



15. Transport

15.1 Introduction

Transport has significant effects on the sustainable management of natural and physical resources, on the economic, social and cultural wellbeing of communities, and on their health and safety and can have adverse effects on resources of value to Tangata Whenua. Transport is a major component of private and public expenditure. Efficient, safe and sustainable transport services, now and in the future, are a basic necessity for Canterbury's people, industry, agriculture and commerce.

The Regional Council's role in transport includes achieving integrated management of all elements of transport and its infrastructure and other resources of the region. The Regional Council's role under the Land Transport Act 1993 is to prepare and update five-year land transport strategies. The strategies assess the community need for transport, how to meet that need and identify the role of the various modes of transport. The Regional Council has adopted a role under the Transport Services Licensing Act 1989 and the Land Transport Act 1993 of ensuring that there are adequate passenger transport services where commercial services are not viable without subsidies.

Resource management issues arise through transport's energy use, its adverse effects on the environment and the infrastructure it requires. Transport in the region is almost entirely dependent on imported fuel derived from hydrocarbons. Alternative fuels are not available in Canterbury in sufficient quantities to meet more than minor needs.

Infrastructure required by transport includes the lands required for rights-of-way, parking, loading, interchanges and operations; earthworks, buildings and bridges; and access, traffic and operational control devices. For land transport these facilities include a network of roads and accessways, cycleways, footpaths and walkways. Rail requires its own right-of-way. Sea ports require access to other transport systems as well as suitable shipping lanes, navigation and safety devices, freight storage areas and other infrastructure. Airports have similar needs. Cableways, pipelines transmission and communication systems also have their own land and air-based needs. This infrastructure can be put at risk by land uses and activities which impede its efficient and effective operation.

Canterbury has an extensive road network serving urban and rural areas which connects and serves all land uses, communities and other transport systems in the region and beyond. The South Island's main railway line passes through the region from Kaikoura via Christchurch and Timaru to Oamaru. The Midland line serves the West Coast with the Lyttelton line connecting to Christchurch. All rail facilities have road access. The ports of Lyttelton and Timaru serve the sea transport needs of the region. Both are connected to rail and road networks. Christchurch International Airport is the region's and South Island's principal air transport facility, with secondary airports at Mount Cook and Timaru. All three have good road access. Small airfields and helicopter landing facilities are becoming increasingly important, particularly for tourism and recreation. They are widespread and generally have limited physical infrastructure. Transport

infrastructure includes major transport land uses within urban areas (particularly in Christchurch) such as freight and passenger interchanges and parking areas.

Canterbury's transport needs are provided for by the whole transport system acting together. Thus, although the Regional Policy Statement focuses on the strategically important physical infrastructure (including the regional transport network defined in Chapter 12 Policy 3, Christchurch International Airport, Timaru Airport, and the Ports of Lyttelton and Timaru) and the adverse effects of the use and provision of such infrastructure on the environment, the co-ordination of the provisions of this document with those in plans providing for the other elements of the system is vitally important. These other plans include regional land transport strategies for Canterbury and other regions, district plans, and "Transport Directions 1994-99" (Ministry of Transport).

There are significant geographical features affecting the transport network in the region including many large floodable rivers, alpine passes and, in several places, a steeply cliffed unstable coastline which make the infrastructure vulnerable to disruption due to climate and natural disasters.

15.2 Issue Resolution

Issue 1

The use, development or protection of land and associated natural and physical resources can cause adverse effects on the ability of the transport infrastructure to efficiently and effectively present and future regional, inter-regional and national transport needs.

For example:

- (i) resource development resulting in transport demands which exceed the capacity of existing infrastructures or are incompatible with present uses, for example, forestry.**
- (ii) land use which impedes the development of transport infrastructure, for example, by foreclosing opportunities for the future expansion of airports or sea ports or impeding the upgrading of the road network.**
- (iii) aquatic development near airports which may compromise operational safety, for example, due to the risk of bird strike.**
- (iv) retail developments on arterial routes which impair their efficiency and safety by creating traffic conflicts.**
- (v) buildings or trees on the flight paths at airports.**
- (vi) developments which impede access to seaports for larger vehicles.**

Objective 1

Ch. 6 Tangata Whenua, Obj. 1

Enable a safe, efficient and cost-effective transport system to meet present and future regional, inter-regional and national needs for transport.

Principal Reasons

The social economic and cultural well-being of the community, and its health and safety is highly dependent on transport. That transport should provide safe, economic and convenient access between activities and land uses for all people and their goods while meeting the requirements of sustainable management of natural and physical resources.

Policy 1

Ch. 12 Settlement, Pol 3, 4

Protect Canterbury's existing transport infrastructure and land transport corridors necessary for future strategic transport requirements by avoiding, remedying, or mitigating the adverse effects of the use, development or protection of land and associated natural and physical resources on the transport infrastructure.

Explanation

The existing strategic transport infrastructure is a physical resource which enables essential transport services to meet present and future regional, inter-regional and national transport needs. This infrastructure needs protection from adverse effects which undermine its ability to safely and efficiently enable those services to be provided. Community needs are changing and will continue to change with population growth. Therefore existing transport infrastructure and land transport corridors within which future expansion of infrastructure can be accommodated, need to be safeguarded.

The infrastructure includes land, sea and air transport and associated freight storage areas. The necessary provisions for land transport infrastructure are included in a Regional Land Transport Strategy. However, this involves only a short time framework and sea and air infrastructures are not included.

Principal Reasons

A wide and long-term framework of protection is needed to ensure that the present and future physical transport infrastructure operates safely and efficiently.

Methods

1. The methods used or to be used by the Regional Council are:
 - (a) Regional plans
 - (b) Regional Land Transport Strategy
 - (c) Encourage the preparation of iwi management plans
 - (d) Information provision
2. District/city councils in the preparation, variation, change or review of district plans, through the exercise of their functions should:

- (a) seek to protect Canterbury's existing transport infrastructure and land transport corridors necessary for future strategic transport requirements by avoiding, remedying, or mitigating the adverse effects of the use, development or protection of land and associated natural and physical resources on transport infrastructure.

Issue 2

Adverse effects on the environment are caused by the provision of transport infrastructure and the use of transport. These effects include:

- (1) air pollution.**
- (2) noise and vibration.**
- (3) contaminated run-off from roads discharging into water or onto or into land.**
- (4) loss of public amenity including effects on visual amenity, natural character and areas of significant indigenous vegetation and significant habitats of indigenous fauna.**
- (5) effects on ancestral lands, sites and other taonga of value to Tangata Whenua.**
- (6) spread of noxious weeds from road verges.**
- (7) loss of land to roads and to the parking of vehicles.**
- (8) effects on sites, buildings, places or areas of heritage value.**

Ch. 9 Water, Iss 3
Ch. 13 Air, Iss. 1,2,3

Objective 2

Ch. 6 Tangata Whenua, Obj. 1
Ch. 13 Air, Obj. 1, 2, 3
Ch. 14 Energy, Obj. 1

Avoid, remedy, or mitigate the adverse effects on the environment of transport use and provision.

Principal Reasons

Achieving the purpose of the RM Act requires any adverse effects on the environment to be avoided, remedied or mitigated.

The physical infrastructure and transport systems can create adverse effects such as air, water and soil pollution, loss of visual amenity, natural character and areas of significant indigenous vegetation and significant habitats of indigenous fauna, community severance, vibration, noise and accident risks. The environment also includes people and their social, economic, aesthetic and cultural conditions and human health. Transport provides social and economic benefits to people and these also need to be considered when avoiding, remedying or mitigating adverse effects.

Policy 2

Ch. 13 Air, Pol. 2
Ch. 14 Energy, Pol. 1, 2

Promote the use of transport modes which have low adverse environmental effects.

Explanation

Cycling, walking, public passenger transport, sea transport and rail as a passenger and freight mode generally have low adverse effects on the environment relative to motor cars and trucks.

Sea and rail transport have lower consumption of fossil fuels per unit of freight than road transport and achieve greater efficiency in the use of non-renewable energy resources and consequently lower emissions. Provided they go where the market wants, rail freight and sea freight also reduce the demand for maintenance and expansion of the highway network.

Principal Reasons

To assist in providing for the transport needs of the community in a sustainable way by avoiding adverse effects on the environment.

Methods

1. The methods used or to be used by the Regional Council are:
 - (a) Regional plans
 - (b) Regional Land Transport Strategy
 - (d) Information provision
 - (e) Service provision
 - (f) Regional Energy Strategy
2. District/city councils in the preparation, variation, change or review of district plans, through the exercise of their functions should:
 - (b) consider promoting the use of transport modes which have low adverse environmental effects.

Policy 3

Promote changes in movement patterns, travel habits and the location of activities, which achieve a safe, efficient and cost-effective use of the transport infrastructure and reduce the demand for transport.

Explanation

By promoting safe, efficient and cost-effective use of the transport infrastructure and reducing the demand for transport, the adverse environmental, economic and community effects may be reduced. The demand for resources such as energy, and for new physical structures will be similarly reduced, or their uses made more efficient.

The demand for transport may be reduced by a wide range of means including:

- (1) controlling the use, development and protection of land, such as the containment of urban areas

- (2) encouraging increased use of more energy efficient transport modes
- (3) increasing public awareness on environmental issues and transport options
- (4) promoting or facilitating increased substitution by telecommunications, for example, "telecommuting".

The demand for transport can be reduced by promoting an urban layout that decreases distances between homes, sources of employment, shops and other frequent destinations, reducing energy demand and emissions. Similarly the effectiveness and efficiency of the most environmentally desirable modes can be facilitated by ensuring the right preconditions are built in. For example, by planning residential areas so that they are located within convenient walking distance of trunk routes where a fast, frequent public transport service can operate, or by providing cycle lanes.

People have an important role to play as individuals. Any steps that people can take to minimise the use of their own cars, for example, by car pooling, and actions by local authorities to encourage this will help reduce the demand for transport and assist energy conservation and reduce exhaust emissions.

Principal Reasons

To reduce the adverse effects of transport on the environment.

Methods

1. The methods used or to be used by the Regional Council are:
 - (a) Regional plans
 - (b) Regional Land Transport Strategy
 - (c) Encourage the preparation of iwi management plans
 - (d) Information provision
 - (e) Service provision
2. District/city councils in the preparation, variation, change or review of district plans, through the exercise of their functions should:
 - (c) consider achieving a safe, efficient and cost-effective use of transport infrastructure and reduce the demand for transport.

Policy 4

Ensure that in the provision, realignment or maintenance of transport infrastructure, adverse effects on natural resources that meet the criteria of sub-chapter 20.4 are avoided, remedied, or mitigated.

Ch. 7 Soils and Land Use, Pol. 2, 4, 6
Ch.8 Landscape and Ecology, Pol. 3, 4, 5, 6

Explanation

The provision, realignment or maintenance of transport infrastructure may have adverse effects on natural resources including amenity, natural character and areas of significant indigenous vegetation and significant habitats of indigenous fauna. This is a particularly important issue on Trans-Alpine road and railway routes, and along the Kaikoura coast which are all located within areas of landscape value, but is also a factor in a number of other situations. A number of actual or potential adverse effects arise from the realignment and repair of these routes including those associated with earthworks (destruction of natural values, visual effects, soil erosion and sedimentation), stabilisation works (including planting of exotic species, erection of structures and protection works), impacts of working areas, and increased vehicle speeds and use.

Adverse effects on water, the beds of rivers and lakes and their margins, and the Coastal Marine Area are addressed in Chapters 9, 10, and 11.

Principal Reasons

To avoid, remedy, or mitigate adverse effects from the provision, realignment or maintenance of transport infrastructure on amenity values, natural character, and areas of significant indigenous vegetation and significant habitats of indigenous fauna.

Methods

1. The methods used or to be used by the Regional Council are:
 - (a) Regional plans
 - (b) Regional Land Transport Strategy
 - (c) Encourage the preparation of iwi management plans
 - (d) Information provision
2. District/city councils in the preparation, variation, change or review of district plans, through the exercise of their functions should:
 - (d) consider ensuring that the adverse effects of the provision, realignment or maintenance of transport infrastructure on landscapes or any other land areas, excluding the beds of rivers and lakes and the coastal marine area, that meet the criteria of sub-chapter 20.4 are avoided, remedied, or mitigated.

15.3 Methods

1. Regional Council

The methods used or to be used by the Regional Council are:

(a) Regional plans

Regional plans may make provision for any matter relating to the use, development, or protection of any natural and physical resources for which the Regional Council has responsibility under the RM Act including the control of land for the purpose of soil conservation, the maintenance and enhancement of the quality of water in water bodies and coastal water, the maintenance of the quantity of water in water bodies and coastal water, and the avoidance or mitigation of natural hazards.

Provisions in regional plans, such as the Natural Resources Regional Plan, which is currently in preparation, will contain specific objectives, policies and methods, including rules, to achieve the integrated management of natural and physical resources. In addition, regional plans may include objectives and policies, but not rules, for any actual or potential adverse effects of any use, development, or protection of land which are of regional significance. When preparing regional plans, the Regional Council will consider the use of economic instruments, performance standards, codes of practice, financial contributions, and may adopt provisions contained in an Iwi Management Plan.

For the purpose of achieving the integrated management of natural and physical resources, and other functions of the Regional Council under the RM Act, regional plans may identify the effects of the use and provision of transport infrastructure on the sustainable management of natural and physical resources, and include policies and methods (including rules where enabled) for the purpose of avoiding, remedying, or mitigating any adverse effects of these activities on the environment and vice versa.

Regional plans will take into account the need for transport to enable people and communities to provide for their social, economic and cultural wellbeing, and the need to provide for the efficient and effective operation of network systems.

Principal Reasons

Preparation of objectives and policies in relation to the actual or potential effects of the use and provision of transport infrastructure, and control of the use of land for the purposes listed above, is necessary to achieve the integrated management of the natural and physical resources of the region and for the avoidance, remedy, or mitigation of adverse effects on the environment.

(b) Regional Land Transport Strategy

A Regional Land Transport Strategy will identify the need for transport, how that need can be met, and the appropriate roles of different transport systems in meeting those needs including the need to promote the sustainable management of natural and physical resources. The Strategy has a five-year horizon and looks at land transport, and will be reviewed at approximately two-year intervals.

It will ensure that the needs of the transport disadvantaged, pedestrians and cyclists are recognised.

Principal Reasons

A Strategy is required under the Land Transport Act 1993. It cannot be inconsistent with the Regional Policy Statement or regional plans and can help to achieve the objectives of the Regional Policy Statement.

(c) Encourage the preparation of iwi management plans

Iwi management plans are non-statutory documents which have been prepared by Tangata Whenua. The Regional Council, in preparing regional plans, must have regard to iwi management plans. By agreement with the Regional Council all or part of an iwi management plan, for example, dealing with wahi tapu or wahi taonga, may be incorporated into a regional plan. The development of the regional plan would be subject to the public consultation processes set out in the RM Act. The Regional Council, by agreement with Tangata Whenua, recognises that there is opportunity for this to occur.

Iwi management plans can provide mechanisms for implementing aspects of policy for example: the process for managing the discovery of koiwi tangata; how any powers transferred will be discharged; and the joint management of sites and/or resources. They can also be a source of information which aids, but does not replace, consultation with Tangata Whenua during regional plan preparation or consideration of consents.

The Regional Council will encourage runanga to prepare iwi management plans and if requested, will provide advice to aid their formulation.

Principal Reasons

Reference to iwi management plans assist the understanding of Tangata Whenua perspectives, can provide an appropriate method to achieve certain environmental policies.

(d) Information provision

Information on transport, its effects, the changing needs for it, and on matters affecting transport relevant to Canterbury should be gathered, co-ordinated and disseminated to the community. Where required investigations should be undertaken to obtain the information.

Education on the effects of transport on the environment and the effects of land use on transport should be co-ordinated or undertaken by the Regional Council to increase awareness of the effects and implications of transport and its changes.

The Regional Council should provide information on fuel efficiencies, energy use and transport parameters to enable them to be considered by individuals and others making transport decisions.

The Regional Council should set up demonstration projects and provide information on research into transport efficiency and alternative transport energy sources.

Community input to these processes should be encouraged.

Principal Reasons

Many decisions affecting transport require information, often over a wide field. Changes to fuel use, vehicle standards, road safety and travel habits can only be efficiently achieved when proposals are properly evaluated. Proposals also need assessment and measurable performance targets, such as transport service performance standards, or vehicle emission standards.

Information on community needs will assist resource allocation and decisions to be directed at meeting those needs.

(e) Service provision

Under the Land Transport Act 1993 and the Transport Services Licensing Act 1989, the Regional Council can fund or partly fund the provision of passenger transport services to ensure that adequate services are provided.

The Regional Council will prepare non-statutory Regional Public Passenger Services plans which will set out what services the Regional Council considers should be provided and how these should be funded. Conditions may be imposed for environmental purposes.

Principal Reasons

A move towards sustainable transport modes may require continued direct financial contributions from the Regional Council. Existing provision of services for other reasons, for example, to assist the transport disadvantaged, can be made to also achieve resource management objectives.

(f) Regional Energy Strategy

The Regional Council will develop a Regional Energy Strategy in consultation with Tangata Whenua, government departments, the energy industry, the community and district councils. The strategy should evaluate existing energy use and production in the region and analyse options for moving to a more sustainable regional energy system. This should include examining the potential for further hydro-electricity production, solar, wind and tidal power generation and the use of biomass. It should also include provisions for energy conservation and energy efficiency. The strategy should include the impact of telecommunication, urban settlement and growth options, and the viability of and dependence on fossil fuels of present farming, fishing, heavy transport and other energy users.

Principal Reasons

Even with a national energy strategy, a regional strategy is required to focus on the particular needs and opportunities of the region. Promoting the use of sustainable energy will be more successful if we know what the opportunities and constraints are. Transport is dependent on fossil fuels and efficiencies in transport use could have a significant effect on energy use.

(2) District plan provisions

Responsibility for the control of subdivision of land and the control of any actual or potential effects of the use, development, or protection of land for the purpose of avoiding, remedying or mitigating adverse effects on natural and physical resources and for the avoidance or mitigation of natural hazards is vested in territorial councils (section.31 (b) and (c), RM Act).

District/city councils in the preparation, variation, change or review of district plans, through the exercise of their functions should:

- (a) seek to protect Canterbury's existing transport infrastructure and land transport corridors necessary for future strategic transport requirements by avoiding, remedying, or mitigating the adverse effects of the use, development or protection of land and associated natural and physical resources on transport infrastructure.
- (b) consider promoting the use of transport modes which have low adverse environmental effects.

- (c) consider achieving a safe, efficient and cost-effective use of transport infrastructure and reduce the demand for transport.
- (d) consider ensuring that the adverse effects of the provision, realignment or maintenance of transport infrastructure on landscapes or any other land areas, excluding the beds of rivers and lakes and the coastal marine area, that meet the criteria of sub-chapter 20.4 are avoided, remedied, or mitigated.

Principal Reasons

Control of the subdivision of land and the effects of the use and provision of transport infrastructure through district plans is necessary for the avoidance, remedy, or mitigation of adverse effects on the environment.

15.4 Environmental Results Anticipated

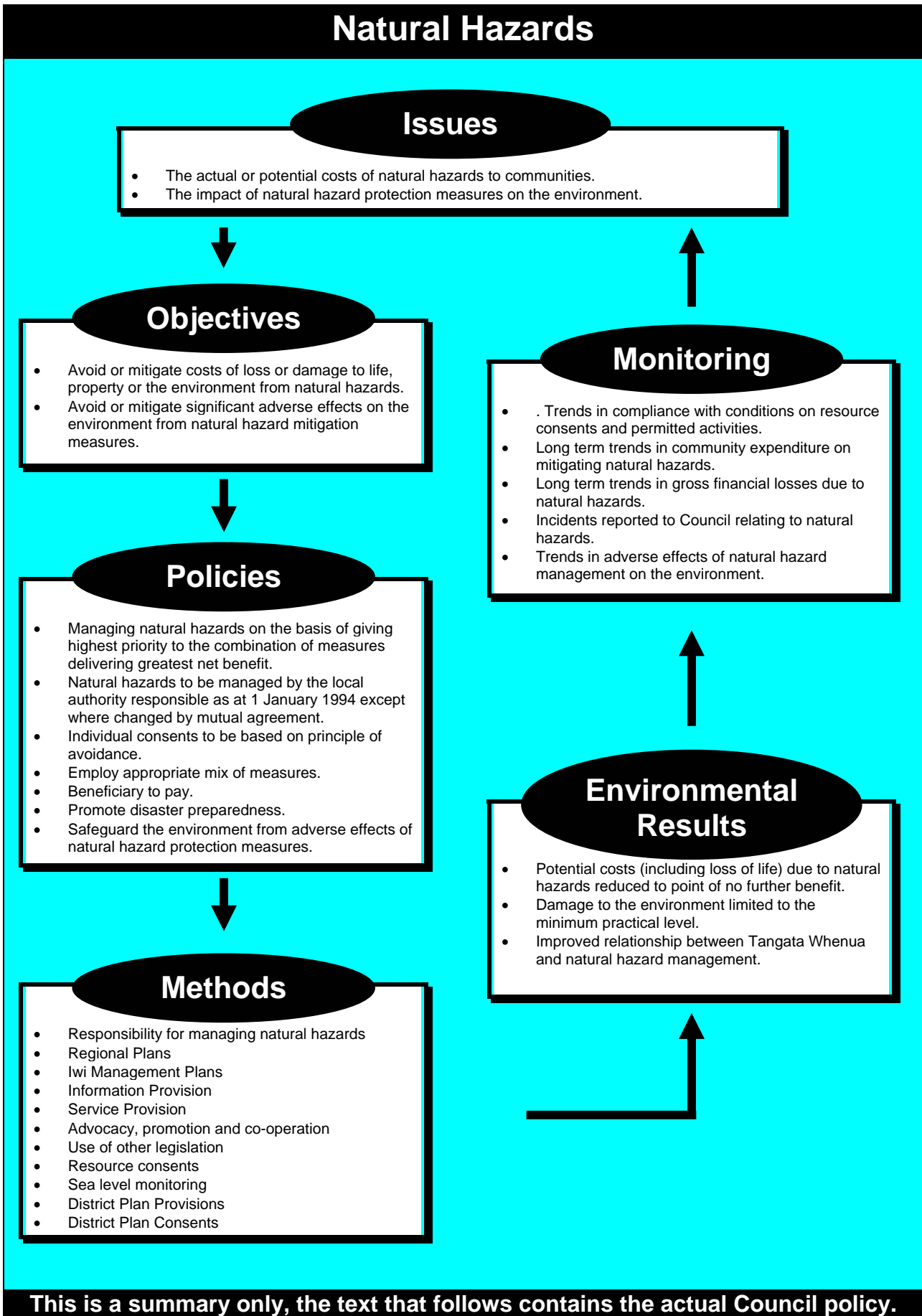
Implementation of the above policies and methods is expected to have the following environmental results.

- (1) A reduction in the adverse effects from the use and provision of transport services and infrastructure including:
 - (a) Reduced use of non-renewable energy sources.
 - (b) Improvements in the efficiency of all energy usage.
 - (c) Reduced air pollution.
 - (d) Increased road safety.
 - (e) Reduced carbon dioxide emissions.
- (2) A transport system which is able to efficiently and effectively meet community needs.

15.5 Monitoring Effectiveness

For transport, the following indicators should be monitored to assess the suitability and effectiveness of this part of the Regional Policy Statement, and any need for it to be reviewed.

- (1) The ability of the strategic transport infrastructure to meet community needs.
- (2) Use of different transport modes including public transport, private vehicles and bicycles.
- (3) Trends in transport accidents.
- (4) Trends in regional and sectoral energy use and the proportions using renewable resources.
- (5) Concentration of contaminants in air and their effects.
- (6) Levels of service in terms of the freedom of movement or absence of congestion provided by the transport network.





16. Natural Hazards

16.1 Introduction

Canterbury has experienced a number of natural occurrences that have caused damage, and sometimes taken lives; earthquakes at Cheviot in 1901, and at Arthurs Pass in 1929, high winds in 1975, flooding at Pleasant Point in 1986, drought in 1987/88, and snowfalls in 1992. In 1868 the Waimakariri flooded the centre of Christchurch. Twice after its completion the masonry spire of Christchurch's cathedral was felled by quakes.

Natural hazards involve events such as these, and similar ones including tsunamis, erosion, volcanic and geothermal activity, landslips, subsidence, and sedimentation. They are natural events which affect or may affect human life, property, or other aspects of the environment.

In facing natural hazards we are dealing with the effects of the extremes of nature on the environment, and in particular on the human occupation of an area. A simple formula for this is:

Assets¹ + natural occurrences = natural hazard

The specific responsibilities of the Regional Council related to natural hazards include:

- (1) Responsibility for stating whether it or a city or district council within its own area shall develop objectives, policies, and rules for control of the use of land for the purpose of avoiding or mitigating natural hazards. In the absence of such a statement, it must do so itself.
- (2) Avoidance or mitigation of natural hazards in the coastal marine area. (Jointly with the Minister of Conservation.)
- (3) Control of the introduction or planting of any plant, in, on, or under land in any bed of a water body in order to avoid or mitigate natural hazards.

It is not possible at present to predict when any particular hazard will occur, but it is certain that natural events which threaten to damage assets will continue to take place. There are many instances where actual or potential losses are unacceptably high, and need to be mitigated, if not avoided.

Three main principles apply to dealing with natural hazards, these, and examples of actual natural hazard management measures are:

- (1) Avoidance - Keeping assets away from sources of danger, (e.g. settlement location, building design, natural hazard warning, community preparedness, matching land use to climate variability).
- (2) Alleviation - Controlling or removing sources of danger, (e.g. stopbanks, retaining walls, raft foundations, water storage, Civil Defence).

¹ Assets include people and anything that is of value to them.

- (3) Recovery - Dealing with the consequences of disaster, (e.g.. insurance, disaster relief, rehabilitation of services).

Who is in the best position to apply these remedies? It can be a regional, city or district council, or it may be an enterprise or a private individual. Usually each will play a part.

In applying remedies for natural hazards new problems can be created. For instance, river straightening and erecting stop-banks to contain a river may destroy the fish habitat, and lower amenity values for the area. Environmental effects caused in this way, including effects of special significance to iwi, must be considered by those managing natural hazards.

Natural hazards in Canterbury can be ranked by the potential damage that could result, for example, taken on an annual basis. Limited information suggests that the most severe regionally significant natural hazards in the region are, in order of importance:

- (1) Large magnitude earthquake affecting Christchurch.
- (2) Extreme drought.
- (3) Waimakariri River flooding of Christchurch and Kaiapoi.
- (4) Major tsunami affecting southern Pegasus Bay and Banks Peninsula, or Timaru coastline.

Other natural occurrences of importance include flooding, fire, wind, snowfall, landslip, erosion and sedimentation (including dune build-up), but the relative impact of these, and what degree of management, if any, is warranted, has yet to be determined.

Climate change (a change in "average weather"), could impact on many of the physical occurrences involved in natural hazards. For example, change in long term temperature, rainfall, and wind conditions may increase or decrease the frequency and severity of flooding, fire, drought, landslip, erosion, sedimentation, and tsunami through rises in sea level, and so on.

Allowance for climate change will be made in the preparation of regional natural hazard management plans including the Regional Coastal Environment Plan when dealing with a particular natural hazard in an area, for instance, flooding of Rangiora or Ashburton, coastal inundation, and the like.

16.2 Issue Resolution

There are two elements that are always present in any natural hazard. One is a natural occurrence; the other is human occupation and use of an area. If the two interact then the outcome, if any, may range from a nuisance to a catastrophe. This outcome is a cost² to the community concerned.

Issue 1

The actual or potential costs of natural hazards to communities.

Ch. 10 Beds of Rivers, Iss. 2

² Both monetary and non-monetary. The cost of natural hazard damage includes damage to life, property and the environment.

Objective 1

Ch. 6 Tangata Whenua, Obj. 1
Ch. 10 Beds of Rivers, Obj. 2

Avoid or mitigate the actual or potential costs of loss or damage to life, property, or other parts of the environment from natural hazards.

Principal Reasons

Natural hazards can result in loss or damage to people, property, or the environment. The aim of natural hazard management is to minimise the net cost of such damage.

Policy 1

Ch.10 Beds of Rivers, Pol. 4

In managing natural hazards, highest priority should be given to the combination of measures which delivers the greatest net benefit.

Explanation

Priority treatment of natural hazards is a policy of dealing first with those that offer the highest return on available investment. This is expressed in terms of protection gained and costs incurred, a notion embodied in the term used above - greatest net benefit. In the calculation of benefit, and of costs, both monetary and non-monetary values are included. Non-monetary factors include effects on people, cultural values, ecosystems, landscape, and amenity. These values are taken into account by comparing alternative options. Although it is not possible to place a precise dollar value on any improvement in non-monetary benefit, methods are available for gauging whether or not the additional non-monetary benefit exceeds any added monetary cost.

Net benefit, then, is the sum of net monetary benefit, and net non-monetary benefit.

A natural hazard is the interaction or potential interaction between a natural occurrence and something of value to people (ie, assets). (This is explained more fully in the second and third paragraphs of 16.1 Introduction.)

Consistent with this, one natural occurrence may give rise to several natural hazards. A single flood for example, may affect some homes and their occupants, some farmland, a major bridge and an airfield. Each of these interactions is a separate natural hazard. Likewise a single earthquake may affect a main highway and a town. For the purposes of this policy, it is these six distinct natural hazards (interactions between a natural occurrence and people and their homes, farmland, a major bridge, airfield, highway and town), not the two hazard triggers (flood and earthquake), that are to be prioritised. Using the approach set out in Policy 4, and by estimating the net benefit of dealing with the full range of natural hazards in Canterbury, a ranking can be arrived at giving first place to whatever natural hazard mitigation gives greatest net benefit, second place

to the next greatest, and so on. A strategy based on this will guide the order in which Canterbury natural hazards are dealt with.

Principal Reasons

Resources for dealing with natural hazards are limited, and it is important to put that investment first in the places where it is likely to do most good.

Methods

1. The methods used or to be used by the Regional Council are:
 - (b) Regional plans
 - (d) Information provision
 - (f) Advocacy, promotion and co-operation
2. District/city councils in the preparation, variation, change, or review of district plans, through the exercise of their functions should, where their responsibilities for natural hazards are stated in this Regional Policy Statement, consider including provisions that:
 - (a) give highest priority to managing those natural hazards where the greatest net benefit can be delivered.

Policy 2

For the Canterbury region, or any part of the region, which local authority shall have responsibility within its own area for developing objectives, policies, and rules relating to the control of the use of land for the avoidance or mitigation of natural hazards shall be determined in the following manner:

- (a) Particular responsibility for any particular hazard or group of hazards shall initially remain with the local authority or local authorities managing that hazard or group of hazards as at 1 January 1994. Where this responsibility is not clear, the Regional Council shall retain primary responsibility.**
- (b) The Regional Council in consultation with territorial authorities in the region will review responsibilities to ascertain any need for changes to which local authority or local authorities shall have responsibility for managing particular natural hazards or groups of natural hazards.**

Explanation

Natural occurrences that have a potential for adverse effects on people, property, and the environment come in many forms, among them earthquake, tsunami, erosion, landslip, wind, fire, drought, and flooding.

Unless the Regional Policy Statement states which local authority or combination of local authorities is responsible for particular natural

hazards, the Regional Council retains primary responsibility. Under this policy, the particular responsibility being undertaken initially remains with the local authority or local authorities managing the particular natural hazard at the time the policy was prepared. Subsequent to the Regional Policy Statement becoming operative, the Regional Council will consult with territorial authorities in the region on any need for a re-allocation of natural hazard responsibilities, and may as a result prepare a change to the Regional Policy Statement.

“Managing” in the context of this policy includes taking particular responsibility for a particular hazard or group of hazards.

It should be noted that under the Building Act 1991, a building consent must be issued by a territorial authority, and that under the RM Act control of the subdivision of land is a function of territorial authorities.

Principal Reasons

To make clear for any particular natural hazard in Canterbury, how it is to be decided which should be dealt with by the Regional Council, and which by city and district councils.

Methods

1. The methods used or to be used by the Regional Council are:
 - (a) Responsibility for managing natural hazards
 - (g) Use of other legislation

Policy 3

Where there is no provision for natural hazard in a plan relevant to an area in which an application for a resource consent has been received, the consent authority should, when having regard to this Regional Policy Statement, take a precautionary approach to the potential for a natural hazard to be created or increased as it relates to the applicant or any other person or property. This may be achieved by giving priority to the principle of avoidance.³

Explanation

Many natural hazards have yet to be dealt with in plans or strategies, and many others are of such a localised or minor nature that they are never likely to be. The Regional Council and territorial authorities in the region, when considering applications for resource consents must, among other things, consider the possible natural hazard effects of granting such applications. This policy gives priority in those situations to keeping assets away from sources of danger.

³ See the paragraph beginning “Three main principles apply to dealing with natural hazards ...” in the Introduction to this Chapter of the RPS.

Principal Reasons

In the absence of plan provisions based on more comprehensive information the potential cost of natural hazard damage will be reduced by applying the principle of avoidance.

Methods

1. The method used or to be used by the Regional Council is:
 - (h) Resource consents
3. District/city councils when undertaking their function as a consent authority should:
 - (a) ensure that when resource consent applications are being considered, and there are no plan provisions relevant to the management of natural hazards for the area concerned, the principle of natural hazard avoidance (keeping assets away from sources of danger) is applied.

Policy 4

In discharging their responsibilities for natural hazard management, the Regional Council, and territorial authorities in the Canterbury region should adopt a precautionary approach and ensure that an appropriate combination of measures is used to modify occurrences, modify susceptibility to damage, and deal with the consequences of disaster.

Explanation

Avoiding, or mitigating any natural hazard is most effectively achieved by some combination of measures that either modify the course of the natural event, modify the proneness of assets to damage, or by taking action subsequent to the event. The most appropriate combination of measures is that which delivers the desired level of protection⁴ while incurring the lowest total of monetary and non-monetary costs to the community. Past failures to recognise this broad approach have sometimes tended to make damage greater. For instance, reliance on stopbanks alone to mitigate flooding has actually increased natural hazard because of development that subsequently occurred close to stopbanks. Any failure of the stopbanks then means costs higher than if they had never been there. Partly because the spectrum of natural hazards is so wide, action before the event is often not feasible, but even afterwards much potential damage can be avoided or reduced. This is particularly so in slow onset situations such as drought, but also applies to the evacuation of people and removal of assets from imminent danger posed by a range of catastrophic events.

Along the coast, the possibility of a rise in mean sea level means that natural hazards arising from forces of the sea may be exacerbated. In view

⁴ The desired level of protection is a community choice made within a range extending from basic to the highest possible level. Input to the decision process includes forecasts of damage and corresponding costs at various levels of protection.

of this possibility, and to accord with the New Zealand Coastal Policy Statement (Policies 3.3.1 and 3.4.2) when developing combinations of measures to avoid or mitigate coastal hazards, a precautionary approach should be taken. To increase understanding of any changes to the mean sea level along the Canterbury coast, levels will be monitored.

Principal Reasons

Will achieve cost-effective provision of community agreed levels of protection from natural hazards.

Methods

1. The methods used or to be used by the Regional Council are:
 - (b) Regional plans
 - (d) Information provision
 - (f) Advocacy, promotion, and co-operation
 - (g) Use of other legislation
 - (h) Resource consents
 - (i) Sea level monitoring
2. District/city councils in the preparation, variation, change, or review of district plans, through the exercise of their functions should, where their responsibilities for natural hazards are stated in this Regional Policy Statement, consider including provisions that:
 - (b) utilise measures or combinations of measures to modify occurrences, modify susceptibility to damage, or deal with the consequences of disaster, that will deliver the desired level of protection while incurring the lowest total of monetary and non-monetary costs to the community.

Policy 5

Responsibility for costs associated with management of natural hazards, as well as these can be determined, should fall on those who benefit in proportion to that benefit.

Explanation

There is a breadth of experience suggesting that people place a higher value on things that have a direct identifiable cost. This is particularly true of hazard protection. In addition to providing resources for hazard mitigation, this policy provides a continuous reminder of costs incurred when assets are made accessible to sources of danger. Methodologies exist for broadly identifying the beneficiaries of hazard protection and the degree of their benefit, and these provide a basis for equitable cost recovery.

Principal Reasons

To provide more equitable treatment of ratepayers, and an incentive for avoiding hazardous situations.

Methods

1. The methods used or to be used by the Regional Council are:
 - (b) Regional plans
 - (e) Service provision
 - (g) Use of other legislation
 - (h) Resource consents
2. District/city councils in the preparation, variation, change, or review of district plans, through the exercise of their functions should, where their responsibilities for natural hazards are stated in this Regional Policy Statement, consider including provisions that:
 - (c) ensure that where practicable the responsibility for costs associated with management of natural hazards, as well as these can be determined, fall on those who benefit in proportion to that benefit.

Policy 6

The Canterbury Regional Council should promote a general state of preparedness for disaster within the regional community and assist aid agencies to plan their responses by providing them with information.

Explanation

By helping to facilitate a general state of readiness in the region to deal with imminent or actual disaster and its aftermath, the Regional Council can make a worthwhile contribution to reducing loss and suffering, both in its own planning, and in assisting other aid agencies.

Principal Reasons

To implement the principle of recovery when avoidance and alleviation have played their parts.

Methods

1. The methods used or to be used by the Regional Council are:
 - (b) Regional plans
 - (d) Information provision
 - (g) Use of other legislation

Issue 2

The impact of natural hazard protection measures on the environment, especially on habitat and amenity values, heritage places, mahinga kai, and other taonga.

Objective 2

*Ch. 6 Tangata Whenua, Obj. 1
Ch. 8 Landscape, Objs. 1, 2, 3,
4*

Avoid or mitigate significant adverse effects on the environment as a result of methods used to manage natural hazards. This applies especially to habitat and amenity values, heritage places, mahinga kai, and other taonga.

Principal Reasons

Natural hazard management may itself affect the environment. This needs to be acknowledged and damage limited.

Policy 7

Ch. 6 Tangata Whenua, Pol. 5

In implementing measures to protect assets from natural occurrences, adverse effects of those measures on the environment, including loss of wildlife habitats or amenity values, heritage places, mahinga kai, and other taonga, are to be avoided, remedied, or mitigated.

Explanation

This Policy acknowledges that other environmental values must not be ignored when implementing measures to avoid or mitigate a natural hazard. Natural disturbances often play a part in maintaining viable indigenous habitats. For example, bank erosion, channel switching and flooding do so in braided rivers.

Principal Reasons

To protect existing environmental values from the adverse effects of natural hazard management measures.

Methods

1. The methods used or to be used by the Regional Council are:
 - (b) Regional plans
 - (c) Encourage the preparation of iwi management plans
 - (h) Resource consents
2. District/city councils in the preparation, variation, change, or review of district plans, through the exercise of their functions should, where their responsibilities for natural hazards are stated in this Regional Policy Statement, consider including provisions that:
 - (d) avoid, remedy, or mitigate adverse effects on the environment resulting from measures to avoid or mitigate natural hazards.

Effects to be avoided remedied, or mitigated include effects on significant habitats of indigenous fauna or amenity values, heritage places, mahinga kai and other taonga.

16.3 Methods

1. Regional Council

The methods used or to be used by the Regional Council are:

(a) Responsibility for managing natural hazards

(i) Confirm present responsibility for managing particular natural hazards.

During the 1995-96 financial year, the Regional Council will consult with territorial authorities in the region on present responsibility for the management of particular natural hazards or groups of natural hazards in each of their areas. The aim will be to confirm which local authority/authorities was/were responsible as at 1 January 1994 for developing objectives, policies, and rules relating to the control of the use of land for the avoidance or mitigation of particular natural hazards.

When completed the results of this consultation should be compiled into a form suitable for inclusion in the Regional Policy Statement, and the necessary steps taken to add it to that document.

(ii) Review responsibilities for managing natural hazards.

Subsequent to the Regional Policy Statement becoming operative, the Regional Council, in consultation with territorial authorities in the region, will review the present allocation of responsibilities for managing particular hazards or groups of hazards in each of their areas, and consider whether there is any need for change.

If changes are considered necessary by the Regional Council as a result of this review, the necessary steps will be taken to incorporate them into the Regional Policy Statement.

Principal Reasons

To clarify regional/district roles and provide for future flexibility.

(b) Regional plans

To provide an overall approach to natural hazard mitigation regionwide, the Canterbury Regional Council will co-ordinate the development of a joint strategy for natural hazard management to be implemented through the Regional Coastal Environment Plan, the Natural Resources Regional Plan, other regional plans, and district plans in the region.

In developing a joint strategy with territorial authorities the following approach will be taken:

- (i) areas of Canterbury that are prone to severe natural occurrences will be identified;
- (ii) the appropriateness of involvement by local government in dealing with related natural hazards, and the form of any involvement, will be assessed;
- (iii) priorities for action should be established consistent with Policy (1).

In accordance with the strategy, the Regional Council, territorial councils in Canterbury, and private individuals or groups may elect singly, or together, to implement measures or combinations of measures along the lines of the following to avoid, remedy, or mitigate losses from natural hazard. It will often be particularly efficient and effective for a relevant local authority (in accordance with Policy (2) and this strategy) to do this comprehensively by way of either a regional or district plan (which may prohibit, restrict, or permit various activities relating to natural and physical resources), or a non-statutory plan. The justification for any particular plan should be addressed within that plan.

Measures that could ultimately be implemented include those in the following list, and others of a similar nature:

(1) Measures that modify natural events, such as:

- (i) land treatment, for example: afforestation, shelter planting, dewatering, drainage, irrigation, development of wetlands, fire-restrictions, planting of drought resistant species.
- (ii) physical controls, for example: dams, retention basins, channel improvements, diversions, walls, moles and stopbanks, drainage.

(2) Measures that modify susceptibility:

- (i) planning/design of structures, for example: siting (particularly in the coastal environment) and strength of buildings, heights of floors, design of foundations.
- (ii) defensive measures, for example: fire breaks, dune reinforcement, revegetation of slip-prone land, retaining walls, hail shelter, raising human awareness, land acquisition, stores of stock feed.
- (iii) relocating structures (particularly in the coastal environment) to reduce the adverse effects of protection measures on the environment.
- (iv) other precautions, for example: flood-forecasting, warning systems, evacuation procedures.

(3) Measures in the aftermath:

- (i) emergency actions, for example: evacuation, rescue/first-aid, fire-fighting, flood-fighting.
- (ii) social/welfare, for example: care of victims, counselling, emergency shelter.
- (iii) financial relief, for example: insurance, emergency grants, relief funds and loans.
- (iv) repairs, for example: rebuilding, restoration of services.

Any natural hazard measures selected must also satisfy the environmental effects requirements of Policy 7.

Principal Reasons

Provides an integrated, comprehensive, effective and efficient approach to minimising losses due to natural hazards.

(c) Encourage the preparation of iwi management plans

Iwi management plans are non-statutory documents that have been prepared by Tangata Whenua. The Regional Council, in preparing regional plans, must have regard to iwi management plans. By agreement with the Regional Council all or part of an iwi management plan, for example, dealing with wahi tapu or wahi taonga, may be incorporated into a regional plan. The development of the regional plan would be subject to the public consultation processes set out in the RM Act. The Regional Council, by agreement with Tangata Whenua, recognises that there is an opportunity for this to occur.

Iwi management plans can provide mechanisms for implementing aspects of policy, for example: the process for managing the discovery of koiwi tangata; how any powers transferred will be discharged; and the joint management of sites and/or resources. They can also be a source of information that aids, but does not replace, consultation with Tangata Whenua during regional plan preparation or consideration of consents.

The Regional Council will encourage runanga to prepare iwi management plans and if requested, will provide advice to aid their formulation.

Principal Reasons

To assist the understanding and inclusion of Tangata Whenua perspectives, and to provide appropriate ways to achieve certain environmental policies.

(d) Information provision

In part the strategy (Method b) should provide a basis for a programme of public education on risk avoidance, and in particular in the way land use relates to natural hazards. The aims of such a programme would be to improve understanding of what constitutes a natural hazard, promote ways to mitigate it at an individual and community level, and to inform on emergency procedures.

Principal Reasons

Would provide reliable facts to inform and motivate action at the level of the individual and the community.

(e) Service provision

Continued maintenance of the Regional Council's existing river protection schemes is required. This entails a programme of flood protection work which may be spelt out in each annual plan in accord with corporate policy.

Policy 5 requires the Regional Council to recover the costs of natural hazard management approximately in proportion to the benefit people obtain from it. In order to do this, the Regional Council may:

- (i) apply user charges.
- (ii) charge a differential rate.

Principal Reasons

Provides resourcing for maintenance of river protection. Matches benefits with costs.

(f) Advocacy, promotion and co-operation

In promoting the sustainable management of natural and physical resources, the Regional Council will, with regard to the management of natural hazards:

- (i) foster co-operation with territorial authorities and other agencies to achieve the integrated management of natural hazards.
- (ii) advocate for a central government role where a nation-wide approach to managing particular natural hazards is considered appropriate.
- (iii) co-operate with Civil Defence in the exchange of information of value to either party.
- (iv) co-operate with and assist landcare and other community based organisations and industry groups to incorporate natural hazards considerations into their codes of conduct and industry codes of practice.

Principal Reasons

Advocacy, promotion and co-operation can be an effective alternative to regulation, and in many circumstances may be the only course open.

(g) Use of other legislation

A range of duties and powers is bestowed on the Regional Council by statutes such as the Waimakariri River Improvement Act 1922, the Ashley River Improvement Act 1925, the Soil Conservation and Rivers Control Act 1941, the Public Works Act 1981, the Civil Defence Act 1983, the Rating Powers Act 1988, and the Building Act 1991, among others. These duties and powers provide alternative and complementary ways for the Regional Council to implement its policies in suitable circumstances. They particularly assist with land acquisition, building standards, cost recovery, and flood control.

Principal Reasons

Provides wider alternatives to RM Act powers for more comprehensive and integrated management of natural hazards.

(h) Resource consents

The Regional Council is a consent authority for some coastal permits, water permits, discharge permits, and land use consents in relation to use of the beds of lakes and rivers.

When considering an application for a resource consent, the Regional Council will consider where appropriate:

- (i) conditions to avoid or mitigate natural hazards; and
- (ii) conditions to avoid, remedy or mitigate adverse effects on the values in Policy 7; and
- (iii) any need for a financial contribution in relation to natural hazards.

Principal Reasons

Provides an opportunity to mitigate natural hazards in the course of the resource consent process.

(i) Sea level monitoring

For the purpose of increasing understanding of the degree to which the mean sea level along the Canterbury coast may be rising, and the rate of any rise, regular observations will be carried out by the Regional Council at a range of locations along the coast.

Principal Reasons

Sea level change poses a significant potential threat to natural and physical resources along the coast.

2. District plan provisions

Responsibility for the avoidance or mitigation of natural hazards rests partly with territorial authorities. The exercise of this responsibility complements the actions of the Regional Council and is essential to the integrated management of natural hazards in Canterbury.

District/city councils in the preparation, variation, change, or review of district plans, through the exercise of their functions should, where their responsibilities for natural hazards are stated in this Regional Policy Statement, consider including provisions that:

- (a) give highest priority to managing those natural hazards where the greatest net benefit can be delivered.
- (b) utilise measures or combinations of measures to modify occurrences, modify susceptibility to damage, or deal with the consequences of disaster, that will deliver the desired level of protection while incurring the lowest total of monetary and non-monetary costs to the community.
- (c) ensure that where practicable the responsibility for costs associated with management of natural hazards, as well as these can be determined, fall on those who benefit in proportion to that benefit.
- (d) avoid, remedy, or mitigate adverse effects on the environment resulting from measures to avoid or mitigate natural hazards. Effects to be avoided, remedied, or mitigated include effects on significant habitats of indigenous fauna or amenity values, heritage places, mahinga kai and other taonga.

3. District plan consents

District/city councils when undertaking their function as a consent authority should:

- (a) ensure that when resource consent applications are being considered, and there are no plan provisions relevant to the management of natural hazards for the area concerned, the principle of natural hazard avoidance (keeping assets away from sources of danger) is applied.

Principal Reasons

Land use controls for which districts have responsibility can only be implemented in a district plan.

16.4 Environmental Results Anticipated

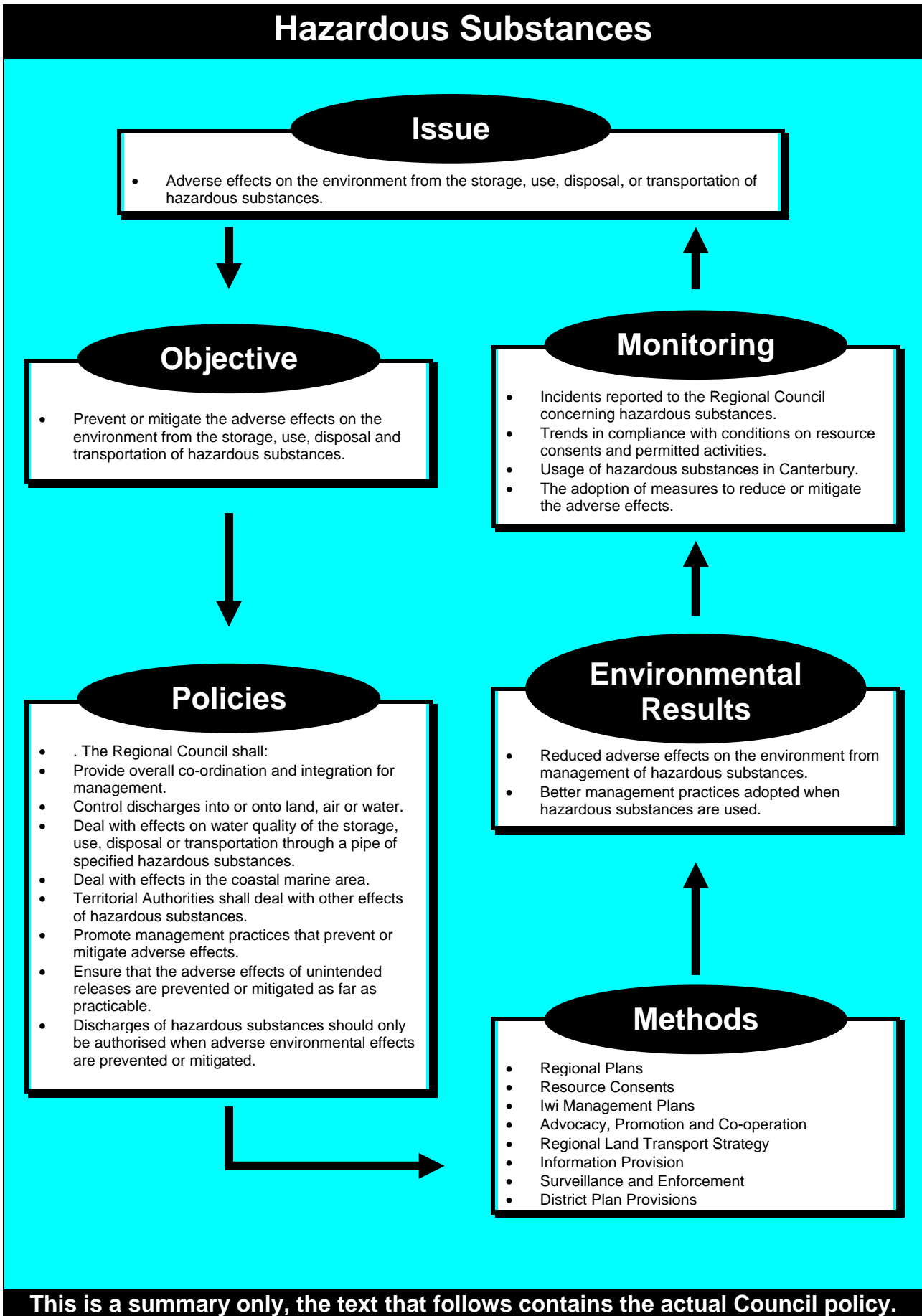
Implementation of the above policies and methods is expected to have the following environmental results:

- (1) Potential costs (including loss of life) due to natural hazards reduced to the point where any further reduction would have no net benefit.
- (2) Damage to the environment, or to important habitats or amenity values, heritage places, mahinga kai areas, and other taonga, is limited to the minimum practical level.
- (3) Improved relationship between Tangata Whenua and natural hazard management.

16.5 Monitoring Effectiveness

For natural hazards, the following indicators should be monitored to assess the suitability and effectiveness of this part of the Regional Policy Statement, and any need for it to be reviewed:

- (1) Trends in compliance with conditions on resource consents and permitted activities.
- (2) The long-term trend in community expenditure on mitigating natural hazards.
- (3) The long-term trend (over decades) in gross financial losses due to natural hazards.
- (4) Incidents reported to the Regional Council relating to natural hazards or relevant Tangata Whenua concerns.
- (5) Trends in the incidence of significant adverse effects on the environment, in particular on significant habitats of indigenous fauna, amenity values and heritage places resulting from natural hazard management measures.





17. Hazardous Substances

17.1 Introduction

Hazardous substances are widely used as part of everyday life in Canterbury. They are used for industrial, commercial and domestic purposes.

Hazardous substances are defined by section 2 of the Hazardous Substances and New Organisms Act 1996 as any substance-

- (a) with one or more of the following intrinsic properties:
 - (i) explosiveness;
 - (ii) flammability;
 - (iii) a capacity to oxidise;
 - (iv) corrosiveness;
 - (v) toxicity (both acute and chronic);
 - (vi) ecotoxicity, with or without bioaccumulation; or
- (b) which on contact with air or water (other than air or water where the temperature or pressure has been artificially increased or decreased) generates a substance with any one or more of the properties specified in paragraph (a) of this definition.

Such substances may be poisonous, infectious or radioactive. They include substances that are toxic because they are pathogenic, carcinogenic, mutagenic, teratogenic or immuno-suppressant. They can affect mahinga kai, taonga and other resources of value to Tangata Whenua through the contamination of water, air or land.

Substances that meet the definition above for specification as hazardous include:

- (a) Pesticides.
- (b) Chlorinated solvents
- (c) Timber preservatives
- (d) Petroleum products
- (e) Radioactive substances
- (f) Substances containing the following chemicals: arsenic, cadmium, chromium, cyanide, lead, mercury, nickel or selenium.

The Regional Council has the functions of controlling contaminant discharges and of controlling the use of land for the purposes of the prevention or mitigation of any adverse effects of the storage, use, disposal or transportation of hazardous substances. Control of hazardous substances is a function which may be shared with territorial authorities.

Other agencies also have responsibilities relating to hazardous substances. These include public health authorities, the Ministry of Transport and the National Radiation Laboratory, and the Environmental Risk Management Authority (ERMA). ERMA has responsibility for regulating some hazardous substances on a national basis, pursuant to the Hazardous Substances and New Organisms Act 1996.

In addition to the provisions of the Hazardous Substances and New Organisms Act 1996 and the RM Act, the use, storage, disposal and transportation of hazardous substances is also controlled by other legislation, for example: the Health and Safety in Employment Act 1992, the Building Act 1991, the Radiation Protection Act 1965, the Transport Act 1962, and the Health Act 1956 together with Regulations associated with these and other Acts. The policies in the Regional Policy Statement and in regional plans do not remove the need to comply with this legislation. Hazardous goods transport matters may also be provided for in the Regional Land Transport Strategy for Canterbury prepared by the Regional Council under the Land Transport Act 1993.

Manufacture, transportation, storage, use and disposal of hazardous substances are all activities where hazardous substances can enter the environment. In addition there are sites which are already contaminated by hazardous substances and these may present a danger to people and the environment.

Past dumping and unauthorised dumping of hazardous substances also has the potential to create environmental problems, such as polluted water or toxic particles in dust from a site. Hazardous wastes are also covered in Chapter 18 of this Regional Policy Statement which deals with waste management, and Chapter 7 which deals with contamination of land.

17.2 Issue Resolution

Issue 1

Adverse effects on the environment may arise from the storage, use, disposal, or transportation of hazardous substances including:

- (i) contamination of air, water and soil**
- (ii) effects on ancestral lands, sites and other taonga of value to Tangata Whenua**
- (iii) effects on ecosystems**
- (iv) human health effects**

These adverse effects may arise because:

- (a) precautionary measures taken when hazardous substances are stored, used or disposed of are inadequate;**
- (b) spills or leaks can occur when hazardous substances are transported, loaded or unloaded; or**

- (c) activities using hazardous substances as an integral part of their process, for example agricultural spraying, may make discharges into the environment which have unintended adverse effects.**

Ch. 7 Soils, Iss. 3

Ch. 9 Water, Iss. 3

Ch. 13, Air, Iss. 2

Ch. 18, Solid, Haz. Waste Mngt., Iss.1

Objective 1

Ch. 6 Tangata Whenua, Obj. 1

Ch. 9 Water, Obj. 3

Ch. 13, Air, Obj. 2

Ch. 18, Solid, Haz. Waste

Mngt., Obj. 1

Ch. 7 Soils, Obj. 3

Prevent or mitigate the adverse effects on the environment from the storage, use, disposal and transportation of hazardous substances.

Principal Reasons

While recognising the need for people to be able to use hazardous substances, adverse effects of discharges as a result of their storage, use or transportation should be prevented or mitigated, and they should be disposed of in a safe manner.

Even where hazardous substances are discharged or released as an integral part of their intended purpose, adverse effects outside this purpose should be prevented or mitigated.

Policy 1

Ch. 9 Water, Pol. 10, 12, 13

- (a) The Regional Council shall have the following particular responsibilities for developing objectives, policies and rules relating to the control of the use of land:**
- (i) co-ordination and integration of the management of the storage, use, disposal, and transportation of hazardous substances within and beyond the Canterbury Region.**
 - (ii) prevention or mitigation of any adverse effects, on the quality of water in water bodies or coastal water, of the storage, use, disposal or transportation through a pipe of the following hazardous substances:**
 - **pesticides including: herbicides, insecticides and fungicides.**
 - **chlorinated hydrocarbons including: bromodichloromethane, trichloroethene, chlorodibromomethane, 1,1,1 - trichloroethane, tetrachloroethene, trichloromethane, tetrachloromethane and tribromomethane.**
 - **timber preservatives including: copper chromium, arsenic formulations, those using boron, other water-borne preservatives, light organic solvent preservatives and anti-sapstain**

chemicals.

- petroleum products including: petrol, waste oil, diesel, aircraft fuel, kerosene, heating oil; but not including liquefied petroleum gases; and compounds containing: benzene, xylenes, toluene or ethylbenzene.
- any substance containing one or more of the following chemicals: arsenic, cadmium, chromium, cyanide, lead, mercury, nickel or selenium.

(iii) prevention or mitigation of any adverse effects of the storage, use, disposal, or transportation, within the coastal marine area, of hazardous substances.

(b) District/city councils shall have the following particular responsibilities in their own areas for developing objectives, policies and rules relating to the control of the use of land:

(i) prevention or mitigation of any adverse effects of the storage, use, disposal or transportation, outside the coastal marine area, of any hazardous substances that are not listed under (a) (ii) above.

(ii) prevention or mitigation of any adverse effects, other than adverse effects on the quality of water in water bodies or coastal water, of the storage, use, or disposal, outside the coastal marine area, of the hazardous substances that are listed under (a) (ii) above.

(iii) prevention or mitigation of any adverse effects, of the transportation, outside the coastal marine area, and other than through a pipe, of the hazardous substances that are listed under (a) (ii) above.

(c) The Regional Council shall control the discharge of hazardous substances into or onto land, air or water.

*Ch. 9 Water, Pol. 13
Ch. 18 Solid, Haz. Waste
Mngt., Pol. 3*

*Ch. 7 Soils, Pol. 7
Ch. 9 Water, Pol. 10, 12, 13
Ch. 13 Air, Pol. 1, 3, 4, 5*

Explanation

These policies meet the requirement of section 62 (1)(ha) of the RM Act to specify the respective roles of the Regional Council and District/city councils in managing hazardous substances.

A joint approach with territorial authorities and adjacent regions and other agencies will be necessary when establishing consistent practices, particularly where transportation of hazardous substances across regional and district/city boundaries is involved. This will need to be based on national standards, policies, guidelines and/or codes of practice.

Principal Reasons

Both the Regional Council and territorial authorities have responsibilities for hazardous substances under sections 30 and 31 of the RM Act. To avoid unnecessary duplication of functions there is a need to specify the respective roles of these organisations.

Methods

1. The methods used or to be used by the Regional Council are:
 - (a) Regional plans
 - (b) Resource consents
 - (d) Advocacy, promotion and co-operation
 - (e) Information provision
 - (f) Surveillance and enforcement
 - (g) Regional Land Transport Strategy
2. District/city councils in the preparation, variation, change or review of district plans should consider district plan provisions that control the effects of the use, development, or protection of land for the purpose of:
 - (i) prevention or mitigation of any adverse effects of the storage, use, disposal or transportation, outside the coastal marine area, of any hazardous substances that are not listed under Policy 1(a) (ii) of Chapter 17 of this Regional Policy Statement; or
 - (ii) prevention or mitigation of any adverse effects, other than adverse effects on the quality of water in water bodies or coastal water, of the storage, use or disposal, outside the coastal marine area, of the hazardous substances that are listed under Policy 1(a) (ii) of Chapter 17 of this Regional Policy Statement; or.
 - (iii) prevention or mitigation of any adverse effects of the transportation, outside the coastal marine area, and other than through a pipe, of the hazardous substances that are listed under Policy 1(a) (ii) of Chapter 17 of this Regional Policy Statement.

Policy 2

Promote hazardous substances management practices that prevent or mitigate adverse effects on the environment, including practices that reduce the use of hazardous substances.

Explanation

This will include promoting the concepts of clean production, and the use of non hazardous substitutes where their use is practicable. It should also

*Ch. 9 Water, Pol. 12, 13
Ch. 13, Air, Pol. 3, 4, 5
Ch. 18 Solid, Haz. Waste
Mngt., Pol. 1, 2, 3 and 4
Ch. 7 Soils, Pol. 7, 8*

involve manufacturers, wholesalers or retailers being encouraged to take more responsibility for the ultimate disposal, or collection for reuse, of the hazardous substances they produce or sell.

Principal Reasons

Better management practices and use of substitutes will reduce the risk of environmental contamination.

Methods

1. The methods used or to be used by the Regional Council are:
 - (d) Advocacy, promotion and co-operation
 - (e) Information provision
 - (g) Regional Land Transport Strategy

Policy 3

Ensure that the adverse effects on the environment of unintended releases of hazardous substances from the storage, use, disposal or transportation of such substances are prevented or mitigated as far as practicable.

*Ch. 9 Water, Pol. 12, 13
Ch. 13, Air, Pol. 3, 4, 5
Ch. 18 Solid, Haz. Waste
Mngt.,
Pol. 1, 2, 3, 4
Ch. 7 Soils, Pol. 7, 8*

Explanation

Rules dealing with hazardous substances may be made to control the use of land by permitting activities, permitting activities subject to conditions or requiring activities to have a resource consent.

Principal Reasons

Hazardous substances are by their nature dangerous to people and the environment. Regional councils have the function of the control of the use of land for the purpose of preventing or mitigating any adverse effects of the storage, use, disposal or transportation of hazardous substances. District/city councils have the function of the control of any actual or potential effects of the use, development, or protection of land for the purpose of the prevention or mitigation of any adverse effects of the storage, use, disposal, or transportation of hazardous substances.

Methods

1. The methods used or to be used by the Regional Council are:
 - (a) Regional plans
 - (b) Resource consents
 - (c) Encourage the preparation of iwi management plans
 - (d) Advocacy, promotion and co-operation
 - (e) Information provision

- (f) Surveillance and enforcement
 - (g) Regional Land Transport Strategy
2. District/city councils in the preparation, variation, change or review of district plans should consider district plan provisions that control the effects of the use, development, or protection of land for the purpose of:
- (i) prevention or mitigation of any adverse effects of the storage, use, disposal or transportation, outside the coastal marine area, of any hazardous substances that are not listed under Policy 1(a) (ii) of Chapter 17 of this Regional Policy Statement; or
 - (ii) prevention or mitigation of any adverse effects, other than adverse effects on the quality of water in water bodies or coastal water, of the storage, use or disposal, outside the coastal marine area, of the hazardous substances that are listed under Policy 1(a) (ii) of Chapter 17 of this Regional Policy Statement; or
 - (iii) prevention or mitigation of any adverse effects of the transportation, outside the coastal marine area, and other than through a pipe, of the hazardous substances that are listed under Policy 1(a) (ii) of Chapter 17 of this Regional Policy Statement.

Policy 4

Discharges of hazardous substances should only be authorised when adverse environmental effects are prevented or mitigated.

*Ch. 9 Water, Pol. 13
Ch. 13, Air, Pol. 3
Ch. 18 Solid, Haz. Waste
Mgmt., Pol. 2, 3
Ch. 7 Soils, Pol. 7, 8*

Explanation

The Regional Council should ensure that adverse environmental effects are prevented or mitigated when it provides for hazardous substances to be discharged into water, onto or into land or into the air as a consequence of their use. Regional Council responsibility for consenting to discharges involving hazardous substances or providing for them in regional plans ensures integration with air, land and water objectives and policies.

Principal Reasons

People and communities currently use hazardous substances to provide for their social, cultural and economic well-being, but the adverse effects of these uses on the environment should be prevented or mitigated.

Methods

1. The methods used or to be used by the Regional Council are:
 - (a) Regional plans
 - (b) Resource consents

- (c) Encourage the preparation of iwi management plans
- (d) Advocacy, promotion and co-operation
- (e) Information provision
- (f) Surveillance and enforcement

17.3 Methods

1. Regional Council

The methods used or to be used by the Regional Council are:

(a) Regional plans

Regional plans may make provision for any matter relating to the use, development, or protection of any natural or physical resources for which the Regional Council has responsibility under the RM Act, including the control of-

- (i) discharges of contaminants into or onto land, air, or water, and discharges of water into water
- (ii) use of land for the purpose of:
 - soil conservation
 - the maintenance and enhancement of the quality of water in water bodies and coastal water
 - the prevention or mitigation of any adverse effects of the storage, use, disposal, or transportation of hazardous substances.

Provisions in regional plans should contain objectives, policies and rules for controlling the use of land and controlling discharges of hazardous substances.

Regional plan provisions should as far as practicable ensure total containment of hazardous substances during manufacture, storage or transportation and ensure the prevention or mitigation of adverse effects occurring from the use, disposal or application of hazardous substances.

Provisions which could be adopted include:

- (i) Requiring facilities using significant amounts of hazardous substances to have site management and contingency plans where the risks and consequences of accidental discharges are high.
- (ii) Requiring compliance with industry codes of practice.
- (iii) Requiring discharge permits.
- (iv) Delineation of areas of environmental vulnerability and control of the use of land in these areas.

Plans will also establish and clarify regional standards and provide overall co-ordination, guidance and integration for the control of hazardous substances.

A local authority may transfer functions, powers or duties to another public authority. Public authorities include iwi authorities, local authorities, statutory authorities and joint committees of local authorities. The responsibility for the making of rules cannot be transferred. Transfers could include monitoring duties, granting of consents and enforcement of rules made under a plan. Such transfers may be made where it is considered that the authority to which the transfer is made, is the appropriate community of interest, is able to undertake the task more efficiently and has the technical or special capability or expertise.

Principal Reasons

Regional plan provisions are necessary to control the use of land for the purposes of preventing or mitigating the adverse effects of the storage, use, disposal or transportation of hazardous substances. They are also necessary to enable the safe use or disposal of hazardous substances where discharges are involved.

A transfer of powers may be necessary to better achieve the objectives of this Regional Policy Statement.

(b) Resource consents

Resource consents will be required where the storage, use, disposal or transportation of hazardous substances does not comply with conditions set down for such activities to be permitted in a regional plan. Resource consents will also be required for discharges of hazardous substances into the air, or into or onto land, or into water where there is no relevant regional plan.

Principal Reasons

Resource consents are required for discharges unless they are allowed as permitted activities by rules in a plan. Resource consents are also necessary to control the use of land.

(c) Encourage the preparation of iwi management plans

Iwi management plans are non-statutory documents that have been prepared by Tangata Whenua. The Regional Council, in preparing regional plans, must have regard to iwi management plans. By agreement with the Regional Council all or part of an iwi management plan, for example, dealing with wahi tapu or wahi taonga, may be incorporated into a regional plan. The development of the regional plan would be subject to the public consultation processes set out in the RM Act. The Regional Council, by agreement with Tangata Whenua, recognises that there is an opportunity for this to occur.

Iwi management plans can provide mechanisms for implementing aspects of policy, for example: the process for managing the discovery of koiwi tangata; how any powers transferred will be discharged; and the joint management of sites and/or resources. They can also be a source of information that aids, but does not replace, consultation with Tangata Whenua during regional plan preparation or consideration of consents.

The Regional Council will encourage runanga to prepare iwi management plans and if requested, will provide advice to aid their formulation.

Principal Reasons

Reference to iwi management plans assist the understanding of Tangata Whenua perspectives and provides an appropriate method to achieve certain environmental policies.

(d) Advocacy, promotion and co-operation

The Regional Council will liaise with and advocate to industry, farmers and other organisations (including the Fire Service) having responsibilities relating to hazardous substances to ensure that the management of hazardous substances occurs in a co-ordinated manner. This may include the promotion of the development and application of industry Codes of Practice.

Principal Reasons

Liaison with and advocacy to industry, farmers and other organisations with responsibilities relating to hazardous substances is a simple and effective method for dealing with issues associated with the use and application of hazardous substances.

(e) Information provision

The Regional Council will prepare and disseminate guidelines for the safe handling, storage, use and application of hazardous substances in the region and for the containment of hazardous substances at facilities using hazardous substances.

Education will involve the dissemination of information through pamphlets and the media on the appropriate ways for users to dispose of hazardous substances. Information may need to be obtained through investigations and research before guidelines are issued or rules made.

Principal Reasons

The preparation of guidelines may be a useful addition to rules since they can be altered as new technologies occur. Education and information provision is an effective tool alongside regulatory methods.

(f) Surveillance and enforcement

This involves detection of illegal discharges of hazardous substances, and enforcement of laws and rules against such discharges. It involves enforcement of rules controlling the use of land to prevent or mitigate adverse effects from the storage, use, disposal or transportation of hazardous substances.

Principal Reasons

Surveillance and enforcement are a necessary part of ensuring compliance with legislation, consent conditions, and regional rules.

(g) Regional Land Transport Strategy

The Regional Land Transport Strategy will identify the need for transport of hazardous substances, how that need can be met, and the appropriate roles of the different transport systems in meeting those needs. The strategy has a five year horizon and will be reviewed at approximately two year intervals.

It will identify appropriate strategic routes for hazardous substances, particularly where such routes cross territorial and regional boundaries. It will not preclude detailed land use planning by District/city councils to control the effects of transportation of hazardous substances on their communities.

Principal Reasons

A Strategy is required under the Land Transport Act 1993. It cannot be inconsistent with the Regional Policy Statement or regional plans and can help to achieve the objectives of the Regional Policy Statement.

2. District plan provisions

District/city councils in the preparation, variation, change or review of district plans should consider district plan provisions that control the effects of the use, development, or protection of land for the purpose of:

- (i) prevention or mitigation of any adverse effects of the storage, use, disposal or transportation, outside the coastal marine area, of any hazardous substances that are not listed under Policy 1(a) (ii) of Chapter 17 of this Regional Policy Statement; or
- (ii) prevention or mitigation of any adverse effects, other than adverse effects on the quality of water in water bodies or coastal water, of the storage, use or disposal, outside the coastal marine area, of the hazardous substances that are listed under Policy 1(a) (ii) of Chapter 17 of this Regional Policy Statement; or
- (iii) prevention or mitigation of any adverse effects of the transportation, outside the coastal marine area, and other than through a pipe, of the hazardous substances that are listed under Policy 1(a) (ii) of Chapter 17 of this Regional Policy Statement.

Principal Reasons

Land use controls for which districts have responsibility can only be implemented in a district plan.

17.4 Environmental Results Anticipated

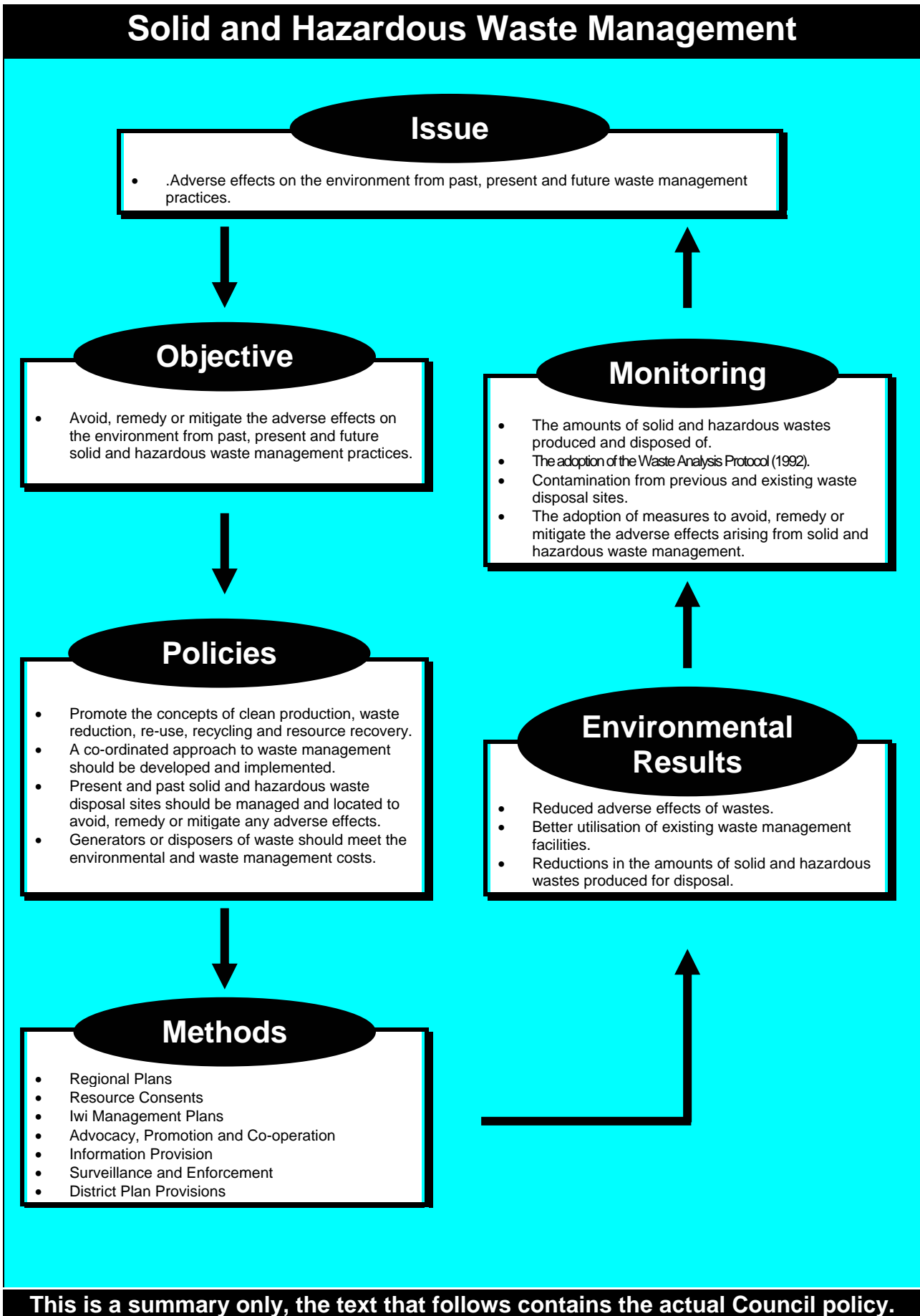
The implementation of the above policies and methods is expected to have the following environmental results:

- (1) Reduced actual and potential adverse effects on the environment from the storage, use, disposal and transportation of hazardous substances.
- (2) Better management practices adopted when hazardous substances are used.

17.5 Monitoring Effectiveness

For hazardous substances, the following indicators should be monitored to assess the suitability and effectiveness of this part of the Regional Policy Statement, and any need for it to be reviewed:

- (1) Incidents reported to the Regional Council relating to hazardous substances.
- (2) Trends in compliance with conditions on resource consents and on permitted activities.
- (3) Usage of hazardous substances in Canterbury.
- (4) The adoption of measures to reduce or mitigate the adverse effects arising from the storage, use, disposal and transportation of hazardous substances.





18. Solid and Hazardous Waste Management

18.1 Introduction

Waste products are a feature of modern economic life and Canterbury produces solid and hazardous wastes like every other community. All territorial local authorities in Canterbury operate landfills and provide either a rubbish collection service and/or waste transfer stations for large settlements. People and organisations also dispose of their own and other peoples wastes in various ways. Many waste disposal sites are located in culturally or environmentally sensitive areas such as in riverbeds, on the coastal foreshore and over unconfined aquifers. New Zealand is a high per capita producer of solid waste compared to the rest of the world, and action by the whole community will be required to reduce the waste stream in Canterbury.

The number of facilities and services available for waste recycling, re-use and resource recovery, and for the appropriate collection, storage, treatment and disposal of hazardous wastes throughout the region are limited.

Wastes are any materials, including waste containers and their contents (whether solid or liquid), which have been discarded or rejected as being spent, useless, worthless or in excess. They include waste materials from any industrial, commercial, institutional or trade source, and waste materials removed or collected for disposal from any residential or rural property. Solid wastes include liquid wastes only to the extent that they are present in containers. Waste disposal sites are sites where solid or hazardous waste is discharged into or onto land and include municipal and other community landfills, farm disposal sites and backfilling of quarries.

Hazardous wastes, including their containers or packaging, are wastes containing hazardous substances either singly or in combination with other material. Such wastes may be reactive, flammable, corrosive, toxic, pathogenic, carcinogenic, mutagenic, bioconcentrative, radioactive or persistent in nature.

Through its roles under the RM Act in controlling land use for certain purposes and controlling the discharge of contaminants, the Regional Council has the responsibility of ensuring that waste management facilities, such as landfills, include adequate provisions to avoid, remedy or mitigate adverse effects on the environment. Such adverse effects include effects on resources of significance to Tangata Whenua. Landfills in riverbeds or on the foreshore in particular can have significant effects on Tangata Whenua cultural values.

18.2 Issue Resolution

Issue 1

Adverse effects on the environment, including soil, air, and water pollution and effects on human health, and on ancestral lands, sites and other taonga of value to Tangata Whenua, may arise from past, present and future waste management practices and problems. These practices and problems include:

- (a) an unco-ordinated approach by waste management agencies.
- (b) old waste disposal and storage sites which continue to release contaminants.
- (c) a shortage of suitable new waste disposal sites and limitations on existing sites, and a lack of facilities to handle hazardous wastes in particular.
- (d) production of increasing amounts of solid and hazardous wastes requiring disposal.

Ch. 9 Water, Iss. 3

Ch. 10 Beds of Rivers, Iss. 1

Ch. 13 Air, Iss. 2

Ch. 17 Haz. Substances, Iss. 1

Objective 1

Ch.6 Tangata Whenua, Obj. 1

Ch. 9 Water, Obj. 3

Ch. 10 Beds of Rivers, Obj. 1

Ch. 13 Air, Obj. 2

Ch. 17 Haz. Substances, Obj. 1

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

Principal Reasons

Sustainable management of natural and physical resources requires that any adverse effects on the environment be avoided, remedied, or mitigated.

Policy 1

Ch. 17 Haz. Substances, Pol. 2

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

Explanation

One of the key ways of reducing the adverse effects of waste is to encourage the implementation of the internationally recognised hierarchy of reduction, re-use, recycling, resource recovery and residues management by all parties involved in the generation and management of waste in New Zealand.

The level of waste reduction which is practically possible will vary according to a number of factors including:

- Levels of waste reduction already achieved.
- The characteristics of waste streams.

- The matching of the supply of wastes with the demands for such wastes by others who are able to re-use them.
- The economic feasibility of separating waste materials and transporting them to recyclers or re-users.

Principal Reasons

Clean production is an effective means to reduce waste generation and the hazardous characteristics of wastes which are generated. Reducing the quantity of waste requiring disposal is an effective means for reducing the adverse environmental effects of waste disposal.

Methods

1. The methods used or to be used by the Regional Council are:
 - (a) Regional plans
 - (d) Advocacy, promotion and co-operation
 - (e) Information provision

Policy 2

Ch. 17 Haz. Substances, Pol. 2

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

Explanation

A co-ordinated approach involves co-operation across jurisdictional boundaries and between different agencies dealing with wastes. The Regional Council will pursue a joint approach with territorial authorities and adjacent regions and other agencies when establishing consistent practices. It may involve specialisation in dealing with particular wastes through disposal, recycling or re-use, in providing co-disposal facilities. It will also involve the common use of a waste analysis protocol.

The total quantity of waste generated within the region is comprised of a large number of distinct waste streams, for example: garden wastes, household hazardous wastes, agricultural chemical wastes. Waste streams will be identified with the implementation of the waste analysis protocol. Each of these waste streams can require different facilities to ensure proper disposal. It is important to ensure that appropriate waste management facilities are provided for each waste stream occurring in the region to ensure that no adverse environmental effects occur.

The waste analysis protocol provides a standardised methodology for acquiring quantitative and qualitative information about the waste stream. It has been developed by the Ministry for the Environment to provide a nationally consistent basis for quantifying waste streams. Detailed quantitative and qualitative information is necessary for a number of reasons including: waste management planning, identifying opportunities for waste reduction, setting realistic waste management objectives

(including targets for waste reduction), and measuring the performance of these objectives.

Principal Reasons

A co-ordinated approach to waste management is necessary because waste can have effects on the whole environment, including air, land, water, ecosystems and people. Such an approach can take advantage of economies of scale, can limit the need to duplicate facilities to deal with specialised wastes, can more readily facilitate co-disposal of hazardous wastes with other wastes, and can reduce the potential for development of inadequate localised solutions to waste problems.

Methods

1. The methods used or to be used by the Regional Council are:
 - (a) Regional plans
 - (d) Advocacy, promotion and co-operation
 - (e) Information provision

Policy 3

Solid and hazardous waste disposal sites, including sites which are no longer used for waste disposal, should be managed and located to avoid, remedy or mitigate any adverse effects on the environment.

Ch. 9 Water, Pol. 10, 12, 13
Ch. 11 Coastal Env., Pol. 1
Ch. 13 Air, Pol. 6
Ch. 17 Haz. Substances, Pol. 3,
4
Ch. 7 Soils, Pol. 8

Explanation

Solid and hazardous wastes have considerable potential to contaminate the environment including potential effects on people's health. In recognition of this potential, measures need to be taken to avoid, remedy or mitigate the adverse effects arising from the discharge of waste into the environment. This includes measures relating to the location of new landfills and the after-care of closed landfills. Landfills may be located in river beds or on the foreshore or may disturb ancestral sites and have particular adverse effects on Tangata Whenua.

Principal Reasons

There is an obligation to avoid, remedy or mitigate adverse effects in accordance with the purpose of the RM Act.

Methods

1. The methods used or to be used by the Regional Council are:
 - (a) Regional plans
 - (b) Resource consents
 - (c) Encourage the preparation of iwi management plans

- (d) Advocacy, promotion and co-operation
 - (e) Information provision
 - (f) Surveillance and enforcement
2. District/city councils in the preparation, variation, change or review of district plans, through the exercise of their functions, should consider:
- (a) district plan provisions that control the subdivision of land for the purpose of avoiding, remedying or mitigating any adverse effects arising from the location of waste disposal sites; and
 - (b) district plan provisions that control the effects of the use, development, or protection of land for the purpose of the prevention or mitigation of any adverse effects of the storage, use, disposal, or transportation of hazardous substances where particular district/city council responsibilities are stated for hazardous substances in Policy 1 of Chapter 17 of this Regional Policy Statement.

Policy 4

Those who generate or dispose of waste should meet the environmental and waste management costs of disposing of their waste as far as practicable and necessary to avoid adverse effects.

Explanation

Generators of waste as well as disposers of waste should ensure they take the costs of waste management and associated environmental costs into account.

Charges for waste management, for example rubbish collection and landfill charges, which are imposed by some territorial authorities do not represent the costs of that management. The costs of waste management are in some cases subsidised and are not a motivating factor for waste generators to minimise waste.

The costs of waste management include landfill operational costs, collection costs, environmental monitoring costs and the costs involved in establishing new disposal services and facilities to replace full landfills.

The environmental and waste management costs also include the value of the land itself as well as measures taken to avoid contamination of water and air. Many of these costs will be incurred by the holder of the consent to discharge wastes into or onto land and will then be passed on through disposal charges. However, some environmental costs may not take effect until years or decades after waste disposal has ceased.

Principal Reasons

Ensuring that the waste generators meet the cost for the management of their waste should act as a financial incentive to reduce the amount of waste produced.

Methods

1. The methods used or to be used by the Regional Council are:
 - (b) Resource consents
 - (d) Advocacy, promotion and co-operation
 - (e) Information provision

18.3 Methods

1. Regional Council

The methods used or to be used by the Regional Council are:

(a) Regional plans

Regional plans may make provision for any matter relating to the use, development, or protection of any natural or physical resources for which the Regional Council has responsibility under the RM Act, including the control of-

- (i) discharges of contaminants into or onto land, air, or water, and discharges of water into water
- (ii) use of land for the purpose of:
 - soil conservation
 - the maintenance and enhancement of the quality of water in water bodies and coastal water
 - the prevention or mitigation of any adverse effects of the storage, use, disposal, or transportation of hazardous substances.

Regional plans should include provisions to avoid or reduce the adverse effects on the environment of solid and hazardous wastes.

Plans should contain rules relating to disposal of wastes and waste management where wastes are discharged into air, or into or onto land, or where water quality may be affected.

Plan provisions should:

- (i) require all existing, new and closed landfills that have discharges that represent a threat to the environment to obtain the appropriate resource consents.
- (ii) require the preparation of site management plans for the operation and subsequent rehabilitation of all existing, new and some closed landfills.

- (iii) develop an integrated approach to resource consent conditions and site management plans.
- (iv) incorporate the Ministry for the Environment's 1992 Landfill Guidelines as necessary.
- (v) address the issue of sites contaminated with hazardous wastes and the controls necessary to prevent further contamination.
- (vi) promote the rationalisation of waste disposal facilities to treat, store, recycle, re-use and/or dispose of all wastes arising within the region.

In preparing the plans, information on contaminated sites will be collected and assessments made of the level of contamination and the options for both their rehabilitation and the measures needed to control any further contamination.

Principal Reasons

Rules for the control of land to prevent or mitigate adverse effects from the disposal of hazardous wastes need to be specified in a plan. They may also regulate discharges of wastes into air onto or into land or into water.

The problems of co-disposal of hazardous wastes and the opportunities to jointly solve the problems of shortages of suitable disposal sites point to a need for regional co-ordination.

(b) Resource consents

Resource consents will be required for discharges of solid or hazardous wastes into air, onto or into land or into water unless allowed by a regional plan.

Under the transitional provisions of the RM Act some landfills which would otherwise require resource consents do not have to obtain them before 1 October 1996 unless a rule in a plan states otherwise.

A financial contribution may be applied as a condition of a resource consent associated with waste disposal. It may be in the form of money or land. Such a contribution would be made for purposes specified in a plan in order to achieve waste management objectives. The amount of financial contribution and the basis for its determination would need to be specified in a regional plan and would depend on the degree of adverse effects and the extent to which other measures are taken to avoid, remedy or mitigate those effects.

Principal Reasons

Resource consents are needed to deal with disposal of solid and hazardous wastes.

(c) Encourage the preparation of iwi management plans

Iwi management plans are non-statutory documents that have been prepared by Tangata Whenua. The Regional Council, in preparing regional plans, must have regard to iwi management plans. By agreement with the Regional Council all or part of an iwi management plan, for example, dealing with wahi tapu or wahi taonga, may be incorporated into a regional plan. The development of the regional plan would be subject to the public consultation processes set out in the RM Act. The Regional Council, by agreement with Tangata Whenua, recognises that there is an opportunity for this to occur.

Iwi management plans can provide mechanisms for implementing aspects of policy, for example: the process for managing the discovery of koiwi tangata; how any powers transferred will be

discharged; and the joint management of sites and/or resources. They can also be a source of information that aids, but does not replace, consultation with Tangata Whenua during regional plan preparation or consideration of consents.

The Regional Council will encourage runanga to prepare iwi management plans and if requested, will provide advice to aid their formulation.

Principal Reasons

Reference to iwi management plans assist the understanding of Tangata Whenua perspectives, and provides an appropriate method to achieve certain environmental policies.

(d) Advocacy, promotion and co-operation

The Regional Council will:

- (i) liaise with central government and advocate the establishment of national strategies and/or facilities for the management of hazardous wastes where they cannot be managed satisfactorily at a local or regional level.
- (ii) encourage territorial authorities and industries to set waste reduction targets, and to promote, advise and where appropriate assist with the establishment of community based composting, recycling and other waste minimisation facilities.
- (iii) encourage the implementation of the waste analysis protocol in Canterbury.
- (iv) encourage territorial authorities to prepare strategies to deal with waste management within a district pursuant to section 539 of the Local Government Act 1974. A district strategy may be primarily concerned with providing waste collection and disposal services. It may also involve waste re-use, recycling, reduction, residues management and resource recovery. It may also involve preparation and dissemination of information on waste minimisation.
- (v) implement measures and encourage territorial authorities to implement measures within their own organisations which minimise the generation of waste.
- (vi) advocate charges or fees for waste management including landfill charges and rubbish collection fees which are based on the amount and type of waste involved. Differential charges can be designed to encourage sorting, re-use and recycling of waste materials or to encourage safe disposal of hazardous wastes.
- (vii) advocate deposits or refund systems to territorial authorities, industry and the government to assist re-using and recycling of waste. Applications include drink bottles, aluminium cans and scrap metal. These systems should be encouraged.
- (viii) encourage industry to accept unused chemicals and their containers for reprocessing or controlled disposal.

Principal Reasons

Methods involving setting a good example in waste minimisation practices have benefits both to the organisation which is setting the example and to the region as a whole. Waste minimisation measures are likely to result in increased efficiency and therefore be worthwhile in themselves.

Liaison and advocacy with Central Government is a simple and effective method for dealing with waste management issues which extend beyond a regional community of interest, for example, the service and facilities required for the storage, treatment and disposal of some hazardous wastes.

Some types of hazardous waste cannot be dealt with efficiently, effectively or in an environmentally suitable way at regional or district level. In such cases a national solution is preferable.

The parties directly involved in handling wastes are best placed to assess the potential for and set targets for waste reduction. The advantage of using the Waste Analysis Protocol is that it is a nationally consistent system that has already been developed.

Economic instruments can operate as an incentive for desirable practices and a disincentive for undesirable practices. Provision of collection or reception services and facilities can act as an incentive for materials re-use and recycling.

(e) Information provision

The Regional Council will:

- (i) co-ordinate and disseminate information on the treatment, storage, recycling, re-use, and disposal of hazardous wastes arising within the region.
- (ii) establish and service a regional waste liaison group comprised of representatives from the Canterbury Regional Council, all territorial local authorities and other agencies with waste management responsibilities in the region.
- (iii) prepare and disseminate a register of hazardous and other wastes which are available for re-use in Canterbury or outside the region.
- (iv) maintain a register of sites in Canterbury that are contaminated with hazardous substances and pose a threat to water quality or air quality, or are inconsistent with existing land uses.

Principal Reasons

Provision of information is simple to administer, often has long-term positive outcomes and helps meet many objectives. The acquisition of good information on the nature and characteristics of the waste stream and its management is essential for the achievement of integrated waste management.

A regional waste liaison group will ensure that waste management issues are integrated across the region. A liaison group is an effective way of maintaining communication throughout the region.

(f) Surveillance and enforcement

The Regional Council will enforce provisions in the RM Act, provisions in regional plans and conditions on resource consents that:

- (i) control discharges of solid and hazardous wastes; and
- (ii) control the use of land for the purpose of soil conservation, maintenance and enhancement of water quality, and to prevent or mitigate adverse effects from the storage, use, disposal or transportation of hazardous substances.

This will involve detection by the Regional Council of illegal discharges of solid or hazardous waste.

Principal Reasons

Surveillance and enforcement are a necessary part of ensuring compliance with legislation, consent conditions, and regional rules.

2. District plan provisions

District/city councils in the preparation, variation, change or review of district plans, through the exercise of their functions, should consider:

- (a) district plan provisions that control the subdivision of land for the purpose of avoiding, remedying or mitigating any adverse effects arising from the location of waste disposal sites; and
- (b) district plan provisions that control the effects of the use, development, or protection of land for the purpose of the prevention or mitigation of any adverse effects of the storage, use, disposal, or transportation of hazardous substances where particular district/city council responsibilities are stated for hazardous substances in Policy 1 of Chapter 17 of this Regional Policy Statement.

Principal Reasons

Control of the subdivision of land is a district council function. District/city councils also have responsibilities stated in this Regional Policy Statement for developing objectives, policies and rules relating to the control of the use of land for the prevention or mitigation of any adverse effects of the storage, use, disposal or transportation of hazardous substances.

18.4 Environmental Results Anticipated

The implementation of the above policies and methods is expected to have the following environmental results:

- (1) Reduced adverse effects of solid and hazardous wastes on the environment.
- (2) Better utilisation of existing solid and hazardous waste management facilities.
- (3) Reductions in the amounts of solid and hazardous wastes produced and requiring disposal.

18.5 Monitoring Effectiveness

For solid and hazardous waste management, the following indicators should be monitored to assess the suitability and effectiveness of this part of the Regional Policy Statement, and any need for it to be reviewed.

- (1) The amounts of various types of solid and hazardous wastes produced and disposed of in Canterbury.
- (2) The adoption of the Ministry for the Environment's 1992 Waste Analysis Protocol.
- (3) Contamination from previous and existing waste disposal sites.
- (4) The adoption of measures to avoid, remedy or mitigate the adverse effects arising from solid and hazardous waste management.

19. Summary of Environmental Results

Introduction

The following is an aggregation of the environmental results anticipated as set out in Chapters 6 to 18. Its purpose is to provide an overview of environmental outcomes which should result from the implementation of the policies and methods in each chapter.

Chapter 7 Soils And Land Use

- (1) Maintenance and improvement of soil quality.
- (2) A reduction in the vulnerability of soils to induced erosion.
- (3) Reduced adverse effects from land contamination.
- (4) Reduction in adverse effects from land management burning.
- (5) More sustainable land uses and practices.
- (6) Control of plant and animal pests.
- (7) Protection of significant wahi tapu and wahi taonga, landscapes, and indigenous flora and fauna.

Chapter 8 Landscape, Ecology and Heritage

- (1) Protection or enhancement of distinctive characteristics of the Canterbury region, including:
 - (a) natural values within wetland areas identified in Policy 1(a).
 - (b) landscape values within areas identified in Objective 2.
 - (c) biological values within areas identified in Objective 3.
 - (d) heritage values within historic places or areas identified in Objective 4.
 - (e) wahi tapu and other taonga of value to Tangata Whenua within any of the above areas.
- (2) Protection of the quantity and quality of water within existing wetlands.
- (3) Greater use of artificial wetlands as means of water treatment or as natural habitats.

Chapter 9 Water

- (1) Adequate and safe sources of drinking water supplies for Canterbury people.
- (2) Protection of the life-supporting capacity of water resources, including the health and diversity of their ecosystems.
- (3) Protection of areas of mahinga kai and water values of cultural significance to Tangata Whenua.
- (4) Efficient use, and better availability, of abstracted water.
- (5) Greater benefits from the use, development and protection of Canterbury's water bodies.
- (6) Maintenance of water quality and quantity to the standards and flow and level regimes set for water bodies and coastal water.
- (7) Maintenance of the health, integrity and value of groundwater aquifers, including water quality, spring flows and associated wetlands and ecosystems.
- (8) A progressive improvement in the quality of degraded water bodies.

Chapter 10 Beds of Rivers and Lakes and their Margins

- (1) Enhancement of natural character, habitats of indigenous flora and fauna, habitats of trout and salmon, and ecological health of aquatic ecosystems.
- (2) No increase in flood hazard due to land use in river beds and margins.
- (3) The stability and performance of essential structures not compromised by other uses.
- (4) Improved public access to and along rivers and lakes and reduced conflicts with land owners or occupiers.
- (5) Heritage sites protected.
- (6) Mahinga kai areas better protected and able to be cared for and managed by Tangata Whenua.
- (7) Reduced frequency of floodwaters being diverted onto occupied land.
- (8) Protection of Tangata Whenua cultural values.

Chapter 11 The Coastal Environment

- (1) Protection of regionally significant natural landscapes/seascapes of Kaikoura, North Canterbury coastal landforms, Banks Peninsula and Kaitorete Spit-Lake Ellesmere (Waihora).
- (2) Recognition, protection and enhancement of the life-supporting capacity of coastal ecosystems, including mahinga kai.
- (3) Preservation of natural character and protection of heritage and amenity values.
- (4) Reduced adverse effects on the environment from commercial development (e.g. port operations at Lyttelton and Timaru).

- (5) Reduction of noise nuisance in the coastal area.
- (6) Reduction of use conflicts in the coastal environment.
- (7) Improved public access where this is desirable.
- (8) Controlled public access where this is required.
- (9) Protection of areas of special cultural significance to Tangata Whenua.
- (10) Increased ability for Tangata Whenua to exercise kaitiakitanga.
- (11) Improved water quality where this is necessary.
- (12) Reduced potential for damage from natural occurrences such as sea-water inundation.

Chapter 12 Settlement and the Built Environment

- (1) Sustainable management of urban and rural communities.
- (2) Adverse effects of urban development and the physical expansion of settlements on natural and physical resources and the environment minimised.
- (3) Reduction in the use of non-renewable energy sources.
- (4) Improvements in the efficiency in the use of all resources (particularly energy) including infrastructure and network utilities.
- (5) Protection of mahinga kai, wahi tapu and wahi taonga adjacent to urban areas.
- (6) Ability for Tangata Whenua to develop and maintain papakainga settlements and marae.

Chapter 13 Air

- (1) Reduced effects of emissions on human health and the environment.
- (2) Discharges into air which meet conditions and standards and terms for consents and permitted activities, and enable ambient air quality standards to be met.
- (3) Ambient air quality that meets air quality standards set by the Regional Council.
- (4) Reduced emissions of greenhouse gases and ozone depleting substances.

Chapter 14 Energy

- (1) More efficient use of energy.
- (2) Provision of energy for the region's and nation's current and future needs from the most efficient and sustainable sources.
- (3) Reduction in the adverse effects of energy production and use, (including the effects on water resources, reduced carbon dioxide emissions and reduced air pollution).
- (4) Substitution of fossil fuels with more sustainable energy sources.

Chapter 15 Transport

- (1) A reduction in the adverse effects from the use and provision of transport services and infrastructure including:
 - (a) reduced use of non-renewable energy sources.
 - (b) improvements in the efficiency of all energy usage.
 - (c) reduced air pollution.
 - (d) increased road safety.
 - (e) reduced carbon dioxide emissions.
- (2) A transport system which is able to efficiently and effectively meet community needs.

Chapter 16 Natural Hazards

- (1) Potential costs (including loss of life) due to natural hazards reduced to the point where any further reduction would have no net benefit.
- (2) Damage to the environment, or to important habitats or amenity values, heritage places, mahinga kai areas, and other taonga, is limited to the minimum practical level.
- (3) Improved relationship between Tangata Whenua and natural hazard management.

Chapter 17 Hazardous Substances

- (1) Reduced actual and potential adverse effects on the environment from the storage, use, disposal and transportation of hazardous substances.
- (2) Better management practices adopted when hazardous substances are used.

Chapter 18 Solid and Hazardous Waste Management

- (1) Reduced adverse effects of solid and hazardous wastes on the environment.
- (2) Better utilisation of existing solid and hazardous waste management facilities.
- (3) Reductions in the amounts of solid and hazardous wastes produced and requiring disposal.