22 March 2016

Hearings Panel
Proposed Queenstown Lakes District Plan
Queenstown Lakes District Council
Private Bag 50072,
QUEENSTOWN 9348

Dear Sirs

FURTHER INFORMATION TO CLARIFY AURORA ENERGY LIMITED SUBMISSION ON PROPOSED QUEENSTOWN LAKSES DISTRICT PLAN 2015

Thank you for the opportunity to present evidence in relation to submissions lodged on the Proposed Queenstown Lakes District Plan 2015 ("Proposed Plan") on behalf of Aurora Energy Limited ("Aurora"). During questioning Mr Nugent, requested some further clarification on which of Aurora's electricity distribution infrastructure could be included within the term "*Regionally Significant Infrastructure*" as service lines to individual dwellings form part of the distribution network, but would not be considered as regionally significant. We agree with this premise. In its original submission on the Proposed Plan, Aurora sought the introduction of provisions relating to corridor protection for its strategic electricity distribution assets which include:

- All 33kV and 66kV sub-transmission and distribution overhead lines and underground cables;
- 11kV overhead line to Glenorchy;
- 11kV overhead line between the Cardrona Substation up to the ski fields;
- 11kV overhead line to Treble Cone; and
- 11kV overhead line to Makarora.

These electricity lines are crucial because they contribute to the social and economic wellbeing and health and safety of the District and are lines that:

i. Supply essential public services; or
ii. Supply large industrial or commercial electricity consumers; or
iii. Supply high numbers of consumers; or
iv. Are difficult to replace with an alternative electricity supply if they are compromised.

The inclusion of these strategic electricity distribution assets, within the definition of *Regionally Significant Infrastructure,* is therefore considered defendable when considered against the electricity supply criteria outlined above.

Critical Infrastructure

As discussed at the hearing, Aurora has sought the inclusion of a number of new definitions within the Proposed Otago Regional Policy Statement 2015. This included not only a new definition for *Regionally Significant Infrastructure* (which is aligned with the definition sought by Aurora on the Proposed Plan) but also *Critical Infrastructure*. The definition sought by Aurora is as follows:

> *Critical infrastructure*
>
> > *Means Infrastructure necessary to provide services which, if interrupted, would have a serious effect on the communities within the Region or a wider population, and which would require immediate reinstatement. This includes any structures that support, protect or form part of critical infrastructure. Critical infrastructure includes:*
>
> 1) *regionally significant airports*
> 2) *regionally significant ports*
> 3) *gas storage and distribution facilities*
> 4) *electricity substations, networks, and distribution installations, including the electricity distribution network*
> 5) *supply and treatment of water for public supply*
> 6) *storm water and sewage disposal systems*
> 7) *telecommunications installations and networks*
> 8) *strategic road and rail networks (as defined in the Regional Land Transport Strategy)*
> 9) *petroleum storage and supply facilities*
> 10) *public healthcare institutions including hospitals and medical centres*
> 11) *fire stations, police stations, ambulance stations, emergency coordination facilities.*

The Otago Regional Council's ("ORC") Hearings Panel requested some further information on the use of the term *Critical Infrastructure* in planning instruments throughout New Zealand. The information that follows, was provided to the ORC Hearing Panel, and is considered relevant to the QLDC Hearing Panel, given the nature of discussions with the New Zealand Fire Service and Aurora at the Hearing on 17th March.

We can confirm that while the term *Critical Infrastructure* is not used in the Electricity Act 1992 or in the National Policy Statement for Electricity Transmission 2008 or in the Resource Management (National Environmental Standards for Electricity Transmission Activities) Regulations 2009, the term is increasingly being used in Regional Policy Statements throughout New Zealand.

The following outlines those Regional Policy Statements which include a definition for "Critical Infrastructure". (For completeness we have included the actual definition and provided some extracts from the relevant plans which highlight how the term is applied to Regional Policy). See **Attachment A**.

The definition used in the Canterbury Regional Policy Statement 2013 is the same as that proposed by Aurora in its submission and states:

Canterbury Regional Policy Statement 2013

Critical infrastructure

> *Infrastructure necessary to provide services which, if interrupted, would have a serious effect on the communities within the Region or a wider population, and which would require immediate reinstatement. This includes any structures that support, protect or form part of critical infrastructure.*
>
> *Critical infrastructure includes:*
>
> 1) *regionally significant airports*
> 2) *regionally significant ports*
> 3) *gas storage and distribution facilities*
> 4) *electricity substations, networks, and distribution installations, including the electricity distribution network*
> 5) *supply and treatment of water for public supply*
> 6) *storm water and sewage disposal systems*
> 7) *telecommunications installations and networks*
> 8) *strategic road and rail networks (as defined in the Regional Land Transport Strategy)*
> 9) *petroleum storage and supply facilities*
> 10) *public healthcare institutions including hospitals and medical centres*
> 11) *fire stations, police stations, ambulance stations, emergency coordination facilities.*

Enclosed as an attachment is a copy of the relevant sections of the Canterbury Regional Policy Statement 2013 which relate to Critical Infrastructure.

We note that the Independent Hearings Panel for the Replacement Christchurch City Plan released decisions on part of the *Definitions* section of the Proposed Plan on 14th March 2016. A definition is included within the Proposed Christchurch District Plan of *Critical Infrastructure* as follows:

> ***Critical infrastructure***
> *means infrastructure necessary to provide services which, if interrupted, would have a serious effect on the communities within the Christchurch District and which would require immediate reinstatement. This includes any structures that support, protect or form part of critical infrastructure.*
>
> *Critical infrastructure includes:*
>
> a. *Christchurch International Airport;*
> b. *Lyttelton Port of Christchurch;*
> c. *Gas storage and distribution facilities;*
> d. *Electricity sub-stations, networks and distribution installations, including the electricity distribution network;*
> e. *Supply and treatment of water for public supply;*

f. *Storm water and sewage disposal systems;*
g. *Telecommunications and radiocommunications installations and networks;*
h. *Strategic road and rail networks (as defined in the Canterbury Regional Land Transport Strategy);*
i. *Petroleum storage and supply facilities;*
j. *Public health care facilities, including hospitals and medical centres;*
k. *emergency service facilities; and*
l. *New Zealand Defence Force facilities.*

Proposed Southland Regional Policy Statement

Critical Infrastructure is defined in the Proposed Southland Regional Policy Statement 2012 as:

> ***Critical infrastructure***
> *Infrastructure that provides services which, if interrupted, would have a significant effect on the wellbeing and health and safety of people and communities and would require reinstatement, and includes all strategic facilities.*

Enclosed as an attachment is a copy of the relevant sections of the Proposed Southland Regional Policy Statement 2012 which relate to Critical Infrastructure.

Proposed Northland Regional Policy Statement

Critical Infrastructure is defined in the Proposed Northland Regional Policy Statement 2012 as:

> ***Critical Infrastructure***
> *Is defined in section 4, page 13, Critical Lifeline Utility Sites – Northland Lifeline Groups: Infrastructure Resilience Plan. In addition to certain utility and communication services, critical infrastructure can include public healthcare institutions and emergency services which are vital to respond to the event and ensure community recovery after the event.*

Enclosed as an attachment is a copy of the relevant sections of the Proposed Northland Regional Policy Statement 2012 which relate to Critical Infrastructure.

Horizons Regional Council – One Plan

Critical Infrastructure is defined in the Horizons Regional Council's One Plan as:

> ***Critical infrastructure*** *means infrastructure^ necessary to provide services which, if interrupted, would have a serious effect^ on the people within the Region or a wider population, and which would require immediate reinstatement. Critical infrastructure* includes infrastructure^ for:*
> *(a) electricity substations*
> *(b) the treatment and storage of water^ for public supply (excluding the distribution network)*
> *(c) the management of human sewage treatment (excluding the reticulation system)*
> *(d) strategic road and rail networks (as defined in the Regional Land Transport Strategy)*
> *(e) health care institutions including hospitals.*

Enclosed as an attachment is a copy of the relevant sections of the One Plan which relate to Critical Infrastructure.

If the Hearings Panel requires any clarification on the attached, please do not hesitate to contact the undersigned at joanne.dowd@thinkdelta.co.nz. or on 03 471 6783.

Yours faithfully

Joanne Dowd

Joanne Dowd
NETWORK POLICY MANAGER

ATTACHMENT A

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

CANTERBURY REGIONAL POLICY STATEMENT 2013

Revised December 2013

CHAPTER 5
LAND-USE AND INFRASTRUCTURE

Introduction

The issues and objectives within this chapter of the Canterbury Regional Policy Statement (CRPS) generally apply to all of the Canterbury region. However, many resource management issues associated with urban and rural-residential development tend to be concentrated in the Greater Christchurch area. For the Greater Christchurch area, the issues to be resolved, and the manner in which the objectives are to be implemented, are set out in Chapter 6 – Recovery and Rebuilding of Greater Christchurch.

Within this chapter, the issues, objectives and policies that relate to the Canterbury region inclusive of Greater Christchurch will be notated as 'Entire Region'; those provisions which are not relevant to Greater Christchurch will be notated as 'Wider Region'.

Accordingly, the achievement and implementation of the objectives, policies or methods in Chapter 6 – Recovery and Rebuilding of Greater Christchurch, take precedence within Greater Christchurch.

The focus of this chapter is on:

(1) development which results in changes to urban, rural-residential and rural areas, together with the infrastructural services which support this development.

(2) the strategic integration of land-use and regionally significant infrastructure in the wider region.

(3) recognition of the importance of regionally significant infrastructure to a community's economic wellbeing, social wellbeing, health and safety; and the need to provide for its establishment, retention and enhancement, as appropriate.

Development, including new land use, subdivision and infrastructure, results in changes in the places we work, live and associate with. Change can be positive or negative, depending on where, when and how it occurs. It can enable people and communities to provide for their social, economic and cultural well-being and can promote positive changes to the environment. However, if not appropriately managed, development can result in changes to natural and physical resources that do not promote sustainable management.

The strategic integration of land use with regionally significant infrastructure is important for the functioning of communities and economic wellbeing at the national, regional and local scale. Without effective regionally significant infrastructure the benefits of development will decline or development will result in unacceptable adverse effects on the environment. While there is a need to provide for the development, expansion and maintenance of this infrastructure, it is also important to manage how this occurs, in order to ensure the way in which it changes the environment is appropriate. The nature of the integration required will depend on the infrastructure. Not all regionally significant infrastructure may need to be integrated with land use.

Without limiting the generality of infrastructure, in the Canterbury region it includes:

- *(1) Electricity generation, transmission and distribution*
- *(2) Fuel distribution networks (including by pipeline, road, rail or sea)*
- *(3) Main highways and roads*
- *(4) Infrastructure for the irrigation of crops and pasture*
- *(5) Railways*
- *(6) River stopbanks and training*
- *(7) Supply of potable water for communities*
- *(8) Sewerage reticulation, treatment and disposal*
- *(9) Stormwater drainage reticulation*
- *(10) Telecommunication networks*
- *(11) Transport hubs, including airports and seaports*

Some infrastructure may be of national importance, and some may have regional or local importance. Some infrastructure may be critical to communities being able to recover promptly from damage from natural hazard events.

Consistent cross-boundary jurisdictional management in addressing the adverse effects of, and on, lineal infrastructure corridors is also necessary, particularly where such infrastructure serves the region generally, despite being located outside of or in only part of it. It is also important when such infrastructure traverses site, district or regional boundaries. Matters relevant to Chapter 5 and 6 are also contained in other sections of the Regional Policy Statement. As an example, energy is addressed in Chapter 16.

5.1 ISSUES

ISSUE 5.1.1 – ADVERSE EFFECTS OF DEVELOPMENT (WIDER REGION)

Development, including the associated use and provision of infrastructure and services, are important to enabling people and communities to provide for their social, economic and cultural well-being, but where not appropriately managed can result in significant adverse effects on the environment.

Explanation

Development, including the use and provision of infrastructure and services, particularly associated with regionally significant infrastructure, enables people and communities to provide for their social, economic and cultural well-being. However, it can result in a range of significant adverse effects on the environment. These adverse effects can occur individually or cumulatively.

The focus of the CRPS is on those matters that require an overview to achieve the integrated management of natural and physical resources. This may be because the benefits are regionally important, the consequences of development are geographically widespread or cumulative in nature, the resource affected is of importance to Canterbury, or significant interaction occurs between different resources.

The adverse effects on the environment of particular concern are:

(1) the loss and degradation of Canterbury's important:

- (a) amenity values
- (b) landscape values
- (c) historic heritage values
- (d) recreational values and the associated public access
- (e) ecosystem values
- (f) indigenous vegetation and habitats of

indigenous fauna values; and

(g) estuary, river margins and wetland values;

(2) the contamination of land and water bodies;

(3) the degradation of air quality;

(4) the undesirable changes to flow and level regimes of water bodies;

(5) those arising from the inefficient end-use of energy;

(6) the location of development where it is more vulnerable to impacts from natural hazards, for example, on low-lying coastal land prone to flooding and tsunami;

(7) the reduction in the rural primary productive base of Canterbury;

(8) the location of development in areas that lack the necessary infrastructure;

(9) reverse sensitivity effects and conflict between incompatible activities, for example where development including growth, limits the operation of existing and consented infrastructure;

(10) compromised access to high value aggregate resources within relatively close proximity to urban areas and in the vicinity of rural residential development including as a result of significant reverse sensitivity effects;

(11) the loss of the relationship of Ngāi Tahu and their culture and traditions with ancestral lands, water, sites, wāhi tapu and other taonga.

(12) the degradation of the natural character of the coastal environment.

The relationship of Ngāi Tahu and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and other taonga can be adversely affected by development, particularly if it encroaches on resources of value to Ngāi Tahu, desecrates wāhi tapu and wāhi taonga or occurs over historical pā sites. Wāhi tapu areas may be associated with creation stories of tāngata whenua, a particular event (such as a battle or ceremony); it may be where the whenua (placenta) was returned to the earth, or where a certain type of valued resource is found. Wāhi tapu include kōiwi tāngata, urupā, waiwhakaheke tūpāpaku, historic pā, buried whakairo tuhituhi o neherā (archaeological and rock art sites), tohu and ana.

ISSUE 5.1.2 – INAPPROPRIATE DESIGN, LOCATION AND FUNCTION OF DEVELOPMENT (WIDER REGION)

Growth and development, if inappropriately designed and located, can reduce the community's well-being or health and safety.

Explanation

Development can either enable or adversely affect the ability of people and communities to provide for their social, economic and cultural well-being, and health and safety. Once development is established it is likely to exist for a number of generations. Changing the form and structure of established urban, rural-residential and rural areas can be difficult and expensive. Therefore, it is important to achieve a robust form of development that is responsive in the long term to the changing needs of people and communities.

Unless the design, location and function of development is carefully managed, it will not necessarily be able to:

(1) respond to changes in the demographic structure of the population;

(2) enable socially cohesive and resilient communities;

(3) improve the efficiency of energy use;

(4) reduce vehicle trip frequency, trip generation and distance, and improve modal choice so as to reduce adverse effects on the environment of high energy consumption and associated discharges to air resulting from dependence on private motor vehicles;

(5) make efficient use of physical resources within communities;

(6) efficiently and effectively provide public infrastructure such as roads, sewerage, stormwater and potable water;

(7) respond to the effects of climate change;

(8) recognise the relative value of land for urban, rural-residential and rural uses;

(9) recognise and avoid reverse sensitivity effects; and

(10) maintain or protect people's health, well-being and amenity.

Development will be influenced by changes in household composition, as well as migration, lifestyles and economic factors. Growth is not uniform across the region as sub-regional areas have distinct social and demographic characteristics and these will affect demand, in particular for housing and service provision. Accordingly, some sub-regional areas will be confronted with issues of accommodating growth in a manner that addresses wider growth patterns and the strategic integration of associated infrastructure. Other areas may be faced with maintaining their identity and the efficient use of infrastructure where there is minimal growth.

ISSUE 5.1.3 – LACK OF STRATEGIC INTEGRATION (ENTIRE REGION)

There can be a lack of strategic integration of regionally significant infrastructure with land-use.

Explanation

Infrastructural services and facilities, including network utilities and services, are necessary to enable people and communities (including future generations) to meet community well-being and provide for people's health and safety.

However, land-use and infrastructure require coordination and integration in order to ensure potentially significant benefits to people and the community are achieved and that the adverse effects on the environment are appropriately avoided, remedied, or mitigated and/or controlled. Consistent cross boundary jurisdictional management in addressing the adverse effects of, and on, regionally significant infrastructure, including lineal infrastructure corridors is also necessary.

If the strategic integration between land-use and infrastructure does not occur, this may result in:

(1) constraints on the safe, efficient and effective, use, development and operation of regionally significant infrastructure;

(2) the untimely, inefficient and costly provision of regionally significant infrastructure;

(3) regionally significant infrastructure unnecessarily adversely affecting the surrounding land-uses;

(4) adverse effects on the environment caused by the lack, or unsuitable provision, of appropriate infrastructure;

(5) an inability to facilitate the continued growth and expansion of regionally significant infrastructure and operations; and

(6) failure to realise the full, 'whole of operational life' value of investment into establishing regionally significant infrastructure.

ISSUE 5.1.4 – LAND USE AND TRANSPORT INTEGRATION (ENTIRE REGION)

The transport system can both adversely affect, and be adversely affected by, urban and rural form.

Explanation

As well as the effects that the transport system has on the environment through its contribution to urban form, transport also has a direct impact on the environment.

The transport system impacts both positively and negatively on existing communities. Roads, motorways, ports, airports, rail, and transport hubs can have effects on people and communities. These effects can be avoided, remedied or mitigated by design and through appropriate management of both the transport system and adjoining sensitive land uses, in a manner that does not compromise the effectiveness of such transport systems.

The transport system can also bring people and communities together and enable them to provide for their social, economic and cultural wellbeing, through improved accessibility, health and safety, modal choice and the provision of efficient networks.

The transport system is a significant regional resource providing for the movement of people, goods, services and resources. Integration of land use and transport is crucial for all communities and to promote the social, cultural and economic benefits that derive from the use and development of the transport system. People and freight need to be linked into efficient regional and national transport networks. Specifically they need effective and efficient access to ports and airports as part of the transport network, and to services in cities and towns.

Land use and transport systems need to be carefully integrated, with co-ordination between infrastructure providers and other agencies responsible for regional growth and development, to ensure that transport systems can:

(1) Promote positive contributions to consolidated urban forms;

(2) promote increased accessibility and mobility;

(3) avoid or mitigate adverse effects on the environment, including on sensitive activities;

(4) effectively and efficiently develop and expand; and / or

(5) realise the full value of investment into establishing regionally significant infrastructure.

ISSUE 5.1.5 – DIFFICULTY IN ESTABLISHING PAPAKĀINGA HOUSING AND MARAE (ENTIRE REGION)

Ngāi Tahu, as tāngata whenua, have difficulty establishing papakāinga housing and marae, and ancillary activities associated with these, on ancestral land identified for such purposes.

Explanation

Papakāinga housing is a form of housing development occurring on ancestral land which provides for mana whenua to live on that land. Papakāinga housing, marae and associated ancillary activities located on ancestral land are important to enable Ngāi Tahu to maintain their culture, traditions and relationships. These activities support Ngāi Tahu, providing for their culture and well-being through living in a culturally-based way.

Further, the ability to develop papakāinga settlements and marae on Māori freehold and Māori reservation land allows tāngata whenua to exercise their relationship, culture and traditions with this land and the surrounding natural resources.

There are multiple barriers to the development of papakāinga housing and marae. These include matters which are outside the influence of this CRPS, such as: the difficulty of obtaining loans for land that is multiple-owned; different views of the various owners of multiple-owned land; the cost of development, including compliance costs; and a lack of coordinated services and advice from the courts, central government and local authorities. The issue which can be influenced by this CRPS is the inability to appropriately develop resulting from provisions in regional and district plans.

5.2 OBJECTIVES

Objective 5.2.1 – Location, design and function of development (Entire Region)

Development is located and designed so that it functions in a way that:

(1) achieves consolidated, well designed and sustainable growth in and around existing urban areas as the primary focus for accommodating the region's growth; and

(2) enables people and communities, including future generations, to provide for their social, economic and cultural well-being and health and safety; and which:

- **(a) maintains, and where appropriate, enhances the overall quality of the natural environment of the Canterbury region, including its coastal environment, outstanding natural features and landscapes, and natural values;**
- **(b) provides sufficient housing choice to meet the region's housing needs;**
- **(c) encourages sustainable economic development by enabling business activities in appropriate locations;**
- **(d) minimises energy use and/or improves energy efficiency;**
- **(e) enables rural activities that support the rural environment including primary production;**
- **(f) is compatible with, and will result in the continued safe, efficient and effective use of regionally significant infrastructure;**
- **(g) avoids adverse effects on significant natural and physical resources including regionally significant infrastructure, and where avoidance is impracticable, remedies or mitigates those effects on those resources and infrastructure;**
- **(h) facilitates the establishment of papakāinga and marae; and**
- **(i) avoids conflicts between incompatible activities.**

The following policies implement this objective:

Policy 5.3.1, Policy 5.3.2, Policy 5.3.3, Policy 5.3.4, Policy 5.3.5, Policy 5.3.6, Policy 5.3.7, Policy 5.3.8, Policy 5.3.9, Policy 5.3.10, Policy 5.3.11, and Policy 5.3.12. Policy 5.3.13

Principal reasons and explanation

Development, including papakāinga and marae, offers significant social, economic and cultural benefits for the people residing and working in Canterbury. However, it may result in environmental change that is a threat to valued natural and physical resources. Natural resources can be finite and the effects of development, particularly on land resources, can be irreversible. The effects may be direct (for example replacement of rural by urban use or the intensification of the activity) or indirect (off-site or "spill-over" effects).

The pattern of development in the region strongly influences the use of energy, whether this is as a result of the demand for transport or energy required to establish and undertake the activity. As development intensifies and spreads, the demand for transport and energy use increases.

A consolidated pattern of urban development, as the primary focus for accommodating the region's growth, together with a limitation on the extent of areas of rural-residential activity, will:

(1) minimise energy use;

(2) promote more sustainable forms of development;

(3) encourage greater modal choice, reduced trip distances and promote healthier transport options;

(4) provide for the efficient use of existing infrastructure; and

(5) maintain regional identity and character.

New development also provides the opportunity to enhance the quality of the environment in appropriate circumstances, such as through the provision of open spaces, community facilities, and restoration of ecosystems.

Primary production from Canterbury's rural areas is of significance to the economic and social well-being of Canterbury's people and communities. It is foreseeable that the well-being of future generations will also be strongly influenced by the ability to continue with such primary production. It is important to manage resources and activities in rural areas so that the foreseeable potential of the rural primary base of Canterbury is maintained. This includes maintaining the primary production resource and the efficient provision of infrastructure and use of other natural resources such as water, in appropriate locations to support primary production.

Objective 5.2.2 – Integration of land-use and regionally significant infrastructure (Wider Region)

In relation to the integration of land use and regionally significant infrastructure:

(1) To recognise the benefits of enabling people and communities to provide for their social, economic and cultural well-being and health and safety and to provide for infrastructure that is regionally significant to the extent that it promotes sustainable management in accordance with the RMA.

(2) To achieve patterns and sequencing of land-use with regionally significant infrastructure in the wider region so that:

- **(a) development does not result in adverse effects on the operation, use and development of regionally significant infrastructure.**
- **(b) adverse effects resulting from the development or operation of regionally significant infrastructure are avoided, remedied or mitigated as fully as practicable.**
- **(c) there is increased sustainability, efficiency and liveability.**

The following policies implement this objective:

Policy 5.3.1, Policy 5.3.2, Policy 5.3.3, Policy 5.3.6, Policy 5.3.7, Policy 5.3.8, Policy 5.3.9, Policy 5.3.10, Policy 6.3.4, Policy 6.3.5 and Policy 8.3.4.

Principal reasons and explanation

Regionally significant infrastructure in the wider region is essential to enable the well-being, health and safety of people and communities and has the following characteristics:

(1) it significantly contributes to the social, economic and cultural well-being of people and communities;

(2) it is the subject of considerable financial investment;

(3) it is unlikely to be readily replaced or duplicated; and

(4) it requires integrated management with other natural and physical resources.

In relation to patterns of land-use, consideration of sequencing and costs of infrastructure development need to be factored into decision-making. These can have significant effects on efficiency and the economic well-being of communities.

Regionally significant infrastructure provides considerable economic and social benefits to the region. The nature and scale of such infrastructure is distinct to land use generally and has varying characteristics, and accordingly impacts. While the relationship between land use and regionally significant infrastructure is typically interrelated and interdependent such that the provision of infrastructure can have major implications on the sustainable pattern and sequencing of land use, some regionally significant infrastructure is of a nature that does not require it to be so closely integrated with urban areas.

When developing and using regionally significant infrastructure, it is not always practicable to 'internalise' all adverse effects on the environment. In some cases (e.g. airports, ports, and strategic road and rail corridors) the infrastructure influences the quality and use of the environment surrounding it.

Recognition of the importance of regionally significant infrastructure will lead to greater weight being given to its requirements. As a consequence, it is desirable to manage the location and form of the surrounding development, to reduce incompatibility and conflicts.

Places that improve liveability are identified in the 2005 New Zealand Urban Design Protocol as those places that provide a high quality of life where people choose to live and work. They provide attractive living environments, and offer good leisure and recreational opportunities, and they support a thriving cultural life. Liveable places provide choices in housing, work, transport and lifestyle opportunities.

Objective 5.2.3 – Transport network (Wider Region)

A safe, efficient and effective transport system to meet local regional, inter-regional and national needs for transport, which:

(1) supports a consolidated and sustainable urban form;

(2) avoids, remedies or mitigates the adverse effects of transport use and its provision;

(3) provides an acceptable level of accessibility; and

(4) is consistent with the regional roading hierarchy identified in the Regional Land Transport Strategy.

The following policies implement this objective:

Policy 5.3.1, Policy 5.3.2, Policy 5.3.3, Policy 5.3.6, Policy 5.3.7, Policy 5.3.8, Policy 5.3.9, Policy 5.3.10, Policy 6.3.4, Policy 6.3.5 and Policy 16.3.1.

Principal reasons and explanation

An efficient transport system is vital to the economic prosperity of the Canterbury region, and to the well-being of its people and communities. Transport and land use are both interrelated and interdependent and should be mutually supportive. Well-designed transport systems can both service growth and development, reinforce growth and ensure efficient access to land, sea and air transport facilities.

Improvements in the regional transport network in both rural areas and existing urban areas can have impacts on the local communities that live there. One of the major impacts from increased traffic, or new roading infrastructure is severance to existing communities, as well as localised impacts of increased noise, dust and adverse amenity effects.

Where alternative means exist of meeting transport demand, environmental objectives can be achieved by giving preference to those transport choices with lower environmental effects, as well as promoting land use changes that will move towards improved accessibility for the communities it serves.

In many areas of Canterbury, where there is little sub-regional growth, and the existing urban pattern is largely developed, reliance on private motor vehicle use will remain the preferred, or only realistic means of travel at least in the medium term. However, cumulative land use and transport developments should not foreclose opportunities for improvements in accessibility and modal choice.

Policy 5.3.1 – Regional growth (Wider Region)

To provide, as the primary focus for meeting the wider region's growth needs, sustainable development patterns that:

(1) ensure that any

(a) urban growth; and

(b) limited rural residential development

occur in a form that concentrates, or is attached to, existing urban areas and promotes a coordinated pattern of development;

(2) encourage within urban areas, housing choice recreation and community facilities, and business opportunities of a character and form that supports urban consolidation;

(3) promote energy efficiency in urban forms, transport patterns, site location and subdivision layout;

(4) maintain and enhance the sense of identity and character of the region's urban areas; and

(5) encourage high quality urban design, including the maintenance and enhancement of amenity values.

This policy implements the following objectives:

Objective 5.2.1, Objective 5.2.2, Objective 15.2.1, Objective 16.2.1 and Objective 16.2.2

Methods

The Canterbury Regional Council:

Will:

(1) Through the Canterbury Regional Land Transport Strategy, implement policies to integrate the development and use of the land transport network infrastructure with land-use.

Territorial authorities:

Will:

(2) Set out objectives, and policies, and may include methods in district plans which establish an approach for the integrated management of urban and zoned rural residential development with the primary focus of ensuring consolidated, well-designed and more sustainable urban patterns including the avoidance, remediation or mitigation of reverse sensitivity effects.

(3) Consider methods which promote good planning, building design and urban design that give effect to the New Zealand Urban Design Protocol (2005).

(4) Consider transport programmes under the Land Transport Management Act 2003 (LTMA) that promote better design and integration between land use and transport.

Local authorities:

Will:

(5) Work together where appropriate, with adjoining local authorities and, with providers of regionally significant infrastructure when identifying patterns and locations of development.

Should:

(6) Engage with Ngāi Tahu as tāngata whenua, including by recognising iwi management plans, when determining Ngāi Tahu values.

Principal reasons and explanation

A consolidated form of urban and rural-residential development in and around existing cities, towns and villages is the pattern of development that will most efficiently and effectively achieve the relevant policies and objectives in the CRPS, particularly in relation to energy and infrastructure provision.

Rural residential development is typified by clusters of small allotments usually in the size range of up to 2.0 hectares zoned principally for residential activity. Rural-residential development will need to be well planned and coordinated in order to minimise adverse effects on such matters as: rural character and resources; rural infrastructure including the road network; and not foreclose development options in the vicinity of urban areas.

Existing rural residential zones adjacent to urban areas have often been developed to provide an edge to that urban area and provides a sympathetic transition between the urban area and the rural hinterland, or marks an appropriate limit to the extension of full urban development. Within the wider region it is important that areas zoned for rural residential development are located close to existing towns and villages so as to ensure efficient utility servicing and patterns of transport.

Policy 5.3.1 incorporates concepts of good urban design, and the encouragement of a range of choice within urban areas for residential and business development to meet the diverse needs of people within the region. High quality urban design creates pleasant living environments, and improvements in amenity values, which includes management of nuisance arising from excessive traffic, noise, odours and contaminants.

In determining an appropriate direction for managing urban growth, all relevant objectives need to be considered, including water management, energy, landscape and air quality. Accordingly, it is considered that a primary focus on consolidation within, or attached to, existing urban areas presents the most appropriate means to provide for the integrated management of all of the region's resources.

Intervention to promote sustainable resource management and the integrated management of effects, is undertaken for two reasons:

(a) a consolidated urban form is more likely to secure desired outcomes and sustainably manage effects; and

(b) that if left unimpeded, resulting development patterns, despite the extent and scale of growth pressures, are likely to produce adverse environmental effects, and costs to communities.

Approaches for achieving integrated management of urban and rural-residential development may include identifying where and how development is to be accommodated. This can be achieved, for example, through other legislation such as under the Local Government Act 2002 or through other process such as structure planning, particularly where there are development and growth pressures.

Policy 5.3.2 – Development conditions (Wider Region)

To enable development including regionally significant infrastructure which:

(1) ensure that adverse effects are avoided, remedied or mitigated, including where these would compromise or foreclose:

- **(a) existing or consented regionally significant infrastructure;**
- **(b) options for accommodating the consolidated growth and development of existing urban areas;**
- **(c) the productivity of the region's soil resources, without regard to the need to make appropriate use of soil which is valued for existing or foreseeable future primary production, or through further fragmentation of rural land;**
- **(d) the protection of sources of water for community supplies;**
- **(e) significant natural and physical resources;**

(2) avoid or mitigate:

- **(a) natural and other hazards, or land uses that would likely result in increases in the frequency and / or severity of hazards;**
- **(b) reverse sensitivity effects and conflicts between incompatible activities, including identified mineral extraction areas;**

and

(3) integrate with:

- **(a) the efficient and effective provision, maintenance or upgrade of infrastructure; and**
- **(b) transport networks, connections and modes so as to provide for the sustainable and efficient movement of people, goods and services, and a logical, permeable and safe transport system.**

This policy implements the following objectives:

Objective 5.2.1, Objective 5.2.2, Objective 5.2.3, Objective 11.2.1 Objective 15.2.1, Objective 16.2.1 and Objective 16.2.2

Methods

The Canterbury Regional Council:

Will:

(1) Through the Canterbury Regional Land Transport Strategy, implement policies to integrate the development and use of the land transport network infrastructure with land-use.

(2) Set out objectives, policies and may include methods in regional plans to control the adverse effects of development on water bodies, including their value as sources of drinking water; and

Territorial authorities:

Will:

(3) Set out objectives and policies, and may include methods in district plans, particular to each district:

- (a) that establish a comprehensive approach to the management of the location of urban and rural-residential development within the territorial authority area, including provisions requiring consideration as to how new land use will be appropriately serviced by transport and other infrastructure;
- (b) to avoid subdivision, use and development that does not meet the criteria set out in Policy 11.3.1 clauses (1) to (5) for known high hazard areas.

Local authorities:

Will:

(4) Engage with Ngāi Tahu as tāngata whenua, including by recognising iwi management plans, when determining Ngāi Tahu values.

(5) Work together where appropriate, with adjoining local authorities and, with providers of regionally significant infrastructure when identifying patterns and locations of development.

(6) Set out objectives and policies, and may include methods in regional and district plans:

- (a) that identifies regionally significant infrastructure, and recognises its economic and social benefits;
- (b) that manage the adverse effects of, and from, the installation, operation, maintenance and/or development of regionally significant infrastructure.

Principal reasons and explanation

This policy establishes the standards to be met for development within the wider region, regardless of whether such development is located within, or outside of, existing urban areas. These qualities and attributes collectively promote sustainable management of natural and physical resources and the social, cultural and economic well-being of people throughout Canterbury.

The approach in Policy 5.3.1 seeks to ensure that urban and rural residential development outside of existing urban areas is to be avoided and limited respectively, so as not to compromise the efficient form and development of existing settlements as the primary focus for meeting the region's growth needs. District plans have a role in providing an appropriate and comprehensive zoned approach to new rural-residential development and new urban development to manage effects arising from these based on the demands, constraints and opportunities within the respective districts.

The standards under Policy 5.3.2(1) address a range of the implications resulting from development that require careful management so as to avoid the potential for adverse effects. This includes the need to avoid the encroachment of sensitive activities into rural areas that may result in reverse sensitivity effects on established rural activities or regionally significant infrastructure. Regard is also to be had to the prospect of the reduced productivity of the region's soil resources, through further fragmentation or a move to a more urban character. The policies also recognise that protecting historic heritage such as historic buildings, as well as areas of high natural character and significant landscape values are important parts of promoting sustainable development.

Policy 5.3.2(2) seeks that development should seek to avoid or mitigate natural and other hazards.

Policy 5.3.2(3), requires the integration of infrastructure with land use to ensure that adverse effects on the environment do not arise from inadequate infrastructure (such as stormwater sewerage, water or roading infrastructure). This may be achieved through infrastructure planning, land use controls, or a combination of both. The integration of transport

networks and modes can promote sustainable development by enhancing accessibility and social interaction, promoting health and safety and reducing environmental impacts.

Policy 5.3.3 – Management of development (Wider Region)

To ensure that substantial developments are designed and built to be of a high-quality, and are robust and resilient:

(1) through promoting, where appropriate, a diversity of residential, employment and recreational choices, for individuals and communities associated with the substantial development; and

(2) where amenity values, the quality of the environment, and the character of an area are maintained, or appropriately enhanced.

This policy implements the following objectives:

Objective 5.2.1, Objective 5.2.2, Objective 5.2.3, Objective 16.2.1 and Objective 16.2.2

Methods

The Canterbury Regional Council:

Should:

(1) Through the Canterbury Regional Land Transport Strategy:

(a) promote and implement policies to reduce motor vehicle transport demand, especially with respect to single occupant private motor vehicle trips and motor vehicles powered by unsustainable fuels.

(b) support and implement programmes that make passenger transport services more effective and attractive.

(c) support and implement policies that encourage the use of active forms of transport such as walking and cycling.

(2) Promote that the New Zealand Urban Design Protocol (Ministry for the Environment, March 2005) is applied at the time of planning, assessing and undertaking urban development.

Territorial authorities:

Will:

(3) Set out objectives and policies, and may include methods in district plans which, where relevant:

(a) establish a comprehensive approach for the management of urban and rural-residential development.

(b) ensure demonstration of accordance with this Policy for any substantial development through either:

(i) including an outline development plan within the district plan; or otherwise

(ii) specific provisions within the district plan to consider any substantial development, such as by way of the consideration of a concept plan;

including by requiring applicants to provide for a outline or concept plan to be lodged at time of application.

Local authorities:

Should:

(4) Co-operate to advance:

(a) energy conservation and efficiency programmes.

(b) growth and development planning.

(c) the development and implementation of appropriate resource management tools and techniques.

Principal reasons and explanation

Well designed urban and rural-residential development provides for the social, economic and cultural well-being of people and communities and will meet the foreseeable needs of future generations. Design influences the manner in which development functions and relates to the wider environment. It establishes long-term patterns of resource use and character. Effectively re-designing urban and rural-residential areas is generally difficult and expensive. While this policy specifically addresses the design of substantial developments, this must occur within the context of the considerations set out in Policy 5.3.1 and Policy 5.3.2.

This policy specifically sets out to purposefully require for substantial developments consideration of design matters to ensure such development is sustainable, safe, vibrant and efficient. A 'substantial development' will be dependent on the extent, context, location and scale of growth faced by sub-regional areas, and accordingly would be more appropriately considered by district councils, as relevant. However, factors would include the provision of a considerable extent of residential housing, and / or employment opportunities, the extension of existing zoned urban areas, and more intensive development which requires significant new public infrastructure.

For incremental developments that are not identified by the territorial authority as being substantial development, the environmental qualities identified in Policy 5.3.1 apply.

High quality development provides attractive environments in which to live, work and play. This includes:

(1) Protecting the important amenity values associated with existing cities, towns and villages;

(2) Achieving well designed developments that integrate with natural and physical resources; and

(3) Achieving opportunities for walking and cycling.

Robust development maintains or improves well-being, health and safety. This includes:

(1) Integrating all the natural and physical resource requirements of a development;

(2) Integrating the development into existing cities, towns and villages;

(3) Implementing traffic demand management measures, as appropriate;

(4) Integrating the provision for public passenger transport with development, as appropriate;

(5) Enabling people to meet their day-to-day needs within the local area; and

(6) Ensuring substantial development minimises risk from natural hazards.

Resilient development is able to respond to the foreseeable future needs of people and communities with the minimum change and reinvestment. This includes:

(1) Enabling housing types to meet changing population structure and preferences;

(2) Integrating substantial development with key transport infrastructure and opportunities;

(3) Planning for the effects of climate change and

(4) Achieving energy-efficient building location, orientation and design.

Development and/or asset spending programmes provide the opportunity to modify existing urban and rural-residential areas. The policy will achieve incremental changes by ensuring that: development is designed appropriately; development is well connected to existing areas; and due consideration is given to the broader effects (including future effects) and context of the development.

Policy 5.3.4 – Papakāinga housing and marae (Entire Region)

To recognise that the following activities, when undertaken by tāngata whenua with mana whenua, are appropriate when they occur on their ancestral land in a manner that enhances their ongoing relationship and culture and traditions with that land:

(1) papakāinga housing;

(2) marae; and

(3) ancillary activities associated with the above

And provide for these activities if:

(4) adverse effects on the health and safety of people are avoided or mitigated; and

(5) as a result of the location, design, landscaping and management of the papakāinga housing and marae:

- **(a) adverse effects on the following are avoided, and if avoidance is not practicable, mitigated:**
  - **(i) the important natural character values of coastal environment, wetlands, lakes, rivers and their margins**
  - **(ii) the values of the outstanding natural features and landscapes**
  - **(iii) the values of the historic heritage, and**
  - **(iv) the values of areas of significant indigenous vegetation and habitats of indigenous fauna; and**
- **(b) regard has been given to amenity values of the surrounding environment.**

This policy implements the following objective:

Objective 5.2.1

Methods

The Canterbury Regional Council:

Should:

(1) Coordinate with Te Rūnanga o Ngāi Tahu, papatipu rūnanga, and agents of the legal representatives of the beneficial owners of ancestral land when determining the effectiveness of this policy.

Territorial authorities:

Will:

(2) Within 3 years of Policy 5.3.4 becoming operative, set out objectives, policies and may include methods in district plans to implement this policy, including providing for:

- (a) papakāinga housing and ancillary activities to be established on ancestral land for the occupation of one or more of the beneficial owners who all are members of the same hapū as a result of the implementation of a partition or occupation order of the Māori Land Court.
- (b) marae and ancillary activities to be established on ancestral land in accordance with a direction of the Māori Land Court:
  - (i) in accordance with tikanga Māori; or
  - (ii) for the use of the beneficial owners.

Local authorities:

Should:

(3) Consult directly with the agents or the legal representatives of the beneficial owners of ancestral land on how to give effect to this policy.

(4) Together with Te Rūnanga o Ngāi Tahu, identify ancestral land of tāngata whenua with mana whenua, to inform their regional and district plans including by reference to:

- (a) The Māori Land Court's data-base recording land tenure under the Te Ture Whenua Māori Act 1993/ Māori Land Act 1993.
- (b) Te Rūnanga o Ngāi Tahu data-base of ancestral land and ancestral relationships.

Principal reasons and explanation

Papakāinga housing and marae located on ancestral land are integral to the identity and development of tāngata whenua. They are one of the essential elements that denote mana whenua.

Traditionally, a range of activities occur in conjunction with papakāinga housing and marae. The traditional activities include food gathering, storage and trade, manufacturing and trade of artisan goods, and the receiving and hosting of visitors. Often these ancillary activities determined where and why papakāinga housing and marae were established.

"Ancestral land" of tāngata whenua with mana whenua is generally land that has been owned by their ancestors and is not confined to land remaining in their ownership as Māori freehold or Māori customary land in accordance with Te Ture Whenua Māori Act 1993/Māori Land Act 1993. It requires some connection between culture and traditions and the land. Continuous ownership may be a relevant factor, and the extent to which a special relationship has been claimed or recognised by tāngata whenua with mana whenua across the generations. In each case, the effect of the proposed papakāinga housing and marae on the relationship must be considered on its merits.

The ownership rights, occupation, partitioning, alienation, and in some cases, use and development, of some forms of ancestral land is subject to Māori Land Court processes in accordance with Te Ture Whenua Māori Act 1993/Māori Land Act 1993.

Ancestral land for papakāinga housing and marae is a finite resource at (generally) fixed locations. It is predominately located in close proximity to natural resources which are highly valued by tāngata whenua, such as the coast, reflecting their strong relationship with these natural resources. Papakāinga housing and marae, together with their ancillary activities on ancestral land, allow tāngata whenua to exercise their relationship, culture and traditions with this land and the surrounding natural resources, including through exercising kaitiakitanga.

For these reasons, the development and use of papakāinga housing and marae, together with their ancillary activities, for members of the same hapū on ancestral land is generally appropriate. This is contrasted with similar physical forms

of the use of land developed for different purposes under different circumstances, which may not be appropriate. These need to be considered in light of other resource management policies.

Papakāinga housing and marae, together with their ancillary activities, should not adversely affect the health and safety of people. This requires that papakāinga housing and marae are; adequately serviced for sewage and stormwater disposal and potable water, safe from natural and other forms of hazard, and do not create hazards for other people and property.

Further, any papakāinga housing and marae development must recognise and respond to the other matters of national importance set out in Section 6 of the Resource Management Act 1991 (RMA). These may influence the location, design, landscaping and management of papakāinga and marae.

Finally, it is desirable that the development of papakāinga housing and marae, together with their ancillary activities, occurs in a way that is sensitive to any adverse effects on the amenity values of adjoining activities. However, not all of the adverse effects on existing amenity values need to be avoided where this would result in the aspirations for papakāinga housing and marae being unduly compromised.

Policy 5.3.5 – Servicing development for potable water, and sewage and stormwater disposal (Wider Region)

Within the wider region, ensure development is appropriately and efficiently served for the collection, treatment, disposal or re-use of sewage and stormwater, and the provision of potable water, by:

(1) avoiding development which will not be served in a timely manner to avoid or mitigate adverse effects on the environment and human health; and

(2) requiring these services to be designed, built, managed or upgraded to maximise their ongoing effectiveness.

This policy implements the following objective:

Objective 5.2.1

Methods

The Canterbury Regional Council:

Will:

(1) Set out objectives and policies, and may include methods in regional plans which:

(a) avoid the cumulative effects of discharges from on-site sewage treatment and disposal systems.

(b) discourage discharges from new community sewage collection, treatment and disposal systems in circumstances where there is a suitable existing community system available.

(c) ensure the discharges of stormwater are managed so that the impact of the development on water quantity off the site is similar to that which existed prior to the development and results in no increase of downstream flood risk.

(d) ensure appropriate treatment of stormwater discharges occurs to avoid or mitigate inappropriate adverse effects on water quality.

(e) ensure that the discharge of sediment in stormwater does not result in significant adverse effects on the receiving water body.

(f) encourage and where appropriate require the progressive upgrading and development of discharges from sewage and stormwater systems, where these currently result in inappropriate adverse effects on the environment.

(g) enable the appropriate provision of potable water.

(h) enable water conservation and water efficiency through the collection, use and reuse of water, and alternative sewage disposal technology.

(i) avoid, or otherwise take into account through progressively upgrading existing sewage and stormwater systems infrastructure to avoid, the cultural effects on Ngāi Tahu associated with the direct discharge of human effluent into water from such systems.

(2) Collaborate with territorial authorities, Te Rūnanga o Ngāi Tahu/papatipu rūnanga, providers of the existing sewerage, stormwater and potable water infrastructure, and where appropriate the Medical Officer of Health at Community and Public Health, Canterbury District Health Board, to ensure development is appropriately served for the collection, treatment, disposal or re-use of sewage and stormwater, and the provision of potable water.

Territorial authorities:

Will:

(3) Set out objectives and policies, and may include methods in district plans which:

(a) ensure, before any rezoning of land enabling more intensive development, the development provided for by the rezoning can be efficiently and effectively served for the collection, treatment and disposal of sewage and stormwater, and the provision of potable water, in order to avoid or mitigate adverse effects on the environment and human health.

(b) ensure that at the time of any rezoning of land enabling substantial developments which requires new public sewerage, stormwater and potable water infrastructure, an outline development plan is included within the district plan which provides

sufficient space at appropriate locations for these to be provided.

(c) ensure, at the time of subdivision and/or development, the manner in which the subdivision and/or development is to occur provides for the collection, treatment and disposal of sewage and stormwater, and the provision of potable water, in order to avoid or mitigate adverse effects on the environment and human health.

Local authorities:

Will:

(4) Engage with Ngāi Tahu as tāngata whenua, including by recognising iwi management plans, when determining Ngāi Tahu values.

Should:

(5) Encourage, and may require:

(a) water conservation and water efficiency through the collection, use and reuse of water, provided that the health of individuals or the community is not put at risk.

(b) low environmental impact stormwater treatment and disposal systems.

Principal reasons and explanation

The provision of sewage and stormwater treatment and disposal, and the provision of potable water, are essential to the well-being and health of people and communities, and help to avoid or mitigate adverse effects on the environment. The management of stormwater and sewage is of particular cultural significance to Ngāi Tahu because of the potential for development to adversely affect their relationship with ancestral land, water, sites, wāhi tapu and other taonga.

Developments must effectively manage the disposal and treatment of sewage and stormwater recognising the receiving environment and the limitations that may exist in terms of environmental quality and the receiving capacity of the environment. Servicing, including, the provision of potable water must be considered early in the development process. This will ensure that appropriate decisions are made as to how servicing is to be achieved, whether the proposed development is appropriate, and what site limitations may exist. It will also allow joint consideration of the proposal where resource consents are required from the Canterbury Regional Council and city or district councils.

Water conservation and water efficiency can be achieved through a range of methods, including reuse.

Policy 5.3.6 – Sewerage, stormwater and potable water infrastructure (Wider Region)

Within the wider region:

(1) Avoid development which constrains the ongoing ability of the existing sewerage, stormwater and potable water supply infrastructure to be developed and used.

(2) Enable sewerage, stormwater and potable water infrastructure to be developed and used, provided that, as a result of its location and design:

(a) the adverse effects on significant natural and physical resources are avoided, or where this is not practicable, mitigated; and

(b) other adverse effects on the environment are appropriately controlled.

(3) Discourage sewerage, stormwater and potable water supply infrastructure which will promote development in locations which do not meet Policy 5.3.1.

This policy implements the following objectives:

Objective 5.2.1 and Objective 5.2.2

Methods

The Canterbury Regional Council:

Will:

(1) Set out objectives and policies, and may include methods in regional plans which enable the development and use of sewerage and stormwater infrastructure while controlling adverse effects.

Should:

(2) Promote the efficient and effective use of sewerage, stormwater and potable water supply infrastructure, and discourage inappropriate development of infrastructure.

Territorial authorities:

Will:

(3) Set out objectives and policies, and may include methods in district plans which:

(a) control the location of development sensitive to the effects of existing sewerage and stormwater infrastructure.

(b) provide for the upgrading of existing, and establishment of new sewerage and stormwater infrastructure while controlling adverse effects.

(c) restrict the upgrading or establishment of new sewerage and stormwater infrastructure that may facilitate development in locations which do not meet Policy 5.3.1.

(d) ensure that when any land is rezoned to enable a substantial development which requires significant new public sewerage, stormwater and potable water infrastructure, an outline development plan is included within the district plan.

Local authorities:

Will:

(4) Engage with Ngāi Tahu as tāngata whenua, including by recognising iwi management plans, when determining Ngāi Tahu values.

Principal reasons and explanation

Sewerage, stormwater and potable water infrastructure makes important contributions to people's social, economic and cultural well-being, health and safety. Environmental health is also affected by this infrastructure.

Considerable public and private investment has been made in sewerage, stormwater and potable water infrastructure systems. It is important that land-use does not adversely affect the efficient use and development of these systems, for example, through the creation of the potential for reverse sensitivity effects in relation to odour.

Sewerage, stormwater, and potable water infrastructure can have adverse effects on the environment – for example, as a result of associated discharges to land or water, odour or amenity values. These effects are of particular cultural significance to Ngāi Tahu because of the potential to adversely affect their relationship with ancestral land, water, sites, wāhi tapu and other taonga. The adverse effects can be mitigated by appropriate location, design, and operation.

Changes to the sewerage, stormwater and potable water infrastructure can facilitate development. For example, this may occur as a result of increase in capacity of existing, or provision of new, infrastructure removing environmental and financial development constraints.

Policy 5.3.7 – Strategic land transport network and arterial roads (Entire Region)

In relation to strategic land transport network and arterial roads, the avoidance of development which:

(1) adversely affects the safe efficient and effective functioning of this network and these roads, including the ability of this infrastructure to support freight and passenger transport services; and

(2) in relation to the strategic land transport network and arterial roads, to avoid development which forecloses the opportunity for the development of this network and these roads to meet future strategic transport requirements.

This policy implements the following objectives:

Objective 6.2.1 and Objective 6.2.4

Methods

The Canterbury Regional Council:

Will:

(1) In the Canterbury Regional Land Transport Strategy identify the strategic land transport network.

Should:

(2) Collaborate with territorial authorities, road controlling authorities and the New Zealand Transport Agency to protect the appropriate functioning of the strategic land transport network and arterial roads.

Territorial authorities:

Will:

(3) Set out objectives and policies, and may include methods in district plans which:

(a) minimise the requirement for upgrading of the strategic land transport network by ensuring that the existing capacity of this network is efficiently used and not compromised by new development.

(b) provide for the strategic integration of changes in land-use with the provision of any necessary strategic land transport network, recognising the availability of any necessary funding.

(c) minimise loss of function of the strategic land transport network and other arterial roads.

(d) support, as appropriate, the provision of public transport services.

(e) restrict the location of connection to the existing strategic land transport network, and as necessary to other arterial roads, to those locations where adverse effects on the existing infrastructure are mitigated.

(f) discourage the further development of the strategic land transport network if all practicable steps have not been taken by the infrastructure provider to mitigate the adverse effects on the community.

Local authorities:

Will:

(4) Engage with Ngāi Tahu as tāngata whenua, including by recognising iwi management plans, when determining Ngāi Tahu values in respect of strategic land transport networks and arterial roads.

Should:

(5) Work together, including with neighbouring district and regional councils that adjoin the Canterbury Region, to adopt a consistent approach in relation to cross boundary issues for strategic land transport networks.

(6) Engage with the NZ Transport Agency to protect the appropriate functioning of the strategic land transport network.

Principal reasons and explanation

The policy applies across all the Canterbury Region. This is in direct recognition of the integrated nature of the transport system.

The strategic transport network and other arterial roads provide essential transport services to meet present and future regional, inter-regional and national transport needs, including supporting passenger and freight transport services. This infrastructure needs protection from adverse effects which undermine its ability to safely and efficiently enable those services to be provided. Canterbury's strategic regional land transport network consists of: the strategic road network, the strategic freight hubs and the rail network. In addition, other arterial roads are a locally important part of Canterbury's transport network.

Community needs are changing. Therefore existing transport infrastructure and land transport corridors within which future expansion of infrastructure can be accommodated needs to be safeguarded.

Policy 5.3.8 –Land use and transport integration (Wider Region)

Integrate land use and transport planning in a way:

(1) that promotes:

- **(a) the use of transport modes which have low adverse effects;**
- **(b) the safe, efficient and effective use of transport infrastructure, and reduces where appropriate the demand for transport;**

(2) that avoids or mitigates conflicts with incompatible activities; and

(3) where the adverse effects from the development, operation and expansion of the transport system:

- **(a) on significant natural and physical resources and cultural values are avoided, or where this is not practicable, remedied or mitigated; and**
- **(b) are otherwise appropriately controlled.**

This policy implements the following objectives:

Objective 5.2.1, Objective 5.2.2 and Objective 5.2.3

Methods

The Canterbury Regional Council:

Will:

(1) Set out objectives and policies, and may include methods in regional plans which:

- (a) avoid development impacts on the efficient functioning of transport infrastructure.
- (b) enable the appropriate upgrading of existing and establishment of new transport infrastructure.
- (c) promote transport modes which have low adverse environmental effects.

Territorial authorities:

Will:

(2) Set out objectives, policies and / or methods in district plans which:

- (a) avoid land-uses that may result in adverse reverse sensitivity effects on transport infrastructure.
- (b) enable the appropriate upgrading of existing and establishment of new transport infrastructure.
- (c) address the interaction between land use and the transport system, including high traffic generators and the promotion of accessibility and modal choice as appropriate.
- (d) promote tranpsort modes which have low adverse environmental effects.

Local authorities:

Should:

(3) Engage with developers to promote accessibility and modal choice for substantial developments.

(4) Engage with the NZ Transport Agency to protect the appropriate functioning of the strategic land and transport network.

Principal reasons and explanation

As the region grows, the transport network inclusive of road, rail, air and sea-based transportation infrastructure, will be required to increase capacity to service this growth. Roading, walking and cycling networks, and appropriate public transport infrastructure can greatly assist in not only improving access and mobility of people and communities, but can also assist in achieving broader environmental objectives in terms of emissions, noise and safety.

Many sub-regional areas will not experience significant growth that would efficiently and effectively justify significant changes to increase modal choice and accessibility for their entire community. However, cumulative land use and transport developments should not foreclose such opportunities.

The operation, maintenance and future development of the transport system can be significantly constrained by the adverse environmental impact of encroaching activities and development. Identifying appropriate standards to limit incompatible activities would ensure that non-compatible land uses are avoided or the effects are otherwise mitigated to ensure the ongoing operation, maintenance, upgrading and development of significant transport infrastructure is not compromised.

Policy 5.3.8 recognises the need for planning for growth and development and the provision of local, regional and national transport infrastructure to proceed side-by-side in a coordinated and integrated way. This is to ensure that necessary growth and development is properly and appropriately serviced and also to ensure that unsustainable demands are not placed on existing transport infrastructure. If this integration does not occur there is the potential for growth and development to be constrained or directed to less favourable areas with associated social, economic and environmental costs.

Policy 5.3.9 – Regionally significant infrastructure (Wider Region)

In relation to regionally significant infrastructure (including transport hubs):

(1) avoid development which constrains the ability of this infrastructure to be developed and used without time or other operational constraints that may arise from adverse effects relating to reverse sensitivity or safety;

(2) provide for the continuation of existing infrastructure, including its maintenance and operation, without prejudice to any future decision that may be required for the ongoing operation or expansion of that infrastructure; and

(3) provide for the expansion of existing infrastructure and development of new infrastructure, while:

(a) Recognising the logistical, technical or operational constraints of this infrastructure and any need to locate activities where a natural or physical resource base exists;

(b) avoiding any adverse effects on significant natural and physical resources and cultural values and where this is not practicable, remedying or mitigating them, and appropriately controlling other adverse effects on the environment; and

(c) when determining any proposal within a sensitive environment (including any environment the subject of section 6 of the RMA), requiring that alternative sites, routes, methods and design of all components and associated structures are considered so that the proposal satisfies sections 5(2)(a) – (c) as fully as is practicable.

This policy implements the following objectives:

Objective 5.2.1, Objective 5.2.2 and Objective 8.2.3

Methods

The Canterbury Regional Council:

Will:

(1) Set out objectives and policies, and may include methods in regional plans which:

(a) provide for regionally significant infrastructure by reducing constraints on their efficient and effective operation, maintenance and upgrade.

(b) avoid development that may impact on regionally significant infrastructure

(c) avoid, remedy or mitigate the adverse effects of regionally significant infrastructure on the environment.

Should:

(2) Collaborate with territorial authorities, the New Zealand Transport Agency representatives of Timaru Airport and maritime facilities at Kaikōura and Timaru as well as representatives of the surrounding communities to protect the appropriate functioning of such regionally significant infrastructure.

(3) Collaborate with territorial authorities, and where appropriate operators of identified transport hubs and representatives of the surrounding communities to protect the appropriate functioning of identified transport hubs.

Territorial authorities:

Will:

(4) Set out objectives and policies, and may include methods in district plans which:

(a) avoid sensitive and incompatible land-uses within proximity of identified transport hubs and regionally significant infrastructure where the quality of current or future environment is incompatible with the health requirements and amenity value expectations of people adjacent or within part of the receiving environment of activities undertaken by regionally significant infrastructure.

(b) avoid land-uses that directly adversely affect the safe operation of regionally significant infrastructure.

(c) avoid, remedy or mitigate the adverse effects of regionally significant infrastructure on the environment.

Principal reasons and explanation

Regionally significant infrastructure including transport hubs and the Timaru Airport and maritime facilities at Kaikōura and Timaru is important for the social and economic well-being of Canterbury. Such facilities provide for the effective movement of people and goods within, into and out of Canterbury, creating important connections between people, places and markets.

When developing, modifying, maintaining and operating regionally significant infrastructure, it is not always practicable, or feasible to internalise all adverse effects on the environment. This often influences the quality and character of the environment surrounding such activities. Consequently, care is needed in terms of avoiding, or managing development that if located within the receiving environment of such facilities may

affect their efficient and effective operation and development.

Development may result in activities which are incompatible with the efficient use and development of regionally significant infrastructure. These may be incompatible because they:

(1) require a quality, character or type of environment which cannot be reasonably achieved in close proximity to such activities

(2) create features which adversely affect the operation and safety of such activities.

Development sensitive to the effects of regionally significant infrastructure, particularly for residential uses, are to be avoided if they may result in the development and use of such facilities being constrained. Often sensitivity arises because the development is incompatible with the noise generated within, or by the facility, including associated activities such as freight storage and movement, especially night time operations.

For the Timaru Airport, sensitive activities within close proximity to the airfield would be impacted by overflying planes and glare from airport and approach path lighting which may lead to issues surrounding the safe and efficient functioning of airport operations. For maritime facilities, incompatible activities may also adversely affect operations and safety by creating the potential for conflict between port operations and recreational users in or near shipping zones.

The policy also seeks to avoid development in the vicinity of the Timaru Airport which may directly constrain its development and use. This typically relates to matters which constrain the Airport's safe operation, and includes development underneath the airport's approach and departure paths.

Regionally significant infrastructure will be required to minimise their adverse effects on the surrounding environment to the extent practicable. This includes: managing interfaces to surrounding development to reduce impacts on amenity values; implementing measures to control noise; and ensuring that there is appropriate provision for the necessary management of hazardous substances and stormwater.

Policy 5.3.10 –Telecommunication infrastructure (Wider Region)

Within the wider region:

(1) Avoid development which constrains the ability of telecommunication infrastructure in Canterbury to be developed and used.

(2) Enable telecommunication infrastructure to be developed and used provided that, as a result of its location and design;

(a) the adverse effects on significant natural and physical resources and cultural values are avoided, or where this is not practicable, remedied, mitigated; and

(b) other adverse effects on the environment are appropriately controlled.

This policy implements the following objectives:

Objective 5.2.1 and Objective 5.2.2

Methods

The Canterbury Regional Council:

Will:

(1) Set out objectives and policies, and may include methods in regional plans which:

(a) avoid development on the beds of lakes and rivers that impact on the efficient functioning of telecommunication infrastructure.

(b) enable the appropriate upgrading of existing and establishment of new telecommunication infrastructure.

Should:

(2) Collaborate with territorial authorities and the telecommunications industry to protect the appropriate functioning of telecommunication infrastructure.

Territorial authorities:

Will:

(3) Set out objectives and policies, and may include methods in district plans which:

(a) avoid land-uses that may result in adverse reverse sensitivity effects on telecommunication infrastructure.

(b) enable the appropriate upgrading of existing and establishment of new telecommunication infrastructure.

(c) avoid, remedy, mitigate or offset the adverse effects of telecommunication infrastructure on the environment.

Local authorities:

Should:

(4) Engage with Ngāi Tahu as tāngata whenua, including by recognising iwi management plans, when determining Ngāi Tahu values in respect of telecommunication infrastructure.

Principal reasons and explanation

Telecommunication services make important contributions to people's economic and social well-being, health and safety. Considerable public and private investment has been made in telecommunications systems. It is not reasonably foreseeable that these systems will become redundant or be replaced.

It is important that land-use does not adversely affect the efficient operation and development of these systems. Further, new telecommunication infrastructure can have adverse effects on the environment. These can be minimised by appropriate location and design.

Policy 5.3.11 – Community-scale irrigation, stockwater and rural drainage infrastructure (Wider Region)

In relation to established and consented community-scale irrigation, stockwater and rural drainage infrastructure:

(1) Avoid development which constrains the ability of this infrastructure in Canterbury to be operated, maintained and upgraded;

(2) Enable this infrastructure to be operated, maintained and upgraded in Canterbury to more effectively and efficiently transport consented water provided that, as a result of its location and design:

(a) the adverse effects on significant natural and physical resources and cultural values are avoided, or where this is not practicable, mitigated; and

(b) other adverse effects on the environment are appropriately managed.

This policy implements the following objective:

Objective 5.2.1 and Objective 5.2.2

Methods

The Canterbury Regional Council:

Will:

(1) Set out objectives and policies, and may include methods in regional plans which:

(a) avoid development that unnecessarily impacts on the functioning of existing and consented community-scale irrigation, stockwater and rural drainage infrastructure.

(b) provide for the appropriate upgrading of existing and consented community-scale irrigation, stockwater and rural drainage infrastructure.

(2) Collaborate with Te Rūnanga o Ngāi Tahu/papatipu rūnanga, territorial authorities, and the rural community and representatives to protect the appropriate functioning of established community-scale irrigation, stockwater and rural drainage infrastructure.

Territorial authorities:

Will:

(3) Set out objectives and policies, and may include methods in district plans which:

(a) avoid development that unnecessarily impacts on the functioning of existing and consented community-scale irrigation, stockwater and rural drainage infrastructure.

(b) provide for the appropriate upgrading of existing and consented community-scale irrigation, stockwater and rural drainage infrastructure.

(c) avoid, remedy or mitigate the adverse effects of existing and consented community-scale irrigation, stockwater and rural drainage infrastructure on the environment.

Local authorities:

Should:

(4) Engage with Ngāi Tahu as tāngata whenua, including by recognising iwi management plans, when determining Ngāi Tahu values.

Will:

(5) Set out objectives and policies, and may include methods in regional and district plans which: avoid, remedy or mitigate the adverse effects of existing and consented community-scale irrigation, stockwater and rural drainage infrastructure on the environment.

Principal reasons and explanation

Existing and consented community-scale irrigation, stockwater and rural drainage infrastructure are important to Canterbury's rural economy. They contribute significantly to Canterbury's well-being, are the subject of considerable public and private financial investment, and are unlikely to be readily replaced or duplicated.

Policy 5.3.11 is limited to existing and consented community-scale irrigation, community-scale stockwater and community-scale rural drainage infrastructure. In this context established means that infrastructure that is present in the environment.

The focus of the policy is on infrastructure, not the associated resource consents to take, use, dam or divert water. The resource management issues, objectives, policies or methods relating to water are found in Chapter 7 - Fresh Water.

The ongoing functioning of existing and consented community-scale irrigation, stockwater and rural drainage infrastructure is dependent on the infrastructure continuing to provide effective and efficient conveyance of water. This is influenced by:

(1) the ongoing management of the infrastructure itself, including the efficiency of the infrastructure to transport the existing consented water; and

(2) the surrounding land-uses affecting the ability of the infrastructure to be efficiently and effectively used.

Policy 5.3.12 – Rural production (Wider Region)

Maintain and enhance natural and physical resources contributing to Canterbury's overall rural productive economy in areas which are valued for existing or foreseeable future primary production, by:

(1) avoiding development, and / or fragmentation which;

(a) forecloses the ability to make appropriate use of that land for primary production; and / or

(b) results in reverse sensitivity effects that limit or precludes primary production.

(2) enabling tourism, employment and recreational development in rural areas, provided that it:

(a) is consistent and compatible with rural character, activities, and an open rural environment;

(b) has a direct relationship with or is dependent upon rural activities, rural resources or raw material inputs sourced from within the rural area;

(c) is not likely to result in proliferation of employment (including that associated with industrial activities) that is not linked to activities or raw material inputs sourced from within the rural area; and

(d) is of a scale that would not compromise the primary focus for accommodating growth in consolidated, well designed and more sustainable development patterns.

and;

(3) ensuring that rural land use intensification does not contribute to significant cumulative adverse effects on water quality and quantity.

This policy implements the following objectives:

Objective 5.2.1 and Objective 15.3.1

Methods

The Canterbury Regional Council:

Should:

(1) Identify soil resources of importance and collaborate with territorial authorities, Te Rūnanga o Ngāi Tahu/paptipu rūnanga and other stakeholders to identify appropriate management methods in relation to those soil resources.

Territorial authorities:

Will:

(2) Set out objectives and policies, and may include methods in district plans which:

- (a) identify areas to be used for primary production, taking into account natural resources through appropriate provisions in district plans.
- (b) control the adverse effects of subdivision and land-use in rural areas, including by:
  - (i) ensuring subdivision and development does not foreclose the ability to utilise natural resources such as soil which is, or foreseeably could be, valued for rural productive purposes.
  - (ii) ensuring appropriate separation between consented and permitted rural productive activities and those land-uses which may result in reverse sensitivity effects on rural productive activities.
  - (iii) managing the interface between the edge of environments sensitive to the effects of rural production activities and areas in productive use to reduce conflict.
  - (iv) specifying appropriate provisions to manage tourism, employment, and recreational development in rural areas consistent and compatible with rural values and resources, an open rural environment and a consolidated approach to development patterns.
  - (v) specifying appropriate controls on rural land-use including subdivision intensification, infrastructure provision and waterway setbacks to manage effects on water quality.

Principal reasons and explanation

The rural productive base of Canterbury is essential to the economic, cultural and social well-being of its people and communities. Enabling the use of natural and physical resources to maintain the rural productive base is a foreseeable need of future generations.

The ability to appropriately utilise natural resources is a vital element in supporting the efficient and effective rural productive activities. These natural resources include soil, the growing medium for food for animals and for many horticultural and arable crops. Different soils are valued for different reasons. Versatile soils (Classes I and II under the Land-use Capability Classification System) are that part of the soil resource that will support the widest range of productive uses with the least inputs. Soils with lower versatility can be valued for other rural productive activities, such as vineyards.

The policy seeks the management of those areas of rural Canterbury for which inherent characteristics and location meaningfully contribute, or will foreseeably contribute, to the rural productive economy of Canterbury. Generally this means that, notwithstanding the current use of these soils, options for their future use for rural productive purposes should not be unnecessarily foreclosed.

Subdivision and land-use change in identified rural productive areas, for instance to create new urban and rural-residential development, can lead to new environmental requirements that are incompatible with rural production. For example, a new housing subdivision may create new requirements for a neighbouring farm to prevent spray drift of agrichemicals. When this occurs, the rural productive activities can be limited in a way that reduces efficiency, and may even cease. This is an example of 'reverse sensitivity effects'.

In order to maintain the rural productive base of Canterbury, separation and management of the interface between rural production and other activities sensitive to the effects of rural production, is necessary.

A number of recreational, employment and tourist activities are already established in the rural area, and contribute to the regions social and economic well-being. Recreational, employment and tourist activities can be consistent and compatible with an open space rural environment, where landscape values and the productivity of the region's soil resources are maintained, and reverse sensitivity effects avoided or mitigated.

Rural based employment, including industrial activities such as those that involve a raw material or product that is derived from the rural area (such as dairy factories or timber yards), as opposed to general industrial activities, contribute greatly to rural employment and are directly linked with primary rural production. Accordingly, the effects of such rural based employment, especially where these are of a small scale, or remain consistent and compatible with an open space rural environment, where landscape values are maintained, and reverse sensitivity effects are avoided, are generally anticipated within the region's rural areas.

Policy 5.3.13 – Spread of wilding trees (Wider Region)

Avoid, or minimise as far as practicable, the risk of wilding tree spread, through the location of planting, design of planting, species selection and management, once planting has occurred.

This policy implements the following objective:

Objective 5.2.1, Objective 9.2.1, Objective 12.2.1 and Objective 12.2.2

Methods

The Canterbury Regional Council:

Should:

(1) Collaborate with territorial authorities, landowners and forestry managers to implement wilding tree spread avoidance measures by:

  (a) the choice of planting sites;

  (b) the choice of tree species;

  (c) plantation design;

  (d) the implementation of land management regimes in areas at risk of wilding tree spread from new plantings.

(2) Include provisions in a Regional Pest Management Strategy to assist in avoiding the risk of wilding tree spread, including consideration of specific non-regulatory methods such as rates relief, monitoring, and dissemination of information/education, that may assist parties in controlling the further spread of wilding trees.

Territorial authorities:

Will:

(3) Set out objectives and policies, and may include methods in district plans which minimise the risk of wilding tree spread.

Principal reasons and explanation

Wilding trees are self-sown exotic trees, especially coniferous species. New or replacement forestry tree plantings can cause similar, and exacerbate any existing, adverse effects of wilding tree spread. Therefore, it is appropriate to manage the risk of wilding tree spread from new forestry plantations.

Canterbury is adversely affected by existing wilding tree spread. Within most river catchments there is some wilding spread. The worst affected areas are the Mackenzie basin, the Rakaia and Waimakariri river catchments, and the Amuri Range near Hanmer Springs. This existing wilding conifer tree spread issue is managed as a pest issue primarily under the Regional Pest Management Strategy. Considerable public and private financial and human resources are dedicated to reducing the adverse effects of this conifer tree spread.

The observed adverse effects of wilding tree spread in Canterbury include:

(1) the reduction of indigenous biodiversity values as a result of wilding trees out-competing and smothering indigenous plant communities, altering environments favourable to indigenous fauna and flora, and drying out wetlands and riparian areas.

(2) the degradation of important landscape values as a result of wilding trees establishing in landscapes.

(3) the reduction in rural productive values as a result of the displacement of pasture on country where conditions are favourable to their spread. This displacement can result in a loss of pastoral production from those land types, which reduces the values of that land.

(4) Wilding tree spread is limited by factors such as the location of seed sources, prevailing winds, seed size and surrounding land-use. Establishment is limited by altitude, climatic conditions, soil types, vegetation, and grazing.

5.4

ANTICIPATED ENVIRONMENTAL RESULTS

(1) New urban and rural residential development is consolidated in, around and integrated with existing urban areas.

(2) All rural-residential development is located in areas zoned for rural residential development.

(3) New urban and rural residential development maintains and improves the functioning and qualities of the existing urban areas.

(4) New development is appropriately serviced by sewerage, stormwater, potable water and multi-modal transport infrastructure.

(5) New urban development provides for community facilities where appropriate.

(6) Canterbury's important natural and physical resources affected by development are maintained.

(7) Regionally significant infrastructure provides safe, effective and efficient services to people and the community.

(8) The rural primary productive potential of Canterbury is maintained.

(9) Ngāi Tahu can develop appropriate papakāinga housing and marae on ancestral land.

(10) Potential land use, subdivision and/or development conflicts are avoided.

CHAPTER 6
RECOVERY AND REBUILDING OF GREATER CHRISTCHURCH

Introduction

The insertion of this chapter into the Canterbury Regional Policy Statement (CRPS) was directed by the Minister for Canterbury Earthquake Recovery in the Land Use Recovery Plan for Greater Christchurch and under section 27 of the Canterbury Earthquake Recovery Act 2011.

The chapter is consistent with the Recovery Strategy for Greater Christchurch and the Christchurch Central Recovery Plan, and supports their implementation.

This chapter focuses on the metropolitan urban area of Greater Christchurch and towns stretching from Lincoln, Prebbleton and Rolleston in the south to Kaiapoi, Rangiora and Woodend/Pegasus in the north and the rural areas between Rangiora, Rolleston and Lincoln. The geographic extent of Greater Christchurch, for the purposes of this chapter, is shown in Map A (page 64). The Ashley River/Rakahuri lies to the north, the Waimakariri River cuts through the centre, the Port Hills and Selwyn River lie to the south and Pegasus Bay and Lyttelton Harbour/Whakaraupo are to the east. It excludes the area of Banks Peninsula as indicated in Map A. In Waimakariri District, Two Chain Road is the western boundary of the sub-region and in Selwyn District the western boundary follows Highfield and Station Roads (shown on Map A). It does not extend to the coastal waters adjoining this area.

Chapter 6 provides a resource management framework for the recovery of Greater Christchurch, to enable and support earthquake recovery and rebuilding, including restoration and enhancement, for the area through to 2028. Recovery in Greater Christchurch is also supported by provisions in Chapter 5 – Land use and infrastructure that are notated "Entire Region". The provisions in the remainder of the CRPS also apply.

Objective 6.2.1 - Recovery framework

Recovery, rebuilding and development are enabled within Greater Christchurch through a land use and infrastructure framework that:

(1) identifies priority areas for urban development within Greater Christchurch;

(2) identifies Key Activity Centres which provide a focus for high quality, and, where appropriate, mixed-use development that incorporates the principles of good urban design;

(3) avoids urban development outside of existing urban areas or greenfield priority areas for development, unless expressly provided for in the CRPS;

(4) protects outstanding natural features and landscapes including those within the Port Hills from inappropriate subdivision, use and development;

(5) protects and enhances indigenous biodiversity and public space;

(6) maintains or improves the quantity and quality of water in groundwater aquifers and surface water bodies, and quality of ambient air;

(7) maintains the character and amenity of rural areas and settlements;

(8) protects people from unacceptable risk from natural hazards and the effects of sea-level rise;

(9) integrates strategic and other infrastructure and services with land use development;

(10) achieves development that does not adversely affect the efficient operation, use, development, appropriate upgrade, and future planning of strategic infrastructure and freight hubs;

(11) optimises use of existing infrastructure; and

(12) provides for development opportunities on Māori Reserves in Greater Christchurch.

The following policies implement this objective:

Policies 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.3.6, 6.3.7, 6.3.8, 6.3.9, 6.3.10, 6.3.11

Principal reasons and explanation

The purpose of this objective is to provide for an outcome where appropriate urban development is enabled within specified spatial areas around Greater Christchurch, so that resources can be focused on rebuilding, and delivering growth and recovery to those priority areas. This provides certainty to all resource users as to locations for development, enabling long-term planning and funding for strategic, network and social infrastructure (such as schooling and healthcare), and protection of Greater Christchurch's natural and physical resources.

The recognition of existing constraints in terms of natural and physical resources is a critical part of successful growth management. This objective identifies the key elements of natural and physical resources in Greater Christchurch that must be protected in order to ensure that harm to the natural environment is minimised.

Objective 6.2.2 – Urban form and settlement pattern

The urban form and settlement pattern in Greater Christchurch is managed to provide sufficient land for rebuilding and recovery needs and set a foundation for future growth, with an urban form that achieves consolidation and intensification of urban areas, and avoids unplanned expansion of urban areas, by:

(1) aiming to achieve the following targets for intensification as a proportion of overall growth through the period of recovery:

- **(a) 35% averaged over the period between 2013 and 2016**
- **(b) 45% averaged over the period between 2016 to 2021**
- **(c) 55% averaged over the period between 2022 and 2028;**

(2) providing higher density living environments including mixed use developments and a greater range of housing types, particularly in and around the Central City, in and around Key Activity Centres, and larger neighbourhood centres, and in greenfield priority areas and brownfield sites;

(3) reinforcing the role of the Christchurch central business district within the Greater Christchurch area as identified in the Christchurch Central Recovery Plan;

(4) providing for the development of greenfield priority areas on the periphery of Christchurch's urban area, and surrounding towns at a rate and in locations that meet anticipated demand and enables the efficient provision and use of network infrastructure;

(5) encouraging sustainable and self-sufficient growth of the towns of Rangiora, Kaiapoi, Woodend, Lincoln, Rolleston and Prebbleton and consolidation of the existing settlement of West Melton;

(6) Managing rural residential development outside of existing urban and priority areas; and

(7) Providing for development opportunities on Māori Reserves.

(3) To generally promote the protection, enhancement and restoration of all of Canterbury's remaining wetlands.

(4) To encourage the formation of created wetlands that contribute to the restoration of indigenous biodiversity.

(5) To protect adjoining areas of indigenous and other vegetation which extend outside an ecologically significant wetland and are necessary for the ecological functioning of the wetland.

This policy implements the following objectives:

Objective 9.2.1, Objective 9.2.2 and Objective 9.2.3.

Methods

The Canterbury Regional Council:

Will:

(1) Set out objectives and policies, and may include methods in regional plans to ensure that Canterbury's ecologically significant wetlands and their values are protected, to provide for the enhancement and restoration of these and other wetlands. The provisions will provide for, where appropriate, the formation of new artificial or created wetlands where they provide biodiversity restoration benefits.

Should:

(2) Continue to work with land owners, and coordinate with the investigations of other agencies, to identify and establish and maintain an inventory of ecologically significant wetlands in the region.

Territorial authorities:

Will:

(3) Set out objectives and policies, and may include methods in district plans to control the effects of the subdivision, use, development, or protection of land to ensure that ecologically significant wetlands are protected.

Should:

(4) Set out objectives and policies, and may include methods in district plans to provide for, where appropriate, the formation of created wetlands where they will provide biodiversity restoration benefits.

May:

(5) Consider including standards in a district plan that remove the requirement for a resource consent from the territorial authority for the use of a wetland, if a resource consent is granted by the Canterbury Regional Council for the same purpose.

Local authorities:

Should:

(6) In undertaking their own operations and activities, protect remaining ecologically significant wetlands. This should apply unless adverse effects on wetlands cannot be avoided because they are necessary for the maintenance of erosion or flood protection structures or for the prevention of damage to life or property by floods.

(7) Advocate, promote or provide targeted financial and other support or guidance for the appropriate establishment of:

(a) reserves,

(b) covenants,

(c) heritage orders,

(d) community initiatives,

(e) management agreements, and associated physical works, by private land-owners and occupiers, Ngāi Tahu and environmental organisations,

(f) best practice guidance for the design and implementation of programmes for wetland protection and enhancement that will maintain, enhance and restore wetlands and create new wetlands, without impacting on the effective operation of critical services and infrastructure.

(8) Use iwi management plans and engage with Ngāi Tahu as tāngata whenua to identify the significant cultural values for wetlands/repo raupo and to protect, restore and enhance them in a manner consistent with those cultural values and their principles.

(9) When developing and implementing programmes for wetland protection or enhancement, take into account the vision, goals, targets and outcomes of the Canterbury Water Management Strategy (2009) and its implementation programmes.

Principal reasons and explanation

The term "wetland" encompasses both freshwater wetlands associated with rivers, lakes and land-bordered tarns and swamps; and brackish (saline) estuarine wetlands including coastal lagoons, marshes and estuaries. As a result of human activities, the total area of wetland within Canterbury has been greatly reduced from its former extent.

The future of ecologically significant wetlands as natural features and habitats can be made more secure. This can be achieved by protecting them from threats to their natural character, their existence or their ecological functioning that result from incompatible uses of land and water. It is also necessary to protect them from abstraction of water, diversion of inflows, or deliberate actions to degrade them.

The Canterbury Water Management Strategy (2009) has set an immediate goal for no further loss of wetlands, together with long term targets for improvements in the ecological functioning and habitat diversity of wetlands and an increase in the total area of wetlands through restoration and construction.

To protect wetlands and their ecological functioning, it is often necessary to protect adjoining areas of indigenous and other vegetation which extend outside the wetland. These provide buffering and contribute to the biological diversity, habitat values and integrity of wetland areas, as well as contributing to their natural character. Adverse effects may arise from earthworks, the presence of stock or domestic animals on adjacent land or within the wetland, burning, plant and animal pests, the excessive application or release of contaminants or nutrients in a wetland or its catchment, the planting or removal of plants, and any drainage or irrigation of the adjacent land that could affect the water table within the wetland. In addition, it is also possible that in-stream water storage and the resulting modification of the flow regime may result in the dewatering of hydraulically connected riparian wetlands.

It may sometimes be appropriate to use created wetlands for the treatment of industrial discharges, including stormwater. Created wetlands are a useful means of buffering and treating waste and water runoff to protect adjacent natural waterways and wetlands. They can also provide natural habitats for indigenous species.

The risk of bird strike resulting from the enhancement or creation of wetlands in the vicinity of Christchurch International Airport is an example of the need for careful design and location of wetland

CHAPTER 10
BEDS OF RIVERS AND LAKES AND THEIR RIPARIAN ZONES

Introduction

This chapter addresses the beds of rivers and lakes and their associated riparian zones. A river's bed is the land that the waters of the river cover at its fullest flow without overtopping its banks. A lake's bed is the land that the waters of the lake cover at its highest level without exceeding its margin. The riparian zone is an area where there is direct interaction between terrestrial and freshwater ecosystems, and it extends from the water's edge across the bank of a river and across the margins of a lake. Riparian zones are important areas for biodiversity.

River and lake beds, and their associated riparian zones, are important natural features in Canterbury which is characterised by its many large braided rivers. Riparaian zones are integral to the mahinga kai customs and values of Ngāi Tahu. A number of these areas are associated with Statutory Acknowledgement Areas and nohoanga sites. These rivers and their beds are especially distinctive, and an important part of the regions natural and geological processes. Foothill streams and rivers and lowland spring-fed streams are also important at a local level. Canterbury is also characterised by its many lakes of varying sizes, including the large lakes created by hydro-electric dams.

Lake and river beds and their riparian zones are vital elements of the Canterbury landscape and important habitats for flora and fauna. These provide birds and fish with essential pathways between the coast and inland habitats. The riparian zone is an important area for the management of water quality and ecological resources. It provides a buffer for effects between land and rivers or lakes. Riparian vegetation, both indigenous and exotic, is important for mitigating the effects of non-point source discharges, moderating in-stream water temperature, maintaining the stability of shorelines and stream banks, providing habitats for flora and fauna, and its contribution to the overall natural character of rivers and lakes. However, in some cases, the presence of exotic vegetation within the riparian zone can adversely affect the flow and level of the adjoining waterway and can also displace indigenous vegetation.

Beds of lakes and rivers and riparian zones are locations where important structures and activities occur associated with essential structures, regionally significant infrastructure, and critical infrastructure. For many activities there are no other location options available.

ISSUE 10.1.1 – ACTIVITIES CAN ADVERSELY AFFECT BED AND RIPARIAN VALUES

Activities occurring within the beds of rivers and lakes and their riparian zones may be important for community well-being, but can adversely affect the natural, physical, cultural, amenity, recreational and historic heritage values of those beds and riparian zones.

Explanation

River and lake beds and their riparian zones are important areas for social, cultural and economic use by the Canterbury community. These areas often provide the location for new and existing essential structures and for other activities, many of which may not be able to locate elsewhere. Essential structures often represent significant capital investment and they can provide economic and social benefits.

Activities taking place in beds include those for: bed management relating to protection from floods; providing for recreational opportunities; water storage; and providing areas where Ngāi Tahu, as tāngata whenua, can access mahinga kai. Gravel, sand and rock extraction from river beds provides material for industry. River and lake beds are often used for farming activities, with margins converted to pasture, and fences within the beds controling stock.

Some of these activities have the potential to cause adverse effects on the natural environment on the functioning of waterbodies, and on spawning areas and fish passage.

ISSUE 10.1.2 – ACTIVITIES AFFECTING FLOOD-CARRYING CAPACITY

Some activities within the beds of rivers and on their banks or margins can reduce flood-carrying capacity or exacerbate the adverse effect of floods.

Explanation

This issue relates to activities in the beds of rivers, and on their banks or margins, affecting their flood-carrying capacity, rather than the effects on flooding, if any, of activities in the wider riparian zone which are addressed elsewhere in the Canterbury Regional Policy Statement. The terms "banks or margins" is used here rather than "riparian zones" because the activities and their effects are more localised.

*The **bank of a river** is the physical or constructed edge of the river that contains its flows.*

*The **margin** is defined as the land immediately adjacent to the bed of a river, wetland, lake or estuary which is likely to be affected by a high water table, flooding, fluvial erosion, or sediment deposition, and often contains distinctive vegetation. The size of the margin will vary according to local site factors but may extend to the limits demarcated by natural river terraces and constructed stop banks.*

River beds are used for a range of activities that benefit the community. However, some of those activities can adversely affect flood-protection works in, or on, the bank or margin of the bed. Such activities can also exacerbate the adverse effects of floods and adversely affect the flood-carrying capacity of a river.

The margins of rivers contain natural features such as vegetation and wetlands that naturally contain or reduce the effects of flood flows. Removal of exotic and indigenous vegetation or bed material such as rocks, or gravel can hasten the erosion of banks and margins, exacerbating the effects of flooding. Vegetation planting or the invasion of pest plants can unduly confine a river. The deposition of bed material, earthworks, the building, placing, or removing of structures in the beds, and the diversion and release of water may similarly exacerbate the effects of flooding. Similar activities in the margins adjacent to the bed can also create these effects.

ISSUE 10.1.3 – ACTIVITIES AFFECTING ESSENTIAL STRUCTURES

Activities can adversely affect the stability, performance or operation of essential structures located in, on, under or over the beds of rivers and lakes and on their banks or margins.

Explanation

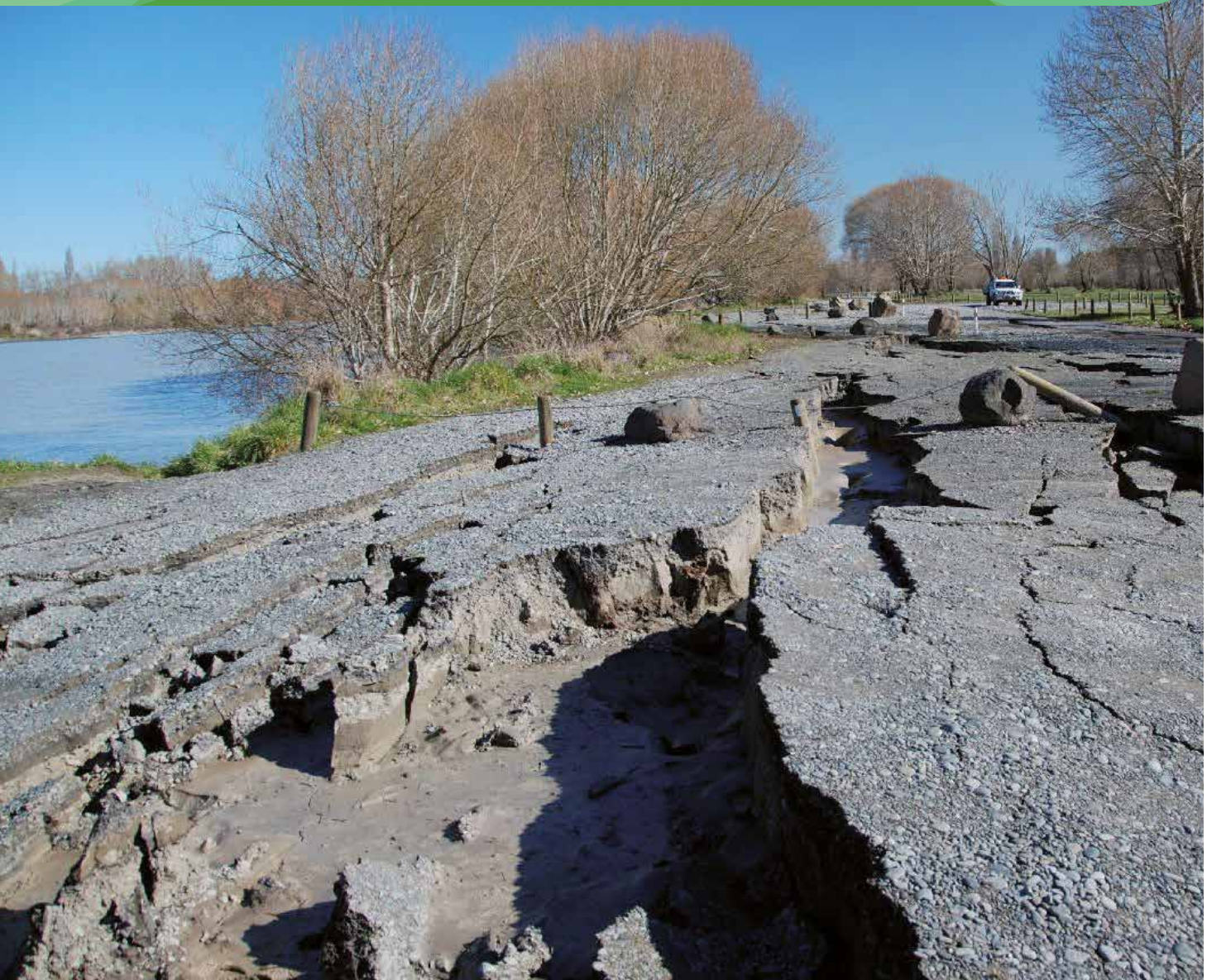
***Essential structures** in beds include, but are not limited to, bridges, fords, and other structures associated with the State Highway network, cables, support structures for infrastructure, pipelines and other crossings, water intakes, water conduits and races, canals for the conveyance, storage and discharge of water, dams, including those for major electricity generation facilities or irrigation schemes, river gauging towers and flood-protection works and plantings. See Glossary and Definitions section.*

This issue is only concerned with effects of activities on essential structures in, on, under or over the beds, banks and margins of rivers and lakes. Essential structures, critical infrastructure and regionally significant infrastructure outside of river and lake beds and margins, including within riparian zones, are addressed elsewhere in the Canterbury Regional Policy Statement. Essential structures enable the well-being of the Canterbury community, by providing services such as transport routes, electricity distribution and protection from floods. Essential structures that are located in the beds and margins of river and lakes are necessarily placed there because thier function is directly related to the river or lake such as a stop bank or irrigation canal, or they are part of a linel network such as a road or electricity pylon that must cross the river or lake bed. Activities that affect the stability, preformance or operation of essential structures, may in turn affect the well-being of the community by putting provision of those services at risk.

Activities that can adversely affect the stability and performance of essential structures include:

(1) diversion of river flows or the release of water
(2) construction of other structures
(3) river flood-protection works
(4) vegetation planting or removal
(5) excavation, deposition or removal of gravel and other material.
(6) inappropriate residential, recreational or building development near essential structures.

CHAPTER 11
NATURAL HAZARDS



Introduction

This chapter provides a framework for managing natural hazard risk in Canterbury. It also sets out the responsibilities of the local authorities in the region for the control of land-use to avoid or mitigate natural hazards. It recognises the need to work closely with the Canterbury Civil Defence Emergency Management Group and to coordinate and integrate, where possible, management under the Resource Management Act 1991 (RMA), the Building Act 2004, the Local Government Act 2002 (LGA), the Civil Defence Emergency Management Act 2002, and other legislation.

The term "natural hazard" is usually associated with major geophysical events or natural occurrences, such as earthquakes and associated tsunamis, volcanic activity, wildfires, landslips, storm surges, coastal erosion, extreme erosion and sedimentation events, or extreme weather events such as flooding, drought, snow (and avalanches) and high winds. Their hazardous nature is a result of their effects on human activities.

Policy 11.3.1 – Avoidance of inappropriate development in high hazard areas

To avoid new subdivision, use and development (except as provided for in Policy 11.3.4) of land in high hazard areas, unless the subdivision, use or development:

(1) is not likely to result in loss of life or serious injuries in the event of a natural hazard occurrence; and

(2) is not likely to suffer significant damage or loss in the event of a natural hazard occurrence; and

(3) is not likely to require new or upgraded hazard mitigation works to mitigate or avoid the natural hazard; and

(4) is not likely to exacerbate the effects of the natural hazard; or

(5) is proposed to be located in an area zoned or identified in a district plan or Chapter 6 of the CRPS for urban residential, industrial or commercial use, at the date of notification of the CRPS, in which case the effects of the natural hazard must be mitigated.

This policy implements the following objective:

Objective 11.2.1

Methods

The Canterbury Regional Council:

Will:

(1) Set out objectives and policies, and may include methods in regional plans, to avoid new subdivision, use and development that do not meet the criteria set out in Policy 11.3.1 clauses (1) to (5), within areas subject to coastal erosion within the next 100 years, and in the beds of lakes and rivers.

(2) Provide information it holds on historical and design events to define high hazard areas.

(3) Make available upon request, any information about natural hazards that it holds.

(4) Identify areas subject to coastal erosion through the provisions of its Regional Plans.

Should:

(5) Develop guidelines and strategies on appropriate new development within high hazard areas.

Territorial authorities:

Will:

(6) Set out objectives and policies, and may include methods in district plans, to avoid new subdivision, use and development that does not meet the criteria set out in Policy 11.3.1 clauses (1) to (5) for known high hazard areas excluding those areas subject to coastal erosion within the next 100 years and within the beds of lakes and rivers.

Should:

(7) Promote the use of guidelines developed pursuant to Method 11.3.1(5) to guide the design and assessment of new development.

Local authorities:

Will:

(8) Work together to investigate and define potential high hazard areas where information is uncertain or insufficient.

Principal reasons and explanation

Policy 11.3.1 seeks to achieve the principle of avoiding the potential effects of natural hazards in high hazard areas in the first instance. A definition of high hazard areas is provided in the definitions section.

> ***"High hazard areas" are:***
>
> ***1. flood hazard areas subject to inundation events where the water depth (metres) x velocity (metres per second) is greater than or equal to 1, or where depths are greater than 1 metre, in a 0.2% AEP flood event;***
>
> ***2. land subject to coastal erosion over the next 100 years; and***
>
> ***3. land subject to sea water inundation (excluding tsunami) over the next 100 years.***
>
> ***When determining high hazard areas, projections on the effects of climate change will be taken into account.***

Development of land for most residential, industrial or commercial purposes is not sustainable in high hazard areas where natural events are most likely to occur. However, the policy acknowledges that, while potentially still adversely affected by natural hazard events, there may be some development that is appropriate in high hazard areas. Development that meets the criteria (1) to (4) will generally be low-intensity use such as forestry, farming, or recreational parks. These uses are less likely to suffer significant damage, loss of life or require significant public expenditure on infrastructure remediation due to damage from a natural hazard event.

Critical infrastructure is addressed in Policy 11.3.4. Critical infrastructure is infrastructure that is necessary for ensuring the resilience of communities to the effects of natural hazard events, for example, key bridges.

Flooding occurs frequently throughout Canterbury and can result in major damage to property and risk to life. International research and observations have shown that critical flood depths and velocities will damage structures and harm people. For example, in water that is not moving, flood depths greater than about 1 metre pose a threat to life. When water is moving, the velocity can increase the risk to life and property. Depth and velocity combined can result in significant risk to life and damage to property.

Areas subject to inundation, where the depth or velocity of flood water is not likely to be sufficient to pose a significant risk to life are addressed in Policy 11.3.2.

Coastal erosion is a major issue in parts of Canterbury. New development such as residential, commercial and industrial activity is not sustainable in areas subject to erosion over the next 100 years.

Sea water inundation has occurred, and will continue to occur, in many coastal areas of Canterbury. Sea water inundation can occur due to a number of different factors, including coastal erosion and storm-surge. Many activities are not sustainable in these areas and should be avoided.

The policy also indicates that it is inappropriate to develop areas that would require significant new hazard mitigation works such as stop-banks or seawalls, as such development is unsustainable.

Policy 11.3.2 – Avoid development in areas subject to inundation

In areas not subject to Policy 11.3.1 that are subject to inundation by a 0.5% AEP flood event; any new subdivision, use and development (excluding critical infrastructure) shall be avoided unless there is no increased risk to life, and the subdivision, use or development:

(1) is of a type that is not likely to suffer material damage in an inundation event; or

(2) is ancillary or incidental to the main development; or

(3) meets all of the following criteria:

(a) new buildings have an appropriate floor level above the 0.5% AEP design flood level; and

(b) hazardous substances will not be inundated during a 0.5% AEP flood event.

provided that a higher standard of management of inundation hazard events may be adopted where local catchment conditions warrant (as determined by a cost/benefit assessment.)

When determining areas subject to inundation, climate change projections including sea level rise are to be taken into account.

This policy implements the following objective:

Objective 11.2.1

Methods

The Canterbury Regional Council:

Will:

(1) Provide information it holds on historical and design flood events to assist territorial authorities in determining areas subject to 0.5% AEP flood events.

(2) Make available, upon request, any information regarding natural hazards that it holds.

(3) Provide guidance about appropriate floor levels to manage the adverse effects of flood events.

Territorial authorities:

Will:

(4) Set out objectives and policies, and may include methods in district plans to avoid new subdivision, use and development of land in known areas subject to inundation by a 0.5% AEP flood event, other than in the circumstances determined in Policy 11.3.2 clauses (1) to (3).

(5) Ensure that flooding hazards are assessed before any new areas are zoned or identified, in a district plan, in ways that enable intensification of use, or where development is likely to cause adverse effects.

(6) Where there is a known flooding risk, include provision in their district plans that require a 0.5% AEP flood event to be determined, and its effects assessed, prior to new subdivision, use or development of land taking place. Where the territorial authority has adopted a standard less frequent than a 0.5% AEP flood event, the expected flow and effects of that less frequent AEP flood event will be determined.

Local Authorities:

Should:

(7) Develop and implement flood plain management strategies.

Principal reasons and explanation

Flooding is the most common natural hazard in the Canterbury Region. Since the early days of settlement, floodwaters have inundated some farm land and urban areas, destroying crops, affecting livestock and damaging or destroying property. Floods may also result in contamination of water, particularly where facilities such as sewage treatment plants or effluent storage are inundated, and this is a particular concern to Ngāi Tahu. Development on floodplains can increase flood hazards.

Although inappropriate subdivision, use and development of land is to be avoided in high hazard areas (Policy 11.3.1), this policy acknowledges that new subdivision, development and use of land can still occur in inundation areas where the specified criteria are met.

Like Policy 11.3.1, Policy 11.3.2 also acknowledges that new land uses that are unlikely to suffer material damage to land or property (for example rural activities and recreational parks), and which do not result in increased risk to life, will probably be acceptable in areas subject to flooding in a 0.5% AEP flood event. In addition, ancillary buildings, including small additions to existing buildings, and development incidental to an existing use are acceptable where there is no increased risk to life. For clarity, any new development or change in use that may result in an increased risk to life falls within this policy. Where the new use or development is of a type that may suffer material damage in a natural hazard event and is not ancillary or incidental to the main building(s) or use, then it may still be acceptable if the floor levels are elevated above the likely flood water level of a 0.5% AEP flood event. Critical infrastructure is excluded from this policy because it is covered in Policy 11.3.4.

When floodwaters enter buildings, flood damage costs increase considerably. The minimum standard under the Building Act, based on a 2% AEP flood event (a 1 in 50 chance of such a flood in any given year), is judged to be too low by experts. In Canterbury, where floodwaters in general can spread out over large areas, the difference in flood level between events of various magnitudes is relatively small. For example, on the Levels Plains north of Timaru and on other similar floodplains, the difference in depth of a 1% AEP flood event and an 0.2% AEP flood event is expected to be 300–400 mm or less in areas clear of any swales or depressions.

Principal reasons and explanation

Active earthquake faults are defined as those faults in the earth's crust that have moved in the past and are likely to move again in the future, generating earthquakes. If an earthquake is large and shallow (generally greater than magnitude 6.5 and shallower than 40 km deep) the displacement on the fault may reach the ground surface, permanently offsetting the ground both horizontally and vertically by up to several metres along the fault trace, as seen with the Greendale Fault that generated the 2010 magnitude 7.1 Canterbury earthquake. Fault rupture at the ground surface tends to occur repeatedly at about the same place in subsequent earthquakes. Therefore, where there is a known fault trace, the location of likely future fault rupture can be predicted with some degree of confidence within a relatively narrow corridor either side the fault trace. Because of this, and because most active fault traces in Canterbury are in sparsely populated mountainous areas, fault rupture hazard is relatively simple to avoid compared with other natural hazards.

Active fault traces, and the areas immediately adjacent to them, should be avoided at the time of subdivision or development of an area. However, in some cases, the level of activity of the fault is low enough that the risk to residential development is acceptable. This policy promotes a risk-based approach whereby zones of fault rupture hazard are identified within which site-specific investigations are required, and development within those zones is managed according to the nature of faulting, the activity of the fault (how often it is thought to move) and the type of building proposed for the site.

Liquefaction can occur in saturated, loose sandy or silty soil below the water table, when earthquake shaking causes the loose soil to compact and water pressure to build up within it. This in turn causes the soil to lose its strength and to behave more like a liquid than a solid. Water may be ejected to the ground surface, carrying silt and sand with it, causing subsidence of the ground, which can damage structures both on and below the ground, such as buildings and buried pipes. Lateral spreading occurs when liquefied soil moves sideways, often towards watercourses. This often causes cracks in the ground parallel to the watercourse and consequent damage to structures across the cracks. Most of the damage, to residential houses and infrastructure such as sewerage, during the 2010 Canterbury earthquake was caused by ground damage due to liquefaction and lateral spreading, rather than ground shaking. The worst damage was in areas of lateral spreading near rivers and streams. This was again the case in the 2011 Canterbury earthquake, with much more wide-spread liquefaction.

General areas that are likely to be susceptible to liquefaction and lateral spreading during earthquake shaking – areas of young sandy and silty soils with a high water table - can be relatively easily determined. However, within these areas the likelihood of liquefaction occurring in any one earthquake can vary greatly, so site specific investigations are required to determine the level of susceptibility.

Liquefaction damage can be mitigated by either reducing the likelihood of liquefaction by treating the ground through a variety of methods, or by using stronger building foundations or piles that so that buildings can withstand ground subsidence and can be more easily repaired after an earthquake. Lateral spreading damage is more difficult to mitigate, but can include stone columns to limit lateral movement. Mitigation measures can be costly, and avoidance may be the best option in areas where the liquefaction or lateral spread hazard is high and mitigation measures are uneconomic.

This policy promotes a risk-based approach whereby zones of fault rupture, liquefaction and lateral spreading hazard are identified within which site-specific investigations are required. Development within those zones is then managed according to the nature of faulting and the activity of the fault (how often it is thought to move) or the likelihood of liquefaction or lateral spreading, as well as the type of development proposed for the site and possible mitigation options.

Positioning a building away from an active earthquake fault trace, or avoiding or mitigating liquefaction and lateral spreading will only reduce the risk of damage to buildings from permanent displacement of, and damage to, the ground underneath the building. This policy does not address other earthquake hazards such as ground shaking, landslides or tsunamis.

Policy 11.3.4 – Critical infrastructure

New critical infrastructure will be located outside high hazard areas unless there is no reasonable alternative. In relation to all areas, critical infrastructure must be designed to maintain, as far as practicable, its integrity and function during natural hazard events.

This policy implements the following objective:

Objective 11.2.1.

Methods

The Canterbury Regional Council:

Will:

(1) Set out objectives and policies, and may include methods in regional plans to ensure that new critical infrastructure is located outside high hazard areas, unless there is no reasonable alternative.

(2) Provide information it holds on historic and design events to define high hazard areas.

(3) Make available, upon request, any information that it holds about natural hazards.

Should:

(4) Encourage that, where located in high hazard areas, critical infrastructure will be able to be maintained and reinstated (if necessary) in reasonable time.

Territorial authorities:

Will:

(5) Set out objectives and policies, and may include methods in district plans to ensure that new critical infrastructure is located outside known high hazard areas, unless there is no reasonable alternative.

Should:

(6) Where critical infrastructure is located in high hazard areas, encourage the provider to ensure that it will be able to be maintained and reinstated, if necessary, within a reasonable timeframe.

(7) Ensure the potential effects of natural hazards are taken into account in the development of any new critical infrastructure.

Principal reasons and explanation

The policy seeks to ensure that critical infrastructure is not placed as a matter of course in areas subject to significant natural hazard exposure. If the infrastructure is critical, it should not be exposed to such hazard events. However, the policy also recognises that there may be extenuating factors, such as availability of land, engineering problems, cost factors, or structure type (i.e. bridges are usually placed in areas subject to flooding), that mean there is no option but to locate the critical infrastructure within a high hazard area. Where such locations are the only option, the infrastructure must be designed to ensure the network maintains its ability to function during a natural hazard event. By its very nature, critical infrastructure provides a service which must be able to be immediately reinstated in the event of a failure.

Policy 11.3.5 – General risk management approach

For natural hazards and/or areas not addressed by policies 11.3.1, 11.3.2, and 11.3.3, subdivision, use or development of land shall be avoided if the risk from natural hazards is unacceptable. When determining whether risk is unacceptable, the following matters will be considered:

(1) the likelihood of the natural hazard event; and

(2) the potential consequence of the natural hazard event for: people and communities, property and infrastructure and the environment, and the emergency response organisations.

Where there is uncertainty in the likelihood or consequences of a natural hazard event, the local authority shall adopt a precautionary approach.

Formal risk management techniques should be used, such as the Risk Management Standard (AS/NZS ISO 31000:2009) or the Structural Design Action Standard (AS/NZS 1170.0:2002).

This policy implements the following objective:

Objective 11.2.1.

Methods

The Canterbury Regional Council:

Will:

(1) Provide information that it holds on historic and design events to assist in determining the likelihood and potential consequence of natural hazards.

(2) Make available upon request, any information that it holds about natural hazards.

Territorial authorities:

Will:

(3) Ensure that natural hazards are assessed before any new areas are zoned or identified in a district plan, in ways that enable intensification of use, or where development is likely to cause adverse effects.

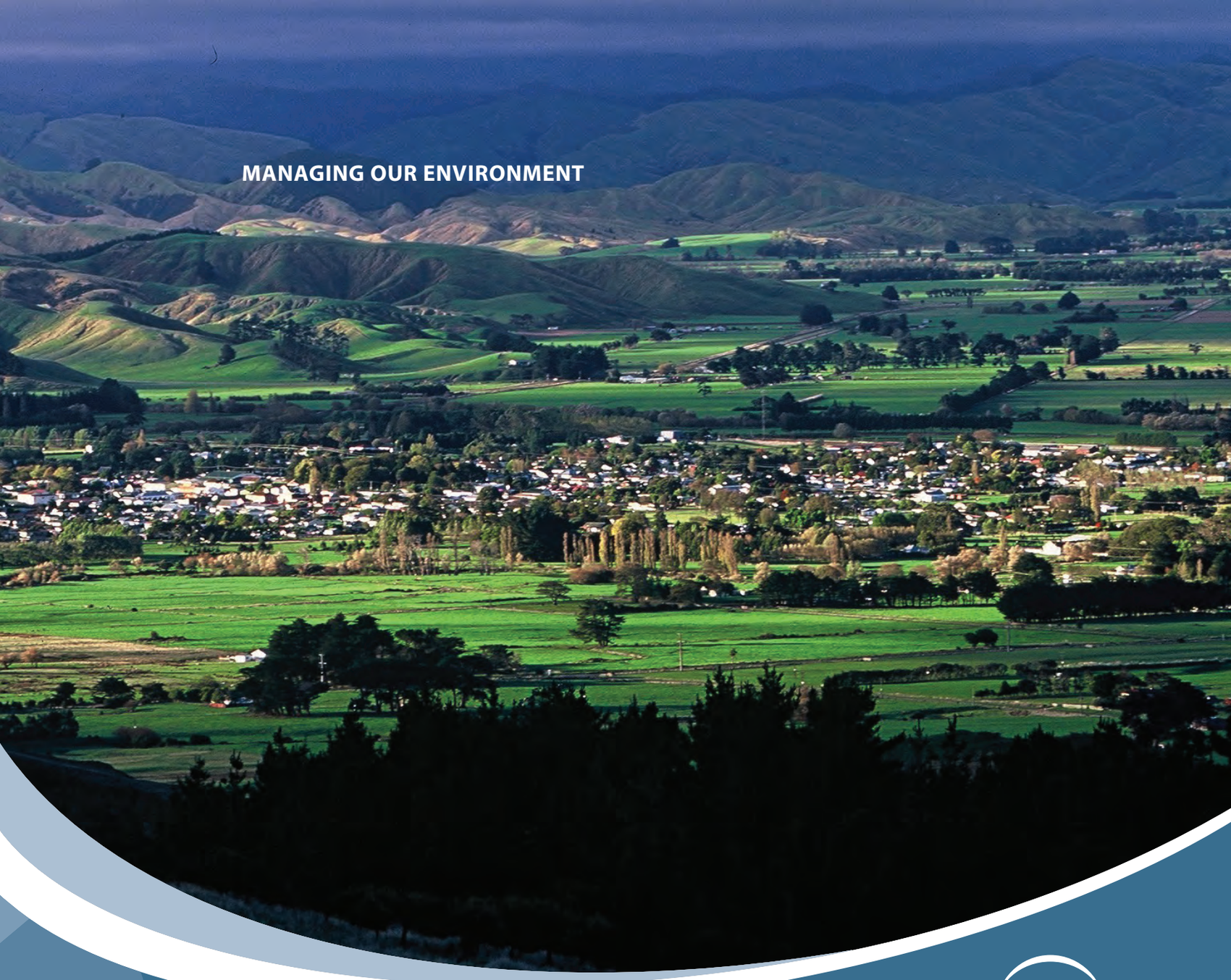
(4) Set out objectives and policies, and may include methods in district plans to ensure that subdivision, use or development of land will be avoided if the risk from natural hazards is unacceptable.

(5) Set out objectives and policies, and may include methods in district plans to ensure that where subdivision, use or development occurs in an area where there is residual risk from natural hazards, appropriate mitigation is required to manage that risk.

Should:

(6) Request applicants for privately initiated plan changes or resource consents, where relevant, to provide baseline information or fund investigation on risks or impacts of natural hazards such as flooding, land instability, coastal hazards or active faults at a local scale, in order that the environmental effects of the proposal or change can be adequately assessed at an appropriate level of detail. This may include working with the Canterbury Regional Council to gather information.

MANAGING OUR ENVIRONMENT



horizons
regional council

One Plan

The Consolidated Regional Policy Statement, Regional Plan and Regional Coastal Plan for the Manawatu-Wanganui Region

one plan
mo te iti mo te rahi

3 Infrastructure, Energy, *Waste**, *Hazardous Substances** and Contaminated Land

3.1 Scope and Background

This chapter deals with how activities involving infrastructure, renewable energy, *waste**, *hazardous substances**, versatile soils and contaminated land will be addressed. In general, this chapter provides broad policy guidance for managing these activities. Where appropriate, specific policy relating to these activities is integrated into the resource-based chapters of this Plan.

Infrastructure and other physical resources of regional or national importance

The Regional Council recognises that some infrastructure and other physical resources are regionally or nationally important. The establishment, *operation**, *maintenance** and *upgrading** of infrastructure and infrastructure corridors is critical to the economic wellbeing of the Region and the nation. However, infrastructure can have adverse effects on the environment and other activities can have reverse sensitivity adverse effects on infrastructure.

There can be logistical or technical constraints on where infrastructure must be located to serve communities and operate efficiently. Urban growth should be integrated with infrastructure provision. The Regional Council wants to ensure the benefits of infrastructure are recognised and appropriately weighed along with other matters in decision-making processes.

Energy

Access to reliable and sustainable energy supplies is essential to the way society functions. People and communities rely on energy for transportation, and electricity for everyday activities at home and at work. A reliable and secure supply of energy, including electricity, is fundamental for economic and social wellbeing. Furthermore, the demand for electricity is increasing.

Government has developed energy strategies and made changes to the RMA to encourage energy efficiency and greater uptake of renewable energy over use of non-renewable resources. Renewable energy means energy produced from solar, wind, hydro, geothermal, biomass, tidal, wave and ocean current sources.

The Government has made a commitment to reduce New Zealand"s greenhouse gas emissions and to achieve increasingly sustainable energy use. This commitment is expressed by the inclusion of sections 7(ba), 7(i) and 7(j) in the RMA in 2004 and in national strategy and policy documents dealing with energy, renewable energy, energy efficiency and conservation, and electricity transmission.

The electricity transmission network is recognised by a national policy statement as a matter of national significance.

As at 2009, the Government"s target is for 90% of New Zealand"s electricity generation to be from renewable energy resources by 2025. Collectively these Government policy instruments seek to achieve economy-wide improvements in the efficiency of energy use and an increase in the supply of energy from renewable energy resources.

9 Natural Hazards

9.1 Scope and Background

This chapter establishes an overall framework for natural hazard management under the RMA. It also sets out the division of responsibilities between the Regional Council and Territorial Authorities for natural hazard management under the RMA.

The Region is vulnerable to a number of natural hazards. The principal threat is from flooding. Other natural hazards include earthquakes, tsunami, volcanic action and land subsidence. Climate change is likely to influence the frequency, scale or intensity of atmospherically influenced natural hazards such as flooding. The vulnerability of the Manawatu-Wanganui Region to natural hazard events is increased because of human activity such as:

- *land disturbance** and *vegetation clearance**, particularly on hill slopes in a *Hill Country Erosion Management Area**, which can increase the erosion risk and the amount of sediment in the flood channel, in turn increasing the intensity of, and effects from, floods and reducing the effectiveness of mitigation measures such as stopbanks
- the increasing number of people living in hazard-prone areas (including associated infrastructure) such as along the coast and adjacent to rivers, which increases the damage potential from natural hazard events, putting lives at risk. It can also reduce the effectiveness of existing mitigation measures such as stopbanks.

Most of the Regional Council's operational work on natural hazard management is carried out under the Soil Conservation and Rivers Control Act 1941, which provides for the establishment of river and drainage schemes. Emergency response, community readiness, recovery planning and research into natural hazard risks, is carried out under the Civil Defence and Emergency Management Act 2002. These roles are implemented through the Civil Defence and Emergency Management Group Plan rather than through the One Plan. The role of the Regional Council and Territorial Authorities under the RMA is primarily one of risk reduction to ensure that resource use activities do not exacerbate natural hazard risks or impede natural hazard mitigation works, thereby ensuring that developments do not put people or property in places or circumstances of undue risk.

The approach to managing natural hazards in this Plan is to:

(a) set out a clear regional framework for natural hazard management,

(b) improve clarity around the respective roles of the Regional Council and Territorial Authorities under the RMA,

(c) discourage future residential development and placement of *critical infrastructure** in areas prone to natural hazard events, particularly areas at high risk of flooding, and

(d) continue to provide information to Territorial Authorities and the general public with regard to natural hazards.

Flooding

Flooding occurs frequently in the Region. The impacts of floods are mostly localised, but the likelihood of a major flood occurring in any year is high.

Policy 9-2: Development in areas prone to flooding

(a) The Regional Council and *Territorial Authorities*^ must not allow the establishment of any new *structure*^ or activity, or any increase in the scale of any existing *structure*^ or activity, within a *floodway** mapped in Schedule J unless:

(i) there is a functional necessity to locate the *structure*^ or activity within such an area, and

(ii) the *structure*^ or activity is designed so that the adverse *effects*^ of a 0.5% annual exceedance probability (AEP) (1 in 200 year) flood event[2] on it are avoided or mitigated, and

(iii) the *structure*^ or activity is designed so that adverse *effects*^ on the *environment*^, including the functioning of the floodway, arising from the *structure*^ or activity during a flood event[2] are avoided or mitigated,

in which case the *structure*^ or activity may be allowed.

(b) Outside of a *floodway** mapped in Schedule J the Regional Council and *Territorial Authorities*^ must not allow the establishment of any new *structure*^ or activity, or an increase in the scale of any existing *structure*^ or activity, within an area which would be inundated in a 0.5% AEP (1 in 200 year) flood event[2] unless:

(i) *flood hazard avoidance** is achieved or the 0.5% AEP (1 in 200 year) flood hazard is mitigated, or

(ii) the non-habitable *structure*^ or activity is on *production land*^, or

(iii) there is a functional necessity to locate the *structure*^ or activity within such an area,

in any of which cases the *structure*^ or activity may be allowed.

(c) *Flood hazard avoidance** must be preferred to flood hazard mitigation.

(d) When making decisions under Policies 9-2(a) and b(i) regarding the appropriateness of proposed flood hazard mitigation measures, the Regional Council and *Territorial Authorities*^ must:

(i) ensure that occupied structures have a finished floor or ground level, which includes reasonable freeboard, above the 0.5% AEP (1 in 200 year) flood level.

(ii) ensure that in a 0.5% AEP (1 in 200 year) flood event[2] the inundation of access between occupied structures^ and a safe area where evacuation may be carried out (preferably ground that will not be flooded) must be no greater than 0.5 m above finished ground level with a maximum water velocity of 1.0 m/s, or some other combination of water depth and velocity that can be shown to result in no greater risk to human life, *infrastructure*^ or *property**,

(iii) ensure that any more than minor adverse *effects*^ on the effectiveness of existing *flood hazard avoidance** or mitigation measures, including works and *structures*^ within River and Drainage Schemes, natural landforms that protect against inundation, and overland stormwater flow paths, are avoided,

(iv) ensure that adverse effects on existing *structures*^ and activities are avoided or mitigated,

(v) have regard to the likelihood and consequences of the proposed flood hazard mitigation measures failing,

(vi) have regard to the consequential *effects*^ of meeting the requirements of (d)(ii), including but not limited to landscape and

Method 9-4	Public Information – Natural Hazards
Description	Easily accessible information will be developed and provided to increase public awareness of the risks of natural hazards, including earthquake, volcanic action, land subsidence, tsunami, flooding and coastal erosion, including consideration of *sea level rise** and climate change implications. Up-to-date natural hazard information will be provided to the general public and other interested parties (for example, advance warning flood and lahar systems and civil defence literature), together with advice on appropriate options for avoiding or mitigating natural hazards.
Who	Civil Defence and Emergency Management Group, Regional Council, Territorial Authorities, research institutes and other relevant agencies.
Links to Policy	This method implements Policies 9-1, 9-2, 9-3 9-4 and 9-5
Target	Information provided via website and available in paper form by 2010.

9.6 Anticipated Environmental Results

Anticipated Environmental Result	Link to Policy	Indicator	Data Source
By 2017, the risk to people, property and *critical infrastructure** will be the same as or less than before this Plan became operative.	Natural Hazards Policies: 9-1, 9-2, 9-3, 9-4 and 9-5 Land Policies: 4-1, 4-2 and 4-3 Water Policies: 5-24 and 5-26	• Number of new dwelling houses in areas prone to flooding consistent with Policy 9-2 • Number of incidents where activities are affecting schemes, especially stopbanks • Natural hazard information shared with Territorial Authorities and interested parties • District plans incorporating hazardous areas on planning maps and associated regulation of land use in those areas	• Territorial Authorities • Regional Council's Operations Group maintenance records • Regional Council's compliance database • Regional Council's incidents database
By 2017, people will be more aware of the risks of natural hazards in the Region and how to cope with them than they were before this Plan became operative.	Natural Hazards Policies: 9-1, 9-2, 9-3, 9-4 and 9-5	• Public perception • Number of requests for information • District plans incorporating hazardous areas on planning maps and associated regulation of land use in those areas	• Customer surveys • Subdivision Enquiry Database (SED)

9.7 Explanations and Principal Reasons

Objective 9-1, Policies 9-1 to 9-5 and the methods above set out a regional framework for avoiding or mitigating the adverse effects of natural hazard events on communities, infrastructure and the natural environment.

Policy 9-1 clarifies the respective roles of the Regional Council and Territorial Authorities as required by s62 RMA. Policy 9-1 largely continues the delineation

of responsibilities under the former Regional Policy Statement. The Regional Council has taken on the role of setting a regional framework for natural hazard management, while allowing decisions on most land use activities to be made by Territorial Authorities.

Policy 9-2 targets floodways and areas prone to flooding, as flooding is the most significant natural hazard in the Region. Areas prone to flooding (including the "floodable area" as in Figure J:2) are defined as those areas that would be inundated by a 0.5% AEP (1 in 200 year) flood event[2]. This is a change from the previously used standard for delineating areas prone to flooding of a 1% AEP (1 in 100 year) flood event[2], in order to take into account the likely effects of climate change. Policy 9-2 generally seeks to avoid residential development and other new activities in areas likely to be affected by flooding, due to the risks to human life and property. It is recognised, however, that some activities have a functional necessity to be located in areas prone to flooding (Policy 9-2(a) and Policy 9-2(b)), or that mitigation for dwellings and other activities (for example, access in or out of areas prone to flooding and building design) can be put in place to avoid any increase in impacts of floods (Policy 9-2(d)(i) and (ii)).

Policy 9-4 sets up the general management regime for other types of natural hazards. Hazard avoidance is preferred to hazard mitigation because of the impacts on human life, property and infrastructure. Avoiding all hazards is difficult, however, because of their infrequency and the widespread nature of their effects.

Policies 9-2, 9-3 and 9-4 also include provisions seeking to ensure that the effectiveness of existing hazard mitigation measures is not undermined by future activities.

Policy 9-3 seeks to ensure that *critical infrastructure** is not disabled by natural hazard events, by avoiding the placement of *critical infrastructure** in areas prone to natural hazards. The policy recognises that in some cases this is unavoidable – for example, roading and gas supplies in coastal areas regardless of tsunami risk, and infrastructure in settlements located on liquefaction zones.

Policy 9-5 seeks to ensure that the implications of climate change are considered as appropriate.

environment SOUTHLAND
Te Taiao Tonga

Proposed Southland Regional Policy Statement 2012

Decision Appendices

Note: Shading indicates either:
Biodiversity Variation notified on 23 May 2015; or
Provisions appealed to the Environment Court as at November 2015

7.3 POLICIES

Policy COAST.1 - Direction on locations for activities[74]

Identify in regional and district plans locations within the coastal environment where particular activities and forms of subdivision, use and development:

(a) are appropriate;
(b) are inappropriate; and
(c) may be inappropriate without the consideration of effects through a resource consent application, notice of requirement for designation or a Schedule 1 process under the Act.

Explanation/Principal Reasons

It is important that local authorities identify locations that are appropriate and, where necessary, inappropriate for particular activities and forms of subdivision, use and development. The matters local authorities may consider when determining whether or not a subdivision, use or development is appropriate include but are not limited to:

- maintaining coastal margins in a natural state;
- avoiding the introduction or accumulation of man-made elements where none are planned (consented or designated) or where not previously present;
- avoiding significant adverse effects and avoiding, remedying or mitigating other adverse effects on identified landscape values; and
- encouraging efficient use of occupied space through intensification and clustering of developments, rather than sprawling, sporadic or unplanned patterns of settlement and urban growth.

This approach will help avoid sprawling or sporadic subdivision, use and development. It will also help avoid cumulative effects of an activity and precedent effects of a decision exceeding the carrying capacity of an area, protecting the natural character, outstanding natural features and landscapes, and amenity, social, intrinsic, ecological, indigenous biodiversity, cultural and historic heritage values of the coastal environment.

To implement Policy COAST.1 the provisions of the Act and the New Zealand Coastal Policy Statement 2010 (NZCPS) must be given effect to. The National Policy Statement for Freshwater Management 2014 (NPS-FM), National Policy Statement for Renewable Electricity Generation 2011 (NPSREG) and National Policy Statement on Electricity Transmission 2008 (NPSET) also must be given effect to where relevant. Particular aspects include, but are not limited to:

- taking into account the Treaty of Waitangi principles, providing opportunities for tangata whenua to exercise kaitiakitanga, and recognising Maori heritage, as set out in sections 6(e), 7(a) and 8 of the Act, and Policy 2 of the NZCPS. Additionally, the Crown has obligations under the Maori Commercial Aquaculture Claims Settlement Act 2004;
- having regard to the purposes for which land or waters are held or managed under other Acts, to avoid adverse effects of activities that are significant in relation to those purposes, or avoid, remedy or mitigate adverse effects that are not significant in relation to those purposes and to provide for the integrated management of the coastal environment;
- strategic planning of the coastal environment for aspects such as nationally and regionally significant infrastructure (including ports, shipping navigation routes and refuge areas for efficient national networks for transport within the coastal space), aquaculture, renewable

[74] Appeal to Environment Court by Environmental Defence Society Incorporated CHC-000058 and Forest & Bird CHC-000059

resources, energy activities (including mineral activities), natural hazards (including sea level rise and climate change), coastal settlements, significant indigenous biodiversity and historic heritage. Thresholds (for example, zones, standards or targets) or specified acceptable limits of change should be set for coastal processes, resources or values under threat or at significant risk from adverse cumulative effects, such as protection from coastal hazards, water quality degradation, sedimentation, provision of public access, indigenous biodiversity loss, natural character preservation, natural features and landscapes protection, and management of harmful aquatic organisms;

- ensuring reclamations are only appropriate if they provide significant regional or national benefit, with particular regard given if the intended purpose would provide for the efficient operation of infrastructure (including ports, airports, coastal roads, pipelines, electricity transmission, railways and ferry terminals) and of marinas and electricity generation;
- recognising natural defences such as beaches, estuaries, wetlands, intertidal areas, coastal vegetation, dunes and barrier islands protect coastal land uses, or sites of significant indigenous biodiversity, cultural or historic heritage or geological value from coastal hazards;
- preservation of natural character, including restoration or rehabilitation where priority is relevant;
- protection of natural features and natural landscapes, and historic heritage; and
- provision of public open space, walking access and vehicle access.

Policy COAST.2 – Management of activities in the coastal environment[75]

Ensure adequate measures or methods are utilised within the coastal environment when making provision for subdivision, use and development to:

(a) protect indigenous biodiversity, historic heritage, natural character, and natural features and landscape values;

(b) maintain or enhance amenity, social, intrinsic, ecological and cultural values, landscapes of cultural significance to tangata whenua and coastal dune systems;

(c) maintain or enhance public access; and

(d) avoid or mitigate the impacts of natural hazards, including predicted sea level rise and climate change.

Explanation/Principal Reasons

Measures or methods (for example, buffer zones) are required to minimise the impact of subdivision, use and development on the coastal environment to a level that is appropriate. An activity can impact on the significant values of the coastal environment, impede or eliminate public access to and along that environment, or increase the impact from natural hazards or predicted sea level rise and climate change. Policy TW.4 relates to the recognition and provision for tangata whenua values in local authority resource management decision-making processes, and should also be referred to in managing activities in the coastal environment.

Policy COAST.3 – Protection of the coastal environment[76]

(a) Ensure that subdivision, use and development activities avoid adverse effects on areas of outstanding natural features and landscapes, and/or outstanding natural character.

(b) Ensure that subdivision, use and development activities avoid significant adverse effects, and avoid, remedy or mitigate other adverse effects on natural features and landscapes and/or natural character in the coastal environment.

[75] Appeal to Environment Court by Environmental Defence Society Incorporated CHC-000058 and Forest & Bird CHC-000059

[76] Appeal to Environment Court by Environmental Defence Society Incorporated CHC-000058, Forest & Bird CHC-000059, Meridian Energy Limited CHC-000055 and Transpower New Zealand Limited CHC-000057

(c) Having regard to (a) and (b) above, take into account the need to protect regionally significant, nationally significant or critical infrastructure, including ports and energy projects for the region.

Explanation/Principal Reasons

Policy 13 of the NZCPS seeks to preserve and protect the natural character of the coastal environment from inappropriate subdivision, use and development. Additionally, Policy 15 of the NZCPS also seeks to protect natural features and natural landscapes of the coastal environment from inappropriate subdivision, use and development. Any subdivision, use and development that cannot be absorbed by the surrounding coastal environment, or is not sensitive to the natural character of the coastal environment, can exceed the carrying capacity for the area and needs to be managed carefully. This inappropriate activity can result in an incremental loss of the coastal environment's natural character, outstanding natural features and landscapes, amenity, social, intrinsic, ecological, indigenous biodiversity, cultural, and historic heritage values. The intensity of activities, including the built development, along the coastline also has consequences for indigenous biodiversity and other direct and indirect effects, such as limiting opportunities for future development of necessary infrastructure and other resource uses both on land and in the coastal marine area. In considering if an activity is appropriate for a location, the criteria provided for the protection of outstanding natural features and landscapes in Chapter 10: Natural Features and Landscapes shall be part of the consideration, in order to assess the value of the landscape. All aspects of the natural and physical resources, including land, water, air, plants, animals and structures, and various factors relating to the viewers and their perception of the resources (affected by social, economic, aesthetic and cultural conditions), need to be taken into account.

Policy COAST.4 – Infrastructure, port, aquaculture, mineral extraction and energy projects[77]

Recognise and make provision for appropriate infrastructure, port, aquaculture, mineral extraction activities and energy projects that must be located within the coastal environment.

Explanation/Principal Reasons

Bluff port straddles the coastal marine area and the landward edges of the coastal environment, as do roads and railways around the region, while some renewable and non-renewable energy projects may need to be located within the coastal marine area. Constraints to manage the effects on the environment from these activities are appropriate, and could include conditions relating to structures, occupation of the area, discharges to water, discharges to air and noise. However, in accordance with Policies 6(1)(a), 6(2)(a) and 8 of the NZCPS these types of activities need to be given recognition for the activities they facilitate, to enable appropriate development and diversification to occur to meet the changing needs of the region. Additionally, there is a need for high water quality for aquaculture activities and a need for land-based facilities associated with aquaculture. Activities such as these can be economically and socially beneficial to the region, increasing the wellbeing of communities through employment or enabling growth of local businesses that utilise and/or support the activities. The ability to maintain and retain existing regionally significant, nationally significant and critical infrastructure located in coastal or sensitive environments is also required.

While recognising and making provision for these activities, tangata whenua interests need to be taken into account in accordance with sections 6(e), 7(a) and 8 of the Act, and Policy 2 of the

[77] Appeal to Environment Court by Environmental Defence Society Incorporated CHC-000058, Forest & Bird CHC-000059 and Transpower New Zealand Limited CHC-000057

Explanation/Principal Reasons

The above priorities are to be adopted in order for the region to work towards the objective of reducing risk over the long term. "Avoid exposure" refers to the need for consent authorities to exclude activities or refuse consent for development in areas at significant risk from natural hazards. "Mitigate" is the imposition of preventative conditions on some land use and infrastructure. Physical works should only be undertaken in situations where existing development and infrastructure is unable to be relocated, i.e. managed retreat. If physical works are to be done, priority should be given to the re-establishment of natural features. New Zealand Standard 9401 outlines a flood management process that should lead to the consideration of all above priorities.

Policy NH.5 – Avoid areas of significant risk from natural hazards

Avoid new subdivision, development and placement of critical infrastructure in areas at significant risk from natural hazards, unless:

(a) there is no reasonable alternative, in which case critical infrastructure must be designed to maintain, as far as practicable, its integrity and function during natural hazard events; or

(b) avoidance is impossible or impractical and adverse effects are mitigated to an acceptable level; or

(c) subdivision is solely for the purpose of boundary adjustments.

Explanation/Principal Reasons

It is important to avoid or exclude subdivision, development and placement of critical infrastructure in areas at significant risk from natural hazards unless there is no alternative, for example, wharves and hydro electricity generation facilities, or when the adverse effects can be completely mitigated. Some forms of development, residential for example, will be more at risk, and more inappropriate, than others, such as, agriculture or boundary adjustment subdivision that merely reconfigures lot boundaries without changing the land use.

Areas potentially at significant risk include but are not limited to:

- areas that have flooded to a depth of more than 100 millimetres previously (marine and riverine inundation but excluding urban stormwater inundation in reticulated areas) and for which the likelihood of inundation has not been reduced by flood alleviation works designed to protect the area from floods with a 2% or less annual exceedance probability (AEP);
- spillways, secondary flowpaths and ponding areas;
- areas immediately downstream of large dams (dams over 3 m in height and more than 20,000 m^3 in volume);
- unprotected areas less than 800 mm higher than land that has been previously been inundated by the sea;
- areas in close proximity to the coastline that, on the basis of past trends and/or the erosive effect of projected sea level rise, could erode in the next 100 years;
- areas prone to slipping, slumping, landslides, landslide runout, avalanche or rockfalls;
- areas subject to multiple hazards, none of which in themselves would constitute a significant risk;
- geomorphic floodplains of small watercourses whose flood history is unknown;
- alluvial fans and river deltas especially in steep, fast flowing, dynamic watercourses;
- areas in close proximity to identified active faults;
- land adjacent to lakes and less than one metre higher than the previous highest lake levels.

Territorial authorities will:

Method NH.5 - District plans

Establish and maintain provisions in district plans that:

(a) identify and map land subject to known inundation;
(b) manage or avoid the subdivision, development or use of land in areas subject to natural hazard risk;
(c) require natural hazard risk assessments that are commensurate to the scale and significance of the risk to be completed as part of the consent application process for subdivision and development;
(d) manage the potential effects of subdivision, land development or land use activities that may increase off-site flood risk;
(e) avoid, to the extent possible, new critical infrastructure being established in areas subject to significant natural hazard risk;
(f) recognise and make provision for infrastructure activities that have a functional, operational and technical need to be developed in an area at risk from natural hazards;
(g) maintain, restore or protect as appropriate natural features that mitigate the effects of natural hazards;
(h) identify no build, open space and reserve or low density development areas as necessary to mitigate the effects of flooding and erosion on land use, development and infrastructure;
(i) exclude some activities from areas known to be subject to significant risk from natural hazards.

Local authorities will:

Method NH.6 - Information

(a) Provide information through Land Information Memoranda on the extent and nature of known natural hazards.
(b) Establish and maintain inundation hazards information in district plans and natural hazard information on Council websites, in collaboration with other local authorities and agencies.
(c) Provide information regarding the earthquake prone building policies developed by the territorial authorities in accordance with the Building Act 2004.

Local authorities will be encouraged to:

Method NH.7 - District plans and resource consents

Collaborate on district plans and resource consent applications in relation to the subdivision, use or development of land subject to natural hazard risk, to encourage a consistent and integrated region-wide approach to natural hazard risk management.

Method NH.8 - Promote

(a) Encourage the adoption of land use, development and management methods that reduce exposure to natural hazard risk, including the effects of predicted climate change on that risk.
(b) Encourage the development of community response plans.
(c) Promote the adoption of guidelines and strategies to mitigate potential effects on existing development on land subject to natural hazard risk.

Method NH.9 - Risk assessments

Undertake natural hazard risk assessments prior to the development of new critical infrastructure.

Method NH.10 - Resource consents

When considering applications for resource consent for activities or development that may be subject to known or potential moderate or high natural hazard risk, consider imposing conditions that avoid or mitigate adverse effects, such as:

(a) set back distances;
(b) minimum floor levels for buildings;
(c) building exclusion areas;
(d) esplanade reserves and open space/flood attenuation areas at subdivision;
(e) protecting, re-creating or enhancing natural features and landforms that provide protection from natural hazards;
(f) ensuring no increase in natural hazard risk to other property from the proposed activity.

Method NH.11 – Critical infrastructure

Enable existing critical infrastructure to be suitably resilient and / or protected from reasonably anticipated natural hazard risk to the extent possible.

Method NH.12 - Research, information and collaboration

Collaborate with central government agencies, other local authorities, industry, research agencies, and landowners to:

(a) assess and quantify the nature and extent of natural hazard risks in Southland;
(b) identify and map known natural hazard risks including areas of:
    (i) flood risk;
    (ii) coastal erosion and inundation;
    (iii) known fault lines, liquefaction risk and strong ground-shaking zones;
    (iv) tsunami and storm-surge inundation risk;
(c) provide access to information and records held on historic and projected natural hazard risk according to established protocols;
(d) provide advice and information to the community about how to prepare for, and increase individual and community resilience to natural hazards;
(e) identify, investigate, and/or monitor land that is subject to known:
    (i) marine inundation; and
    (ii) active fault lines, and areas prone to liquefaction and tsunami.

Method NH.13 - Collaboration

Work with other local authorities, emergency services, emergency management organisations, central government and critical infrastructure providers to prepare, maintain and implement emergency response plans in response to identified natural hazard risks.

Method NH.14 - Sharing and transfer of responsibilities

Provide for tangata whenua involvement in resource management decisions on natural hazard risk management where tangata whenua values are affected.

Method NH.15 - Strategies

Develop, implement and maintain natural hazard management and response strategies consistent with their functions and responsibilities, other relevant legislation and the roles of other agencies, setting out how local authorities will work with each other and with other agencies in the event of an emergency from a natural hazard event.

Part A: Infrastructure

Table 15: Overview of Infrastructure provisions

Issues	Objectives	Policies	Methods
Issue INF.1	**Objective INF.1** Southland's infrastructure	**Policy INF.1** Regional, national and critical infrastructure	**Methods INF.1 - 6**
		Policy INF.2 Infrastructure and the environment	**Methods INF.1, 2, 4 - 6**
		Policy INF.3 Infrastructure protection	**Methods INF.1 - 6**
		Policy INF.5 Development, subdivision and land use	**Methods INF.1 - 6**
		Policy INF.6 Promoting consistent and integrated management of infrastructure across the region	**Methods INF.1 – 3, 5, 6**
Issue INF.2	**Objective INF.1** Southland's infrastructure	**Policy INF.2** Infrastructure and the environment	**Methods INF.1, 2, 4 - 6**
		Policy INF.4 Natural hazards	**Methods INF.1, 2, 4 - 6**
Issue INF.3	**Objective INF.1** Southland's infrastructure	**Policy INF.1** Regional, national and critical infrastructure	**Methods INF.1 - 6**
		Policy INF.2 Infrastructure and the environment	**Methods INF.1, 2, 4 - 6**
		Policy INF.4 Natural hazards	**Methods INF.1, 2, 4 - 6**

		Policy INF.6 Promoting consistent and integrated management of infrastructure across the region	**Methods INF.1 – 3, 5, 6**
Issue INF.4	**Objective INF.1** Southland's infrastructure	**Policy INF.1** Regional, national and critical infrastructure	**Methods INF.1 - 6**
		Policy INF.3 Infrastructure protection	**Methods INF.1 - 6**
		Policy INF.5 Development, subdivision and land use	**Methods INF.1 - 6**
		Policy INF.6 Promoting consistent and integrated management of infrastructure across the region	**Methods INF.1 – 3, 5, 6**

15.1 ISSUES

Issue INF.1
Land use change and development is not always integrated with local, regional and national infrastructure and this can affect the communities' social and economic wellbeing or health and safety.

Issue INF.2
The impact of climate change and natural hazard events are a risk to critical infrastructure.

Issue INF.3
The provision of infrastructure and associated activities are important to enable people and communities to provide for their social, economic and cultural wellbeing, but, where not appropriately managed, can result in significant adverse effects on land use and the environment.

Issue INF.4
Subdivision, use and development can result in adverse effects, including reverse sensitivity effects, on existing or planned infrastructure development and activities.

15.2 OBJECTIVE

Objective INF.1 – Southland's infrastructure
Southland's regionally significant, nationally significant and critical infrastructure is secure, operates efficiently, and is appropriately integrated with land use activities and the environment.

Explanation/Principal Reasons
Southland's regional, national and critical infrastructure is essential to enable the wellbeing, health and safety of people and communities. Infrastructure in the wider region has the following characteristics:

1. it significantly contributes to the social, economic and cultural wellbeing of people and communities;
2. it is the subject of considerable financial investment;
3. it is unlikely to be readily replaced or duplicated;
4. it requires integrated management with other natural and physical resources.

Recognition of the importance of significant infrastructure will lead to greater weight being given to its requirements. As a consequence, it is desirable to manage the location and form of the surrounding development to reduce incompatibility and conflicts. It is also desirable to control any effects infrastructure may have on the environment.

The term 'appropriately' is used in this objective to recognise that the extent to which adverse effects may be avoided, remedied, mitigated, or where appropriate, and such measures are volunteered by the resource user, offset or compensated for, may vary depending on the particular circumstances of each particular case.

15.3 POLICIES

Policy INF.1 - Regional, national and critical infrastructure

Recognise the benefits to be derived from, and make provision for, the development, maintenance, upgrade and ongoing operation of regionally significant, nationally significant and critical infrastructure and associated activities.

Explanation/Principal Reasons

It is essential that provision be made for continued operation, maintenance and upgrades of new and existing critical infrastructure services, including the region's lifeline infrastructure. This should include targeted planning for future needs because robust infrastructure underpins the social, economic, cultural and environmental wellbeing of our region.

Policy INF.2 – Infrastructure and the environment[105]

Where practicable, avoid, remedy or mitigate the adverse effects of infrastructure on the environment. In determining the practicability of avoiding, remedying, or mitigating adverse effects on the environment, the following matters should be taken into account:

(a) any functional, operational or technical constraints that require the physical infrastructure of regional or national significance to be located or designed in the manner proposed;
(b) whether there are any reasonably practical alternative designs or locations;
(c) whether good practice approaches in design and construction are being adopted; and
(d) where appropriate, and such measures are volunteered by a resource user, whether any significant residual adverse effects can be offset or compensated for.

Explanation/Principal Reasons

While public infrastructure provides communities with essential services, this infrastructure should not unnecessarily detract from the environment in which it is placed. For example, the construction or maintenance of a road should not cause adverse effects on people's health from dust or on water quality from dust suppressants. This is especially important when looking to install new infrastructure. Careful consideration of all infrastructure types and possible locations should be completed to determine which option will have the least impact to the environment, and ensure that infrastructure is integrated with surrounding land use and maintained to avoid, remedy, mitigate, or where appropriate, and such measures are volunteered by the resource user, offset or compensated for adverse effects. Assessments of environmental effects should have regard to all matters of national significance, including the significance of the infrastructure activity itself.

Policy INF.3 – Infrastructure protection[106]

Protect regionally significant, nationally significant and critical infrastructure, particularly from new incompatible land uses and activities under, over or adjacent to the infrastructure.

Explanation/Principal Reasons

Southland's significant infrastructure networks require protection from land use and development changes that may result in damage to existing or planned infrastructure or reverse sensitivity issues. Existing infrastructure may also be located in coastal or sensitive environments and should be protected to allow for its maintenance and retention.

When managing existing infrastructure activities, local authorities shall take into account the benefits of the existing infrastructure and the constraints imposed by the technical and

[105] Appeal to Environment Court by Oil Companies CHC-000060
[106] Appeal to Environment Court by Oil Companies CHC-000060

Climate change*

Means a change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is, in addition to natural climate variability, observed over comparable time periods.

Coastal environment

An environment in which the coast is a significant part or element and includes:

(a) the coastal marine area;
(b) islands within the coastal marine area;
(c) areas where coastal processes, influences or qualities are significant, including coastal lakes, lagoons, tidal estuaries, saltmarshes, coastal wetlands, and the margins of these;
(d) areas at risk from coastal hazards;
(e) coastal vegetation and the habitat of indigenous coastal species including migratory birds;
(f) elements and features that contribute to the natural character, landscape, visual qualities or amenity values;
(g) items of cultural and historic heritage in the coastal marine area or on the coast;
(h) inter-related coastal marine and terrestrial systems, including the intertidal zone; and
(i) physical resources and built facilities, including infrastructure, that have modified the coastal environment.

Coastal marine area*

The foreshore, seabed, and coastal water, and the air space above the water—

(a) of which the seaward boundary is the outer limits of the territorial sea;
(b) of which the landward boundary is the line of mean high water springs, except that where that line crosses a river, the landward boundary at that point shall be whichever is the lesser of—
    (i) one kilometre upstream from the mouth of the river; or
    (ii) the point upstream that is calculated by multiplying the width of the river mouth by 5:

Coastal processes

Dynamic natural, physical and ecological relationships and events, that are characteristically coastal in their occurrence, nature and effects, that act to shape a coastline, its landforms and features - such as, beaches, wave cut platforms – and including processes of: wave formation, breaking and dissipation; swash run-up; nearshore currents; sediment transport, erosion and deposition.

Coastal water*

Means seawater within the outer limits of the territorial sea and includes—

(a) seawater with a substantial fresh water component; and
(b) seawater in estuaries, fiords, inlets, harbours, or embayments.

Compact urban form

The physical layout and design of a city which increases efficiency in the way people can use a city and the way in which a city is run.

Contaminated land*

Land that has a hazardous substance in or on it that

(a) has significant adverse effects on the environment; or
(b) is reasonably likely to have significant adverse effects on the environment.

Covenant

A legally binding protection agreement.

Critical infrastructure

Infrastructure that provides services which, if interrupted, would have a significant effect on the wellbeing and health and safety of people and communities and would require reinstatement, and includes all strategic facilities.

Cumulative effect

Means an effect, which arises over time or in combination with other effects, regardless of the scale, intensity, duration or frequency of the effect.

Rare habitat[120]
Habitat that is naturally or originally rare in the Region (that is, there was never a large number of that type of habitat).

Regional Council
Means a regional council named in Part 1 of Schedule 2 of the Local Government Act 2002.

Regional plan*
(a) Means an operative plan approved by a regional council under Schedule 1 (including all operative changes to the plan (whether arising from a review or otherwise); and
(b) Includes a regional coastal plan.

Regionally significant infrastructure
Infrastructure in the region which contributes to the wellbeing and health and safety of the people and communities of the region, and includes all critical infrastructure.

Regionally strategic transport infrastructure
The infrastructure required to facilitate the movement of freight or people and includes:
(a) the regional strategic roads as defined in the Southland Regional Land Transport Strategy.
(b) the Southland rail network.
(c) commercial port areas at Bluff including associated infrastructure.
(d) Invercargill, Gore, Manapouri and Milford Sound/Piopiotahi Airports, and Stewart Island/Rakiura Airstrip (Ryans Creek).

Renewable electricity generation***
The generation of electricity from solar, wind, hydro-electricity, geothermal, biomass, tidal, wave, or ocean current energy sources.

Renewable electricity generation activities***
The construction, operation and maintenance of structures associated with renewable electricity generation. This includes small and community-scale distributed generation activities, the system of electricity conveyance required to convey electricity to the distribution network and/or the national grid, and electricity storage technologies associated with renewable electricity.

Renewable energy*
Means energy produced from solar, wind, hydro, geothermal, biomass, tidal, wave, and ocean current sources.

Reverse sensitivity
Means the vulnerability of an existing lawfully established activity to the introduction or development of a new activity or land use in the vicinity that may be sensitive to the actual or perceived adverse effects generated by the existing activity.

Riparian margin**
Land situated along the bank of a lake, river, wetland or other water body.

Rural area
An area of lower population density in which farmland, forestry, national parks or reserves predominate.

Rural-residential development (lifestyle property)
A semi-rural property comprising a house and land, that may be used for small-scale farming.

Sedimentation
When particulate matter is carried by water or wind and deposited on the surface of the land or the seabed, and may in time become consolidated into rock.

Small and community-scale distributed generation***
Means renewable electricity generation for the purpose of using electricity on a particular site, or supplying an immediate community, or connecting into the distribution network.

[120] This definition is not part of this Decision, it has been reviewed as part of the Biodiversity Variation publicly notified on 23 May 2015.

Solid waste
Any solid materials, regardless of form, that require permanent disposal, or are diverted from disposal to be reused or recycled.

Statutory acknowledgement**
An acknowledgement by the Crown of Ngāi Tahu's special relationship with identifiable areas, namely Ngāi Tahu's particular cultural, spiritual, historical, and traditional association with those areas (known as statutory areas).

Steep land
Land 26-35° in slope.

Strategic facilities
Includes:
(a) critical infrastructure;
(b) nationally significant infrastructure;
(c) regionally significant infrastructure;
(d) gas and petroleum storage facilities;
(e) public healthcare facilities and medical centres;
(f) fire stations, police stations, ambulance stations, emergency coordination facilities;
(g) defence facilities;
(h) Invercargill, Gore, Manapouri and Milford Sound/Piopiotahi Airports, and Stewart Island/Rakiura Airstrip (Ryans Creek);
(i) Southland Public Hospital (Kew);
(j) Life line utilities as defined in the Civil Defence Emergency Management Act 2002;
(k) Flood and drainage infrastructure managed by the Southland Regional Council.

Structure plan
Means a framework to guide the development or redevelopment of a particular area by defining the future development and land use patterns, areas of open space, the layout and nature of infrastructure (including transportation links), and other key features for managing the effects of development.

Subdivision of land*
(a) The division of an allotment—
  (i) by an application to [the Registrar-General of Land] for the issue of a separate certificate of title for any part of the allotment; or
  (ii) by the disposition by way of sale or offer for sale of the fee simple to part of the allotment; or
  (iii) by a lease of part of the allotment which, including renewals, is or could be for a term of more that 35 years; or
  (iv) by the grant of a company lease or cross lease in respect of any part of the allotment; or
  (v) by [the deposit of a unit plan, or] an application to [the Registrar-General of Land] for the issue of a separate certificate of title for any part of a unit on a unit plan; or
(b) An application to [the Registrar-General of Land] for the issue of a separate certificate of title in circumstances where the issue of that certificate of title is prohibited by Section 226 of the Resource Management Act 1991.

Surface water**
Fresh or geothermal water in a river, lake, stream, pond, or wetland, or any part thereof, that is not located within the coastal marine area but excludes water in an artificial water course.

Taxa[121]
Named biological classification units assigned to individuals or sets of species (e.g. species, subspecies, genus, order, variety).

[121] This definition is not part of this Decision, it has been reviewed as part of the Biodiversity Variation publicly notified on 23 May 2015.