17 Hazards, Hazardous Substances and Earthworks

[Amended by Plan Change 11, 11/10/10]

Introduction

The City is subject to a wide range of potential hazards. Its topography (flood plains, steep to rolling hills), geology (clay and loess soils, mudstone formations and volcanic deposits), low lying coastal areas and its proximity to earthquake fault lines, present the City with a likelihood of the occurrence of natural hazards. Technological or 'human induced' hazards such as uncontrolled tussock fires, the failure of structures such as bridges and buildings, and the slumping of abandoned mine shafts are further hazards which could affect the City.

The Abbotsford slip in 1979 increased community awareness of potential land instability in the Green Island/Saddle Hill area. Heavy rainfalls have emphasised the vulnerability of the Taieri Plain and the lower Waikouaiti River to flooding, and of the Otago Peninsula to landslips and soil erosion.

Predicted rises in sea level may affect low-lying coastal areas. These include land developed for residential, industrial and recreational activities. The effects of sea level rise are not expected to be felt during the term of this District Plan. However, it is important to ensure that today's planning decisions allow for the predicted effects of sea level rise in order that life and property are not placed at risk. Council acknowledges that due to the level of development, land lying within the South Dunedin area enclosed by Victoria Road, the extended John Wilson Ocean Drive, Tainui Road, Ravelston Street, Royal Crescent, Portobello Road, Portsmouth Drive, Strathallan Street, Wilkie Road, South Road and Forbury Road will require mitigation works if the sea level rises. Such works are to be undertaken by the Council.

The impact of hazards increases as the number of people increases who are affected by the hazard, or the risk of hazard giving rise to an adverse event. The effects can be localised or widespread.

Hazardous substances and their storage, use, disposal or transport are potential threats to the health and safety of the City's people and to the environment. Such substances include industrial, agricultural, horticultural and household chemicals, medical wastes, petroleum products including LPG and lubricating oils, and radioactive substances.

The Council's role in hazards and hazardous substances management under the Resource Management Act 1991 is defined in section 31(b):

> *The control of any actual or potential effects of the use, development, or protection of land, including for the purpose of-*
> *(i) the avoidance or mitigation of natural hazards; and*
> *(ii) the prevention or mitigation of any adverse effects of the storage, use, disposal, or transportation of hazardous substances...*

In accordance with sections 35(3) and 35(5)(j) of the Act, the Council is also required to keep reasonably available at its principal office, records of natural hazards and hazardous substances to enable the public to be better informed of their duties and of the functions, powers and duties of the local authority, and to enable them to participate effectively under the Act. *[Amended by Proposed Plan Change 13]*

The Regional Policy Statement for Otago outlines the responsibilities of the Dunedin City Council with regard to natural hazards and hazardous substances in accordance with section 62(1)(i) of the Act.

To address the matters above, the Council will use the measures in the District Plan and other relevant legislation, such as the Building Act 2004 ~~1991~~, the Civil Defence Emergency Management Act 2002 ~~1983~~, the Hazardous Substances and New Organisms Act 1996 and the Land Transport Act 1998 ~~1962~~. The Council also acknowledges that there are other non-statutory mechanisms that can be used to complement the legislative requirements. Examples of these include management and emergency response plans, New Zealand Gazette Notice 26 March 2004- Issue No. 35 et al, ERMA Approved Codes of Practice (HSNOCoP), and ~~codes of practice~~, New Zealand Standards. ~~and the Hazardous Facility Screening Procedure.~~ To illustrate how the use of other legislation and non-statutory mechanisms outside the District Plan are ~~is~~ particularly relevant, it is noted that the Council has limited ability to control the effects of the transportation of hazardous substances through the District Plan. While it is useful for the objectives and policies to refer to such effects so that the matter can be at least considered when assessing resource consent applications where the Council has unlimited discretion, the methods of implementation relating to transportation can only rely on other legislative provisions and non-statutory mechanisms. *[Amended by Proposed Plan Change 13]*

This section of the Plan also contains provisions to control earthworks. Earthworks are an essential part of the development of Dunedin's land and economy including the provision of infrastructure. Well-managed earthworks do not give rise to significant adverse environmental effects. However, without careful management, earthworks can result in injury to people and damage to property, exacerbate certain existing hazards, create new hazards, and, if carried out at contaminated sites, release hazardous substances into the environment. Earthworks can also result in adverse effects on rivers, lakes, streams, wetlands, coastal waters and groundwater, visual amenity and landscape, indigenous flora and fauna, high class agricultural soils, and archaeological and cultural sites. In addition, during construction, earthworks can cause adverse effects on local amenity and on locally, regionally and nationally important infrastructure, such as the transportation network, the reticulated water, foul sewer and stormwater networks and the National Grid.

The earthworks provisions in this section of the District Plan work alongside other mechanisms that control earthworks. The Rural and Indigenous Vegetation and Fauna sections of this Plan control the effects of earthworks and other activities on high class soils, Areas of Significant Conservation Value and other areas of coastal habitat, wetland, skink habitat and indigenous vegetation. Certain earthworks will be carried out as part of building work; these will be subject to the New Zealand Building Code and may require a building consent under the Building Act 2004. Other regulatory mechanisms through which earthworks of certain types are controlled include the Historic Places Act 1993, the Regional Plan: Waste for Otago, the Regional Plan: Water for Otago and the Otago Regional Council Flood Protection Management Bylaw 2008. *Amended by Plan Change 11, 11/10/10]*

17.1 Significant Resource Management Issues

Issue 17.1.1

The City's geology and topography are such that natural hazards may occur.

Objective: 17.2.1

Policies: 17.3.1 - 17.3.6

Explanation

Hazard susceptibility varies across the City. The effects of hazards vary depending on where they occur, how many people could be affected and on the type of hazard. The significant natural hazards affecting or likely to affect the City are flooding, coastal erosion, sea level rise, land instability, wind, snow, earthquakes and fire hazards. Of these, flooding is the most commonly occurring natural hazard in the City, especially on the Taieri Plains and low-lying areas near the Waikouaiti River.

It is necessary to ensure that predicted rises in sea level are considered when deciding on further development in areas that may be at risk of inundation.

Issue 17.1.2

There is potential for technological hazards to occur within the City.

Objective: 17.2.1

Policies: 17.3.4, 17.3.7

Explanation

Human activities, for example gas and fuel storage, and abandoned mine shafts, disused sheep dips and toxic and hazardous substance waste storage can create hazards. Awareness of these hazards and their potential location is important in avoiding, remedying or mitigating any adverse effects on subdivision, land use activities, development and the environment. *[Amended by Proposed Plan Change 13]*

Issue 17.1.3

Development has occurred in or adjacent to areas where natural and technological hazards exist or may occur.

Objective: 17.2.1

Policies: 17.3.2 - 17.3.6

Explanation

In the past, development in the City located where it was thought to be appropriate at the time. In some of these areas hazards have occurred which were unexpected or the causes of which were unknown. Such hazards may also occur in the future.

Issue 17.1.4

The characteristics, location and impact of natural and technological hazards require better knowledge and understanding.

Objective: 17.2.1

Policy: 17.3.1

Explanation

Natural and technological hazards may occur without warning or may develop over a period of time. Studies of historical records of climate and events such as flooding, coastal processes, drought, heavy snowfalls, fire, earth movements and earthquakes, as well as knowledge of geology and soil types, and the location of fault lines, are factors in gaining a better understanding of the likelihood of a hazard event occurring and the best means to avoid, remedy or mitigate its effect.

Issue 17.1.5

Effective management needs to be implemented to avoid, remedy or mitigate the effects of hazards.

Objective: 17.2.1

Policies: 17.3.2 - 17.3.8

Explanation

Managing activities to avoid, remedy or mitigate hazards will minimise the costs of clean up and rehabilitation after an event as well as reducing adverse effects on the health and safety of the community.

Issue 17.1.6

The storage, use, transportation and disposal of hazardous substances have the potential for adverse effects on the environment.

Objective: 17.2.2

Policy: 17.3.8

Explanation

Any activities that involve hazardous substances carry a degree of health and other risk to individuals or of damage to the environment. There is also a risk to the economic wellbeing of the City's people and long term commercial viability of the City and its businesses from hazardous substances. The Council has a role in ensuring that the effects of incidents involving hazardous substances are prevented or mitigated. This can be achieved, for example, by the appropriate siting of facilities, establishment of buffer zones and protected routes, together with a requirement for contingency planning by the user concerned. *[Amended by Proposed Plan Change 13]*

Issue 17.1.7

Earthworks are an essential part of the development of Dunedin's land and economy. However, without careful management, earthworks can have a range of adverse effects on safety, property and the environment. *[Inserted by Plan Change 11, 11/10/10]*

Objective: 17.2.3

Policy: 17.3.9

Explanation

Adverse effects of earthworks can include the following:

- Unstable cuts and fill may cause instability to land and buildings.
- Redirection of surface water may cause flooding or erosion.
- Exacerbation of existing instability and flooding hazards.
- The release of hazardous substances from contaminated land into the wider environment.
- Sedimentation of water bodies.
- Disturbance and contamination of groundwater.
- Adverse visual and amenity impacts.
- Impacts occurring during earthworks construction, including noise, vibration, dust, mud and impacts on infrastructure, such as the transportation network, the reticulated water, foul sewer and stormwater networks and the electricity transmission network.
- Loss of or damage to natural landforms, vegetation and habitats.
- Destruction, damage or modification of archaeological and cultural sites.
- Depletion of high class soils.

17.2 Objectives

Objective 17.2.1

Ensure the effects on the environment of natural and technological hazards are avoided, remedied or mitigated.

Issues: *11.1.7, 17.1.1 - 17.1.5*
Policies: *17.3.1 - 17.3.7*
AER: *17.9.1*

Explanation

The Council has an obligation under the Act to control the effects of the use, development or protection of land including avoiding or mitigating the effects of natural hazards. Buildings, structures and people need to be protected from hazards. The Council must ensure it is able to respond adequately to the threat and effects of hazards within the City. This includes ~~responding to an event when it occurs~~ a response capacity for dealing with natural and post event hazards; for example structural engineering advice for seismically or fire affected buildings and infrastructural services and active participation in the NZ Fire Service chaired Hazardous Substances Technical Liaison Committee (HSTLC) and NZ Police chaired Emergency Services Coordinating Committee (ESCC). ~~as well as ensuring~~ The Council also ensures that any proposed subdivision, land use activities or development will not cause or be affected by hazards. In assessing the effects of hazards, attention will be given to the acceptable level of risk and any potential adverse effects. *[Amended by Proposed Plan Change 13]*

There is a need to plan for known potential hazards and for anticipated hazards. This requires an understanding of hazards as well as up to date information on those hazards which may affect the City. Effective planning is needed to reduce risks to people and resources. The responses will vary according to the characteristics of the hazard and the affected areas.

Objective 17.2.2

Prevent or mitigate the adverse environmental effects and risks arising from facilities and activities involving the storage, use, disposal or transportation of hazardous substances.

Issue: *17.1.6*
Policy: *17.3.8*
AER: *17.9.2*

Explanation

Facilities or activities involving hazardous substances and hazardous wastes generated by the use of hazardous substances may cause adverse environmental effects when the substances are not controlled adequately or when they escape into the environment. Such releases, whether accidental, or through poor management practices, may cause environmental contamination (including contaminated sites) or injury. To avoid, remedy or mitigate potential adverse effects, these facilities and activities need to be located appropriately and managed correctly. In assessing the effects of hazardous substances, attention will be given to the acceptable level of risk and any potential adverse effects. *[Amended by Proposed Plan Change 13]*

Objective 17.2.3

Earthworks in Dunedin are undertaken in a manner that does not put the safety of people or property at risk and that minimises adverse effects on the environment. *[Inserted by Plan Change 11, 11/10/10]*

Issue: *17.1.7*
Policy: *17.3.9*
AERs: *17.7.3, 17.7.4, 17.7.5*

Explanation

Earthworks are an essential part of the development of Dunedin's land and economy, but can have adverse effects on people, property and the environment if they are not well-managed. A balance can be struck between providing for earthworks and controlling their adverse effects, through the careful design and location of earthworks, the avoidance of significant works in sensitive locations and the implementation of appropriate mitigation measures.

17.3 Policies

Policy 17.3.1

Gather and maintain accurate information about, and encourage research into, the location and causes of hazards and the risks associated with them, and the potential for adverse effects of hazards within the City.

Objective: 17.2.1
Methods: 17.4.1, 17.4.2, 17.4.5

Explanation

The community, the Council and other agencies need to be aware of hazards and the risks involved in order to make informed decisions and to avoid, remedy or mitigate the adverse effects of these hazards. An information base that is up to date and comprehensive is essential for well-informed decision making.

Greater understanding of the natural hazards affecting or likely to affect the City, will enable better informed decisions to be made. There are many agencies with expertise and an interest in the natural hazards of the City and the region, and the Council will work with them to increase understanding.

Policy 17.3.2

Control building and the removal of established vegetation from sites or from areas which have been identified as being, or likely to be, prone to erosion, falling debris, subsidence or slippage.

Objective: 17.2.1
Methods: 17.4.3 - 17.4.5

Explanation

Land movement affects significant areas of the City and, in many instances, stabilisation would be difficult. Intensive development of such areas is undesirable. In other areas where the causes of the land instability are understood and can be avoided, remedied or mitigated on a long term basis, further limited development may be allowed. An example of the way in which adverse effects can be avoided, remedied or mitigated is by the undertaking of tree planting in affected areas.

Policy 17.3.3

Control development in areas prone to the effects of flooding.

Objective: 17.2.1
Methods: 17.4.3, 17.4.4

Explanation

Areas of the City are contained within flood plains which are protected by protective works.[1] Intensive development in such areas needs to be controlled and the ground and floor levels of new buildings defined to ensure that the effects of flooding on new developments are avoided or mitigated.

[1] Refer to the Hazards Register.

Policy 17.3.4

Control development of areas located over underground mines.
Objective: 17.2.1
Methods: 17.4.3, 17.4.4

Explanation

While substantial records of mining in the area are available, these are of variable accuracy and detail. Accurate definition of all areas affected, or likely to be affected, is not possible. The effects of mining on the surface depend on the strata overlying the mines and their depth. Such information, while it can be inferred, is not always specifically known and indications of mine collapse have occurred on the surface in the past. Intensive development in such areas is undesirable unless the underlying features are determined and remedial actions are possible and taken.

Policy 17.3.5

Control development in those areas identified as being likely to be affected by a rise in sea level.
Objective: 17.2.1
Methods: 17.4.3 - 17.4.5, 17.4.9

Explanation

A rise in sea level has been predicted as a probable consequence of global warming although the rate at which it will occur is subject to some debate. Sea level rise predictions based on present world environmental conditions continuing[2] is regarded as the best approach when considering long term planning and development issues.[3] Approval of development near the coast or in low-lying areas nearby should take this into account.

Monitoring by the scientific community of the effects of global warming and any consequent amendment to the prediction for a sea level rise may mean that requirements will change over time.

[2] That is, the 'business as usual scenario', prepared by the UN - based 'Intergovernment Panel on Climate Change'.

[3] The IPCC prediction (1990) is for a sea level rise of 0.2 m (range 0.1 to 0.3 m) by year 2030, and 0.66 m (range 0.3 to 1.1 m) by year 2100.

Policy 17.3.6

Control development in those areas located within or adjacent to land affected by, or likely to be affected by, coastal hazards.

Objective: 17.2.1
Methods: 17.4.3 - 17.4.5, 17.4.9

Explanation

Erosion and changes to the coastline are the result of continuing natural processes. Attempts to control these effects are often inadequate and in some instances have aggravated them. Measures which reinforce natural processes are more likely than others to be successful. Where development is proposed adjacent to the coastline, adequate buffer zones which provide long term security must be provided. Before any development is approved, the mechanism of any hazards affecting the land must be understood, and measures taken to avoid or mitigate them.

Policy 17.3.7

Encourage developers constructing new buildings or making substantial alterations to existing structures adjacent to arterial routes, to locate them so as to avoid the possibility of those routes being obstructed by debris resulting from the collapse of those structures.

Objective: 17.2.1
Method: 17.4.3

Explanation

Access to critical facilities and the rapid evacuation of people and resources are vital if the community is to be able to respond in the event of an earthquake occurring. The prevention or avoidance of building collapses affecting the principal routes will aid the community response.

Policy 17.3.8

Control activities involving the storage, use, disposal and transportation of hazardous substances, and identify sites where hazardous substance processes and facilities which pose a risk to the environment and to health and safety are located.

Objective: 17.2.2
Methods: 17.4.1, 17.4.2, 17.4.6 - 17.4.8, 17.4.10
Rules: 17.5.1 – 17.5.4

Explanation

Local authorities have the responsibility to manage the effects of land use. The nature and scale of environmental effects and risk associated with hazardous substances are influenced by their location. This includes their proximity to sensitive environmental areas or residential areas, schools, hospitals, emergency services and arterial routes. Specific controls relating to the use, storage, disposal and transportation of hazardous and environmentally damaging substances will affect the nature and scale of risk and environmental effects. While the Council has limited ability to control the effects of the transportation of hazardous substances through the District Plan, it is a matter that can be at least considered when assessing resource consent applications where the Council has unlimited discretion.

Policy 17.3.9

Control earthworks in Dunedin according to their location and scale. *[Inserted by Plan Change 11, 11/10/10]*

Objective:	*17.2.3*
Methods:	*17.4.4, 17.4.8, 17.4.12*
Rules	*17.7.1 – 17.7.5*

Explanation

The degree to which earthworks adversely affect safety, property and the environment is dependent on the scale and location of the activity.

Resource consent is required only where the scale and/or location of earthworks are such that adverse effects are likely. Where resource consent is required, the range of effects assessed is tailored to the scale and location of the earthworks. Appropriate mitigation measures will be imposed to minimise any potential adverse effects; such measures may include but will not be limited to reduction in the scale of the earthworks. Earthworks should not occur in any areas where it is not possible to avoid, remedy or mitigate their effects.

17.4 Methods of Implementation

In addition to the rules, the methods to be used to achieve the objectives and policies identified in this section include the following:

Method 17.4.1 Hazards Register

Compile, maintain and provide access for the public to a Hazards Register containing information on the location and nature of identified or potential:

- flood prone areas, including tsunami hazard
- areas of land instability
- coastal sites susceptible to coastal erosion and sea level rise
- areas prone to subsidence or inundation
- geological hazards such as fault lines, and areas susceptible to amplified ground shaking and liquefaction
- areas prone to high wind and heavy snowfalls
- areas prone to drought
- technological hazards such as underground mining activities, areas of infilling, closed landfills, disused gas works sites, former hazardous substances manufacturing or disposal areas.

The Hazards Register will be publicly available at the Dunedin City Council.

Policies: 17.3.1, 17.3.8

Method 17.4.2 Hazardous Substances Register

Compile and maintain a Hazardous Substances Register listing the locations and types of activities that generate, use, store, transport or dispose of hazardous substances, including ~~combustibles and oxidants~~ explosives, flammable gases, liquids, and solids, oxidizers, toxics, corrosives, ecotoxics, and hazardous wastes exhibiting the preceding characteristics. The register will also include information on known contaminated sites. Enquiries regarding the Hazardous Substances Register should be directed to the Dunedin City Council. *[Amended by Proposed Plan Change 13]*

Policies: 17.3.1, 17.3.8

Method 17.4.3 Land and Project Information Memoranda

Use the Land Information Memorandum and Project Information Memorandum processes to identify whether or not an activity or structure is proposed to be located on a site identified as hazard-prone in the Hazards Register, or a site which the Council has good cause to suspect may be prone to a hazard. The Council will encourage applicants to apply for Project Information Memoranda in advance of building consent and resource consent applications.

Policies: 17.3.2 - 17.3.7

Method 17.4.4 Information Requirements for Hazardous Sites

Where any proposed activity that:

(a) requires an application for resource consent and involves earthworks;

(b) requires an application for subdivision consent or other resource consent where discretion is unrestricted; and/or

(c) requires an application for building consent

is to be located on a site identified as hazard-prone in the Hazards Register or on a site that the Council, with good cause, suspects to be hazard-prone, the Council may, at its discretion, require that the relevant consent application includes the results of a site investigation and assessment carried out by a suitably qualified person. *[Amended by Plan Change 11, 11/10/10]*

Policies: 17.3.2 - 17.3.6, 17.3.9

Method 17.4.5 Liaison

(i) Liaise with other agencies, including ERMA, Department of Labour, Ministries of Health and the Environment, Test Certifiers and affected landowners to gather, collate, share and provide information on known hazards, and develop measures to encourage sustainable land use practices in hazard-prone areas. *[Amended by Proposed Plan Change 13]*

(ii) Liaise with agencies responsible for preparing industry and building codes of practice that avoid, remedy or mitigate hazards and improve the community's awareness, and encourage implementation of these codes of practice.

Policies: 17.3.1, 17.3.2, 17.3.5

Method 17.4.6 Accords and Protocols

The Council will ~~use appropriate procedures, for example the Hazardous Facility Screening Procedure and industry codes of practice, to~~ assess resource consent applications for the establishment and operation of hazardous processes and facilities within the City. Existing facilities will be subject to the same procedures should they expand or alter their operations or inputs. *[Amended by Proposed Plan Change 13]*

Policy: 17.3.8

Method 17.4.7 Advocacy

(i) Encourage the implementation of environmentally acceptable technologies in the storage, use, disposal, or transportation of hazardous substances.

(ii) Encourage voluntary agreements on transport routes to avoid sensitive activities such as hospitals.

Policy: 17.3.8

Method 17.4.8 Information, Education and Public Awareness

(i) Produce brochures and advise the public about any relevant changes in legislation or controls administered by the Council that may affect hazardous processes and facilities.

(ii) Promote increased awareness and knowledge among developers and operators of the environmental risks associated with hazardous substances.

(iii) Provide advice and information to the public regarding the potential impacts of earthworks and methods for mitigating those impacts. *[amended by Plan Change 11, 11/10/10]*

Policies: 17.3.8, 17.3.9

Method 17.4.9 Works Programmes

Consider the implementation of works necessary to avoid, remedy or mitigate the potential adverse effects of natural hazards in particular areas of the City.

Policies: 17.3.5, 17.3.6

Method 17.4.10 Management Plans

(i) Require, where appropriate, the preparation and operation of site management and emergency response management plans for hazardous substances.

(ii) The Council will encourage initiatives which involve formulating responses to natural hazards.

Policy: 17.3.8

Method 17.4.11 Zoning

Ensure that the adverse effects of natural hazards can be avoided, remedied or mitigated by restricting the scale and density of development in potentially hazard prone areas through the use of zoning.

Policies: 4.3.7, 4.3.9, 6.3.4, 6.3.14, 17.3.2, 17.3.3, 17.3.4, 17.3.5.

[Inserted by Variation 9A, 2/3/04]

Method 17.4.12 Guidelines

Provide guidelines with information on best management practices for earthworks activities, including:

(i) An Accidental Discovery Protocol to be followed in the event that archaeological material is discovered during earthworks.

(ii) Sediment control techniques.

Policy: 17.3.9

[Inserted by Plan Change 11, 11/10/10]

17.5 Rules: Hazardous Substances

Note to Plan Users:
In addition to these District Plan rules, the provisions of the following legislation may also be applicable to activities involving hazardous substances:

- *Hazardous Substances and New Organisms (HSNO) Act 1996 and regulations*
- *Medicines Act 1981*
- *Health and Safety in Employment Act 1992*
- *Building Act 2004*
- *Health Act 1956*
- *Radiation Protection Act 1965*

Compliance with the following District Plan provisions does not ensure compliance with the Hazardous Substances and New Organisms (HSNO) Act 1996 and often separate approvals will be required under this Act. Any permitted activity included within this section must also comply with sections15 and 17 of the Resource Management Act 1991. In addition, activities involving hazardous substances may also require resource consent from the Otago Regional Council.

~~Table 17.1: Thresholds Above Which a Resource Consent is Required for Hazardous Substances~~

~~GLOSSARY OF TERMS USED FOR THRESHOLDS IN TABLE BELOW~~

~~'Full compounding'~~ ~~means a secondary form of containment, such as bunding, capable of retaining 100% of the contaminants in the event of a failure of the principal container. Where storage is outside a building, or subject to stormwater ingress, then an allowance for stormwater ingress is to be made that ensures that 100% of the contaminants can be retained in a 1 in 5 year return period 24 hours storm. *[Inserted by C195/2001]*~~

~~'STP'~~ ~~means Standard Temperature Pressure (Gases are measured at 15° Celsius at 1atm).~~

~~Stored 'otherwise in bulk'~~ ~~means stored in any container less than 250 litres.~~

~~'Protected works'~~ ~~means -~~

~~(a) Any place of worship, public building, university, college, school, hospital, public institution, Court, theatre or other building in which persons are accustomed to assemble, excluding a dwelling house.~~

~~(b) Any factory, workshop, office, store, warehouse, shop or other building where persons are regularly employed for the purpose of any trade or business, and any other building which a licensing authority may consider is of sufficient importance or value to warrant protection.~~

~~(c) Any wooden decked wharf (not being a wharf specifically designed for the transfer of hazardous substances), public railway (not being a siding), or timber yard, and any place where it is customary for ships to berth, moor or lie.~~

~~But does not include a small office or other building connected with the storage or use of hazardous substances on premises in which such storage or use is a major function.~~

~~Class~~	**~~Residential Zones and Residential Activities in Any Other Zone (thresholds apply per site)~~**	**~~All Activities (Excluding Residential Activities) in Any Zone Except Residential Zones (thresholds apply per site)~~**
~~Class 1: Explosives~~		
~~Class 1(a) - Storage Only~~	~~0 kg~~	~~25 kg~~
~~Class 1(b) - Storage Only~~	~~15 kg~~	~~50 kg~~
~~Class 2: Gases~~		
~~Class 2(a)~~	~~No limit, except for oxygen which shall not exceed 5.5 m^3 at STP~~	~~No limit, except for oxygen which shall not exceed 200 m^3 at STP~~
~~Class 2(b) - Non liquefiable flammable compressed gas~~	~~0 m^3~~	~~100 m^3 at STP~~
~~Class 2(c) - Acetylene~~	~~2 m^3 at STP~~	~~100 m^3 at STP~~

Class	Residential Zones and Residential Activities in Any Other Zone (thresholds apply per site)	All Activities (Excluding Residential Activities) in Any Zone Except Residential Zones (thresholds apply per site)
Class	Residential Zones and Residential Activities in Any Other Zone (thresholds apply per site)	All Activities (Excluding Residential Activities) in Any Zone Except Residential Zones (thresholds apply per site)
Class 2(d) – LPG – in cylinders	A total of 100 kg. The 100 kg limit may be made up of any combination of the following: • up to 10 kg in the dwelling or in any structure attached to the dwelling. • up to 100 kg in an approved domestic gas installation externally attached to the dwelling. • up to 100 kg in, or attached to, an accessory building or garage not attached to the dwelling.	Total of 100 kg for the site. The 100 kg limit may be made up of any combination of the following: • up to 100 kg in an approved gas installation externally attached to a protected work. • up to 100 kg in, or attached to, an accessory building or garage not attached to a protected work.
Class 2(d) – LPG – in tanks	0 kg	0 kg
Class 2(e) – Chlorine gas in cylinders or tanks	0 kg	250 kg
Class 2(f) – Anhydrous ammonia gas in cylinders, tanks or refrigeration receivers	0 kg	250 kg
Liquid Oxygen stored 'otherwise in bulk'	As required for medical use.	200 m^3 at STP
Aerosols	No limit if flammable content is 45% or less. 20 litres if flammable content is greater than 45%.	No limit if flammable content is 45% or less. 3000 litres if flammable content is greater than 45%.
Class 3: Flammable Liquids		
Class 3	*See thresholds in Table 17.2 and 17.3 below.*	*See thresholds in Table 17.2 and 17.3 below.*
Class 4: Flammable Solids		
Class 4.1 – Flammable solids	0 kg	25 kg – Category A 50 kg – Category B 1 tonne – Category C
Class 4.2 – Substances spontaneously combustible	0 kg	50 kg – Category A 1 tonne – Categories B or C
Class 4.3 – Substances flammable by reaction with water	0 kg	25 kg – Category C 1 tonne – Categories A or B
Class 5: Oxidising Substances		
Class 5(a) – Oxidising agents (oxidisers)	10 kg	50 kg or 50 litres. There is no limit for farms, except that full compounding is required for liquids stored in tanks greater than 250 litres within 100 m of any lake or river, the coastal marine area, or any groundwater protection zone identified in the Regional Plan: Water (2000). *[Amended by C195/2001]*
Class 5(b) – Organic peroxides	0.5 kg or 0.5 litres	10 kg or 10 litres
Class 6: Poisonous and Infectious Substances		
Class 6 – standard poisons (as listed in the 3rd schedule of the Toxic Substances Regulations)	10 litres or 10 kg	no limit

Class 6 – dangerous poisons (as listed in the 2nd schedule of the Toxic Substances Regulations)	1 litre or 1 kg	200 litres or 200 kg. There is no limit for farms, except that full compounding is required for liquids stored in tanks greater than 250 litres within 100 m of any lake or river, the coastal marine area, or any groundwater protection zone identified in the Regional Plan: Water (2000). *[Amended by C195/2001]*
Class 6 – deadly poisons (as listed in the 1st schedule of the Toxic Substances Regulations)	0kg	20 litres or 20 kg
Class 7: Radioactive Materials		
Class 7	Quantities specified in the 'Type A' transport package limit (as identified in the IAEA 'Regulations for the Safe Transport of Radioactive Material'). (Examples: domestic smoke detectors, demonstration radioactive sources in school laboratories.)	Quantities specified in the 'Type A' transport package limit (as identified in the IAEA 'Regulations for the Safe Transport of Radioactive Material'). (Examples: domestic smoke detectors, demonstration radioactive sources in school laboratories.)
Class 8: Corrosives		
Class 8 – acids and alkalis	5 litres	1 tonne for industrial activities. Full compounding is required for liquids stored in tanks greater than 250 litres within 100 m of any lake or river, the coastal marine area, or any groundwater protection zone identified in the Regional Plan: Water (2000). *[Amended by C195/2001]* 50 litres for laboratories (including educational laboratories).

CLASS 3: FLAMMABLE LIQUIDS (see Tables 17.2 and 17.3 below)

GLOSSARY OF TERMS USED FOR THRESHOLDS LISTED BELOW

'Approved containers' – means containers approved to Environmental Risk Management Authority (ERMA) specifications.

'Flash Point' in relation to any substance, means the lowest temperature at which the substance, when tested in a prescribed type of apparatus, liberates vapour at a rate sufficient to produce an explosive mixture with the air that is in immediate contact with the substance.

'Full compounding' – means a secondary form of containment, such as bunding, capable of retaining 100% of the contaminants in the event of a failure of the principal container. Where storage is outside a building, or subject to stormwater ingress, then an allowance for stormwater ingress is to be made that ensures that 100% of the contaminants can be retained in a 1 in 5 year return period 24 hours storm. *[Inserted by C195/2001]*

'Protected works' means –

(a) Any place of worship, public building, university, college, school, hospital, public institution, Court, theatre or other building in which persons are accustomed to assemble, excluding a dwelling house.

(b) Any factory, workshop, office, store, warehouse, shop or other building where persons are regularly employed for the purpose of any trade or business, and any other building which a licensing authority may consider is of sufficient importance or value to warrant protection.

(c) Any wooden decked wharf (not being a wharf specifically designed for the transfer of hazardous substances), public railway (not being a siding), or timber yard, and any place where it is customary for ships to berth, moor or lie.

But does not include a small office or other building connected with the storage or use of hazardous substances on premises in which such storage or use is a major function.

Notes:

i. For the purpose of these thresholds below, a dwelling is treated separately to a protected work.

ii. Examples of Class 3(a), (b) and (c) goods include petrol, kerosene and fuel oil (diesel) respectively.

Table 17.2: Class 3 Thresholds for Residential Activities and Activities Accessory to These (Thresholds Apply per Site)

Location	Class	Allowed Limit	Container Type and Size	Additional Requirements
In dwelling or structure attached to dwelling	3(a)	5 litres	securely closed, approved - 1 litre or less	**not** within 3 m of fire or heater
	3(b)	50 litres	securely closed, approved - 20 litres or less	**not** within 3 m of fire, heater or Class 3(a) goods
	3(c)	50 litres	securely closed, approved - 20 litres or less	**not** within 3 m of fire, heater or Class 3(a) goods
Externally attached to dwelling	3(a)	none allowed	n/a	n/a
	3(b) - flash point below 50°C	none allowed	n/a	n/a
	3(b) - flash point at least 50°C	600 litres	above ground tanks	Full compounding within 100 m of any lake or river, the coastal marine area, or any groundwater protection zone identified in the Regional Plan: Water (2000). *[Amended by C195/2001]*
	3(c)	600 litres	above ground tanks	Full compounding within 100 m of any lake or river, the coastal marine area, or any groundwater protection zone identified in the Regional Plan: Water (2000). *[Amended by C195/2001]*
In or attached to accessory building/ garage (not attached to dwelling)	3(a)	50 litres	securely closed, approved	no requirements
	3(b) - all	250 litres	no requirements	**not** within 5 m of Class 3(a) goods. Full compounding within 100 m of any lake or river, the coastal marine area, or any groundwater protection zone identified in the Regional Plan: Water (2000). *[Amended by C195/2001]*
	3(b) - flash point at least 50°C	600 litres	above ground tanks	Full compounding within 100 m of any lake or river, the coastal marine area, or any groundwater protection zone identified in the Regional Plan: Water (2000). *[Amended by C195/2001]*
	3(c)	600 litres	above ground tanks	Full compounding within 100 m of any lake or river, the coastal marine area, or any groundwater protection zone identified in the Regional Plan: Water (2000). *[Amended by C195/2001]*

Table 17.3: Class 3 Thresholds for All Other Activities (excluding Residential Activities)

Location	Class	Allowed Limit	Container Type and Size	Additional Requirements
In protected work or attached structure	3(a)	200 litres	securely closed, approved - 5 litres or less	maximum quantity of Class 3(a) + 3(b) not greater than 200 litres
	3(b)	200 litres	securely closed, approved - 20 litres or less	maximum quantity of Class 3(a) + 3(b) not greater than 200 litres
	Alcohol spirit or fortified wine - in containers 5 litres or less	no limit	no requirements	when intended for use as beverage
	Alcohol spirit or fortified wine - in containers larger than 5 litres	200 litres	no requirements	when intended for use as beverage
	3(c)	209 litres	in approved container	no requirements
Outside storage and in buildings which are not protected works.	3(a)	209 litres	approved container(s)	maximum quantity of Class (a) + (b) not greater than 209 litres
Outside storage: Where more than one tank is situated in a compound, the capacity of the compound shall be calculated on the capacity of the largest tank but need not be more than 100% of the volume of that tank.	3(a)	250 litres	above ground tanks	Full compounding within 100 m of any lake or river, the coastal marine area, or any groundwater protection zone identified in the Regional Plan: Water (2000). *[Amended by C195/2001]*
	3(b)	209 litres	approved container(s)	maximum quantity of Class (a) + (b) not greater than 209 litres
	3(b)	250 litres	above ground tanks	Full compounding within 100 m of any lake or river, the coastal marine area, or any groundwater protection zone identified in the Regional Plan: Water (2000). *[Amended by C195/2001]*
	3(c)	600 litres	above ground tanks	Full compounding within 100 m of any lake or river, the coastal marine area, or any groundwater protection zone identified in the Regional Plan: Water (2000). *[Amended by C195/2001]*
Outside storage only. Where more than one tank is situated in a compound, the capacity of the compound shall be calculated on the capacity of the largest tank but need not be more than 100% of the volume of that tank.	3(c)	2000 litres	approved containers	Full compounding within 100 m of any lake or river, the coastal marine area, or any groundwater protection zone identified in the Regional Plan: Water (2000). *[Amended by C195/2001]*

Rule 17.5.1 Permitted Activities *(Policy 17.3.8)*

The following activities are permitted activities:

(i) The storage, use or disposal of hazardous substances for domestic purposes, associated with a lawfully established residential activity, excluding home occupation. The hazardous substance(s) must form part of a consumer product intended for domestic use. The product must be stored in the container in which it was sold, and used or disposed of in accordance with the manufacturer's instructions.

(ii) The storage and use of fuel in motor vehicles, boats, aircraft and small engines.

~~(i)~~(iii) The storage, use, or disposal of hazardous substances not exceeding the quantity limits and other requirements stipulated in Table~~s~~ 17.1. ~~, 17.2 and 17.3.~~[4] ~~*[Amended by C195/2001]*~~

(iv) Table 17.1 contains maximum permitted quantity thresholds (plus, in certain cases, storage requirements) for the storage, use or disposal of different types of hazardous substance, as classified via the Hazardous Substance (Classification) Regulations 2001. The quantities vary according to District Plan zone and/or activity type. Where the requirements set out in this table are not met, resource consent will be required under Rule 17.5.2, 17.5.3 or 17.5.4 of this Plan.

(v) Unless otherwise stated, if a hazardous substance falls into more than one HSNO sub-class and is therefore controlled by more than one maximum permitted quantity threshold, the more or most restrictive quantity threshold applies.

(vi) The permitted quantity thresholds in this table apply per site, except for the Campus, Port 1, Airport, Industrial 1 zones and forestry and timber treatment activities in the Rural zone, where the permitted quantity thresholds apply per hazardous sub-facility . Where more than one activity is carried out per site or hazardous sub-facility, each hazardous sub-facility shall comply with Table 17.1, otherwise resource consent will be required under rule 17.5.2, 17.5.3 or 17.5.4 of this Plan.

(vii) Where the volume or weight of a hazardous substance is affected by the temperature and pressure at which it is stored, the volume or weight shall be considered (for the purposes of this table) to be that present in conditions of 20°C and 101.3kPa otherwise resource consent will be required under rule 17.5.2, 17.5.3 or 17.5.4 of this Plan.

[4] Plan users are also advised to refer to the Regional Plan: Waste for Otago for rules governing the disposal of hazardous wastes. *[Amended by C195/2001]*

Table 17.1

Substance	HSNO sub-class and hazard classification	Substance	Group 1: Residential Zones and residential activities in all other zones.	Group 2: Activity, Industry, Stadium, Proposed Harbourside Zones, exc. residential activities.	Group 3: Campus Zone, excluding residential activities.	Group 4: Rural Zone, excluding residential, forestry and timber treatment activities.	Group 5: Forestry and timber treatment activities in the Rural Zone.	Group 6: Port Zone, excluding residential activities.	Group 7: Airport Zone, excluding residential activities.
Explosives	1.1A-G, J, L Mass explosion hazard	Gunpowder and blackpowder	5kg	15kg	0	5kg	0	0	0
		Display fireworks	0						
		Industrial explosives (e.g. TNT) and all other 1.1	0	25kg	0	25kg	25kg	No threshold	0
	1.2B-L Projection hazard	All	No thresholds						
	1.3C, F-L Fire and minor blast hazard	Smokeless ammunition reloading powder	15kg	50kg	0	15kg	15kg	No threshold	15kg
Explosives	1.3C, F-L Fire and minor blast hazard	Retail fireworks	No thresholds – refer to Hazardous Substance (Fireworks) Regulations 2001						
		All other 1.3	No thresholds						
	1.4B-G, S No significant hazard	Safety ammunition and marine flares	15kg	50kg	5kg	15kg	15kg	50kg	No threshold
		Retail fireworks	No thresholds – refer to Hazardous Substance (Fireworks) Regulations 2001						
		All other 1.4	No thresholds						
	1.5D Very insensitive, with mass explosion hazard	All	No thresholds						
	1.6N Extremely insensitive, no mass explosion hazard	All	No thresholds						

Substance	**HSNO sub-class and hazard classification**	**Substance**	**Group 1: Residential Zones and residential activities in all other zones.**	**Group 2: Activity, Industry, Stadium, Proposed Harbourside Zones, excluding residential activities.**	**Group 3: Campus Zone, excluding residential activities.**	**Group 4: Rural Zone, excluding residential, forestry and timber treatment activities.**	**Group 5: Forestry and timber treatment activities in the Rural Zone.**	**Group 6: Port Zone, excluding residential activities.**	**Group 7: Airport Zone, excluding residential activities.**
Gases and aerosols	2NH (Non-Hazardous)	All	$10m^3$	$200m^3$	$200m^3$	$200m^3$	$200m^3$	$200m^3$	$200m^3$
	2.1.1A High hazard gases	LPG (inc. propane-based refrigerant) in cylinders	20kg per dwelling (except for multi storey attached dwellings of over 3 storeys where no more than 10kg per dwelling with max cylinder size of 10kg) 180kg (outdoor storage)	20kg (indoor storage) 180kg (outdoor storage)	20kg (indoor storage) 180kg (outdoor storage)	20kg (indoor storage) 180kg (outdoor storage)	20kg (indoor storage) 180kg (outdoor storage)	20kg (indoor storage) 180kg (outdoor storage)	20kg (indoor storage) 180kg (outdoor storage)
		LPG propane-based refrigerant in commercial refrigeration receivers	0	50kg	50kg	50kg	50kg	50kg	50kg

Substance	**HSNO sub-class and hazard classification**	**Substance**	**Group 1: Residential Zones and residential activities in all other zones.**	**Group 2: Activity, Industry, Stadium, Proposed Harbourside Zones, excluding residential activities.**	**Group 3: Campus Zone, excluding residential activities.**	**Group 4: Rural Zone, excluding residential, forestry and timber treatment activities.**	**Group 5: Forestry and timber treatment activities in the Rural Zone.**	**Group 6: Port Zone, excluding residential activities.**	**Group 7: Airport Zone, excluding residential activities.**
Gases and aerosols	2.1.1A High hazard gases	LPG (inc. propane-based refrigerant) in single vessel tanks or 222kg cylinder installations.	0						
		LPG (inc. propane-based refrigerant) in multi-vessel tanks.	0						
		Acetylene	$2m^3$	$30m^3$	$30m^3$	$30m^3$	$30m^3$	$30m^3$	$30m^3$
		Hydrogen, methane and all other permanent gases	0	$30m^3$	$100m^3$	$30m^3$	$30m^3$	$30m^3$	$30m^3$
	2.1.1B Medium hazard gases	Anhydrous ammonia refrigerant	0	140kg	0	0	0	140kg	140kg
		All other 2.1.1B	No thresholds						
	2.1.2A Flammable aerosols	All	20 litres	450 litres	450 litres	450 litres	450 litres	450 litres	450 litres

Substance	**HSNO sub-class and hazard classification**	**Substance**	**Group 1: Residential Zones and residential activities in all other zones.**	**Group 2: Activity, Industry, Stadium, Proposed Harbourside Zones, exc. residential activities.**	**Group 3: Campus Zone, excluding residential activities.**	**Group 4: Rural Zone, excluding residential, forestry and timber treatment activities.**	**Group 5: Forestry and timber treatment activities in the Rural Zone.**	**Group 6: Port Zone, excluding residential activities.**	**Group 7: Airport Zone, excluding residential activities.**
Flammable liquids (stored above ground in containers ≤450 litres)	3.1A Liquid: Very high hazard (flash point <23°C, initial boiling point ≤35°C)	Petrol	• 10 litres inside dwelling. • 50 litres outside dwelling. (No storage in metal drums)	• 50 litres (any storage except metal drums). • 250 litres in Dangerous Goods cabinet approved to AS 1940. • 420 litres in approved HSNO 'Type' stores.		2000 litres	2000 litres	• 50 litres (any storage except metal drums). • 250 litres in Dangerous Goods cabinet approved to AS 1940. • 420 litres in approved HSNO 'Type' stores.	
		All others	0	50 litres	50 litres	50 litres	50 litres	50 litres	50 litres
	3.1B Liquid: High hazard (FP<23°C, IBP>35°C)	All – e.g. acetone, paint spray thinners, pure alcohol	10 litres	• 10 litres (any storage). • 250 litres in Dangerous Goods cabinet approved to AS 1940. • 450 litres in approved HSNO 'Type' stores. • Large scale retail activities only: 1500 litres in containers of up to 5 litres each.					
	3.1A Petrol plus 3.1B	Petrol plus any 3.1B substance – cumulative total limit	• 10 litres inside dwelling. • 50 litres outside dwelling. (No storage in metal drums)	• 50 litres (any storage except metal drums). • 250 litres in Dangerous Goods cabinet approved to AS 1940. • 420 litres in approved HSNO 'Type' stores.		2000 litres	2000 litres	• 50 litres (any storage except metal drums). • 250 litres in Dangerous Goods cabinet approved to AS 1940. • 420 litres in approved HSNO 'Type' stores.	
	3.1C Liquid: Medium hazard (FP≥23°C, but ≤35°C)	All – e.g. kerosene, aviation kerosene	• 20 litres inside dwelling. • 50 litres outside dwelling.	250 litres, stored away from combustibles.					
	3.1D Liquid: Low hazard (FP>60°C, but ≤93°C)	All – e.g. diesel, petroleum fuel oils	• 20 litres inside dwelling. • 209 litres outside dwelling	450 litres					

Substance	HSNO sub-class and hazard classification	Substance	Group 1: Residential Zones and residential activities in all other zones.	Group 2: Activity, Industry, Stadium, Proposed Harbourside Zones, excluding residential activities.	Group 3: Campus Zone, excluding residential activities.	Group 4: Rural Zone, excluding residential, forestry and timber treatment activities.	Group 5: Forestry and timber treatment activities in the Rural Zone.	Group 6: Port Zone, excluding residential activities.	Group 7: Airport Zone, excluding residential activities.
Flammable liquids (stored above ground in containers >450 litres)	3.1A Liquid: Very high hazard (flash point <23°C, initial boiling point ≤35°C)	Petrol	0	• Certified Single skin tanks: 0. • Certified Double skin tanks: 600 litres.		• Certified Single skin tanks: 0. • Certified Double skin tanks: 2000 litres.		• Certified Single skin tanks: 0. • Certified Double skin tanks: 600 litres.	
		All others	0						
	3.1B Liquid: High hazard (FP<23°C, IBP>35°C)	All – e.g. acetone, paint spray thinners, pure alcohol	0	• Certified Single skin tanks: 0. • Certified Double skin tanks: 600 litres.					
	3.1C Liquid: Medium hazard (FP≥23°C, but ≤35°C)	All – e.g. kerosene, aviation kerosene	0	• Certified Single skin tanks: 450 litres. • Certified Double skin tanks: 2000 litres.					
	3.1D Liquid: Low hazard (FP>60°C, but ≤93°C)	All – e.g. diesel, petroleum fuel oils	• Certified Single skin tanks: 450 litres. • Certified Double skin tanks: 600 litres. • Certified Super vault tanks constructed to South Western Research Institute (SWRI) standards: 10000 litres.	• Certified Single skin tanks: 450 litres. • Certified Double skin tanks: 2000 litres. • Certified Super vault tanks constructed to SWRI standards: 10000 litres.	• Single skin tanks: 450 litres. • Double skin tanks: 2000 litres. • Super vault tanks construct-ed to SWRI standards: 10000 litres.	• Certified Single skin tanks: 450 litres. • Certified Double skin tanks: 5000 litres. • Certified Super vault tanks constructed to SWRI standards: 30000 litres.		• Certified Single skin tanks: 450 litres. • Certified Double skin tanks: 20000 litres. • Certified Super vault tanks constructed to SWRI standards: 30000 litres.	• Certified Single skin tanks: 450 litres. • Certified Double skin tanks: 10000 litres. • Certified Super vault tanks constructed to SWRI standards: 30000 litres.

Substance	**HSNO sub-class and hazard classification**	**Substance**	**Group 1: Residential Zones and residential activities in all other zones.**	**Group 2: Activity, Industry, Stadium, Proposed Harbourside Zones, excluding res activities.**	**Group 3: Campus Zone, excluding residential activities.**	**Group 4: Rural Zone, excluding residential, forestry and timber treatment activities.**	**Group 5: Forestry and timber treatment activities in the Rural Zone.**	**Group 6: Port Zone, excluding residential activities.**	**Group 7: Airport Zone, excluding residential activities.**
Flammable liquids (stored below ground)	3.1A, 3.1B, 3.1C, 3.1D	All	0						
Flammable liquids (any storage)	3.2A, 3.2B & 3.2C Liquid desensitised explosive: High, medium & low hazard	All	0						
Flammable solids	4.1.1A Readily combustible solids and solids that may cause fire through friction: Medium hazard	All	0	50kg	50kg	50kg	50kg	50kg	50kg
	4.1.1B Readily combustible solids and solids that may cause fire through friction: Low hazard	All	0	500kg	500kg	500kg	500kg	500kg	500kg
	4.1.2A&B Self-reactive: Types A&B	All	0	50kg	50kg	50kg	50kg	50kg	50kg
	4.1.2C-G Self-reactive: Types C-G	All	0	500kg	500kg	500kg	500kg	500kg	500kg

Substance	HSNO sub-class and hazard classification	Substance	Group 1: Residential Zones and residential activities in all other zones.	Group 2: Activity, Industry, Stadium, Proposed Harbourside Zones, excluding residential activities.	Group 3: Campus Zone, excluding residential activities.	Group 4: Rural Zone, excluding residential, forestry and timber treatment activities.	Group 5: Forestry and timber treatment activities in the Rural Zone.	Group 6: Port Zone, excluding residential activities.	Group 7: Airport Zone, excluding residential activities.
Flammable solids	4.1.3A-C Solid desensitized explosives	All	0						
	4.2A&B Spontaneously combustible – Pyrophoric substances: High hazard & Self-heating substances: Medium hazard	All	0	50kg	50kg	50kg	50kg	50kg	50kg
	4.2C Spontaneously combustible – Self-heating substances: Low hazard	All	0	500kg	500kg	500kg	500kg	500kg	500kg
	4.3A&B Solids that emit flammable gas when wet: High & medium hazard	All	0	50kg	50kg	50kg	50kg	50kg	50kg
	4.3C Solids that emit flammable gas when wet: Low hazard	All	0	500kg	500kg	500kg	500kg	500kg	500kg

Substance	**HSNO sub-class and hazard classification**	**Substance**	**Group 1: Residential Zones and residential activities in all other zones.**	**Group 2: Activity, Industry, Stadium, Proposed Harbourside Zones, excluding residential activities.**	**Group 3: Campus Zone, excluding residential activities.**	**Group 4: Rural Zone, excluding residential, forestry and timber treatment activities.**	**Group 5: Forestry and timber treatment activities in the Rural Zone.**	**Group 6: Port Zone, excluding residential activities.**	**Group 7: Airport Zone, excluding residential activities.**
Oxidising substances	5.1.1A-C Liquids & solids	All	10 litres if liquid, 10kg if solid	200 litres if liquid, 200kg if solid	200 litres if liquid, 200kg if solid	No threshold	200 litres if liquid, 200kg if solid	200 litres if liquid, 200kg if solid	200 litres if liquid, 200kg if solid
	5.1.2A Gases	Oxygen	5.5m^3	1000m^3	500m^3	200m^3	200m^3	200m^3	200m^3
		Nitrous oxide (Except as stored and used in accordance with HSNO requirements within medical facilities)	0						
		Chlorine	0						
	5.2A-G Organic Peroxide: Types A-G	All – e.g. MEKP Polyester resin catalyst	0.5 litres	16 litres	0.5 litres	0.5 litres	0.5 litres	0.5 litres	0.5 litres
Toxic substances	6.1A-C Acutely toxic	Anhydrous ammonia refrigerant	0	140kg	0	0	0	140kg	140kg
		Chlorine	0	0	0	0	0	0	0
		All other substances	0	20 litres if liquid, 20kg if solid	20 litres if liquid, 20kg if solid	20 litres if liquid, 20kg if solid	20 litres if liquid, 20kg if solid	20 litres if liquid, 20kg if solid	20 litres if liquid, 20kg if solid
	6.1D&E	All	No thresholds						
	6.3A&B Skin irritant	All	1kg	200kg	1000kg	200kg	1000kg	1000kg	1000kg
	6.4A Eye irritant	All							
	6.5A&B Respiratory & contact sensitizers	All							
	6.6A&B Human mutagens	All							

Substance	**HSNO sub-class and hazard classification**	**Substance**	**Group 1: Residential Zones and residential activities in all other zones.**	**Group 2: Activity, Industry, Stadium, Proposed Harbourside Zones, excluding residential activities.**	**Group 3: Campus Zone, excluding residential activities.**	**Group 4: Rural Zone, excluding residential, forestry and timber treatment activities.**	**Group 5: Forestry and timber treatment activities in the Rural Zone.**	**Group 6: Port Zone, excluding residential activities.**	**Group 7: Airport Zone, excluding residential activities.**
Toxic substances	6.7A&B Carcinogens	All	1kg	200kg	1000kg	200kg	1000kg	1000kg	1000kg
	6.8A-C Human reproductive or developmental toxicants	All							
	6.9A&B Substances affecting human target organs or systems	All							
Radioactive materials	These substances are controlled through the Radiation Protection Act 1965 rather than through HSNO.	All	Quantities specified in the 'Type A' transport package limit, as identified in the International Atomic Energy Agency(IAEA) Regulations for the Safe Transport of Radioactive Material. Examples: domestic smoke detectors, demonstration radioactive sources in school laboratories.						
Corrosives	8.1A Substances corrosive to metals	All	5 litres	1000 litres	1000 litres	1000 litres	5000 litres	1000 litres	1000 litres
	8.2A-C Substances corrosive to skin	All	5 litres	1000 litres	1000 litres	1000 litres	5000 litres	1000 litres	1000 litres
	8.3A Substances corrosive to the eye	All – e.g. hydrofluoric acid	0	5 litres	5 litres	0	0	0	0

Substance	HSNO sub-class and hazard classification	Substances	Group 1: Residential Zones and residential activities in all other zones.	Group 2: Activity, Industry, Stadium, Proposed Harbourside Zones, excluding residential activities.	Group 3: Campus Zone, excluding residential activities.	Group 4: Rural Zone, excluding residential, forestry and timber treatment activities.	Group 5: Forestry and timber treatment activities in the Rural Zone.	Group 6: Port Zone, excluding residential activities.	Group 7: Airport Zone, excluding residential activities.
Ecotoxics	9.1A-D Aquatic ecotoxics 9.2A-D Soil ecotoxics	All subclass 9.1 & 9.2 substances that do not also fall into another HSNO subclass. For example, transformer coolant oils and vinyl monomer. Storage: containers ≤450 litres aboveground.	• 50 litres inside dwelling. • 209 litres outside dwelling.	450 litres					
Ecotoxics	9.1A-D Aquatic ecotoxics 9.2A-D Soil ecotoxics	All subclass 9.1 & 9.2 substances that do not also fall into another HSNO subclass. For example, transformer coolant oils and vinyl monomer. Storage: containers >450 litres aboveground.	• Single skin tanks: 450 litres. • Double skin tanks: 600 litres. • Super vault tanks constructed to South Western Research Institute (SWRI) standards: 10000 litres.	• Single skin tanks: 450 litres. • Double skin tanks: 2000 litres. • Super vault tanks constructed to SWRI standards: 10000 litres.	• Single skin tanks: 450 litres. • Double skin tanks: 2000 litres. • Super vault tanks construct-ed to SWRI standards: 10000 litres.	• Single skin tanks: 450 litres. • Double skin tanks: 5000 litres. • Super vault tanks constructed to SWRI standards: 30000 litres.		• Single skin tanks: 450 litres. • Double skin tanks: 20000 litres. • Super vault tanks constructed to SWRI standards: 30000 litres.	• Single skin tanks: 450 litres. • Double skin tanks: 10000 litres. • Super vault tanks constructed to SWRI standards: 30000 litres.

Substance	HSNO sub-class and hazard classification	Substances	Group 1: Residential Zones and residential activities in all other zones.	Group 2: Activity, Industry, Stadium, Proposed Harbourside Zones, excluding residential activities.	Group 3: Campus Zone, excluding residential activities.	Group 4: Rural Zone, excluding residential, forestry and timber treatment activities.	Group 5: Forestry and timber treatment activities in the Rural Zone.	Group 6: Port Zone, excluding residential activities.	Group 7: Airport Zone, excluding residential activities.
Ecotoxics	9.1A-D Aquatic ecotoxics	All subclass 9.1-9.2 substances that do not also fall into another HSNO subclass. For example, transformer coolant oils and vinyl monomer. Storage underground.	0						
	9.2A-D Soil ecotoxics		0						
	9.3A-C Terrestrial vertebrate ecotoxics	All	No thresholds (see Class 6 thresholds, since all substances in this sub-class also fall within Class 6).						
	9.4 A-C Terrestrial invertebrate ecotoxics	All	No thresholds (see Class 6 thresholds, since all substances in this sub-class also fall within Class 6).						

Rule 17.5.2 Controlled Activities *(Policy 17.3.8)*

The following activities are controlled activities:

(i) The single vessel tank storage of HSNO sub-class 2.1.1A LPG, including

(a) propane-based refrigerant, in belowground or aboveground tanks;

(b) the storage of HSNO sub-class 2.1.1A LPG, including propane-based refrigerant, in 222kg cylinder installations;

(c) the storage of HSNO sub-class 2.1.1A LPG propane-based refrigerant in commercial refrigeration receivers, in quantities exceeding those permitted in Rule 17.5.1; and

(d) the storage of HSNO sub-class 3.1A-D liquid petroleum fuels in ~~underground storage~~ belowground tanks;

is controlled in respect of:

(a) Location and design of storage tanks.

(b) Monitoring systems.

(c) Emergency response plans.

(d) Site security and containment.

Assessment Matters

In assessing any application the Council will, in addition to the matters contained in the Fourth Schedule of the Act, have regard to:

- For storage of petrol and/or diesel, adherence to the Environmental Protection Authority (EPA) Approved Code of Practice HSNOCOP 13-2, "Code of Practice for the Management of Existing Stationary Container Systems up to 60,000 litres Capacity".~~with the 'Code of Practice for the Design, Installation and Operation of Underground Petroleum Systems' published by the Department of Labour (Occupational Safety and Health).~~
- For storage of LPG, including siting of LPG facilities, adherence to the Hazardous Substances (Classes 1-5 Controls) Regulations 2001 and to AS/NZS 1596:2008 "The Storage and Handling of LP Gas".~~ adherence with the 'Dangerous Goods Class 2 Regulations' and 'Australian/New Zealand Standard (AS/NZS 1596)' for LPG storage and handling - siting of LP Gas facilities.~~
- Any unusual soil or other underground conditions of the site which contribute to risks of tank or pipework failure.
- The nature of activities and density of use in the vicinity of the site, including any potential for synergistic enhancement of risk from use on the same or adjacent sites of quantities of the same substance or the co-storage and/or use of other hazardous substances.

(ii) The storage in belowground tanks of HSNO sub-class 9.1A-D aquatic ecotoxics and/or HSNO sub-class 9.2A-D soil ecotoxics is controlled in respect of:

(a) Location and design of storage tanks or cylinders.
(b) Monitoring systems.
(c) Emergency response plans.
(d) Site security and containment.

Assessment Matters

In assessing any application the Council will, in addition to the matters contained in the Fourth Schedule of the Act, have regard to:

- For storage of aquatic or soil ecotoxics, adherence to the Environmental Protection Authority (EPA) Approved Code of Practice HSNOCOP 13-2, "Code of Practice for the Management of Existing Stationary Container Systems up to 60,000 litres Capacity".

~~(ii)~~(iii) The storage, use or disposal of ~~Class 7~~ radioactive materials not exceeding 100 times the quantities specified in the 'Type A' transport package limit ~~(~~as identified in the International Atomic Energy Agency (IAEA) 'Regulations for the Safe Transport of Radioactive Material'~~)~~ is controlled in respect of:

(a) Location and design of facility.

(b) Monitoring systems.

(c) Emergency response plans.

(d) Site security and containment.

(Example: industrial radiography)

Assessment Matters

In assessing any application the Council will, in addition to the matters contained in the Fourth Schedule of the Act, have regard to:

- Adherence with requirements of the National Radiation Laboratory.
- The nature of activities and density of use in the vicinity of the site.

Rule 17.5.3 Discretionary Activities (Restricted) *(Policy 17.3.8)*

The following activities are discretionary activities (restricted):

(i) The multi vessel tank storage of HSNO sub-class 2.1.1A LPG, including propane-based refrigerant ~~and the storage of petroleum fuels in above ground storage tanks in the Port 2 Zone.~~

(ii) The storage in aboveground tanks in the Port 2 Zone, at quantities exceeding those permitted under Rule 17.5.1, of HSNO sub-class 3.1A-D liquid petroleum fuels, HSNO class 6 toxic substances, HSNO class 8 corrosive substances, HSNO sub-class 9.1A-D aquatic ecotoxics and HSNO sub-class 9.2A-D soil ecotoxics.

Council's discretion under this rule is restricted to:

(a) Matters relating to public safety.

(b) Avoidance of environmental effects arising from potential spillage of hazardous substances stored.

(c) Location and design of storage tanks.

(d) Monitoring systems.

(e) Emergency response plans.

(f) Site security and containment.

Rule 17.5.4 Discretionary Activities (Unrestricted) *(Policy 17.3.8)*

The following activities are discretionary activities (unrestricted):

(i) The storage, use or disposal of hazardous substances other than provided for in Rule 17.5.1, Rule 17.5.2 or Rule 17.5.3.

In addition to an assessment of effects as contained in the Fourth Schedule of the Act, the Council will require applicants to prepare a site management plan and an emergency response plan to be submitted with any application for resource consent required under this rule.

17.6 Assessment of Resource Consent Applications: Hazardous Substances *[Amended by Proposed Plan Change 13,]*

In assessing any applications, in addition to the matters contained in the Fourth Schedule of the Act, the Council will have regard to, but not be restricted by the following matters:

17.6.1 Intensity

The nature and size of the development or activity.

17.6.2 Nature of ~~Hazard/~~ the Hazardous Substance

The nature of the ~~hazard or~~ hazardous substance. ~~and the level of risk.~~

17.6.3 Information

Knowledge and understanding of the ~~hazard or~~ hazardous substance and its effects.

17.6.4 HSNO Act 1996

Ability to comply with the HSNO Act 1996

~~17.6.4~~ 17.6.5 Location

Location of the site or sub-facility with respect to population, services, schools, emergency services, hospitals and arterial routes.

17.6.6 Design and location

Location and design of storage tanks and associated plant.

17.6.7 Transportation

Ability to transport the hazardous substances to, and from, the facility is a safe and secure manner.

~~17.6.6~~17.6.8 Risk

The sensitivity of the surrounding environment and the acceptable level of risk and includes the assessment of site management plans and emergency response plans.

~~17.6.9~~ 17.6.9 Consequences of ~~Hazard/~~Hazardous Substance

Consequences to people, infrastructure and the environment of any failure, escape or activation of the ~~hazard or~~ hazardous substance.

17.6.10 Cumulative Effects

The cumulative effects on people, infrastructure and the environment arising from storing, using or disposing of hazardous substances.

17.6.11 Alternative locations and methods

Consideration of alternative locations and methods of storing, using or disposing of hazardous substances.

~~17.6.5~~17.6.12Mitigation

Whether mitigation measures are appropriate, reliable and able to be adequately monitored.

~~17.6.7 Drainage~~

~~Drainage of the area.~~

~~17.6.8~~ 17.6.13Long Term Measures

The long term performance and management requirements of protective or mitigation measures.

~~17.6.10 Climate~~

~~Climatic conditions.~~

~~17.6.11 Suitability of Site~~

~~How the applicant has addressed matters relating to natural hazards which may affect the suitability of the site for the proposed activity.~~

~~17.6.12~~ 17.6.14Codes of Practice

Industry codes of practice and other procedures which may be used to assess activities involving hazardous substances.

17.6a Assessment of Resource Consent Applications: Hazards *[Amended by Proposed Plan Change 13]*

In assessing any applications, in addition to the matters contained in the Fourth Schedule of the Act, the Council will have regard to, but not be restricted by the following matters:

17.6a.1 Intensity

The nature and size of the development or activity.

17.6a.2 Nature of Hazard

The nature of the hazard.

17.6a.3 Information

Knowledge and understanding of the hazard and its effects.

17.6a.4 Location

Location with respect to population, services, schools, emergency services, hospitals and arterial routes.

17.6a.5 Mitigation

Whether mitigation measures are appropriate and reliable.

17.6a.6 Risk

The acceptable level of risk.

17.6a.7 Drainage

Drainage of the area.

17.6a.8 Long Term Measures

The long term performance and management requirements of protective or mitigation measures.

17.6a.9 Consequences of Hazard

Consequences to people, infrastructure and the environment of any failure or activation of the hazard.

17.6a.10 Climate

Climatic conditions.

17.6a.11 Suitability of Site

How the applicant has addressed matters relating to natural hazards which may affect the suitability of the site for the proposed activity.

17.9 Anticipated Environmental Results *[Numbering amended by Plan Change 11, 11/10/10]*

The anticipated environmental results are:

17.9.1

The avoidance or mitigation of adverse effects resulting from natural hazards on infrastructure, the physical environment, and people's health and safety.

Objective: 17.2.1

17.9.2

The prevention or mitigation of adverse effects of the storage, use, disposal or transportation of hazardous substances.

Objective: 17.2.2

17.9.3

Earthworks do not result in loss of life or injury, or in damage to property. *[Inserted by Plan Change 11, 11/10/10]*

Objective: 17.2.3

17.9.4

Earthworks do not cause sedimentation of surface water bodies, coastal water or stormwater networks, or contamination of groundwater. *[Inserted by Plan Change 11, 11/10/10]*

Objective: 17.2.3

17.9.5

Earthworks do not cause adverse visual impacts, and do not result in loss of or damage to natural landforms, vegetation, habitats, or archaeological sites. *[Inserted by Plan Change 11, 11/10/10]*

Objective: 17.2.3