Hazards mitigation

This goal addresses two quite different hazards that are both in their own ways human creations. Natural hazards arise through the impact of natural occurrences on human life and property and the other comes about through involvement with hazardous substances. In terms of hazardous substances, the danger comes from the risk of damage or death to living systems caused by explosive, noxious or toxic substances. Natural occurrences may cause physical damage or danger through events such as storms, flooding and erosion thus becoming natural hazards. The need to manage and plan for natural hazards has always been a significant issue in New Zealand. The aim is to minimise the risks from natural hazards and hazardous substances to levels acceptable to the community.

The key issues for the District in relation to hazards mitigation are:

(a) Human life, property or other aspects of the environment may be at risk from certain natural occurrences within the District, such as coastal erosion and land subsidence.

(b) Without adequate mechanisms in place, there are considerable risks to human communities and to the environment from the manufacture, use, transport, and disposal of hazardous substances.

Issue 14 – Natural hazards

Particular issues of the District relating to natural hazards are:

(a) There are a range of natural occurrences which impact, or have the potential to impact, on the Hurunui District, including drought, wind, tsunami, snowstorms, flooding, slope failure, coastal erosion and inundation by the sea, and earthquakes.

(b) Specific local issues which need addressing include:

- Active faulting within the Cheviot and Hanmer Basins
- Slope hazard around Hanmer Springs
- Beach erosion at Amberley Beach, Leithfield Beach and Gore Bay
- Cliff erosion at Motunau
- Surface water ponding in the coastal regions south of the Waipara River
- Potential inefficiencies in providing emergency relief due to inadequate transport and communications facilities

(c) Limited information exists about some natural hazards which do or could affect the District, including the degree of risk associated with those hazards. This may mean that measures to avoid, remedy or mitigate hazards are not adequate.

(d) People are not always aware of the risks of natural hazards, or of ways of improving personal or community safety.
One of the primary functions of territorial authorities under section 31(b) of the Act is:

“The control of any actual or potential effects of the use, development or protection of land, including for the purpose of the avoidance or mitigation of natural hazards...”

The Act defines “natural hazard” as:

“Any atmospheric or earth or water related occurrence (including earthquake, tsunami, erosion, volcanic and geothermal activity, landslip, subsidence, sedimentation, wind, drought, fire, or flooding) the action of which adversely affects or may adversely affect human life, property, or other aspects of the environment”.

Thus, the Council has responsibility for protecting all aspects of the environment, not just people and property, from the adverse effects of natural hazards. Amenity values of an area and its ecological systems must also be protected against natural hazards. It is not always feasible or practicable to mitigate all potential effects of natural hazards at all times for all aspects of the environment. Some priority must be placed on human life and property, but preferably this can be achieved in conjunction with achieving other goals. The goal in managing the effects of natural hazards within the District, therefore, is the avoidance or mitigation of the adverse effects of natural hazards on the environment as appropriate to the circumstances, with priority on community protection.

Although the District is vulnerable to a variety of natural hazards, the principal hazards which this Plan addresses are flooding, geological hazards, coastal hazards and seismic events.

**Objective 14**

*The avoidance or mitigation of the adverse effects of natural hazards on the environment, with priority on community protection.*

**Policies**

**Policy 14.1**

*To promote an integrated management approach to avoid or mitigate any risks created by the adverse effects of natural hazards.*

**Methods**

Policy 14.1 shall be implemented through:

- Co-ordination and liaison with Environment Canterbury
- Information gathering and assessments of natural hazards within the District
- Support community initiatives to avoid or mitigate any risks to human life or property from natural occurrences
- Co-ordination and liaison with relevant interest groups for example Federated Farmers for snow and drought
- Co-ordination and consultation with neighbouring territorial authorities for cross-boundary issues
Explanation
The District Council shares the responsibility for protection against natural hazards with Environment Canterbury. It is therefore important that the two authorities liaise to establish an integrated approach to natural hazard management. This includes working together to determine where the risks from natural hazards are, and the most appropriate means of effectively addressing the avoidance and mitigation of those hazards. For example, Coastal Hazard Lines 1 & 2 established by the Canterbury Regional Council as part of the preparation of a Regional Coastal Environment Plan pursuant to section 64 Resource Management Act 1991 have been incorporated into the District Plan in order to integrate the management of coastal hazards. The Regional Council Coastal Hazard Lines cover land which is at risk from coastal erosion within the next 50 (Line 1) and 100 (Line 2) years. The Coastal Hazard Line detailed on the District Plan maps shows the most landward of these two lines.

The Regional Council has a strategy for hazard management, to be implemented through its Natural Resources Regional Plan and Coastal Environment Regional Plan. This strategy provides a basis for a programme of public education of risk avoidance and, in particular, the way land use relates to natural hazards. The provisions of the District Plan are intended to complement and reinforce this strategy. To achieve this, while avoiding the need for duplicate consent processes, the provisions in the Regional Coastal Environment Plan will be used to avoid or mitigate coastal erosion by controlling the actual or potential effects of the use and development of land. As such the District Plan does not contain rules relating to the management of coastal hazards on the seaward side of the Coastal Hazard Line (refer to Rule A9.1).

Policy 14.2
To maintain a database on the susceptibility of certain areas within the District to damage from natural occurrences including a system for assessing risks to existing and future development.

Methods
Policy 14.2 shall be implemented through:

– Investigation and research into technological and physical changes to the environment

– Coordination and liaison with Environment Canterbury

– On-going development of a database on the Council’s GIS

Explanation
In order that an effective management policy can be developed and implemented for natural hazards mitigation, it is important that a comprehensive database on natural hazards is available. Much work has already been done on this within the District. It will be important to build on this information to reflect changes in both technology and the physical and technological environment. This database should be developed in conjunction with the Regional Council.

Policy 14.3
To ensure that new subdivision and development takes into account any risks from natural hazards.
Methods
Policy 14.3 shall be implemented through:

– District Plan rules, including environmental standards relating to natural hazards, subdivision and land use (refer to Rules A3.3(m), A3.5(b), A4.3.2(b)–(c), Section A9 – Natural Hazards, in particular Rules A9.2 and A4.2.2(f), C1.2.4(h) and C1.2.5(b), (c) and (e))

– Resource consent processes

– Liaison with Environment Canterbury

– Regional Coastal Environment Plan provisions, including rules, to manage coastal hazards on the seaward side of the Coastal Hazard Line (refer to Rule A9.1)

Explanation
A significant factor in the avoidance or mitigation of natural hazards is the degree to which subdivision is allowed to occur in areas which may be susceptible to natural hazards. The consequences of permitting more intensive subdivision (and subsequent development and infrastructure) could be substantial. Thus, standards, along with the subdivision consent process, are necessary to prevent such subdivision and development occurring within high risk areas.

Policy 14.4
To establish special standards for land use activities proposing to locate in areas of high potential risk.

Policy 14.5
To promote risk reduction measures where existing activities are located in areas of high existing or potential risk.

Methods
Policies 14.4 and 14.5 are to be implemented through:

– District Plan rules, including environmental standards relating to natural hazards (refer to Rules A3.3(m), A3.5(b), A9 – Natural Hazards, particularly Rules A9.2, C1.2.4(h) and C1.2.5(b), (c) and (e))

– The provision of information and advice, including any technical and professional recommendations

Explanation
Risk assessment is an important aspect of natural hazards management. It concerns identifying the probability of an outcome and estimating the magnitude (the severity and likely impact) of the event. As there is always some uncertainty in assessing such risk, District Plan rules will apply conservative controls where the estimated magnitude of an event would be great. By taking this approach, Council has the ability to control or decline consent to activities where they are inconsistent with the objective of avoiding or mitigating natural hazards in the District. For existing activities, Council will encourage risk reduction measures so that any adverse effects from natural hazards can be minimised. Areas of existing or potential high risk are identified in the Schedule of Natural Hazard Areas in Appendix A9.

Planning Map H of Hanmer Springs identifies a flood hazard area adjacent to the Chatterton River. Environment Canterbury has completed flood hazard modeling that identifies the risk of inundation of the site described as Pt Lot 216 Set 76 Hanmer Township. The modeling shows that development
on this site can occur (subject to compliance with subdivision and other relevant resource management requirements) upon completion of flood protection works providing a 0.2% AEP protection to the subject site. Upon satisfactory completion of flood protection work to the standard specified above, the Hurunui District Council will initiate a plan change to amend the flood hazard line on Planning Map H to recognise the mitigation measures undertaken to protect the subject site.

**Policy 14.6**

To encourage people to be prepared for the occurrence of hazardous events.

**Methods**

Policy 14.6 shall be implemented through:

- The provision of information and advice to the District’s residents and agencies (including emergency services groups) operating in the District on natural hazards in the Hurunui District

- Co-ordination with civil defence to ensure a high level of personal preparedness to deal with natural hazards, including the development of an adverse events plan

**Explanation**

An essential part of avoiding or mitigating the adverse effects from natural hazards is to have an informed and prepared community. While it will be important to ensure that mitigation measures are in place in the event of an emergency, the emphasis in the management of natural hazards is to encourage people to avoid situations in which they, or their property, could be in danger.

**Anticipated environmental results**

The implementation of these policies is anticipated to have the following environmental results:

- The mitigation of adverse environmental effects of natural hazards on communities, including mitigation measures in place in areas identified as being of high risk

- Prevention of development increasing the levels of risks in areas identified as being of high risk

- Communities informed about, and prepared for, the occurrence of natural hazards

**Monitoring and review procedures**

<table>
<thead>
<tr>
<th>Matter to monitor</th>
<th>Information to be gathered</th>
<th>Information source</th>
<th>Review period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Hazard Areas</td>
<td>Development in identified Natural Hazard Areas</td>
<td>Council resource consent records (GIS)</td>
<td>Annual</td>
</tr>
<tr>
<td></td>
<td>Changes to Natural Hazard Areas:</td>
<td>Council and Environment Canterbury records</td>
<td>Annual</td>
</tr>
<tr>
<td></td>
<td>– additions and deletions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>– enlargements / reductions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consultation</td>
<td>Issues of common concern</td>
<td>Environment Canterbury</td>
<td>Annual or as initiated</td>
</tr>
<tr>
<td>Matter to monitor</td>
<td>Information to be gathered</td>
<td>Information source</td>
<td>Review period</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>-------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Effectiveness of conditions of consents and methods used in controlling adverse</td>
<td>Complaints and enforcement proceedings</td>
<td>Council complaints register</td>
<td>Annual</td>
</tr>
<tr>
<td>effects</td>
<td>Compliance with conditions</td>
<td>Council resource consent records/field work</td>
<td>Annual</td>
</tr>
<tr>
<td></td>
<td>Success of methods used for the management of</td>
<td>Various</td>
<td>Annual</td>
</tr>
<tr>
<td></td>
<td>hazards, including rules</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Community/Environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Canterbury/Council mitigation initiatives</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number and value</td>
<td>Council records – Engineering Services</td>
<td>Annual</td>
</tr>
</tbody>
</table>

**Issue 15 – Hazardous substances**

Particular issues of the District relating to hazardous substances are:

(a) Hazardous substances and activities can have potentially significant and long-lasting effects which can degrade or destroy water quality or contaminate mahinga kai, soil resources, and other natural and physical resources within the District.

(b) Control over hazardous activities and substances are shared amongst a number of agencies which means that close coordination is necessary to ensure there is no duplication or conflict. This includes coordination with adjacent authorities.

(c) There is a need for flexibility in any management approach taken to hazardous activities and substances so that District-level management is consistent with national and regional management.

(d) The increase in utilities and other activities that emit electromagnetic radiation is an issue for the District.

Hazardous substances have not been an issue of real significance to the District in the past, partly due to a lack of knowledge; for example, the emergence of PCP as a contaminant has only recently been highlighted and does affect some sites within the District. Under the Act, local authorities shall manage the use of hazardous substances, or the emission of radiation, where any actual or potential effects on the environment are likely to occur.

Any activity which involves any hazardous substance or hazardous energy has the potential to cause a significant adverse effect on the environment or the community. The policies of the District Plan seek to minimise the risk of adverse effects to the environment resulting from the extraction, manufacture, storage, use, disposal and transportation of hazardous substances, and the emission of radiation.

The Resource Management Act requires Environment Canterbury to define the appropriate role for the District Council in developing objectives, policies and rules relating to control of the use of land to deal with adverse effects of hazardous substances through the regional policy statement. The regional policy statement reserves the role of dealing with adverse effects on water quality of the storage, use, disposal or transportation through a pipeline of certain specified substances to the Regional Council itself. It also reserves for itself the role of developing objectives, policies and rules in relation to the use of hazardous substances in the coastal marine area.
The Hurunui District is not a large producer of hazardous substances. However, the potential for problems associated with hazardous substances are greatly disproportionate to their volumes. The main categories of hazardous substances are agricultural substances, timber treatment wastes, commercial and household wastes, and underground petrol tanks. Radioactive materials are excluded as they are licensed and controlled by the national radiation laboratory, Ministry of Health.

Many substances which are used frequently but in minor quantities (for household use for example) could be considered hazardous in larger quantities, such as ammonia. The use of such substances in minor quantities does not create a significant adverse effect on the environment, and the Plan should not seek to control their use.

Rigorous control, however, is required for the use, storage, disposal or transportation of substances in quantities greater than certain threshold limits because of the high public health and environmental risks involved. Therefore, every proposed activity involving hazardous substances above a threshold quantity must first apply for discretionary activity resource consent and strict criteria must be met before consent may be given.

In addition, there are a number of contaminated or potentially contaminated sites within the District, on which hazardous substances have been used, stored or produced, the residues of which may have contaminated the soils or other resources on the site to such a level as to be unsafe for human occupancy or use. The District Plan needs to address such issues. In regard to the contamination of land resources, reference should also be made to the policy framework under Issue 1.

Objective 15
Minimised risk of damage to people, communities and environment from hazardous activities and the use of hazardous substances.

Policies

Policy 15.1
To coordinate with national and regional organisations in the management of hazardous substances at the District level.

Policy 15.2
To recognise that hazardous activities and the use of hazardous substances is a cross-boundary issue.

Methods
Policies 15.1 and 15.2 are to be implemented through:

- Consultation with Environment Canterbury and other appropriate organisations
- Regular liaison with adjacent territorial authorities

Explanation
Local, regional and central government all have responsibilities for hazardous substances under the Act. To avoid duplication of effort between these organisations, it is necessary to specify their respective roles. However, the regulatory system concerning the whole issue of the management of hazardous substances and new organisms is under reform. Therefore, policies at District level will
have to be transitional in nature, until the new system for hazardous substances becomes established. In the transitional phase, there will be a need to maintain close liaison between the various responsible agencies in the region and adjoining territorial authorities, and to recognise existing legislation.

**Policy 15.3**

To gather information, monitor effects and keep records to identify and assess the relative risks to the environment from hazardous substances which will enable informed policy to be made.

**Methods**

Policy 15.3 shall be implemented through:

- Council investigation and identification of possible contaminated sites within the District
- Resource consent processes
- Council’s waste management strategy
- Council gathering information, monitoring hazardous substances manufacture, use, storage and disposal

**Explanation**

An assessment of the relative risks posed by the use of hazardous substances should be undertaken, so that standards can be set and appropriate efforts can be made to minimise the potential effects from those activities that present the highest risk. Risk can be reduced through effective management of storage, transport and use of hazardous substances, and by separating incompatible activities. The resource consent process can also be used to identify and assess the potential risks from hazardous substances. In addition, the Council’s waste management strategy should identify the risks entailed from the disposal of hazardous wastes in the District.

**Policy 15.4**

To control the potential adverse effects of the use of land for the storage, use, disposal or transportation of hazardous substances.

**Methods**

Policy 15.4 shall be implemented through:

- Investigation into collection systems for unused hazardous substances within two years of this Plan becoming operative
- Promoting codes of practice, guidelines, site management and contingency plans
- Co-ordinating with agencies with responsibilities in managing hazardous substances
- Use of the District Council’s powers and functions under other legislation regarding hazardous substances management including the Health Act 1956 and the Building Act 1991
- Council initiatives to finding alternatives to products containing hazardous substances used in the carrying out of Council functions, such as in maintaining gardens and reserves
- Education and advice for users of hazardous substances
– Provision for land owners to specify to Council that herbicides used on frontages to their properties are non-toxic to animal life

– Negotiation with and advice for persons whose land is adversely affected by hazardous substances

– Financial disincentives and incentives

– District Plan rules including environmental standards relating to the effects of hazardous substances (refer to the rules in Section A10 and Rules A10.2, and Procedure’s C1.2.4(i))

– Resource consent process

– Council’s waste management strategy

– Development, maintenance and implementation of a register of contaminated sites, in conjunction with Environment Canterbury’s Management Strategy for contaminated sites

**Explanation**

The three main methods of managing hazardous substances at present are the promotion of voluntary methods of good practice, the co-ordination with agencies with responsibilities in hazardous substances management, and the use of the Council’s own powers for hazardous substances management. In addition, education and advice to users of hazardous substances will be provided to supplement these methods.

Sites contaminated with hazardous substances that may adversely affect human health or the integrity of ecosystems will also need to be addressed, primarily by providing advice and assistance to affected landowners as needed. In particular, activities involving hazardous substances which could threaten ecosystems associated with water bodies will be encouraged to locate away from those water bodies. Alternatively, the use of products which do not contain hazardous substances will be encouraged, and, where possible, implemented by Council in undertaking its own functions.

Standards are incorporated in the Management Code to provide minimum levels of acceptable environmental risk. During the evaluation of resource consent applications, consideration should be given to identifying the risks from hazardous substances in order to avoid, remedy or mitigate such risks. The maintenance of a register of contaminated sites with information from it being passed to the public via Property Information Memoranda and Land Information Memoranda is part of an effective, equitable and flexible approach to managing contaminated sites.

**Policy 15.5**

To minimise the effects of radiation by requiring sources of radiation to comply with appropriate standards of environmental protection.

**Methods**

Policy 15.5 shall be implemented through:

– District Plan rules to require activities to meet recognised standards (refer to Rules A10.2.4, A10.2.5, A10.4(b))

**Explanation**

In sufficient quantity, radiation has the potential to create adverse effects on living systems. There are two main types of radiation: ionising radiation (such as that associated with nuclear power) and non-ionising (electromagnetic) radiation, which includes the energy emitted from communication transmitters. Other legislation and a number of New Zealand standards control and guide the
various types of radiation emissions. The policy of this Plan is to permit activities which emit radiation, provided they can demonstrate compliance with the appropriate legislation or standards. The onus is therefore on the proponents of new facilities which emit radiation to demonstrate such compliance.

**Anticipated environmental results**

The implementation of these policies and methods is anticipated to have the following environmental results:

- Avoidance of environmental damage from hazardous substances and radiation
- An increase in public awareness about the need to avoid using substances which may have an adverse effect on the environment
- The safe storage and disposal of hazardous substances within Hurunui District
- Adequate responsiveness to emergencies and to the environmental restoration of contaminated sites

**Monitoring and review procedures**

<table>
<thead>
<tr>
<th>Matter to monitor</th>
<th>Information to be gathered</th>
<th>Information source</th>
<th>Review period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous substance use</td>
<td>Available research and data</td>
<td>Environment Canterbury</td>
<td>Annual</td>
</tr>
<tr>
<td>Contaminated sites</td>
<td>Additions and deletions</td>
<td>Environment Canterbury</td>
<td>Annual</td>
</tr>
<tr>
<td></td>
<td>Remedied sites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource consents</td>
<td>Type</td>
<td>Council resource consent</td>
<td>Annual</td>
</tr>
<tr>
<td></td>
<td></td>
<td>records</td>
<td></td>
</tr>
<tr>
<td>Consultation</td>
<td>Compliance with conditions</td>
<td>Environment Canterbury</td>
<td>Annual or as</td>
</tr>
<tr>
<td></td>
<td>Issues of common interest</td>
<td></td>
<td>initiated</td>
</tr>
</tbody>
</table>