influenced by economy of scale and availability of primary resources.
3. Limited availability of facilities for the appropriate recovery of hazardous waste in the region and nationally.
4. Limited market acceptance for recovered hazardous waste.

### **8.3 Strategies**

1. Facilitate recovery of hazardous waste through the development and support of appropriate hazardous waste exchange programmes and/or drop off facilities.
2. Ensure technical information on hazardous waste characteristics and suitability for recovery is available to generators of hazardous waste.
3. Advocate for a national approach for hazardous waste where no suitable facilities are available regionally or nationally.
4. Local authorities will aim to stimulate the establishment and/or development of recovery opportunities for hazardous wastes.

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<sup>8</sup> Hazardous waste may contain energy and materials that could be recovered before disposal, this could include treatment processes.

## **9 Disposal**

### **9.1 Objective**

**To eliminate the adverse effects on the environment from the disposal<sup>9</sup> of hazardous waste.**

### **9.2 Issues**

1. Limited availability of facilities for the appropriate disposal of hazardous waste in the region and nationally.
2. Lack of regional consistency and appropriate application of acceptance criteria for hazardous waste at disposal facilities. The Ministry for the Environment are currently developing national acceptance criteria for certain hazardous wastes.

### **9.3 Strategies**

1. Ensure, as far as reasonable, that suitable disposal facilities are available in appropriate locations, for the disposal of hazardous waste.
2. Maintain regionally consistent minimum acceptance criteria for disposal sites, which provide appropriate environmental controls.
3. Work to encourage the implementation of a nationally consistent hazardous waste recording system, that includes generator and carrier information for appropriate waste types and volumes at disposal sites.
4. Advocate for the continuation and expansion of a national approach for intractable<sup>10</sup> hazardous waste where no suitable disposal facilities are available regionally or nationally.

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<sup>9</sup> Disposal may require treatment processes that change the character of the waste to minimise its impact on the environment.

<sup>10</sup> Intractable hazardous wastes are wastes for which there are no practicable, accessible or acceptable treatment and disposal processes available.

## **10 Storage**

### **10.1 Objective**

<b>Ensure secure storage<sup>11</sup> of hazardous waste is available</b>
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### **10.2 Issues**

1. There are currently limited facilities for the short term storage of domestic hazardous waste at council controlled transfer stations.
2. There are limited numbers of trained staff to manage storage facilities.

### **10.3 Strategies**

1. Ensure that every district has access to a facility for the short-term storage of domestic hazardous waste prior to appropriate disposal.
2. Work through the Regional Land Transport Strategy to develop and distribute guidelines for safe transport and storage of hazardous wastes.
3. Ensure that staff or contractors that operate council owned facilities have the appropriate training to protect themselves, other users of the facility and the environment.
4. Maintain regionally consistent minimum criteria for temporary storage facilities.

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<sup>11</sup> Methods of storage include, self storage of wastes by generators, handlers, disposers, or owners; and centralised storage facilities provided by or on behalf of local authorities. Centralised storage includes facilities for short term storage of wastes as an intermediary step prior to other management methods.



# Appendix A Legislation and Policy Documents

## LEGISLATION

### A.1 Resource Management Act 1991

Under provisions of the RMA central government can issue National Environmental Standards and/or a National Policy Statement concerning hazardous waste management. At present there are no national standards or policy statements for hazardous waste.

The Resource Management Act 1991 (RMA) is concerned with the management of natural and physical resources. Under sections 30 and 31 of the RMA local authorities are given specific responsibilities for management of hazardous substances (including hazardous wastes). These responsibilities are for both regional and district councils, and are to control adverse effects on the environment from the use of land for the storage, use, disposal or transport of hazardous substances. Regional Councils also have responsibility to control discharges of contaminants into or onto land, water and air. In controlling adverse effects from use of land, objectives, policies and rules are required in district and/or regional plans. In controlling discharges<sup>12</sup>, the Regional Council can make provisions in regional plans, require resource consents, and take enforcement action.

Implementation of this Strategy will be consistent with the provisions of the Resource Management Act 1991, and will support the purpose of the Act, to promote the sustainable management of natural and physical resources.

### A.2 Local Government Act 1974 Territorial Local Authorities

The Local Government Act 1974 (LGA1974) is concerned with the provision of services. Part 31 of the LGA 1974 deals with waste collection and disposal. Section 538 of the LGA requires every territorial authority to promote effective and efficient waste management within its district. Waste management includes the management of hazardous wastes. Effective and efficient waste management is achieved through the development of waste management plans, which must provide for collection, reduction, reuse, recycling, recovery, residual management and treatment and disposal of waste. The LGA empowers territorial authorities to own, build, and operate facilities for the management of waste, including hazardous waste. Territorial authorities may also transfer their waste management services to another territorial authority. Territorial authorities can make bylaws for controlling hazardous waste management.

The LGA 1974 was reviewed in 2002 as The Department of Internal Affairs believed that the prescriptive nature of the LGA 1974 limited local government's effectiveness and it did not clearly express the purpose of local government. Part 31 of the LGA 1974 remains intact. However, there are reporting provisions on waste management as part of the Long-term Council Community Plans (LTCCP) now contained in the Local Government Act 2002 (LGA 2002). The LGA 2002 includes the following mandatory requirements

- It is mandatory for TLAs to have a waste management plan by June 2005
- It is mandatory to have a report summary of that plan in the LTCCP

### Regional Authorities

The only role in waste management for the Regional Council under the LGA is from section 37SB of that Act which gives regional councils the power to fund, establish and manage sites for the regional disposal of hazardous wastes. This function is not mandatory for a regional

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<sup>12</sup> In some cases of discharges to land or air, a rule in a regional plan is needed before resource consents can be required.

council and can be transferred to territorial authorities, with their agreement, under procedures set out in the LGA.

The objectives, principles and methods in this Hazardous Waste Management Strategy seek to ensure that territorial authorities can fulfil their role in respect of hazardous waste management. Therefore, the development and implementation of this Strategy is consistent with the provisions of the LGA.

### **A.3 Hazardous Substances and New Organisms Act 1996**

The Hazardous Substances and New Organisms Act 1996 (HSNO) establishes a framework for managing the life cycle of *imported* or *manufactured* hazardous substances. The substances within the framework of HSNO do not include by-products of manufacturing or other processing. Therefore, hazardous waste, which has not been imported or deliberately manufactured, is not covered by the HSNO Act. Controls on hazardous substances applied under the HSNO Act by the Environmental Risk Management Authority (ERMA) may be administered and implemented by territorial authorities.

The management system developed under HSNO will have a big impact on the way hazardous waste is managed, particularly for human safety. However, most hazardous waste is not likely to be subject to HSNO Act controls.

ERMA are currently developing Environmental Exposure Limits (EELs) for the implementation of HSNO. These will be equivalent to National Environmental Standards for the receiving environment with any standards set under the RMA must be equivalent or higher than the EELs. Therefore these EELs will impact on the management of hazardous waste by any disposal facility (e.g. landfills, wastewater treatment facility).

These Acts although not specific to the management of hazardous waste, provide useful guidance for the development of appropriate waste management.

## **POLICY DOCUMENTS**

### **A.4 Regional Policy Statement**

The Regional Policy Statement, prepared by Canterbury Regional Council under the provisions of the RMA became operative on 26 June 1998. The Policy Statement provides an overview of the resource management issues of the region. It sets out how natural and physical resources are to be managed in an integrated way to promote sustainable management.

The Canterbury Regional Council has responsibility under section 30(1)(c) of the RMA to control land use for the prevention or mitigation of any adverse effects of the storage, use, disposal or transportation of hazardous substances. The Regional Council also has responsibility under section 30(1) (f) to control the discharge of contaminants into the environment. As part of the fulfilment of these responsibilities the Regional Council has developed objectives and policies for solid and hazardous waste management in the region.

The Regional Policy Statement in Chapter 18 Solid and Hazardous Waste Management contains;

#### **Objective 1**

**Avoid, remedy or mitigate the adverse effects on the environment from past, present and future solid and hazardous waste management practices.**

Policies to support the objective include:

**Policy 1**

***Promote the implementation of the concepts of clean production, waste reduction, re-use, recycling and resource recovery.***

**Policy 2**

***A co-ordinated approach to waste management in Canterbury should be developed and implemented.***

**A.6 New Zealand's Waste Management Policy**

In 1992 the Ministry for the Environment produced *The Government Waste Policy and Ministry for the Environment Waste Work Programme* (MfE 1992). While the RMA provides the framework for dealing with the effects on the environment from the management of all wastes, the government waste management policy is focussed on reducing waste generation. The policy deals primarily with solid waste, sourced mainly from households and commercial generators, and excludes sewage, mine tailings and slag.

The New Zealand Waste Management Policy is:

*"i. to ensure that as far as practicable, New Zealand's waste generators should meet the costs of the waste they produce; and*

*to encourage the implementation of the internationally recognised hierarchy of reduction, reuse, recycling, recovery and residual management by all involved in waste generation and management in New Zealand."*

In partnership with Local Government New Zealand, the Ministry for the Environment launched the New Zealand Waste Strategy (NZWS) in March 2002. The Strategy is a long term approach to reduce waste, improve recycling and re-use of waste materials, and better manage residual waste in New Zealand. It sets the overarching strategic direction for the minimisation and management of solid, liquid, gaseous and hazardous wastes in New Zealand.

The Waste Strategy identifies a number of principles, policies and action programmes to achieve the vision towards zero waste and a sustainable New Zealand. The three core goals of the Strategy are:

- to lower the social costs and risks of waste
- to reduce the damage to the environment from waste generation and disposal
- to increase economic benefit by more efficient use of materials.

The Strategy includes 30 national targets for dealing with priority waste issues in New Zealand. These are divided into nine subgroups including targets for hazardous wastes. The targets for hazardous wastes are:

- Target 5.1 - By December 2005, an integrated and comprehensive national hazardous waste management policy will be in place that covers reduction, transport, treatment and disposal of hazardous wastes to effectively manage risks to people and the environment
- Target 5.2 - By December 2004, hazardous wastes will be appropriately treated before disposal at licensed facilities, and current recovery and recycling rates will be established for a list of priority hazardous wastes
- Target 5.3 - Recovery and recycling rates for priority hazardous waste will increase 20 percent by December 2012

## **OTHER HAZARDOUS WASTE MANAGEMENT INITIATIVES**

### **A.6 Ministry For The Environment – Hazardous Waste Programme**

In November 1998 the Ministry for the Environment released “Managing Hazardous Waste - A Discussion Paper”. This document was the culmination of work undertaken by the Ministry since September 1989 when it received funding to address the management of hazardous wastes in New Zealand.

The Ministry has collated issues identified by studies into waste management by the Ministry, Regional Councils and the Parliamentary Commissioner for the Environment, as well as in a report on New Zealand’s environmental performance by the OECD. The issues identified the potential for serious adverse environmental effects due to:

- Inconsistent management of hazardous waste by local authorities
- Inconsistent definitions of hazardous waste
- Lack of information about hazardous waste disposal or generation
- Concern about the lack of regulations for hazardous waste management
- Lack of knowledge about hazardous waste

The programme aims to identify and implement a national management system for hazardous waste and presents a number of options for achieving the objectives based around the following key issues:

- Defining hazardous waste
- Controlling hazardous waste
- Monitoring and enforcing hazardous waste controls

The Organisation for Economic Cooperation and Development’s (OECD) undertook a review of New Zealand’s environmental performance in 2005/06. The final report is not due until 2007.

### **Information on the Draft National Hazardous Waste Management Strategy**

#### **Goal**

A comprehensive, cost effective hazardous waste management system which reduces the adverse effects of hazardous waste on human health and the environment.

#### **Objectives**

- 1 to develop an integrated and cohesive national hazardous waste management policy framework.
- 2 to provide direction and co-ordination for the range of policy initiatives at regional and local government.
- 3 to prevent the creation of contaminated sites from poor management of hazardous waste.

International experience shows that four key elements are required to achieve an effective management of hazardous waste; information, a legislative framework, management controls and funding/economic incentives. Other essential ingredients include; the need to raise the bar of performance across all disposal media to encourage waste minimisation, and the need for a waste management industry able to treat hazardous waste.

The Ministry’s current work programme includes:

### **Information**

NZ Definition of hazardous waste

Online Information System supporting the definition for hazardous waste

Hazardous waste indicators for New Zealand

### **Legislative Framework**

Assess the fit of the hazardous waste management system within existing legislation RMA, HSNO and LGA.

### **Management Controls**

Record keeping

Waste acceptance criteria for landfills

The programme has strong links with the proposed New Zealand waste minimisation strategy (due in June 2001) being developed by the Waste Minimisation and Management Working Group.

### **Policy Framework To Reduce And Safely Manage Hazardous Wastes In New Zealand**

In December 2004 the MfE outlined the proposed policy framework and undertook a “stock take” of the policy elements already in place or under development. It also provided an indication of what work was still considered necessary before targets of the NZWS could be met. The paper outlining the proposed policy framework was placed on the Ministry for the Environment’s website. The paper indicated that the hazardous wastes policy framework was still under development and that the material on the website would be subject to change as the work progressed.

One outcome from the policy stock take was the formation of a Hazardous Wastes Advisory Group to advise the MfE on the further development and implementation of policy. This group has members from industry, local government and central government agencies. The group has endorsed the policy approach adopted by the MfE and provided advice on the elements of policy still under development.

Set out below is the policy framework for the management of hazardous wastes in New Zealand, as at December 2005. This policy framework includes existing legislation as well as regulations, guidelines and codes of practice. Significant work has already been done to ensure that the policy framework is comprehensive. Some elements such as an effective waste tracking scheme are well progressed.

The policy framework includes:

- the policy objective and the principles guiding policy development;
- the main elements of the policy framework;
- work completed or under development on different elements of the policy framework;
- a brief description of the statutes and agencies involved in the management of hazardous wastes; and
- a comment on the monitoring and review of policy.

Significant work has already been done to ensure the policy framework is comprehensive, and it was updated in December 2005. Some elements are still under development, such as an effective waste tracking scheme.

Some of the specific elements or tools contributing to the management of hazardous wastes include:

New Zealand Working Definition Of Hazardous Waste

See Appendix C for more detail

### **Landfill waste acceptance criteria**

Module 2 of the Hazardous Waste Guidelines outlines a nationally consistent approach to the disposal of waste to landfills. This module provides:

- waste acceptance criteria for two classes of landfills (Class A and Class B), including concentration limits covering a greater range of contaminants than those currently specified in the US EPA Toxicity Characteristic Leaching Procedure (TCLP) list
- a landfill classification system
- a definition of liquid waste
- a list of prohibited wastes
- flowcharts clearly outlining the waste acceptance and landfill classification process
- model resource consent conditions for Class A and Class B landfills.

### **Guidelines for the management of hazardous waste**

To provide guidance to handlers of hazardous waste (i.e. generators, transporters, treatment and disposal operators), the MfE decided to produce a set of Guidelines for the Management of Hazardous Waste - information and practical tools to achieve best practice in hazardous waste management.

The Guidelines will assist central and local government to achieve the targets in the [New Zealand Waste Strategy](#) (2002) for hazardous wastes. The Guidelines will be developed as separate modules relating to different aspects of hazardous waste management (e.g. identification and record-keeping, landfill acceptance criteria). The purpose of the modules is to give practical guidance on how to implement elements of best practice hazardous waste management. The MfE expects to update and modify the Guidelines as they work with councils and industry to implement the hazardous waste management policy

For further information:

Hazardous waste definition  
<http://www.mfe.govt.nz/issues/waste/hazardous/definition.html>

Landfill Waste Acceptance Criteria  
<http://www.mfe.govt.nz/publications/waste/haz-waste-guide-module-2-may04/index.html>

Guidelines for hazardous waste  
<http://www.mfe.govt.nz/issues/waste/hazardous/guidelines.html>

Policy framework  
<http://www.mfe.govt.nz/issues/waste/hazardous/policy-framework/index.html>

NZ waste strategy  
<http://www.mfe.govt.nz/publications/waste/waste-strategy-mar02/>

### **A.7 Centre for Advanced Engineering**

The Centre for Advanced Engineering at the University of Canterbury has recently released two guidelines, “*Management of Hazardous Waste*” and “*Landfill Guidelines*”.

The Management of Hazardous Waste guideline aims to “*bring together information relating to the current legislation and good practice...to all involved in the generation, lifecycle management, treatment and disposal of hazardous waste in New Zealand*”.

The Landfill Guidelines have been written to provide “*guidance on operations and monitoring at all landfills*”.

These documents provide an excellent resource for practical hazardous waste management and landfill management. They should be used and adopted by all involved in the waste management industry.



## Appendix B New Zealand Working Definition of Hazardous Waste

The Ministry has developed a national working definition of hazardous waste. The purpose of the working definition is to provide consistency in defining hazardous waste, for the purposes of resource consents, waste management planning, and other aspects of hazardous waste management. This is a 'working' definition, and does not have legal status. However, it may serve as the basis for definitions incorporated into legal instruments, such as national environmental standards. While a legal definition incorporated into regulation or statute might draw on the working definition, the definition would first need modification to reflect the purpose of the legal instrument. Guidance on how to use the working definition can be found in the [Guidelines for the Management of Hazardous Waste](#).

Working definition of hazardous waste

Hazardous waste is any waste<sup>1</sup> that:

- i. Contains hazardous substances at sufficient concentrations to exceed the minimum degrees of hazard specified by *Hazardous Substances (Minimum Degrees of Hazard) Regulations 2000* under the *Hazardous Substances and New Organism Act 1996*, or
- ii. Meets the definition for infectious substances included in the *Land Transport Rule: Dangerous Goods 1999 and NZ Standard 5433: 1999 - Transport of Dangerous Goods on Land*<sup>2</sup>, or
- iii. Meets the definition for radioactive material included in the *Radiation Protection Act 1965 and Regulations 1982*<sup>3</sup>.

<sup>1</sup> Waste is defined as any material, whether it is liquid, solid or gas, that is unwanted and unvalued (defined by the W-Code) and discarded or discharged (defined by the D/R-Code) by its holder. In the context of defining waste, 'unwanted and unvalued' relates, but is not limited to, any material from the categories listed in the W-Code.

W-Code: Categories of materials that are unwanted or unvalued

*This list is taken from Table 1 of OECD Decision C(88)90(Final).*

W1	Production residues not otherwise specified below
W2	Off-specification products
W3	Products whose date for appropriate use has expired
W4	Materials spilled, lost or having undergone other mishap including any materials, equipment etc. contaminated as a result of the mishap
W5	Materials contaminated or soiled as a result of planned actions (e.g. residues from cleaning operations, packing materials, containers, etc.)
W6	Unusable parts (e.g. reject batteries, exhausted catalysts, etc.)
W7	Substances which no longer perform satisfactorily (e.g. contaminated acid, contaminated solvents, exhausted tempering salts, etc.)
W8	Residues of industrial processes (e.g. slags, still bottoms, etc.)
W9	Residues from pollution abatement processes (e.g. scrubber sludges, baghouse dusts, spent filters, etc.)
W10	Machining/finishing residues (e.g. lathe turnings, mill scales, etc.)
W11	Residues from raw materials processing (e.g. mining residues, oil field slops, etc.)
W12	Adulterated materials (e.g. oils contaminated with PCBs, etc.)
W13	Any materials, substances or products whose use has been banned by law in the country of exportation

W14	Products for which there is no further use (e.g. agriculture, household, office, commercial and shop discards, etc.)
W15	Materials, substances or products resulting from remedial actions with respect to contaminated land
W16	Any materials, substances or products which the generator or exporter declares to be wastes and which are not contained in the above categories

<sup>2</sup> Substances that are known, or reasonably expected, to contain pathogens, including bacteria, viruses, rickettsia, parasites, fungi or recombinant micro-organisms (hybrid or mutant) that are known, or reasonably expected, to cause infectious disease in humans or animals that are exposed to them.

<sup>3</sup> Radioactive material means any article containing a radioactive substance giving it a specific radioactivity exceeding 100 kilobecquerels per kilogram and a total radioactivity exceeding 3 kilobecquerels.

