



PROPOSED INVERCARGILL CITY DISTRICT PLAN

Report No. 15

Natural Hazards

**29 September 2014
COUNCIL CHAMBERS
CIVIC ADMINISTRATION BUILDING**

**Reporting Officer: William J Watt
WILLIAM J WATT CONSULTING LTD**

**Peer Reviewed by: John Edmonds and Dan Wells
JOHN EDMONDS AND ASSOCIATES LTD**

[THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY]

TABLE OF CONTENTS

	Page
1. Executive Summary	1
2. Introduction and Procedural Matters	3
2.1 Report Author	3
2.2 Peer Review	3
2.3 How to Read this Report	3
2.4 Interpretation.....	4
2.5 The Hearing Process	4
3. Background	6
3.1 Proposed Issues, Objectives and Policies.....	8
3.2 Proposed Rule	12
3.3 Planning Maps	12
4. The Statutory Framework	14
4.1 Resource Management Act 1991 (RMA).....	14
4.1.1 Part 2 of the RMA	14
4.1.2 Functions of Territorial Authorities under the RMA	16
4.1.3 Consideration of alternatives, benefits, and costs	16
4.2 Relevant Planning Policy Documents.....	17
4.2.1 New Zealand Coastal Policy Statement	17
4.2.2 National Policy Statements and National Environmental Standards	17
4.2.3 Regional Policy Statement	18
4.2.4 Proposed Regional Policy Statement	20
4.2.5 Regional Plans.....	24
4.2.6 Iwi Management Plans.....	25
4.2.7 Management Plans and Strategies Prepared under other Acts	25
4.3 Summary	26
5. Analysis of Submissions	27
6. Section 32 Matters	33
6.1 Relevant Section 32AA matters	33
6.2 Section 32AA Further Evaluation	34
7. Concluding Comments	35
Appendix 1: Recommendations on Submissions	37
Appendix 2: Recommended Changes to the Proposed District Plan	67
Appendix 3: Recommended Extension to “Coastline Most Prone to Erosion”	75
Appendix 4: Five Metre Contour Line	79
Appendix 5: Extension to the “Coastal Environment”	83

[THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY]

1. EXECUTIVE SUMMARY

The Natural Hazards provisions of the Proposed District Plan attracted a small number of submissions, compared with other issues, and the general tenor of the submissions supports the provisions in principle. Sixty one submission points were made by submitters on the Natural Hazards provisions of the Proposed District Plan. Twenty three of those submission points were made by Environment Southland, many of which sought minor corrections to and clarifications of the Plan but were largely supportive of it. Many of the other submission points sought minor changes to provisions that they generally supported.

The requirement for territorial authorities to address natural hazard in their district plans has its roots in Sections 5 and 7 of the RMA, in the requirement to promote “sustainable management” and in the matters to which “particular regard” must be had. The New Zealand Coastal Policy Statement sets out a very clear instruction to plan for the effects of sea level rise. At regional level, provisions to which the Invercargill City Council must “give effect” and “have regard” include specific policy on planning to avoid or mitigate the effects of the range of natural hazards to which the Invercargill City District is subject.

The natural hazard provisions of the Proposed District Plan build on the provisions of its predecessor, the Operative District Plan. The most obvious example of this is the new understanding of “multiple hazard” – for example, some areas of Invercargill subject to riverine inundation tend also to be subject to sea level rise and storm surge. Variation in the effect of earthquake on different substrates– including susceptibility to liquefaction – is also addressed.

The main issues raised in the submissions are:

1. General support for the Plan Provisions.
2. Is the hazard information, on which the Plan is based, sufficiently up to date?
3. The need to not preclude uses from a hazard-prone area where they have a functional need to locate in that area.
4. Can natural hazards or their effects be “avoided”, “mitigated”, “remedied” or “reduced”?
5. Matters of detail raised by Environment Southland.
6. Subdivision in hazard-prone areas.
7. When “long term strategic withdrawal” should be considered.
8. Clarifying the meaning of “coastline prone to erosion”.

I am recommending what I believe to be minor changes to the Proposed District Plan. My recommended changes are set out in Appendices 2 and 3.

In this report:

- Part 2 considers several key procedural issues.
- Part 3 provides background information on the Biodiversity provisions.
- Part 4 summarises the various statutory provisions that apply to the consideration of the Proposed District Plan.
- Part 5 assesses the relevant issues raised by the submitters.
- Part 6 provides a discussion on the Section 32 matters.
- Part 7 sets out the overall conclusions.
- Appendix 1 sets out the recommendations on each of the submission points.

- Appendix 2 sets out the recommended changes to the text of the Proposed District Plan.
- Appendix 3 contains details of a recommended change to the Hazard Information Maps

2. INTRODUCTION

2.1 Report Author

This report has been prepared by William J. Watt. My company, William J Watt Consulting Ltd, offers consultancy services in planning and resource management including research, consultation facilitation, policy formulation and evaluation, hearings commissioner and mediation roles. I am currently the sole practitioner in that company.

I hold the qualifications of Bachelor of Arts and Diploma of Town Planning. I am a Full Member of the New Zealand Planning Institute and also a Fellow of the New Zealand Institute of Management. I am an accredited Hearings Panel Chairman under the MfE “Making Good Decisions” programme and have mediator accreditation with LEADR. Before setting up my consultancy I had 40 years’ experience in local government in regional, local and project planning and senior management roles. I have been practising as a planning consultant for four years.

2.2 Peer Review

This report has been peer reviewed by Dan Wells and John Edmonds, from John Edmonds and Associates Ltd. Both John Edmonds and Dan Wells are practising resource management planners with a variety of experience throughout the plan change preparation process. Dan Wells has a Bachelor of Resource and Environmental Planning (Hons) and a Post Graduate Diploma in Development Studies, both from Massey University. John has a Bachelor of Regional Planning from Massey University.

2.3 How to Read this Report

This report is structured as follows:

- Interpretation (an explanation of some of the terms used).
- A summary of the hearing process.
- Background to the Natural Hazards topic, and the provisions of the Proposed Invercargill City District Plan 2013.
- Description of the statutory framework within which the proposed provisions have been developed.
- Analysis of the submissions, including a discussion of the key issues raised through the submissions and further submissions received.
- Assessment of the proposed changes under Section 32 of the RMA.
- Concluding comments.
- Recommendations on individual submissions.
- Tracked changes of the Proposed District Plan provisions relating to Biodiversity

To see my recommendation on an individual submission please refer to the table in **Appendix 1**. The table sets out the name and relevant submission number of those that submitted on the Natural Hazard provisions; a brief summary of their submission and decisions requested, followed by my recommendation and the reasons for it.

2.4 Interpretation

In this report, the following meanings apply:

“*AEE*” means Assessment of Environmental Effects

“*Council*” means the Invercargill City Council

“*FS*” means further submitter - someone who made a Further Submission to the Proposed District Plan

“*Hearings Committee*” means the District Plan Hearings Committee

“*ICC*” means Invercargill City Council

“*NES*” means National Environmental Standard

“*NPS*” means National Policy Statement

“*Operative District Plan*” means the Invercargill City District Plan 2005

“*Proposed District Plan*” means the Proposed Invercargill City District Plan 2013

“*Provisions*” is a term used to collectively describe Objectives, Policies and Rules

“*PSRPS*” means the Proposed Southland Regional Policy Statement 2012

“*RMA*” means the Resource Management Act 1991

“*Submitter*” means a submitter to the Proposed District Plan

2.5 The Hearing Process

Several hearings are to be held to consider the submissions lodged to the Proposed Invercargill City District Plan 2013. The hearings have been divided up to ensure that submissions on similar issues have been grouped together and to enable the District Plan Hearings Committee to make decisions on the provisions relating to those issues. This report applies to the Natural Hazard provisions of the Proposed District Plan.

The Hearings Committee is comprised of accredited Invercargill City Councillors, with the assistance of an Independent Hearings Commissioner. This Committee is to consider the Proposed Plan and the submissions and further submissions lodged. The Hearings Committee has full delegation to issue a decision on these matters.

This report is prepared pursuant to Section 42A of the Resource Management Act 1991 (the “RMA”). Section 42A provides for a report to be prepared prior to a hearing, setting out matters to which regard should be had in considering a Proposed District Plan and the submissions lodged to it. This report highlights those matters that are considered appropriate by the author for the Hearings Committee to consider in making decisions on the submissions lodged. This report has been prepared on the basis of information available prior to the hearing.

While the Hearings Committee is required to have regard to this report, regard must also be given to the matters raised in submissions, and presentations made at the hearing. The comments and recommendations contained in this report are not binding on the Hearings Committee and it should not be assumed that the Hearings Committee will reach the same conclusions set out in the report after having heard from the submitters and Council advisers.

The hearing is open to the public, and any person may attend any part of the hearing. Those persons who lodged a submission have a right to speak at the hearing. They may appear in person, or have someone speak on their behalf. They may also call evidence from other persons in support of the points they are addressing.

At any time during or after the hearing, the Hearings Committee may request the preparation of additional reports. If that is done, adequate time must be provided to the submitters to assess and comment on the report. The Hearings Committee may determine that:

- the hearing should be reconvened to allow responses to any report prepared, or
- any responses be submitted in writing within a specified timeframe.

At the conclusion of the hearing process, the Hearings Committee will prepare a written decision. The decision is sent to all persons who lodged a submission. If not satisfied with the decision the submitters have a right of appeal to the Environment Court. If an appeal is lodged, the RMA requires a copy to be served on all submitters with an interest in that matter. Any submitter served, if they wish, may become a party to the appeal either in support or opposition to it.

If there is an appeal, the Environment Court will provide an opportunity for mediation between the parties. If mediation is not accepted, or does not resolve the issues, a further hearing will take place before a Judge and Court appointed Commissioners.

Except on points of law, the decision of the Environment Court is final.

3. BACKGROUND

In late 2010 the Invercargill City Council began work on the review of its District Plan.

Also in 2010 and again in 2011, Canterbury experienced earthquakes that were, arguably, the largest natural hazard event that had occurred in urban New Zealand in the last 200 years. The need for “resource management” processes to understand and have careful regard to the geography of the area became, in hindsight, tragically obvious to everyone. The Canterbury experience brought home to the public that insurance is not a substitute for careful site selection and site planning. Taking hazards into account is integral to such planning. It also brought home to local government throughout New Zealand the probability that it could be held accountable in the future for zoning decisions made today. It brought the need for hazard mitigation planning to the forefront of public consciousness.

Invercargill is no stranger to natural hazard events. Severe flooding events in Southland in the late 1970s and 1980s, notably the 1984 Invercargill floods and the subsequent building of flood mitigation works, are within the living memory of most of those working on the Proposed District Plan.

The Operative District Plan incorporated a number of provisions addressing natural hazards. It included the best information available at the time on a range of natural hazards. Hazard information maps were included in the volume of planning maps. These maps showed information on riverine inundation, risk of storm surge, and areas known to be subject to storm water flooding. Separate maps showing wind zone and seismic information were included in the volume. The Operative District Plan contained rules relating to areas subject to riverine inundation (varying degrees of risk were recognised) or high level of risk from sea level rise/storm surge.

In 2002, the Invercargill City Council completed a “Lifelines” project that identified where and in what ways the city’s essential services were vulnerable. The report outlined what needed to be done to make the city more resilient. Much of the suggested remediation is long-term hazard avoidance or reduction, so the 2002 report was a good starting point for the District Plan Review.

In general, therefore, in reviewing the District Plan there was a strong imperative to address “Natural Hazards” in a wise and farsighted manner that neither under-stated nor over-reacted to the issues.

New information and perspectives were made available to the Council in preparing the Proposed District Plan. Much of this information came from Environment Southland. This resulted in an updated appreciation of the Invercargill hazardscape.

The main natural hazard threats were seen as:

- Riverine inundation. The information incorporated in the Operative District Plan was seen as a good basis for the District Plan review. In particular, much of the river protection work around Invercargill has been constructed since 1984 with a view to providing protection from an event of similar magnitude to the 1984 floods. It is now understood that there is a 22% chance of a flood equal to or greater than the 1984 flood occurring in the next 50 years.
- Earthquake – Expected ground shaking intensity for Invercargill City for an event with 10% probability in 50 years is Modified Mercalli VII. In terms of amplified ground shaking, some parts of the city will be more affected than others.

- Liquefaction – the range of susceptibility across the city district ranges from “negligible” to “very high”.
- Weather hazards – more extreme weather events as a consequence of climate change (Invercargill experienced a “once in 50 years” snow event in September 2010 that resulted in destruction of some buildings).
- Sea level rise - the need to identify land below the 3.5 metre contour as being at significant risk of inundation by 2100. (This was subsequently modified on the advice of Environment Southland to 3.0 m.)
- Coastal erosion – needs to be taken into account in certain areas.

The range of issues that needed to be addressed in the preparation of the Proposed District Plan therefore included:

- Continuing and refining the approach of the Operative District Plan to hazard from **riverine inundation**, including addressing the issue of whether development should be allowed to intensify in areas protected from riverine inundation, with a 10% probability in 50 years of design protection levels being exceeded.
- Amplified ground shaking and **liquefaction susceptibility** - some parts of the city are worse affected than others, and to what extent should limits on development be imposed.
- **Building issues relating to earthquake** risk in Invercargill’s CBD, and how to plan for a vibrant CBD when it is probable that a high proportion of the building stock will need to be strengthened or demolished.
- The extent to which development should be steered away from areas of **very soft soil**.
- How to take a precautionary approach that recognises the probable increase in incidence and severity of **extreme weather events**.
- What level of “safety” should be adopted in relation to **sea level rise and storm surge**.
- Ensuring that threat from **coastal erosion** is properly understood and addressed in the design of utilities and land uses that have a functional need of a coastal location.
- How to take a precautionary approach that recognises the **multiple hazard** threat to some areas of Invercargill.

It was recognised that if Invercargill were being planned as a new city it is highly likely on the basis of today’s knowledge that much of what is there now would not have been allowed to happen. For example:

- Higher ground would be planned for development.
- The New River Estuary would have been left at its original size and the airport, the city’s industrial zones and other infrastructure placed elsewhere.
- The Tiwai Point Aluminium Smelter may not have been placed in an area at risk from tsunami.
- The Port of Bluff may well have developed differently, with critical infrastructure such as oil storage tanks not placed where they are prone to liquefaction (and other hazards).

However the fact is that the citizens of today have inherited a City that reflects decisions undertaken in the past.

The (over-arching) issue now is the extent to which there should now be regulatory intervention, in an era where occurrence of natural hazards is perceived by the general public to be increasing.

Clearly, the term “natural hazards” covers significant resource management issues that needed to be addressed in the preparation of the proposed District Plan.

3.1 Proposed Issues, Objectives and Policies

At Section 2.11.1 the Proposed District Plan states the significant resource management issues for natural hazards as follows:

1. *Areas which are hazard prone tend to be subject to more than one hazard.*
2. *Climate change will affect the intensity, frequency and risk of some natural hazards events, particularly:*
 - (a) *Sea level rise, exacerbating the effects of coastal erosion and inundation and river flooding of low-lying areas, especially during storm events;*
 - (b) *Increased frequency and intensity of storm events, adding to the risk from floods, storm surge, coastal erosion and inundation;*
 - (c) *Increased frequency of drought, placing pressure on water resources and increasing the wild fire risk.*
3. *There is a lack of public awareness of the risks of natural hazards and how they may affect specific sites or areas. Consequently there is a lack of contingency planning for natural hazards and some business decisions appear to be ill-informed with respect to natural hazards.*
4. *The impacts of natural hazards on individuals, communities and businesses and the effects of natural hazards on infrastructure are always present and likely to increase if the Invercargill district experiences more extreme weather conditions and sea level rise as predicted*
5. *There is pressure for development in areas prone to natural hazards.*

The introduction to this section gives a brief overview of the hazard information considered in the preparation of the Proposed District Plan. It starts by stating the situation succinctly:

“(Invercargill’s) location

- *In terms of latitude and climate*
- *At the mouth of the Oreti and Waihopai Rivers*
- *Adjacent to Foveaux Strait*
- *On a flood plain*
- *Within an area likely to be influenced by an event on the Alpine Fault results in the district being susceptible to natural hazards.”*

The Proposed District Plan states two objectives for Natural Hazards:

Objective 1: *Actual or potential effects of natural hazards on people, communities and their businesses, property and infrastructure are understood and avoided or reduced, resulting long-term in the Invercargill community becoming more resilient.*

Objective 2: *The exposure of the Invercargill City District to adverse effects arising from natural hazard is reduced over time.*

Twelve policies reflect both the varying nature of the natural hazards to which the Invercargill city district is subject, and the variety of regulatory and non-regulatory approaches proposed in the Plan.

They are as follows:

Policy 1 Awareness and Understanding. *To raise awareness and promote understanding of the nature of natural hazards likely to affect the Invercargill city district, and their risks and possible effects on buildings and activities.*

Explanation: *Increasing awareness of the natural hazardscape of Invercargill is the best way to enable people to take precautions against natural hazard in the way that they manage existing properties and plan new developments. Knowledge can help prevent a hazard being either ignored or over-stated.*

Policy 2 Reduced exposure: *To encourage organisations and communities to reduce their exposure to natural hazard.*

Explanation: *Use of hazard-prone properties is likely to become less sustainable as more frequent hazard events affect them and they become more difficult to insure.*

Policy 3 Identification: *To identify areas at risk from the effects of natural hazard.*

Explanation: *While the Council's hazard information will always be incomplete, it is likely to be the best information available and assembled in any one location. Council uses this information to identify as public information areas which it has cause to believe could be hazard-prone.*

Policy 4 Identification - Multiple hazards: *To identify areas below the three metre contour (AMSL) using the best information available to the Council, and delineate these areas on the Planning Maps as hazard prone.*

Explanation: *Areas of land below three metres above mean sea level are most at risk from sea level rise, are also affected or potentially affected by riverine inundation, storm surge, and tsunami.*

Policy 5 Identification - Earthquake:

(A) *To identify the Modified Mercalli VIII earthquake as the 475 year return period event, around which hazard planning for earthquake should be based.*

(B) *To also identify areas at risk from liquefaction.*

Explanation: *The best information available to the Council indicates that the biggest earthquake risk to Invercargill is from an earthquake originating in Fiordland and that the shaking felt in Invercargill from a 475 year return period event is likely to be of Modified Mercalli VIII. Generally, the lower lying areas of Invercargill are known to be at significantly*

greater risk from liquefaction than the areas above the three metre contour.

Policy 6 Identification - Riverine inundation: To identify risk from riverine inundation as follows:

- (A) Level 1: (Low risk as a result of flood protection mitigation measures.)
- (B) Level 2: (High risk, and includes those areas where future flood levels can be predicted.)
- (C) Level 2A: (High risk in the event of a flood greater than the design limits of the flood protection system.)
- (D) Level 3: (High risk, unprotected, and including areas designed to pond in a flood event, and active floodplains.)

and to:

- (E) Discourage intensification of land use on areas classed as having a Level 1 risk, and
- (F) Limit development on areas classed as having a 2, 2A or 3 level of risk.

Explanation: Even if an area is believed to have a low level of risk at present, this can change as understanding improves. If development intensifies, the consequences of flood events are worse than if development intensity had been controlled. Building development should be discouraged on areas at high risk from inundation. Even if floor levels and building platforms can mitigate the risk for individual dwellings, infrastructure is affected in any flood event, as is the efficacy of on-site effluent systems. The more people that live in such areas, the harder it is to manage an emergency event.

Policy 7 Identification - Sea level rise: To recognise areas below the five metre contour (AMSL) as having the potential to be affected by sea level rise, and to identify areas below the three metre contour (AMSL) as being most at risk from sea level rise.

Explanation: Throughout New Zealand local authorities are being warned to plan proactively for sea level rise and its consequences, and these contours form the basis of the advice from Central Government.

Policy 8 Subdivision: To avoid subdivision in hazard-prone areas where this would lead to intensification of development that would exacerbate significantly the consequence of a hazard event.

Explanation: Subdivision sets the pattern of future land use and has an effect on land development potentially lasting hundreds of years. Controls on subdivision will help prevent intensification of development in hazard-prone areas.

Policy 9 Protection: To protect areas or features which offer protection against the effects of natural hazards.

Explanation: Some natural features, such as the sand dunes at Oreti Beach, are nature's line of defence against extraordinary climatic or other

hazard events and need to be protected. There are also man-made structures such as flood protection works that need to be protected.

Policy 10 Assessment criterion: *To adopt as an assessment criterion the degree to which natural hazard has been understood and addressed, in relation to any resource consent for any development on land affected by one or more natural hazards.*

Explanation: *The susceptibility of a site to natural hazard can be a prime determinant of the suitability of that site to the proposed use. In many cases natural hazard can be avoided or mitigated in the design of proposed structures or buildings.*

Policy 11 Precautionary Approach: *To take a precautionary approach to managing the effects of natural hazard.*

Explanation: *Our understanding of the natural hazardscape is changing all the time. Further, the current indications are that climate change will result in more, and more extreme, weather events even if average changes are small.*

Policy 12 Collaboration: *To seek advice on an ongoing basis from Environment Southland and relevant government agencies relating to the hazardscape of Invercargill.*

Explanation: *Both Environment Southland and the Invercargill City Council need to work closely, and with congruent policies, to ensure that the wise development of the Invercargill city district has appropriate regard to the hazardscape of the city district. Government agencies such as NIWA have a lead role with provision of information in the sciences of natural hazard and climate change*

Section Two of the District Plan sets out five methods at paragraph 2.11.4. They are:

- (A) *Indicating areas subject to risk from natural hazard on the Planning Maps.*
- (B) *Rules limiting subdivision and activity in areas subject to risk from natural hazard.*
- (C) *Requiring hazard assessment and mitigation to be addressed in relation to any development requiring resource consent and affected or potentially affected by natural hazards identified by the Council.*
- (D) *Initiating environmental advocacy for:*
 - (i) *Promoting long-term strategic withdrawal of key infrastructure and services from hazard-prone areas where this is viable.*
 - (ii) *Encouraging assessment of natural hazard and response to that hazard to be an integral part of all project planning.*
- (E) *Dissemination of information:*
 - (A) *Preparing and disseminating information describing the natural hazard environment of Invercargill to inform public and private sector decision-making.*
 - (B) *Issuing hazard information to the best of the Council's knowledge as part of the LIM and PIM processes.*

- (F) *Collaboration and information sharing with other local authorities and government agencies.*

3.2 Proposed Rule

“Rules” are only one of the methods set out in the Proposed District Plan for achieving the objectives and policies in relation to natural hazards. The rules are district-wide and are set out in Section 3.12.

In summary, they are:

Rule 3.12.1: Rules relating to new residences and extensions to existing residences within those areas identified as having Level 2, 2A or 3 risk from riverine inundation. In essence:

- (a) An extension under 50 m² is a permitted activity, but a larger extension or a new dwelling is a discretionary activity (dependent on compliance with floor level standards).
- (b) Within areas having a Level 3 degree of risk, an extension to an existing house is a discretionary activity but a new house would be a non-complying activity.
- (c) Accessory buildings are exempt.

Rule 3.12.2 applies to new residences and extensions to existing residences in those areas identified on the Planning Maps as being “Most at Risk from Sea Level Rise/Storm Surge Event and coastline prone to erosion. In essence:

- (a) An extension up to 50 square metres to an existing house is permitted.
- (b) Larger extensions or new dwellings are discretionary activities.
- (c) Accessory buildings are exempt.

Rule 3.12.3 provides that it is a non-complying activity to undertake earthworks or build structures in identified sand dune areas or on river stop banks.

3.3 The Planning Maps

The Planning and Hazard Information Maps are published as one volume. The maps are presented as a matched pair, for each of the 33 mapping areas into which the city district is divided. For any given area, the hazard information is presented on the left hand map and the planning information on the right. Additional hazard information is included in smaller-scale maps at the end of the volume.

To make sense of the way Riverine Inundation information is presented it is necessary to consult the back pages of the Planning Maps, where the levels regarding riverine inundation are explained as follows:

- *Level 1 has a low degree of risk, reflecting flood protection mitigation measures.*
- *Level 2 has a high degree of risk, and includes those areas where future flood levels can be predicted.*
- *Level 2A has a high degree of risk in a flood event greater than the design limits of the flood protection system.*

- *Level 3 has a high degree of risk and includes areas designed to pond in a flood event, and active floodplains.*

The Hazard Maps delineate the areas known to be subject to riverine inundation (based on information shared with Environment Southland) and classified according to the above criteria.

4. STATUTORY CONTEXT / LEGISLATIVE REQUIREMENTS

4.1 Resource Management Act 1991 (RMA)

In reviewing the District Plan, the Council must follow the process outlined in Schedule 1 of the RMA.

The First Schedule procedure includes notification for submissions (clause 5) and further submissions (clause 8), holding a hearing into submissions (clause 8(b)), and determining whether those submissions are accepted or rejected and giving reasons for the decisions (clause 10).

Clause 29(4) of the First Schedule to the RMA states that, after considering a plan, the local authority may decline, approve, or approve with modifications, the plan change, and shall give reasons for its decisions.

Under Section 74 of the RMA, in relation to changes to the District Plan, Council must consider Part 2 of the RMA (purposes and principles), Section 32 (alternatives, benefits and costs), and relevant regional and district planning documents.

4.1.1 Part 2 of the RMA

Part 2 of the RMA (Sections 5-8) sets out its purpose and principles of the Act.

The purpose of the RMA is set out in Section 5. I confirm that the provisions for managing natural hazards fall within the purpose of the Act. In particular, under subsection 2:

*“... **sustainable management** means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety ...”*

Those who have lived through a civil defence emergency caused by a natural hazard are well aware of the social and economic impact of such events which can directly threaten their “health and safety”. Natural hazards management is therefore part of “sustainable management” in the context of Section 5.

In my opinion the provisions in the Proposed District Plan relating to Natural Hazards as notified address these matters in a comprehensive and reasoned manner.

Section 7 of the RMA sets out “other matters” for particular regard. It is considered that the matters most relevant to natural hazards are:

- (b) *The efficient use and development of natural and physical resources.*
- (f) *Maintenance and enhancement of the quality of the environment.*
- (g) *Any finite characteristics of natural and physical resources.*
- (i) *The effects of climate change.*

In my opinion the provisions relating to natural hazards in the Proposed District Plan demonstrate particular regard to these matters.

It is worth noting that deficiencies in Part 2 of the RMA were identified by Central Government after the Canterbury natural hazard events. A Technical Advisory

Group was set up to “provide independent advice to the Minister for the Environment on any changes needed to sections 6 and 7 of the Resource Management Act 1991 (RMA) to improve the functioning of the RMA, relative to 20 years’ practical experience of its operations; the Government’s environmental and economic objectives; and the broader second phase of resource management reforms”.

Their primary “Scope of Work” prescribed in their Terms of Reference naturally and properly draws attention first to:

“... giving: ... greater attention to managing issues of natural hazards noting the RMA issues arising from the recent Canterbury earthquakes”.

That group reported in February 2012. Its main recommendations were:

Natural hazards:

- *Retain the RMA definition of natural hazards. Further work should be undertaken on alignment of the definition across all relevant legislation, in particular to take account of the differing “return periods” for natural hazards.*
- *Amend provisions specifying matters to be considered in preparing RPS and plans to specifically refer to CDEM Group management plans as a matter which must be considered.*
- *Regional councils should have the lead function of managing all the effects of natural hazards. Territorial authorities are to retain their current function in regard to natural hazards.*
- *There should be one combined regional and district natural hazards plan.*
- *This plan should be required to be operative within three years of enactment of the empowering legislation.*
- *Require local authorities to make information about natural hazards available to all other local authorities within their region. This requirement should be drafted to expressly override any constraints arising from other legislation on information sharing, including the Privacy Act 1993 and the Local Government Official Information and Meetings Act 1987.*
- *Section 106 be amended to expressly include liquefaction and lateral spreading, along with any other consequences of the events included in the definition of “natural hazard” in Section 2.*
- *Section 106 be amended to reflect the risk associated with any natural hazard, rather than the likelihood of the event.*
- *Section 106 be amended so that the consent authority must refuse consent if there will be a significant increase in the risk associated with any natural hazard.*
- *That the potential to extend the scope of Section 106 to include land use consents issued by regional councils be investigated.*
- *That the Government promulgate a NPS or NES on the management of natural hazards.*

In preparing the Proposed District Plan, the Invercargill City Council worked closely with Environment Southland in developing the information and understanding upon which the Provisions of the Proposed District Plan are based. In my view, generally, the approach taken in addressing Natural Hazards in the Proposed District Plan would be a reasonable prelude to the above changes, if and when they are implemented.

Section 8 of the RMA obliges persons exercising functions and powers under the RMA to take account of the principles of the Treaty of Waitangi. Representatives from Te Ao Marama Inc have been part of the Plan Review process as members of the Council's Plan Group that worked on developing the Proposed District Plan. Consultation with Iwi has also occurred. Maori are astute observers of the environment and reference to past natural hazard events can be found in the Maori tradition. As discussed in Section 4 of this report, Ngai Tahu ki Murihiku Natural resource and Environmental Iwi Management Plan 2008 – The Cry of the People – Te Tangi a Tauira is an Iwi Management Plan lodged with the Council. It contains many references to natural hazards in general and the implications of climate change in particular.

In my opinion the provisions of the proposed District Plan relating to Natural Hazards are fully consistent with Section 8 matters.

4.1.2 Functions of Territorial Authorities under the RMA

Section 31 of the RMA states the functions of a territorial authority under that Act. One of the functions set out in Section 31(1)(a) is:

“The establishment, implementation, and review of objectives, policies, and methods to achieve integrated management of the effects of the use, development, or protection of land and associated natural and physical resources of the district.”

Under Section 31(1)(b) of the RMA a territorial authority is required to “... control ... any actual or potential effects of the use, development, or protection of land, including for the purpose of

(i) *The avoidance or mitigation of natural hazards.*

Clearly, the Natural Hazard provisions in the Proposed District Plan address Section 31(1)(b) of the RMA by including objectives, policies, and methods intended to avoid or mitigate natural hazards and their effects.

4.1.3 Consideration of alternatives, benefits, and costs

Section 32 of the RMA states the Council's obligations in assessing the alternatives, benefits and costs.

Whilst a Section 32 report was released at the time of notification of the Proposed District Plan, the Council is required to carry out a further evaluation through the hearing, consideration and deliberation process before making its decision on the Plan Change. Section 6 of this report includes my evaluation of the Proposed District Plan Provisions in accordance with Section 32AA.

4.2. Relevant Planning Policy Documents

The RMA specifies a number of documents that need to be considered in a decision on a Proposed District Plan and the weight that should be given to them. These documents are addressed in the following sections.

4.2.1 New Zealand Coastal Policy Statement

Section 75 of the RMA requires that a District Plan must give effect to any New Zealand coastal policy statement. The relevant document is the New Zealand Coastal Policy Statement 2010(NZCPS).

Policy 24 of the NZCPS is directly relevant. It reads as follows:

Policy 24: Identification of coastal hazards

Identify areas in the coastal environment that are potentially affected by coastal hazards (including tsunami), giving priority to the identification of areas at high risk of being affected. Hazard risks, over at least 100 years, are to be assessed having regard to:

- a. *physical drivers and processes that cause coastal change including sea level rise;*
- b. *short-term and long-term natural dynamic fluctuations of erosion and accretion;*
- c. *geomorphological character;*
- d. *the potential for inundation of the coastal environment, taking into account potential sources, inundation pathways and overland extent;*
- e. *cumulative effects of sea level rise, storm surge and wave height under storm conditions;*
- f. *influences that humans have had or are having on the coast;*
- g. *the extent and permanence of built development; and*
- h. *the effects of climate change on:*
 - i. *matters (a) to (g) above;*
 - ii. *storm frequency, intensity and surges; and*
 - iii. *coastal sediment dynamics;*

taking into account national guidance and the best available information on the likely effects of climate change on the region or district.

That is an instruction from central government to take natural hazard seriously. With its combination of methods, regulatory and non-regulatory, in my opinion the Proposed District Plan is consistent with, and provides a vehicle for implementing, the provisions of the NZCPS. However, commitment will need to be made to implementing the provisions of the Proposed District Plan in order to properly “give effect” to these provisions.

4.2.2 National Policy Statements and National Environmental Standards

Section 75 of the RMA requires that a District Plan must give effect to National Policy Statements.

As noted above (Section 4.1.1) in 2012 the Technical Advisory Group recommended to the Government that it promulgate an NPS or NES on the management of natural hazards. However as yet no NPS or NES has yet been adopted by Government specifically covering Natural Hazards.

4.2.3 Regional Policy Statement

Under Section 75 of the RMA, a District Plan must give effect to an operative Regional Policy Statement.

The Southland Regional Policy Statement (operative since 1997) contains extensive provisions that relate to natural hazards. The Objectives pertaining specifically to natural hazards are:

Objective 15.1

To raise community awareness of the existence and risk of natural hazards in the environment and the interaction between those hazards and their activities.

Objective 15.2

To reduce the social and economic costs that result from the occurrence, avoidance, mitigation and remedying of natural hazards.

Objective 15.3

To ensure all options to reduce the risk of natural hazards are considered in an unbiased way.

Objective 15.4

To recognise and protect cultural and heritage values from the adverse effects of activities which are designed to mitigate or remedy natural hazards.

The Southland Regional Policy Statement contains 19 policies relating to natural hazards. Most of these are relevant to the Proposed District Plan and they are as follows:

Policy 15.1

In managing natural hazards, the following implementation priorities are to be adopted -

- Priority 1 Avoid exposure to natural hazards where practicable.*
- Priority 2 Reduce the effects of hazards, by managing activities in areas subject to, or likely to be affected by, those hazards.*
- Priority 3 Undertake physical works to divert the hazard, or to stop it from impacting upon people.*
- Priority 4 Implement flood warning systems, insurance measures, and adopt civil defence procedures.*

Policy 15.2

Prepare and update hazard registers for inclusion in District Plans and the Regional Coastal Plan to show –

- a land subject to actual or potential inundation.*
- b areas of land instability.*
- c areas prone to the effects of actual or potential coastal erosion.*
- d areas prone to the actual or potential effects of sea level rise.*

- e information that identifies areas most vulnerable to the effects of earthquakes.
- f areas prone to other identifiable actual or potential hazards considered to be significant, for example, wind, snow and tsunami, and prepare information to explain the hazard registers

Policy 15.3

Promote an understanding of natural hazards and an awareness of areas that could be affected, and encourage people and communities to avoid wherever practicable, or remedy or mitigate the effects of natural hazards.

Policy 15.4

Have regard to the impacts that natural hazards and any works undertaken may have on sites of significance to the takata whenua.

Policy 15.5

Take into account the effects of particular activities both of, and on, natural hazards when preparing District Plans and Regional Plans, considering resource consents and building permits, and manage those activities which may increase the probability of the wider community being adversely affected by natural hazards.

Policy 15.6

Mitigate the adverse environmental effects that could arise from the construction of defences against inundation and erosion from the sea or rivers.

Policy 15.7

.....

Policy 15.8

Avoid inundation hazard to other property from activities that are undertaken within riverbeds, floodways and floodplains.

Policy 15.9

Protect hazard alleviation works from inappropriate activities.

Policy 15.10

Protect the integrity of landforms that provide protection from significant adverse effects of natural hazards.

Policy 15.11

Where subdivision takes place on land which is subject to actual or potential inundation, the consent authority shall give consideration to the need to -

- a impose conditions to mitigate or remedy the adverse effects of actual or potential inundation; and/or
- b restrict the activities that take place on the land; and/or
- c require the undertaking of flood alleviation works.

Policy 15.12

Seek the inclusion of design features in buildings in flood-prone areas which minimise the potential for future losses from flood damage to the building or its contents.

Policy 15.13

To ensure that the legal liability of local authorities is not increased by activities undertaken in areas prone to actual or potential inundation which have not incorporated design features recommended by the territorial authority.

Policy 15.14

Plan for a sea level rise of 35 cm by the year 2050, until such time that there is evidence that the rate of rise is higher or lower.

Policies 15.15 – 15.18

.....

Policy 15.19

Recognise that the most likely effect of climate change will be reflected in a changing rainfall pattern in the Region.

The Southland Regional Policy Statement lists 17 methods by which Environment Southland proposed to implement these policies. The two most directly relevant to the Proposed District Plan are Method 15.11 and 15.13:

Method 15.11 District Plans and Regional Coastal Plan

Policies, rules, criteria and guidelines in District Plans and the Regional Coastal Plan will be necessary to deal with, but are not limited to, the following matters:

- *assessment of natural hazard issues in considering resource consents*
- *recording of information on Certificates of Title where land is susceptible to a natural hazard*
- *building consents, including minimum floor levels, building platforms, relocatability and structural integrity*
- *subdivision, including allotment sizes, floor levels, areas of hazard-free land, protection works and off-site effects*
- *activities, including compatibility with the hazard-prone nature of any site and effect on natural hazards.*

Method 15.13 Resource Consents and Public Works

When local authorities consider resource consents and public works they shall have regard to natural hazard matters.

In my opinion the Proposed District Plan is consistent with, and gives effect to, these provisions of the Southland Regional Policy Statement.

4.2.4 Proposed Regional Policy Statement

In accordance with Section 74 subsection 2, the Council must “*have regard to*” any proposed Regional Policy Statement. The Proposed Southland Regional Policy Statement (PSRPS) was notified in May 2012. Submissions have been called for and have closed. They have not yet been considered by Environment Southland. In this context, therefore, the words “*have regard to*” can be taken to mean that the PSRPS must be considered but that the Council is not yet bound to give effect to it.

The PSRPS contains a whole chapter devoted to Natural Hazards (Chapter 8). The provisions that are directly relevant to this report are set out below:

A natural hazard is any atmospheric, earth or water-related event which adversely affects (or may adversely affect) human life, property or the environment. Natural hazards can include earthquakes, tsunamis, erosion, volcanic and geothermal activity, snow, frost, hail, landslides, subsidence, sedimentation, wind, drought, fire, flooding, marine inundation or rising sea level.

Hazard management can take four forms:

- 1. seeking to ensure that the hazard itself does not arise;*
- 2. undertaking physical works to reduce the severity or frequency of natural hazards and their adverse effects on people and property;*
- 3. reducing the effects of hazards; and*
- 4. taking action to reduce the social and economic costs of hazards when they occur.*

The overall strategy employed to avoid, mitigate or remedy the adverse effects of natural hazards will use all four methods to a greater or lesser degree. Because the Regional Policy Statement is mandated by the Resource Management Act, our focus is on avoidance, reduction or mitigation.

Section 62 of the Act requires a regional policy statement to state the local authority responsible, in the whole or any part of the region, for specifying the objectives, policies and methods for the control of the use of land to avoid or mitigate natural hazards or any group of hazards.

Territorial Authorities' responsibilities:

Territorial authorities of the region shall be responsible, within their own district, for specifying the objectives, policies and methods for the control of the use of land to avoid or mitigate the following natural hazards:

- storm water inundation, earthquakes, liquefaction, landslip and subsidence, wind, avalanche and tsunami, in all areas;*
- riverine inundation, marine inundation, erosion and sedimentation in all areas excluding the beds of rivers and areas covered by the Southland Flood Control Management Bylaw 2010.*

Environment Southland has identified four over-arching issues:

Issue NH.1

Climate change will affect the intensity, frequency and risks of some natural hazard events, particularly:

- a) Sea level rise, exacerbating the effects of coastal erosion and inundation and river flooding in low lying areas, especially during storm surge events.*
- b) Increased frequency and intensity of storm events, adding to the risk from floods, landslides, severe wind, storm surge, coastal erosion and inundation.*
- c) Increased frequency of drought, placing pressure on water resources and increasing the wild fire risk.*

Issue NH.2

There is a lack of public awareness of, and contingency planning for, natural hazards.

Issue NH.3

The impacts of natural hazards on individuals, communities and businesses and the effects of natural hazards on infrastructure are ongoing.

Issue NH.4

There is ongoing development pressure in areas prone to natural hazards

There is one objective which is broad in compass:

Objective NH.1 – Communities becoming more resilient

The risks to people, communities, their businesses, property and infrastructure from the effects of natural hazards are understood and avoided or reduced, resulting in communities becoming more resilient.

Most of the Policies are relevant to the Proposed District Plan. The relevant policies are as follows:

Policy NH.1 – Awareness and understanding of risks: *Raise public awareness and promote an understanding of the risks of natural hazards, and encourage people, businesses and communities to reduce their long term risk.*

Policy NH.2 – Identify and manage risks from natural hazards: *Identify in district plans areas at risk from the effects of natural hazards, and actively manage those and other hazard prone areas, using the most up to date information available.*

Policy NH.3 – Precautionary approach: *Take a precautionary approach towards managing the effects of climate change and sea level rise, and any associated changes in the scale and frequency of natural hazards, to ensure potential adverse effects are avoided or reduced.*

Policy NH.4 – Management priorities: *In managing natural hazards, the following implementation priorities are to be adopted:*

1. *avoid exposure to natural hazards where practicable by adopting a precautionary approach;*
2. *mitigate the effects of natural hazards by managing land use in areas known to be susceptible to the effects of natural hazards;*
3. *undertake physical works needed to reduce the potential for the natural hazard to affect people and infrastructure.*

Policy NH.5 – Avoid areas of significant risk from natural hazards: *Avoid subdivision, development and placement of critical infrastructure in areas at significant risk from natural hazards, unless:*

- i) *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*
- ii) *adverse effects can be completely mitigated; or*
- iii) *avoidance is impossible or impractical.*

Policy NH.6 – Mitigate the effects of natural hazards: *Mitigate the effects of natural hazards in areas other than those at significant risk.*

Policy NH.7 – Works may affect other land: *Mitigate the potential for activities to have adverse off site natural hazard effects on other land.*

Policy NH.8 – Natural features and landforms: *Protect, re-create or enhance natural features and landforms that provide protection from natural hazards.*

The “Methods” by which the PSRPS seeks to achieve these policies are (in summary):

(a) The Southland Regional Council (Environment Southland) will:

Method NH.1 - Regional Plans and Bylaws Establish and maintain provisions in regional plans and bylaws, consistent with other relevant legislation.

Method NH.2 - Research and Investigation Identify, investigate and/or monitor land that is subject to known (hazards).

Method NH.3 - Information, Education and Technical Assistance Maintain and provide information held on historic and projected natural hazard risk and provide technical assistance and information to land owners, territorial authorities, and the community.

Method NH.4 - Monitoring

- a) Maintain a flood monitoring and warning system.
- b) Investigate and monitor coastal hazards.

The PSRPS indicates that local authorities “will”

Method NH.5 - District Plans

Establish and maintain provisions in district plans that:

- a) identify and map land subject to known natural hazard risk;
- b) manage or avoid the subdivision, development or use of land in areas subject to natural hazard risk;
- c) require natural hazard risk assessments to be completed as part of the consent application process for subdivision and development;
- d) avoid to the extent possible new critical infrastructure being established in areas subject to high natural hazard risk;
- e) maintain, restore or protect as appropriate natural features that mitigate the effects of natural hazards;
- f) 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;
- g) exclude some activities from areas known to be subject to significant risk from natural hazards.

In the context of preparing and implementing a district plan, local authorities would “be encouraged to”

Method NH.6: Collaborate to ensure a consistent and region-wide approach to natural hazard management.

Method NH.7: Promote methods to mitigate the effects or impacts of natural hazards.

Method NH.8 - Risk Assessments: Undertake natural hazard risk assessments prior to the development of new critical infrastructure.

Method NH.9: Provide Information through LIMs and other methods on natural hazard.

Method NH.10: 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.

Method N.H.11: Enable existing critical infrastructure to be suitably resilient and / or protected from reasonably anticipated natural hazard risk to the extent possible.

Methods N.H.12, NH 13, N.H.14: Collaborate widely, research and share information about Natural Hazards.

The following excerpt from the “Explanations/Principal Reasons” to the Methods summarised above is particularly relevant:

“One of the essential functions of local authorities under the Resource Management Act is to have objectives, policies and methods which avoid or mitigate natural hazards in relation to the use, development and subdivision of land. The Civil Defence Emergency Management (CDEM) Act 2002 also requires local authorities to identify and analyse the long term risks to people and property from natural hazards and to take steps to eliminate these risks where practicable and to reduce the likelihood and magnitude of their impact. With this in mind, the methods have been developed to encourage local authorities to adopt good practice to avoid subdivision and development in natural hazard areas and to better inform communities of natural hazard risk so that they can undertake measures to respond to natural hazard events” (page 74).

The PSRPS places very clear responsibilities on local government with respect to planning for natural hazards avoidance and mitigation. In my opinion, in the process of preparing the Natural Hazard provisions of the Proposed District Plan, regard has been had to the PSRPS. With its combination of methods, regulatory and non-regulatory, the Proposed District Plan is consistent with, and provides a vehicle for implementing, the provisions of the PSRPS. However, commitment will need to be made to implementing the provisions of the Proposed District Plan in order to properly “give effect” to these regional policies.

4.2.5 Regional Plans

In accordance with Section 74 of the RMA, a District Plan must not be inconsistent with a Regional Plan.

The relevant document under the RMA is the Southland Regional Coastal Plan. The main focus of this document is the sustainable management of the coast, including the Coastal Marine Area which is outside the jurisdiction of a district plan. However, it is relevant that the coastal margin of the Invercargill City District (which falls within the broader ambit of that Plan), generally speaking, is prone to single or multiple hazard.

In my opinion the thrust of the natural hazards provisions of the Proposed District Plan is consistent with the conservative management tenor of the Southland Regional Coastal Plan.

4.2.6 Iwi Management Plans

Section 74 of the RMA requires that a local authority must take into account any relevant planning document recognised by an iwi authority and lodged with the territorial authority

Ngai Tahu has lodged an Iwi Management Plan with the Council. The relevant document is the Ngai Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008 – The Cry of the People - Te Tangi a Tauria.

This plan is described on page 28 as having the following purposes:

- *(To) describe the values underpinning the relationship between Ngai Tahu ki Murihiku and the natural environment.*
- *(To) identify the primary issues associated with natural resource and environmental management in the takiwa, from the perspective of Ngai Tahu ki Murihiku.*
- *(To) articulate Ngai Tahu ki Murihiku policies and management guidelines for natural resources and environmental management, wahi tapu and wahi taonga.*

Ngai Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008 – The Cry of the People - Te Tangi a Tauria addresses natural hazard issues. An example of this is that Chapter 3 is devoted to Climate Change and its implications.

In my opinion the natural hazard provisions of the Proposed District Plan are consistent with and often help give effect to the provisions of Ngai Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008 – The Cry of the People - Te Tangi a Tauria.

4.2.7 Management Plans and Strategies Prepared under other Acts

The other plan that should be mentioned is the Southland Civil Defence Emergency Management Group Plan, prepared under the Civil Defence Emergency Management (CDEM) Act 2002. This Plan states:

- The hazards and risks to be managed by the Southland Civil Defence Emergency Management Group;
- The strategic, operational and administrative measures necessary to manage these hazards and risks; and
- The arrangements for declaring a state of local emergency in Southland.

I am generally familiar with this Plan through my previous role as an Alternate Regional Civil Defence Controller, and I am confident that the Natural Hazard provisions of the Proposed District Plan are consistent with it.

I refer in Section 3 of this report to the 2002 “Lifelines” project that identified where and in what ways the city’s essential services were vulnerable. A full project report was never published as a formal report as it was in the form of a ring binder compendium of reports by various authors. It was intended that the project would involve ongoing review of these reports, but this has been overtaken by events – in particular, the decision of Southland territorial authorities and Environment Southland to operate Civil Defence Emergency Management as a shared service. The information in the Lifelines folder is nevertheless “public information”. The reports

assessed hazard in some detail. The 2002 report was a good starting point for the hazards section of the District Plan Review, and the information has been refined and updated with assistance from Environment Southland.

Another outcome from the Canterbury earthquakes has been, nationally, a heightened awareness of issues around earthquake-prone buildings. This matter is being addressed, nationally, under the umbrella of the Building Act 2004 and possible amendments to it. However, the possibility of substantial work being needed in some areas of Invercargill, notably the CBD, is anticipated in the zoning provisions of the Proposed District Plan.

4.3 Summary

It is considered that the purpose and principles of the RMA are met by the Natural Hazard provisions set out in the Proposed District Plan. The proposed provisions fall within the functions of local authorities. The requirements of Section 32 of the RMA have been met through the evaluations carried out prior to notification and in this report. The various documents required to be considered have been appropriately addressed in the preparation of provisions relating to Natural Hazards.

5. ANALYSIS OF SUBMISSIONS

The “Natural Hazards” provisions of the Proposed District Plan attracted a total of 61 submission points.

The table below sets out the number of points made in submissions and further submissions on each section of the Proposed District Plan. While numbers in themselves do not indicate the complexity of an issue, they are an indication of the degree to which a particular group of provisions is contentious.

<i>Plan provision</i>	<i>(approximate) Number of submission points</i>
General	7
Issues	5
Objectives	7
Policies	21
Methods	5
Rules	6
Subdivision section of the Plan	3
Appendices	4
Planning Maps	3
TOTAL	61

Given the importance of the topic, the prominence given to it particularly in regional policy, and the far-reaching effect of the hazards provisions in limiting what can be done without requiring resource consent, the number of submission points is low (compared to other provisions of the Plan such as Biodiversity). Many of the submission points have been made by one submitter (Environment Southland) who generally supports the provisions of the Plan. Nothing appears to have “outraged” the community or a sector of it.

It is important to approach any analysis of the submissions on natural hazards fully conscious of the significance placed on the topic at national level, and in policy documents drawn especially at regional level under the RMA to which a District Plan must “give effect”. These documents have been discussed in detail in the previous section (Section 4) of this report. As noted in recent case law (*Environmental Defence Society Incorporated v. The New Zealand King Salmon Company Limited* SC 82/2013[2014] NZSC 38) when the RMA uses the words “give effect to” it basically means “implement”. This is rather more onerous than the Section 104 (1) requirement of consent authorities to “have regard to” the same national policy documents.

The main issues raised in the submissions are:

1. General support for the Plan Provisions.
2. Is the hazard information, on which the Proposed District Plan is based, sufficiently up to date?
3. The need to not preclude uses from a hazard-prone area where they have a functional need to locate in that area.
4. Can the effects of natural hazards be “avoided”, “remedied”, “mitigated”, or “reduced”?
5. Matters of detail raised by Environment Southland.
6. Subdivision in hazard-prone areas.
7. When “long term strategic withdrawal” should be considered.
8. Clarifying the meaning of “coastline prone to erosion”.

These issues are discussed below, in the general order in which they appear in Appendix 1.

1. General support for the Plan Provisions

Support was expressed by the majority of the submitters for the general approach taken to the topic in the Plan and for the objectives, policies and methods. While many of the submissions seek changes to wording to clarify the intent or application of a provision, the submission is often prefaced by an expression of support for the general approach.

2. Is the hazard information, on which the Proposed District Plan is based, correct or sufficiently up to date?

This concern has been raised with respect to tsunami modelling at Bluff, the quantum and effect of sea level rise, and elevation (the 5 metre contour). The situation is that while tsunami modelling was commissioned by New Zealand Aluminium Smelters, and the information was shared with the Council, there has been no parallel study for Bluff and the same level of information is simply not available.

This highlights the difficulty of using hazard information to set policy in a district plan, which is fixed at one point in time. The nature of hazard information generally is that it is continually being updated and refined. From time to time new information may be made available nationally (e.g. revised estimates of sea level rise or severity and incidence of earthquakes). Also, from time to time the private sector undertakes its own hazard analyses and makes the information available (e.g. the tsunami modelling with respect to the Tiwai Point aluminium smelter). This sharing of information is appreciated, but results in the Council knowing more about some areas than others. Work done for some areas or proposals in the city may “set the bar” for other areas (e.g. the hazard analyses undertaken with respect to the industrial zoning at Awarua helped clarify the hazards issues for other industrial areas).

A relevant consideration (raised by one submitter) is whether additional information will decrease the level of uncertainty. I have suggested this is not necessarily the case. Additional information about sea level rise, for example, may actually create greater uncertainty if the new predictions show the previous ones to have been overly conservative. Nevertheless, the key issue is to ensure that the most up to date and reliable information is made widely available.

Another relevant consideration is whether additional information may lead to incorrect conclusions. An example is that one submission (117.11) recommends that dwelling owners be advised if their property is below five metres or three metres AMSL. Although, generally, land below five metres can be understood to be “subject to” sea level rise and storm surge, the severity of the effect is likely to diminish with distance inland. An example of this is that areas in the Bay Road and Prestonville areas are low-lying but due to their distance inland, a judgment call was made in the preparation of the Plan that to show them on the Hazard Maps as “prone to sea level rise” would be unnecessarily alarmist.

The Plan needs to reflect these considerations and practical realities without including provisions based on unsubstantiated conclusions. There are several recommendations to add the words in various areas “*using the best information available*”. There also needs to be an openness to review the Plan as new information becomes available. This is the tenor of the responses I have recommended to submissions on this issue.

The natural hazards information about the Invercargill City District is (and probably always will be) incomplete. This implies an ongoing need to obtain the most up to date information, ponder its implications, share that information with the community, and from time to time update the Plan as necessary.

Landowners need to be involved in interpreting this information as local knowledge can be invaluable.

Lastly, it is considered that including most of the known hazard information on the planning maps helps ensure this information is widely and easily accessible to the public. However, one drawback of this approach is that updating the District Plan can be a time consuming and resource intensive process. As a result, it may take some time for newly available information on hazards to be reflected on the District Plan maps. It is therefore recommended that some additional text be added to the explanation that follows Policy 3 to make it clear that one should not assume that the District Plan maps will necessarily show all known hazard information, and that consultation with Council may be appropriate to confirm the presence or absence of information on natural hazard risks for a site.

3. The need to not preclude uses from a hazard-prone area where they have a functional need to locate in that area

An example of “functional need” of a coastal location is a sea port. Normally a sea port cannot function other than on the coastal margin and therefore has a functional need to locate in the coastal zone which is a hazard-prone area.

A less obvious example is Invercargill Airport, for which an extensive reclamation was undertaken prior to construction and which is now understood to be prone to multiple hazards. Here the presence of assets created by past investment decisions have in turn created a functional need to continue to locate in this space.

The concept of “functional need” implies a priority for that location, but it does not necessarily mean that all sorts of other related activities need to be in the same location and exposed to the same hazards. For example, any facility that is associated with the servicing of aeroplanes has an obvious “functional need” to locate in or around the airport. By contrast a hotel, intended to cater for airport users, may need to be within a few minutes’ drive of the terminal but does not have a “functional need” to locate actually in the airport environs.

The Plan needs to avoid putting unnecessary obstacles in the way of activities which have a functional need for sites which may be hazard prone, without giving carte blanche to allied activities which can and should locate away from the hazard prone area. This is the tenor of the responses I have recommended to submissions on this issue.

4. Can the effects of natural hazards be “avoided”, “remedied”, “mitigated” or “reduced”?

Some of the submissions have missed the point that the Proposed District Plan addresses the “effects” of natural hazards, not necessarily the hazard itself. For example, a district plan can reduce the effects of an earthquake (e.g. by limiting construction on land prone to liquefaction). A district plan has little influence over the earthquake itself or the chances of having one.

Submissions have questioned wording that seeks to “avoid” natural hazards. It is accepted that, realistically, not all natural hazards can be avoided. But sometimes this is possible e.g. choice of an alternate route for a network service on higher ground that avoids flood-prone land. Effects from risk can also be “mitigated” e.g. by design features in a building that minimise damage. An example is the “pressure relief” valves built into the pools at Splash Palace to prevent possible structural damage caused by an empty pool “floating” on high groundwater. This “mitigates” the effect of the risk by changing the consequence of the flood event from a major catastrophe (a ruined pool tank) to a more minor clean-up operation that might involve cleaning and machinery overhaul. Effect of risk from natural hazards can be “reduced” e.g. by taking likely flood risk into account when designing floor levels for a new building – this reduces the risk because the flood has to be a certain magnitude for the water to enter the building. I am less convinced that in the context of a forward-looking plan the effects of a natural hazard can be “remedied” – yes, a flooded house can be repaired, but the probability is that at some stage it will be flooded again. In this instance you might “reduce” the effects of natural hazard by e.g. re-routing the electrical systems above flood level.

The RMA uses the words “avoided, remedied or mitigated” in relation to environmental effects. In the case of natural hazards, however, in my view it is better planning that the effects of natural hazards are “avoided, remedied or reduced”. Over time, the nature of natural hazards is better understood and something meaningful is done about addressing them. (The risk from the hazard is *avoided, mitigated* or *reduced*.) In the long-term, the result is a more resilient community that is less affected by natural hazards than it otherwise would have been.

This is why, in my recommendations I have favoured the words “*avoided, mitigated or reduced*”.

5. Matters of detail raised by Environment Southland and others

Environment Southland raised several matters of detail, interpretation and word choice. Examples are:

- Submission 18.60 (Introduction) – it was submitted that the Plan should state “*A significant part*” rather than “*The majority*” of the district being located on modified floodplains.
- Submission 18.62 sought changes to the description of earthquake risk.

Minor changes to wording to make the meaning clearer are also recommended by the Council’s own Environmental and Planning Services Directorate.

In my recommendations I have supported submissions which suggested improvements in wording to various parts of the Plan.

A recent review of Rule 3.12 identified that there is a missing clause in the rule which could lead to some unintended interpretations. It is, arguably, not entirely clear to readers of the Plan that if one’s proposal does not meet the minimum floor level in a Level 2 or Level 2A area, that will result in a non-complying activity status. It is considered that Clause 16(2) can be evoked to make this change to the District Plan text.

It is also considered that in response to submissions a number of changes to the explanatory information at the end of the Planning maps be made. In addition, it is

considered useful to add to that explanatory information to clarify that the minimum floor level as stated on the maps is expressed in centimetres.

6. Subdivision

Subdivision is mentioned in several submissions. However, the effect of Rule 3.18.3 (under 3.18 Subdivision) is that by and large subdivision is a discretionary activity. The effect of Rule 3.18.4 (T) is that *natural hazard issues* must be addressed in resource consent applications and will be among those matters taken into account by the Council.

An example of the way subdivision has cropped up in submissions under “Natural Hazards” is 18.71 – Environment Southland. The submitter supports Policy 8 – which is:

“To avoid subdivision in hazard-prone areas where this would lead to intensification of development that would exacerbate significantly the consequence of a hazard event”

However, the submitter expresses concern there will be debate around what constitutes “exacerbate significantly”. “Exacerbate” means to make worse. The addition of the word “significantly” adds a dimension to the policy (to make “significantly worse”) which is not useful, and I am recommending that it be deleted.

It is recommended in response to another submission that “hazard event” include storm water flooding when natural hazards are being considered in relation to subdivision. This results in a recommended change to Policy 10.

7. “Long term strategic withdrawal”

Concern was raised in submissions about 2.11.4 Method of Implementation (D)(i), which is:

Initiating environmental advocacy for:

- (i) *Promoting long term strategic withdrawal of key infrastructure and services from hazard-prone areas where this is viable.*

It was suggested that the words “*technically and economically*” needed to be added before “*viable*”. I have recommended that the word “technically” be included but the intent of the method is clearly to encourage long-term, visionary strategic thinking that should not be constrained by the time frames of economics which can vary.

8. Coastline Prone to Erosion

One submitter (18.96) pointed out a problem with the wording of the Plan in Rule 3.12.2. That Rule states:

*“This rule applies only to the erection of new residences and extensions to existing residences in those areas identified on the Hazard Maps as being within the area identified as Most at Risk from Sea Level Rise/Storm Surge Event **and coastline prone to erosion.**”*

Another submission suggests that this should be worded, *coastline most prone to erosion*. In the right circumstance most of the coastline could be eroded, but some parts are definitely more prone to it than others. I agree with this suggestion.

The Rule needs to use exactly the same terminology as the Hazard Maps. I recommended the legend for the maps be amended to read: ***Coastline (Most) Prone to Erosion*** (capital C, M, P, E) to show that it is an official term used elsewhere in the Plan and not simply a description.

Coastline (Most) Prone to Erosion is identified – as a line coloured magenta – on the Hazard Maps.

It also does not make sense to have a rule saying you cannot build on a “line”, and I have recommended the use of the words *less than 50 metres inland from MHWS along any Coastline (Most) Prone to Erosion*.

The effect of Rule 3.12.2 is to trigger the requirement for a resource consent. I have considered where *Coastline (Most) Prone to Erosion* has been identified on the Hazard Maps and consider that requiring a resource consent application for a residence within 50 metres of MHWS (Mean High Water Springs) of the coast in those areas is both sensible and justified.

6. DISCUSSION OF SECTION 32 MATTERS

Section 32 of the RMA establishes the framework for assessing objectives, policies and rules proposed in a Plan. This requires the preparation of an Evaluation Report. This Section of the RMA was recently amended (since the notification of the proposed District Plan) and the following summarises the current requirements of this section.

The first step of Section 32 requires that objectives are assessed to determine whether they are the most appropriate way to achieve the purpose of the RMA (as defined in Section 5).

The second step is to examine policies and rules to determine whether they are the most appropriate way to achieve the objectives. In this instance, the objectives are those proposed by the District Plan. This assessment includes requirements to:

- Identify the costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the provisions (including effects on employment and economic growth)
- Identify other reasonably practicable options for achieving the objectives; and
- Assess the efficiency and effectiveness of the provisions in achieving the objectives.

An Evaluation Report was released at the time of notification of the Proposed Plan.

Section 32AA of the RMA requires a further evaluation to be released with decisions, outlining the costs and benefits of any amendments made after the Proposed Plan was notified.

Section 32 states that Evaluation Reports need to contain a level of detail that corresponds to the scale and significance of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the proposal. This means that if in its decision the Hearings Panel recommends minor changes from what was in the Proposed Plan, a further evaluation can be relatively brief.

6.1 Relevant Section 32AA Matters

Listed below are the recommended changes to the Proposed District Plan with regard to the natural hazard provisions. The following recommended amendments to the Introduction and Policies are considered relevant for further evaluation under Section 32AA of the RMA.

- Introduction – minor changes of an explanatory nature.
- Issues - deletion of the phrase *“and some development decisions appear to be ill-informed with respect to natural hazards”* from Issue 3.
- Objective1 – insertion of the word *“mitigated”* in the context of *“understood, avoided or ~~reduced~~ mitigated or reduced.*
- Policy 2 – expansion of the “explanation” but no change to the policy.
- Policy 3 – insertion of the words *“using the best information available”* in the context of *“To identify areas at risk from the effects of natural hazards using the best information available”.*
- Policy 4 – expansion of the “explanation” but no change to the policy.
- Policy 5 – correct the spelling of *Mercalli*.
- Policy 8 – deletion of the word “significantly”.

- Methods of Implementation – reformatting, and very minor wording changes to clarify meaning.
- Rules – 3.12.1 – new provision (C) clarifying that the erection or extension of an existing residence which would result in a floor level below a minimum floor level prescribed on the Planning Maps is a non-complying activity.
- Rules – 3.12.2 – clarification of the application of the rule regarding development on or near any *Coastline (Most) Prone to Erosion*.
- Rules – 3.12.3 – clarification that the asset management authority for stopbanks may authorise earthworks without being a non-complying activity, and also clarification that the rule does not apply to earthworks undertaken to clear sand from roads or streams to facilitate access or drainage.
- Subdivision – Policy 6 – expansion of the explanation but no change to the policy.
- Subdivision – Policy 10 – clarification that storm water flooding is a natural hazard, in the context of an assessment criterion in relation to which resource consents would be assessed.
- Appendix 1 – minor changes to the information required to accompany land use and subdivision resource consent applications.
- Hazard Maps – Inclusion of the 5 – metre contour in the urban areas, minor changes to the delineated coastlines “Most Prone to Erosion”, minor changes to the legend.
- Hazard Maps – additional explanatory text on the page entitled “Explanation of Hazard Data” toward the end of the District Plan Maps.

6.2 Section 32AA Further Evaluation

The natural hazard and subdivision sections of the original Section 32 report (pages 85 – 92 and 105 – 114) are relevant to this report. The changes proposed are within the scope of the original evaluation findings and do not raise any additional matters of consideration.

The changes that are recommended are minor. It follows that the environmental, economic, social or cultural effects anticipated to arise as a consequence of the changes are minor. A detailed assessment or quantification of costs and benefits is neither practical nor necessary with respect to the plan provisions pertaining to natural hazard.

7. CONCLUDING COMMENTS

Unlike some other district-wide topics such as biodiversity or issues pertaining to the coast, there is not a national policy statement about planning for natural hazards. One has been contemplated. However, the 2010 and 2011 events in Christchurch highlighted the need for land use planning to properly take account of the natural hazardscape.

A strong imperative is implicit in the regional planning documents to which the Invercargill City Council must have regard and to which it must give effect.

The natural hazards issues were well researched and carefully considered by the Council in drafting the Proposed District Plan. This may be reflected in both the small number of submission points compared with some other areas of the Plan and the general tenor of support in many of the submissions.

Submissions raised useful points which needed to be clarified, and this is reflected in my recommendations in relation to the individual points.

The natural hazards information about the Invercargill City District is (and probably always will be) incomplete. This implies an ongoing need to obtain the best and most up to date information, ponder its implications, share that information with the community, and from time to time update the Plan as necessary. Landowners need to be involved in interpreting this information – local knowledge can be invaluable.

There needs to be a clear acceptance – which the Proposed District Plan promotes – that hazard information is public information. This means that it affects people's investment decisions. This in turn means that it affects the value of the land. In turn, this implies a responsibility to make sure that the information that is available is the best and most up to date information that can be obtained.

The natural hazards provisions of the Plan are both an end in themselves, in the sense that they are regulatory provisions to avoid, mitigate or reduce the effects of natural hazards, and an agenda for further action in that they also comprise non-regulatory methods to which ongoing commitment will be necessary.

In my opinion, only minor changes are needed to clarify the intent of the Plan provisions and address submitters' concerns. These changes are set out in Appendix 2.

APPENDIX 1 – RECOMMENDATIONS BY SUBMISSION

Submitter	Plan Provision	Submission	Recommendation
GENERAL			
2.4 Bluff Community Board	General	<p>There is a lack of information for the Bluff area regarding tsunami and earthquake disasters. The draft District Plan should include the readily available information from the NZ Aluminium Smelters commissioned disaster modelling report and Civil Defence information.</p> <p>DECISION SOUGHT Not stated.</p>	<p>Reject</p> <p>The “Natural Hazards” section of the Plan was based on the most up to date information available at the time of writing. There has not yet been the same level of modelling for the Bluff township area and Island Harbour as there has been for the Tiwai Peninsula, and the information is simply not available.</p> <p>It is agreed that updated hazard information needs to be continually reviewed for its implications for planning policy.</p> <p>The submitter’s attention is drawn to 2.11.4 Method (F) – collaboration and information sharing.</p>
FS2.35 NZAS Ltd	General	<p>The further submitter opposes submission 2.4, opposing the inclusion of a reference to the disaster modelling report it commissioned as the report may be superseded over the life of the Plan.</p> <p>DECISION SOUGHT Rejection of submission 2.4.</p>	Accept

Submitter	Plan Provision	Submission	Recommendation
<p>56.14 Jenny Campbell</p>	<p>General</p>	<p>The submitter considers that in light of present and increasing climate change and disruption, it is essential that natural hazards are taken seriously and impending sea level rise and more frequent climate disruption incidents be given greater weight in the Plan.</p> <p>DECISION SOUGHT Not stated.</p>	<p>Accept The Proposed District Plan develops planning policy as far as it can on the basis of the most up to date information available. It is agreed that as new information comes to hand, it needs to be continually reviewed for its implications for planning policy.</p> <p>(No particular change to the Plan was requested by the submitter.)</p>
<p>64.33 Department of Conservation</p>	<p>General</p>	<p>Support. The submitter is particularly supportive of the provisions regarding the coastal environment as it considers they are consistent with Part 2 and Section 106 of the RMA and gives effect to the NZCPS 2010. The submitter seeks the retention of the objectives, policies, methods and rules.</p> <p>DECISION SOUGHT Retain objectives, policies and rules.</p>	<p>Accept Minor changes are recommended in response to other submissions but the major thrust of the plan remains unchanged.</p>
<p>116.3 Kylie Fowler</p>	<p>General - tsunami</p>	<p>The submitter would like to see the activity type, in particular bulk storage of chemicals, to be considered within tsunami areas within Bluff. The submitter would like to have a long term phase-out policy for some activities in the at-risk tsunami and liquefaction areas. The submitter seeks consideration of tsunami risk in Bluff, with long-term phase-out for some activities in hazard risk areas.</p>	<p>Reject The Plan as notified already goes a long way towards achieving the outcome sought by the submitter.</p> <p>In general, the provisions of the Proposed District Plan seek to increase awareness of, and reduce exposure to, natural hazard. This has been backed up by changes in zoning from the Operative District Plan – for example, an area along the foreshore at Bluff previously in the</p>

Submitter	Plan Provision	Submission	Recommendation
		<p>DECISION SOUGHT Consideration of tsunami risk in Bluff, with long-term phase-out for some activities in hazard risk areas.</p>	<p>Sea Port area has been re-zoned Industrial 1A (light – marine).</p> <p>The tsunami risk for Bluff has not yet been modelled or quantified, although it is acknowledged there may be an issue. The Plan contains precautionary measures based on current knowledge.</p>
<p>FS7.30 South Port New Zealand Ltd</p>	<p>General</p>	<p>The further submitter opposes submission 116.3.</p> <p>The further submitter notes that there are activities, such as ports, with a functional need of locating within a tsunami risk area.</p> <p>DECISION SOUGHT Not stated specifically.</p>	<p>Accept</p>
<p>117.10 Southern District Health Board</p>	<p>General</p>	<p>The submitter agrees with the issues, objectives, policies and rules, in particular Method (C). However, the submitter notes that the format for the methods of implementation is set out differently to the other sections of the Proposed District Plan.</p> <p>DECISION SOUGHT That the Council reformat the Methods of Implementation section to be consistent with the other sections of the Proposed District Plan.</p>	<p>Accept</p> <p>The Methods listed in 2.11.4 are listed (A) – (F) in the Proposed District Plan as notified. On other sections of the Plan methods are listed as “Method 1, Method 2” etc.</p> <p>It is recommended that the paragraph 2.11.4 be reworded as follows:</p> <p>2.11.4 Methods of Implementation Method 1: <i>Delineation of areas indicating areas subject to risk from natural hazard on the <u>District Hazard Planning Maps</u></i></p>

Submitter	Plan Provision	Submission	Recommendation
			<p>Method 2: Rules limiting subdivision and <u>certain activities</u> activity in areas subject to risk from natural hazard,</p> <p>Method 3: Requiring hazard assessment and mitigation to be addressed in relation to any development requiring resource consent and affected or potentially affected by natural hazards identified by the Council.</p> <p>Method 4: Initiating environmental advocacy for</p> <ul style="list-style-type: none"> (i) Promoting long-term strategic withdrawal of key infrastructure from hazard-prone areas where this is <u>technically</u> viable (ii) Encouraging assessment of natural hazard and response to that hazard to be an integral part of all project planning <p>Method 5: Dissemination of information:</p> <ul style="list-style-type: none"> (A) (i) Preparing and disseminating information describing the natural hazard environment of <u>the Invercargill city district</u> to inform public and private sector decision-making (B) (ii) Issuing hazard information to the best of the Council's knowledge as part of the LIM and PIM processes <p>Method 6: Collaboration and information sharing with other local authorities and government agencies <u>in order to obtain and share the best and most up to date information on natural hazards.</u></p>

Submitter	Plan Provision	Submission	Recommendation
SECTION 2.11 ISSUES, OBJECTIVES AND POLICIES			
2.11 Introduction			
18.60 Environment Southland	Introduction	<p>The submission concerns the third paragraph of the Introduction which states that the majority of the district is located on modified floodplains. The submitter believes that is not correct – a significant part of the district is but not “the majority”.</p> <p>DECISION SOUGHT Replace the words “<i>The majority</i>” with “<u>A significant part</u>” of the district</p>	<p>Accept The fact of the matter is arguable but the suggested wording is demonstrably correct.</p> <p>It is recommended that Paragraph 3 of the introduction at 2.11 on page 2- 41 be amended to read: <i>The majority</i> <u><i>A significant part of the district is located on modified flood plains which historically have experienced periodic inundation and watercourse change.</i></u></p>
18.61 Environment Southland	Introduction	<p>The fourth paragraph of the Introduction states that “Sea level rise/storm surge has been identified as a natural hazard in respect of land adjoining the open coast, Bluff Harbour, the New River Estuary and tidal tributaries.” The submitter believes that this statement is not quite correct because this hazard has only been identified around the New River Estuary and tidal tributaries.</p> <p>DECISION SOUGHT To amend the first sentence of the fourth paragraph to read:</p> <p><i>“Sea level rise/storm surge has been identified as a natural hazard in respect of land adjoining the New River Estuary and tidal tributaries.”</i></p>	<p>Reject. The paragraph goes on to say that “<i>the areas below three metres above mean sea level are most at risk from storm surge and sea level rise over the next 100 years or so.</i>”</p> <p>These areas were researched in the course of preparing the Proposed District Plan. There is plenty of land below three metres AMSL around Bluff Harbour. The paragraph is more accurate as it stands.</p>

Submitter	Plan Provision	Submission	Recommendation
<p>18.62 Environment Southland</p>	<p>Introduction</p>	<p>The submitter suggests that reference is made Puysegur Subduction Zone, the risk of amplified ground shaking in lower lying areas and more recent estimates of the likelihood and severity of an Alpine Fault earthquake (the current estimate was developed in the year 2000).</p> <p>The submitter also suggests the abbreviation MM be expanded to the full term, Modified Mercalli, to be consistent with Section 2.11.3 Policy 5.</p> <p>DECISION SOUGHT</p> <p>The submitter seeks to amend the fifth paragraph to read as follows:</p> <p><i>“The district, like the rest of New Zealand, is susceptible to seismic activity. A major rupture of the Alpine Fault is understood to have a <u>30% chance in the next 50 years.</u> The district is also <u>at risk of earthquakes in the Puysegur Subduction zone to the southwest of the South Island.</u> The best information available to the Council indicates that a <u>Modified Mercalli VIII earthquake is the 475 year return period earthquake event allowing for the risk of amplified ground shaking due to the nature of the underlying soils.</u> The lower lying areas of the Invercargill district have a high, or very high susceptibility to liquefaction.”</i></p>	<p>Accept.</p> <p>The submission is an improvement on the original.</p> <p>It is recommended that the fifth paragraph be amended to read:</p> <p><i>The district, like the rest of New Zealand, is susceptible to seismic activity. A major rupture of the Alpine Fault is understood to have a 6–14% probability occurrence within the next 20 years <u>30% chance in the next 50 years.</u> The district is also at risk of earthquakes in the <u>Puysegur Subduction zone to the southwest of the South Island.</u> The best information available to the Council indicates that a <u>Modified Mercalli VIII earthquake is the 475 year return period earthquake event⁷ allowing for the risk of amplified ground shaking due to the nature of the underlying soils.</u> The lower lying areas of the Invercargill district have a high, or very high, susceptibility to liquefaction.</i></p>

Submitter	Plan Provision	Submission	Recommendation
		2.11.1 Issues	
18.63 Environment Southland	Issues	The submitter supports the issues as stated (except for Issue 3) and seeks their retention.	Accept.
18.64 Environment Southland	Issue 3	The submitter believes the second sentence of the issue contains questionable judgement and is not necessary, and seeks its deletion.	<p>Accept in part. The sentence as written is demonstrably true, however the Issue retains validity and is likely to be more acceptable if the sentence is shortened.</p> <p>It is recommended that Issue 3 be re-worded to read:</p> <p><i>There is a lack of public awareness of the risks of natural hazards and how they may affect specific sites or areas. Consequently there is a lack of contingency planning for natural hazards and some development decisions appear to be ill-informed with respect to natural hazards.</i></p>
		2.11.2 Objectives	
18.65 Environment Southland	Objectives	<p>The submitter generally supports the objectives.</p> <p>DECISION SOUGHT Retain.</p>	<p>Accept. The minor change in wording recommended in response to Submission 87.32 (below) does not affect the overall sense of the objective.</p>

Submitter	Plan Provision	Submission	Recommendation
78.5 Ministry of Education	Objective 1	<p>Objective 1 is supported, on the basis that the submitter considers it (along with policies 2 and 8) to be a sound management approach to encourage communities and subdivision to avoid hazard prone areas.</p> <p>DECISION SOUGHT Retain Objective 1.</p>	<p>Accept. On the same basis as 18.65 (above).</p>
53.16 NZ Transport Agency	Objective 1	<p>The submitter suggests that not all natural hazards can realistically be avoided.</p> <p>DECISION SOUGHT Amend Objective 1 as follows:</p> <p><i>Actual or potential effects of natural hazards on people, communities and their businesses, property and infrastructure are understood and avoided <u>mitigated</u> or reduced, resulting long-term in the Invercargill community becoming more resilient.</i></p>	<p>Accept in part. Planning for hazards in the context of a district plan can “mitigate” the effects of a hazard, but inevitably the benefits are “long term”.</p> <p>It would be preferable to re-word Objective 1 including the word “mitigated” as follows:</p> <p>Objective 1: <i>Actual or potential effects of natural hazards on people, communities and their businesses, property and infrastructure are understood and avoided, <u>mitigated</u> or reduced, resulting long-term in the Invercargill community becoming more resilient.</i></p>
FS39.12 Environment Southland	Objective 1	<p>The further submitter opposes submission 53.16, agreeing that not all hazards “can realistically be avoided” but disagreeing with the proposed amendment to Objective 1. ES believes that the existing objective allows for avoidance and reduction.</p> <p>DECISION SOUGHT Disallow decision sought in response to 53.16.</p>	<p>Accept in part. The addition of the word <i>mitigated</i>, recommended in response to Submission 53.16, is consistent with the remedy sought by the further submitter. The Objective otherwise is as publicly notified.</p>

Submitter	Plan Provision	Submission	Recommendation
<p>87.32 Transpower NZ Ltd</p>	<p>Objective 1</p>	<p>The submitter supports Objective 1 in part. The submitter notes that Transpower designs and constructs its infrastructure to be resilient to known natural hazards to the extent practical and feasible. The submitter also considers that the effects of natural hazards cannot technically be reduced in scale or impact and therefore the objective should be amended to refer to mitigating rather than reducing the effects of natural hazards.</p> <p>DECISION SOUGHT The submitter seeks to</p> <p>(i) Amend Objective 1 as follows: “Actual or potential effects of natural hazards on people, communities and their businesses, property and infrastructure are understood and avoided or reduced <u>mitigated</u>, resulting long-term in the Invercargill community becoming more resilient.”</p> <p>(ii) And any consequential amendments.</p>	<p>Accept in part The addition of the word <i>mitigate</i> is recommended in response to submission 53.16. However, again as noted in response to submission 53.16, the effect of natural hazards can sometimes be “reduced” e.g. by taking likely flood risk into account when designing floor levels for a new building, so the word “<i>reduced</i>” is meaningful in the policy.</p>
<p>FS5.23 Invercargill Airport Limited</p>	<p>Objective 1</p>	<p>The further submitter supports submission 87.32, supporting the replacement of the term ‘reduced’ with ‘mitigated’ as it agrees that natural hazards cannot be reduced in scale, however considers that measures can be taken to avoid or mitigate their impact.</p> <p>DECISION SOUGHT As for 87.32.</p>	<p>Accept in part On the same basis and for the same reasons as Submission 87.32.</p> <p>The Plan at Objective 1 addresses “the actual or potential <u>effects</u> of natural hazards”. The Council <u>does not</u> presume to be able to influence the magnitude of the hazard event itself.</p>

Submitter	Plan Provision	Submission	Recommendation
FS6.1 Alliance Group Limited	Objective 1	<p>The further submitter supports in part submissions 53.16 and 87.32, agreeing with the submissions seeking that the objective recognises that the complete avoidance of natural hazards is not always practicable.</p> <p>DECISION SOUGHT Not stated specifically.</p>	<p>Accept in part On the same basis and for the same reasons as Submission 53.16.</p>
2.11.3 Policies			
18.66 Environment Southland	Policies	<p>The submitter generally supports the policies.</p> <p>DECISION SOUGHT Retention of the policies with minor amendments.</p>	<p>Accept The submitter's general support for the policies is noted. It is not considered that the minor alterations recommended in response to other submissions affect the overall intent and focus of the policies.</p>
53.17 NZ Transport Agency	Policies	<p>The submitter supports the intent of the policies, but considers that many of the policies in this section of the Plan appear more as methods of implementation rather than District Plan policies. The submitter suggests that the section is reviewed to ensure that the policies are not worded as rules, and that they are worded to provide clear direction to decision makers on rules and to those implementing methods.</p> <p>DECISION SOUGHT Rework the policies contained in section 2.11.3 Policies to ensure that they provide the clear direction necessary for effective policy making.</p>	<p>Reject Information on the extent and severity of natural hazards affecting Invercargill City is continually updated. Better information is available for some areas than for others. Whilst the "concern" can be stated in policy terms, its application to specific sites cannot always be determined with sufficient accuracy to enable a robust "rule" to be drafted. As they stand, the policies do give a clear indication of the matters that must be considered when a resource consent is triggered and matters should that be taken into account in relation to any land use and development.</p> <p>Further, the wording of the submission is insufficiently clear to enable the wording of a policy or policies to be recommended in</p>

Submitter	Plan Provision	Submission	Recommendation
FS25.10 Transpower NZ Ltd	Policies	<p>The further submitter opposes in part submission 53.17. Transpower understands that there is uncertainty around the extent and level of risk from natural hazards. Transpower considers that this needs to be resolved to enable more definitive policies to be included in the Proposed Plan. Transpower also considers that the submission provides insufficient clarity as to the wording of these “reworked policies”.</p> <p>DECISION SOUGHT Not stated precisely.</p>	<p>response to it.</p> <p>Accept in part. Inevitably, as information on natural hazards is updated and improved, the district plan response will need to be reviewed.</p> <p>It is debatable whether, over time, the level of uncertainty will decrease. For example, recent comments on earlier predictions of sea level rise suggest that these predictions may have been unduly conservative. This leads to greater uncertainty, not less, about the effect of sea level rise.</p> <p>Further, it is agreed that the wording of the original submission is insufficiently clear to enable the wording of a policy or policies to be recommended in response to it.</p>
88.3 Federated Farmers	Policy 1	Policy 1. Support	Accept
78.5 Ministry of Education	Policy 2	<p>Policy 2 is supported, on the basis that the submitter considers it (along with Objective 1 and Policy 8) to be a sound management approach to encourage communities and subdivision to avoid hazard prone areas.</p> <p>DECISION SOUGHT Retain Policy 2.</p>	<p>Accept</p> <p>The expanded explanation, recommended in response to Submission 65.30 (below) does not affect the wording or the sense of the policy.</p>

Submitter	Plan Provision	Submission	Recommendation
<p>65.30 ICC Environmental and Planning Services</p>	<p>Policy 2 – Reduced Exposure</p>	<p>Policy 2 The submitter supports this policy in part, considering the explanation should be amended as it does not match the full intention of the policy. Apart from retreating from the hazard-prone properties there may be other options that make the organisations or communities more resilient to hazards.</p> <p>DECISION SOUGHT Not stated specifically.</p>	<p>Accept An expanded explanation would help clarify the policy.</p> <p>It is recommended that the explanation be changed as follows:</p> <p><i><u>Use of hazard-prone properties is likely to become less sustainable as more frequent hazard events affect them and they become more difficult to insure. More frequent hazard events are likely to affect the use of properties in hazard-prone areas and make it more difficult to insure both buildings and their contents. Where it is possible and feasible to shift to less hazard-prone sites, this should be encouraged. Alternately, measures such as design features within the site or building itself may help mitigate the hazard.</u></i></p>
<p>18.67 Environment Southland</p>	<p>Policy 3 - Identification</p>	<p>Policy 3 The submitter believes the second sentence of the Explanation needs to be altered to make it read better.</p> <p>DECISION SOUGHT: Add a comma between “public information” and “areas” in the second sentence of the explanation.</p>	<p>Accept It is recommended that the Explanation to Policy 3 be reworded as follows:</p> <p>Explanation: <i>While the Council’s hazard information will always be incomplete, it is likely to be the best information available and assembled in any one location. Council uses this information to identify as public information, areas which it has cause to believe could be hazard-prone.</i></p>

Submitter	Plan Provision	Submission	Recommendation
<p>88.4 Federated Farmers</p>	<p>Policy 3 - Identification</p>	<p>Policy 3 The submitter supports this Policy in part. The submitter supports improved identification and mapping of areas at risk from the effects of natural hazards, but only where this is done in liaison with landowners and where this is carried out based on genuine scientific research and need. The submitter believes that landowners have substantial knowledge of their property and how it responds to natural events and should be consulted on issues affecting their land before any decisions are made.</p> <p>The submitter considers that there remains a level of contention in relation to what natural hazards do hold a genuine risk to the district and that any determinations in this area must be objectively researched and only acted upon after evidence suggests a trend.</p> <p>DECISION SOUGHT The submitter seeks to Amend the wording of the policy as follows:</p> <p>Policy 3 Identification: <i>To identify areas at risk from the effects of natural hazard, <u>in consultation with landowners and after objective scientific research</u></i></p>	<p>Reject It is accepted that identifying and mapping areas at risk from natural hazards should be done on the best information that is available or can be obtained. Further, it is accepted that landowners should be involved in the process and that local knowledge can provide a valuable additional insight into the effects of natural hazard.</p> <p>However, while consultation with landowners through the process of hazard identification will most often be appropriate, this does not imply that decisions on these matters should always be with their agreement. The interests of the general public should always be paramount-</p> <p>There is a wide range of stake-holders involved in such analyses which includes regional government and crown research institutes and organisations.</p> <p>Hazard information is, and should be, public information.</p> <p>It should be noted, however, that it is being recommended in response to Submission FS39.13 (below) that the words "<u>using the most up to date and reliable information available</u>" to <u>Council</u> be added to Policy 3 and these words have a similar intent to the relief sought by the submitter.</p>

Submitter	Plan Provision	Submission	Recommendation
FS2.36 NZAS Ltd	Policy 3 - Identification	<p>The further submitter supports submission 88.4, considering that any further identification of natural hazards should be based on “objective scientific research” and therefore supports the amendment sought.</p> <p>DECISION SOUGHT Amend Objective 3 as sought in Submission 88.4.</p>	<p>Reject On the same basis and for the same reasons as Submission 88.4.</p>
FS39.13 Environment Southland	Policy 3 - Identification	<p>The further submitter opposes submission 88.4, believing that if any change is to be made to the policy, it should be changed to “To identify areas at risk from the effects of natural hazards <u>using the best information available.</u>” They comment that this may or may not involve landowners and will almost certainly use the latest credible research. They consider that while some owners have been on a property long enough to have a good understanding of one or more hazards that may affect their property, many don’t as well. Furthermore, while property owners may understand what has happened in the past, they don’t have a good understanding of the likelihood of the hazard in the future.</p> <p>The further submitter considers the District Plan should promote a precautionary approach and believes that every attempt has been made to incorporate the latest information. They consider that it is not practical at a district wide scale to consult with every landowner.</p>	<p>Accept in part It is recommended that Policy 3 be amended to read as follows:</p> <p><i>Policy 3: Identification: To identify areas at risk from the effects of natural hazards <u>using the most up to date and reliable information available’ to Council</u></i></p> <p>The most up to date and reliable information may well include whatever information the landowner is willing and able to share. However the public interest is best served by the publication of the most up to date and reliable information available whether or not the landowner has bought into it.</p>

Submitter	Plan Provision	Submission	Recommendation
		<p>DECISION SOUGHT Amend Policy 3 to include the words “<i>using the best information available</i>”.</p>	
<p>65.31 ICC Environmental and Planning Services</p>	<p>Policy 4 – Identification Multiple Hazards</p>	<p>Policy 4 The submitter supports Policy 4 in part. The submitter considers that the explanation could be developed to further explain that there are areas within the Invercargill city district that are potentially at risk from more than one hazard.</p> <p>DECISION SOUGHT Amend the explanation as follows: <u>“The geography of the Invercargill city district is such that where an area is potentially at risk from one hazard, it is also susceptible to a range of other hazards. Generally those areas below three metre ...”</u></p>	<p>Accept in part. The wording is an improvement on the original, but reads even better with the insertion of the word “often”.</p> <p>It is recommended that the Explanation to Policy 4 be re-worded to read:</p> <p>Explanation – <u>The geography of the Invercargill city district is such that where an area is potentially at risk from one hazard, it is often also susceptible to a range of other hazards. Generally those areas of land below three meters above mean sea level are most at risk from sea level rise, are also affected or potentially affected by riverine inundation, storm surge, and tsunami.</u></p>
<p>FS5.24 Invercargill Airport Limited</p>	<p>Policy 4 – Identification Multiple Hazards</p>	<p>The further submitter opposes submission 65.31, considering that a broad statement of this effect needs to be supported by sound scientific evidence prior to its inclusion in the Proposed Plan.</p> <p>DECISION SOUGHT (Implied) – leave the Explanation to Policy 4 as publicly notified.</p>	<p>Reject Research compiled in the preparation of the Plan shows that the lower-lying areas of Invercargill are more subject to natural hazard and in many instances to more than one hazard.</p>

Submitter	Plan Provision	Submission	Recommendation
FS39.14 Environment Southland	Policy 4 – Identification Multiple Hazards	<p>The further submitter supports submission 65.31, commenting that low areas and floodplains are generally more susceptible to liquefaction and ground shaking as well as the more obvious hazards of marine and riverine inundation.</p> <p>DECISION SOUGHT As for 65.31.</p>	<p>Accept For the same reasons and on the same basis as Submission 65.31.</p>
18.68 Environment Southland	Policy 5 – Identification – Earthquake	<p>Policy 5 The submitter notes that “Mercalli” is spelt incorrectly (as “Merceli”).</p> <p>DECISION SOUGHT Correct the spelling of “Mercalli”.</p>	<p>Accept It is recommended that Policy 5 (A) be reworded to read:</p> <p><i>To identify the Modified Mercelli–<u>Mercalli</u> VIII earthquake as the 475 year return period event.....</i></p> <p>And that the Explanation be changed to read:</p> <p><i>“.....shaking felt in Invercargill from a 475 year return period event is likely to be of Modified Mercelli–<u>Mercalli</u> VIII. Generally.....</i></p>
117.11 Southern District Health Board	Policies 5 and 7	<p>Policy 5 (and 7) The submitter recommends that consideration be given to advising dwelling owners that their property is in an area three metres or five metres AMSL.</p> <p>DECISION SOUGHT Not specifically stated.</p>	<p>Accept in Part This information is most useful when provided with a PIM or LIM, as that is when construction or a change in ownership is being contemplated.</p> <p>Further, it is being recommended in response to Submission 18.70 (below) that the five metre contour information is made available, as a general guide, for the urban areas of the Invercargill City District in the Hazard Maps.</p>

Submitter	Plan Provision	Submission	Recommendation
18.69 Environment Southland	Policy 6 – Identification- Riverine	Policy 6. The submitter supports Policy 6 and seeks its retention.	Accept
18.70 Environment Southland	Policy 7 - Identification – Sea Level Rise	<p>Policy 7 The submitter supports Policy 7, but suggests that the five metres above mean sea level contour should be shown in the District Plan maps, either on the Hazard Maps or a completely separate map, to make the policy more meaningful.</p> <p>DECISION SOUGHT Include five metre contour information in the District Plan.</p>	<p>Accept in part As noted in relation to Submission 117.11 (above), there is insufficient certainty that the five metre contours that can be shown at District Plan scale over the Invercargill City District as a whole are sufficiently accurate to be definitive at the scale of the individual property.</p> <p>However the five metre contour can be determined with reasonable confidence in the urban areas. This information is useful hazard information and should be made available.</p> <p>It is recommended that the five metre contour information be included for the urban areas of the Invercargill City District in the Hazard Maps.</p>
78.5 Ministry of Education	Policy 8	<p>Policy 8 is supported, on the basis that the submitter considers it (along with Objective 1 and Policy 2) to be a sound management approach to encourage communities and subdivision to avoid hazard prone areas.</p> <p>DECISION SOUGHT Retain Policy 8.</p>	<p>Accept The deletion of the word “significantly”, recommended in response to 18.71 (below), does not alter the thrust of the policy.</p>

Submitter	Plan Provision	Submission	Recommendation
<p>18.71 Environment Southland</p>	<p>Policy 8 – Subdivision</p>	<p>Policy 8. The submitter supports Policy 8, but suggests there will be debate around what constitutes “exacerbate significantly”.</p> <p>DECISION SOUGHT Not specifically stated.</p>	<p>Accept Other provisions of the Proposed District Plan will require resource consent for subdivisions. In the context of an application for resource consent, an analysis within the AEE about whether a subdivision would “exacerbate” the consequence of a flood event would be highly relevant to determining that application. This kind of assessment is most relevant on a case by case basis.</p> <p>It is recommended that Policy 8 be re-worded to read:</p> <p><i>Policy 8 Subdivision. To avoid subdivision in hazard-prone areas where this would lead to intensification of development that would exacerbate significantly the consequence of a hazard event.</i></p>
<p>18.72 Environment Southland</p>	<p>Policy 11 – Precautionary Approach</p>	<p>Policy 11. The submitter supports Policy 11 and seeks its retention.</p>	<p>Accept</p>
<p>18.73 Environment Southland</p>	<p>Policy 12 – Collaboration</p>	<p>Policy 12. The submitter supports Policy 12 and seeks its retention.</p>	<p>Accept</p>

Submitter	Plan Provision	Submission	Recommendation
SECTION 2.11.4 METHODS OF IMPLEMENTATION			N.B. It is recommended in response to submission 77.10 (above) that the Methods in this section be re-numbered. In my recommendations I have referred to the new numbering.)
87.33 Transpower NZ Ltd	2.11.4	<p>Methods of Implementation (A) – (D) The submitter supports these methods in part but seeks assurance that technical and economic matters will be taken into consideration and suggests that Method of Implementation (B) is amended to refer to “inappropriate” activity, thereby recognising that some activities such as National Grid towers may need to locate in areas at risk from natural hazards.</p> <p>DECISION SOUGHT</p> <p>(i) Amend Method of Implementation as follows:</p> <p>“2.11.4 Methods of Implementation</p> <p>.....</p> <p>(B) Rules limiting subdivision and <u>inappropriate</u> activity in areas subject to risk from natural hazard.</p> <p>(D) Initiating environmental advocacy for:</p> <p>(i) Promoting long-term strategic withdrawal of key infrastructure and services from hazard-prone areas where this is <u>technically and economically</u> viable.</p> <p>(ii) Encouraging assessment of natural</p>	<p>Accept in part</p> <p>It is not accepted that the word “inappropriate” should be inserted in Method (B)(<u>Method 2</u>). The word is generally best avoided in the District Plan unless it is used in a specific context.</p> <p>Further, it is not accepted that it should be recognised in the Rule that some activities have a functional need or operational requirements which require location in hazard-prone areas. In the vernacular of the Plan, the concept of functional need is recognised in several places at Policy level.</p> <p>The submission is accepted in part with respect to (D) (<u>Method 4</u>) Under (i) promoting long-term strategic withdrawal and qualifying that by adding the words “where it is technically viable” is a useful addition. It requires a check of realism. However, requiring “economic” viability is another matter. The Council should be able to initiate advocacy without the requirement that a proposal be “economically viable” before it does so. “Economic viability” can depend greatly on timeframes and other variables and on the assumptions used in cost-benefit analyses.</p> <p>It is recommended that (D) (<u>Method 4</u>) be</p>

Submitter	Plan Provision	Submission	Recommendation
		<p>hazard and response to that hazard to be an integral part of all project planning.”</p> <p>And any consequential amendments.</p>	<p>changed to read:</p> <p>2.11.4 Methods of Implementation</p> <p>.....</p> <p>(D) <i>Initiating environmental advocacy for:</i></p> <p>(i) <i>Promoting long-term strategic withdrawal of key infrastructure and services from hazard-prone areas where this is <u>technically</u> viable.</i></p>
<p>FS5.25 Invercargill Airport Limited</p>	<p>2.11.4</p>	<p>Methods of Implementation (A) – (D) The further submitter supports submission 87.33, adding that historical circumstances and subsequent investment have also led to some infrastructure locating on at risk areas. Relocating such infrastructure would not be economically viable.</p> <p>DECISION SOUGHT An amendment that recognises the need for some activities to locate in at risk areas.</p>	<p>Accept in part On the same basis and for the same reasons as submission point 87.33.</p>
<p>FS6.2 Alliance Group Limited</p>	<p>2.11.4</p>	<p>Methods of Implementation (A) – (D) The further submitter supports submission 87.33, agreeing that there should be recognition of technological and economic constraints when determining appropriateness of an activity within areas subject to risk from natural hazards.</p> <p>DECISION SOUGHT Not specifically stated.</p>	<p>Accept in part On the same basis and for the same reasons as submission point 87.33.</p>

Submitter	Plan Provision	Submission	Recommendation
FS7.31 South Port New Zealand Ltd	2.11.4	<p>Methods of Implementation (A) – (D) The further submitter supports submission 87.33.</p> <p>DECISION SOUGHT An amendment that recognises the need for some activities to locate in at risk areas.</p>	<p>Accept in part On the same basis and for the same reasons as submission point 87.33.</p>
18.74 Environment Southland	2.11.4 (C)	<p>The submitter supports Method (C), which is to require hazard assessment and mitigation to be addressed in relation to any development requiring resource consent and affected or potentially affected by natural hazards identified by the Council. The submitter suggests the assessment required should extend to consideration of storm water flooding.</p>	<p>Accept in part Storm water flooding can be an issue in Invercargill and it can be exacerbated by development which increases or changes runoff.</p> <p>However, it would be out of context to specifically mention storm water flooding in this section. The matter can be dealt with at policy level. It is recommended that Policy 10 be amended to read:</p> <p><i>Policy 10: Assessment criterion:</i> <i>To adopt as an assessment criterion the degree to which natural hazard has been understood and addressed, in relation to any resource consent for any development on land affected by one or more natural hazards <u>including storm water flooding.</u></i></p>
SECTION 3.12 RULES			
88.84 Federated Farmers	3.12.1 and 3.12.2	<p>Rules 3.12.1 and 3.12.2. The submitter supports these provisions, suggesting there needs to be an acknowledgement that people knowingly move into such areas and take on the risks and benefits associated with this choice.</p>	<p>Accept The amendments to the Rule recommended to address points raised by other submitters do not change the focus of the rule supported by the submitter.</p>

Submitter	Plan Provision	Submission	Recommendation
<p>18.96 Environment Southland</p>	<p>3.12.2</p>	<p>Rule 3.12.2. The submitter suggests that in respect of the coastline, “within” could be replaced with “adjacent to” or “near” as one can’t be “within a coastline prone to erosion, but then the question of “how near” arises. The submitter believes the City Council needs to either establish a coastal erosion hazard overlay or specify a distance from the eroding coast.</p> <p>DECISION SOUGHT The submitter seeks to amend the wording of the rule in respect of proximity to a coastline mapped on the Hazard Maps as eroding.</p>	<p>Accept in part The submitter raises a valid point, in relation to the wording of the Rule, in that a site cannot be “<i>within coastline prone to erosion</i>”. “Coastline Prone to Erosion” is delineated – as a magenta line- on the Hazard Maps. The Rule needs to use exactly the same terminology as the Hazard Maps and relate in a meaningful and unambiguous way to that line.</p> <p>The words “adjacent to” or “near” are too imprecise to be enforceable. On the other hand, the effect of Rule 3.12.2 is to trigger a resource consent application for a discretionary activity – it does not determine whether the activity can occur or not. Looking at the Planning Maps at where “<i>Coastline Prone to Erosion</i>” is delineated, it is my opinion that it is reasonable to require a resource consent application for any new residences within 50 metres of the edge of the sea or river at Mean High Water Springs (MWHS).</p> <p>Note: In response to submission 18.109 (below) it is being recommended that the terminology be changed to <i>Coastline <u>most</u> prone to erosion</i>).</p> <p>It is recommended that Rule 3.12.2 be re-worded to:</p> <p><i>Sea level rise, coastal erosion and storm surge:</i> <i>This rule applies only to the erection of new residences and extensions to existing</i></p>

Submitter	Plan Provision	Submission	Recommendation
			<p><i>residences in those areas identified on the Hazard Maps as being within the area identified as being Most at Risk from Sea Level Rise/Storm Surge Event and <u>less than 50 metres inland from MHWS along any Coastline most prone to Erosion.</u></i></p>
<p>FS2.37 NZAS Ltd</p>	<p>3.12.2</p>	<p>Rule 3.12.2 The further submitter does not oppose the provision of coastal erosion hazard overlay in principle, however they are unsure whether the proposed extension to the coastal erosion line will have any implications on the operations of the smelter. NZAS opposes the extension of the coastal erosion line to the extent that it may affect the operation of the smelter.</p>	<p>Reject Rule 3.12.2 applies “<i>only to the erection of new residences and extensions to existing residences</i>”. It does not apply to other land use activities.</p>
<p>18.97 Environment Southland</p>	<p>3.12.3 (A)</p>	<p>Rule 3.12.3 (A) The submitter suggests that the Rule should make it clear that it does not apply to earthworks undertaken to clear sand from roads or streams to facilitate access or drainage. The submitter seeks an amendment to the rule to ensure that it does not apply to earthworks undertaken to clear sand from roadways or streams.</p>	<p>Accept It is recommended that the following be added to the Rule after (B): <i><u>Note: This rule does not apply to earthworks undertaken to clear sand from roads or streams to facilitate access or drainage.</u></i></p>
<p>18.98 Environment Southland</p>	<p>3.12.3 (B)</p>	<p>3.12.3 (B) The submitter believes the rule should be amended to enable Environment Southland or the Invercargill City Council to undertake earthworks or erect structures on stopbanks. The addition of the words “unless authorised by the asset management authority for the stopbanks” is requested.</p>	<p>Accept It is recommended that Rule 3.12.3 be reworded to read: 3.12.3 <i>It is a non-complying activity to undertake any earthworks and/or erect any structures in the following areas:</i> <i>(A) Any land on the seaward side of the line on</i></p>

Submitter	Plan Provision	Submission	Recommendation
			<p><i>the Hazard Maps identifying the inland extent of the coastal sand dunes</i></p> <p><i>(B) Any stopbanks identified on the Hazard Maps <u>unless the earthworks are carried out by the asset management authority for the stopbanks in which case the earthworks shall be deemed to be a permitted activity.</u></i></p>
<p>67.2 ICC Drainage Manager</p>	<p>3.12.3 (B)</p>	<p>3.12.3 (B) The submitter considers that work within stopbanks should be allowed if done with the approval and to the specification of the authority responsible for management of the stopbank. The Drainage Manager asks that Rule 3.12.3(B) is amended to provide for excavation and construction within stopbanks to be allowed with the written approval, and to the required standards, of the responsible Asset Management authority.</p>	<p>Accept in part The recommended response to Submission 18.98 achieves the same outcome but with different wording.</p>
SUBDIVISION			
<p>18.103 Environment Southland</p>	<p>3.18.7</p>	<p>Support.</p> <p>DECISION SOUGHT Retain.</p>	<p>Accept</p>
DEFINITIONS			
	<p>2.14</p>	SUBDIVISION	
<p>77.41 Te Runaka o Waihopai and Te Runaka o Awarua</p>	<p>Policy 6 Natural Hazards - Explanation</p>	<p>Support.</p> <p>DECISION SOUGHT Seeks retention of this section.</p>	<p>Accept in part In response to submission 65.36 it is considered that the explanation to the Policy should be broadened to refer to the need for consideration of natural hazards at both subdivision and land use consent stages.</p>

Submitter	Plan Provision	Submission	Recommendation
<p>65.36 ICC Environmental and Planning Services</p>	<p>Policy 6 Natural Hazards - Explanation</p>	<p>The submitter considers that natural hazards should be considered at both the subdivision and land use stages. The explanation infers that they should only be considered at the time of subdivision.</p> <p>DECISION SOUGHT Amend Policy 6:</p> <p>“Natural hazards are a constraint that should be considered at <u>both</u> the subdivision stage <u>and</u>, rather than at the building stage”</p> <p>Or</p> <p>“Natural hazards are a constraint that should be considered at the subdivision stage, rather than at <u>as well as at</u> the building stage.</p>	<p>Accept in part It is recommended in response to FS39.16 (below) that the Explanation be reworded to:</p> <p><i>Explanation: Natural hazards are a constraint which that should be <u>identified and considered primarily</u> at the subdivision stage rather than that <u>as well as the <u>land use consent</u> and <u>building consent</u> stages</u>. It is considered appropriate to forewarn prospective purchasers through notice on the title at the subdivision stage, rather than being left to the point in time when buildings <u>or changes in land use</u> are proposed.</i></p> <p>This addresses the concern of the submitter.</p>
<p>FS39.16 Environment Southland</p>	<p>Policy 6 Natural Hazards - Explanation</p>	<p>Support in part submission 65.36 The further submitter agrees that natural hazards should be considered at the subdivision, land use and building consent stages, but in the first instance at the subdivision or land use stages, which if required, would precede the building consent stage.</p> <p>DECISION SOUGHT Allow but consider the following alternatives to the alternatives submitted: “Natural hazards are a constraint that should be considered at the subdivision, <u>land use</u> and</p>	<p>Accept in part On the same basis as submission 65.36.</p>

Submitter	Plan Provision	Submission	Recommendation
		<p>building consent stages” or “Natural hazards are a constraint that should be considered <u>primarily</u> at the subdivision stage as well as the <u>land use</u> and building consent stages”.</p> <p>The latter version is preferred.</p>	
APPENDICES			
<p>18.105 Environment Southland</p>	<p>Appendix 1 2(g)</p>	<p>The submitter suggests adding an introductory statement “Whether or not the site is mapped as being within or adjacent to a hazard overlay”. The submitter believes applicants or their representatives are overly reliant on the hazard overlays, especially the flood overlay, to indicate the actual or potential existence of hazards, but the flood hazard overlay does not map all areas subject to actual or potential inundation.</p> <p>DECISION SOUGHT Preface the existing statement with the following “Whether or not the site is mapped as being within or adjacent to a hazard overlay,”.</p>	<p>Accept It is recommended that 2 (g) on page 5-3 be amended to read:</p> <p>2. INFORMATION TO ACCOMPANY LAND USE RESOURCE CONSENT APPLICATIONS <i>Council may require any or all of the following information with applications for resource consent:</i></p> <p>(a) (b) (c) (d) (e) (f) (g) <u>Whether or not the site is shown on the Hazard Maps as being within or adjacent to a hazard overlay, a description of any natural hazards affecting the land, together with an assessment of how the proposal will affect, or be affected by any hazard,</u></p>

Submitter	Plan Provision	Submission	Recommendation
			<p><i>and any measures proposed to avoid, remedy or mitigate <u>or reduce</u> those effects and the effects of those measures and where necessary the required hazard assessment form completed by a suitably qualified expert and signed as accepted by the applicant.</i></p>
<p>65.123 ICC Environmental and Planning Services</p>	<p>3</p>	<p>Support subject to amendment. The submitter notes that Section 219 of the RMA has been repealed and therefore should be removed from the provision of the Plan.</p> <p>DECISION SOUGHT Remove reference to Section 219 of the RMA.</p>	<p>Accept It is recommended that the first paragraph under heading (3) on page 5-5 be amended to read:</p> <p>3. INFORMATION TO ACCOMPANY SUBDIVISION CONSENT APPLICATIONS <i>For any applications to subdivide land, the following information requirements may apply (in addition to that required by Section 219 of the Resource Management Act).</i></p>
<p>18.106 Environment Southland</p>	<p>3(d)(vi)</p>	<p>The submitter suggests that the locations of watercourses should be required to be shown on applications because they are relevant to natural hazard, public access and protection of waterways from stock provisions of the Plan.</p> <p>DECISION SOUGHT Amend the provision to read “Topographical features including <u>watercourses</u>, buildings, fences and hedges”</p>	<p>Accept It is recommended that on page 5-5 under (d) provision (vi) be amended to read:</p> <p><i>(vi) Topographical features including <u>watercourses</u>, buildings, fences and hedges, and also contours and spot heights to show the general fall of the land and appropriate grade of roads or access.</i></p>

Submitter	Plan Provision	Submission	Recommendation
<p>18.107 Environment Southland</p>	<p>3(d)(viii)</p>	<p>The submitter suggests the provision should be consistent with 2(g) of Appendix I.</p> <p>The submitter also suggests that the consideration of hazards, in particular the flood hazard, should not be limited to areas identified on the hazard information maps.</p> <p>DECISION SOUGHT Amend the provision to read “Whether or not the site is mapped as being within or adjacent to a hazard overlay, an assessment of how the proposal will affect or be affected by any hazard, and any measures proposed to avoid, remedy or mitigate these effects and the effects of those measures and where necessary the required hazard assessment form completed by a suitably qualified expert and signed as accepted by the applicant.”</p>	<p>Accept Provision 3 on page 5-5 refers to information that is to accompany a subdivision consent application. Provision 3(d) (viii) requires “information relating to areas identified on the Hazard Information Maps as being subject to a natural hazard and an assessment of how the proposal will affect or be affected by any hazard, and any measures proposed to avoid, remedy or mitigate these effects.”</p> <p>The recommendation with respect to submission 18.105 (above) seeks a hazard assessment whether or not the site is shown on the Hazard Maps as being within or adjacent to a hazard overlay.</p> <p>To be consistent, 3(d)(viii) should be reworded as follows:</p> <p><i>(viii) Areas identified on the Hazard Information Maps as being subject to a natural hazard and An assessment of how the proposal will affect or be affected by any natural hazard, and any measures proposed to avoid, remedy or mitigate <u>or reduce</u> these effects.</i></p>

Submitter	Plan Provision	Submission	Recommendation
MAPS			
18.108 Environment Southland	Hazard Maps	<p>The submitter believes the coastal erosion symbol is incorrect.</p> <p>DECISION SOUGHT Show coastal erosion symbol as a line rather than a polygon or box.</p>	<p>Accept On the Hazard Maps coastline prone to erosion is shown as a purple line (see for example Map 21) but in the fold-out Hazard Information Map Legend it is shown as a purple rectangle.</p> <p>It is recommended that the Hazard Information Map legend needs to show coastline prone to erosion as a purple line.</p>
18.109 Environment Southland	Hazard Maps	<p>The submitter believes the current descriptor “Coastline prone to erosion” could suggest a false degree of absoluteness, accuracy or certainty when the reality is that most of the “soft” coastline within and near the margin of the Invercargill District is eroding, some a lot more than others. The submitter believes this situation will continue and probably accelerate as sea level continues to rise and the descriptor needs to be changed to one that does not give the impression that the mapped areas are the only ones subject to erosion.</p> <p>DECISION SOUGHT Amend the descriptor to “Coastline most prone to erosion”.</p>	<p>Accept It is recommended that the relevant notation on the fold-out Hazard Information Map Legend read:</p> <p><i>Coastline <u>Most</u> Prone to Erosion..</i></p>

Submitter	Plan Provision	Submission	Recommendation
18.110 Environment Southland	Hazard Maps	<p>The submitter believes the line needs to be extended in various locations – e.g. Omaui, Oreti Beach and the Tiwai Peninsula to reflect the erosion that has occurred, become apparent or been an issue since the mapping was done for the original District Plan.</p> <p>DECISION SOUGHT Extend the line as shown in red on the maps attached to the submission.</p>	<p>Accept It is recommended that the line showing coastline most prone to erosion be extended as shown on the map attached as Appendix 3.</p>

APPENDIX 2 - RECOMMENDED CHANGES TO THE PROPOSED DISTRICT PLAN

2.11 NATURAL HAZARDS

The Invercargill city district is located at about latitude 46.5 degrees South, at the southern end of the South Island. Its location

- (a) In terms of latitude and consequent climatic effects
- (b) At the mouth of the Oreti and Waihopai Rivers
- (c) Adjacent to Foveaux Strait
- (d) On a flood plain
- (e) Within an area likely to be influenced by an event on the Alpine Fault

results in the city district being susceptible to natural hazards.

~~The majority~~ A significant part of the district is located on modified flood plains which historically have experienced periodic inundation and watercourse change.

Sea level rise/storm surge has been identified as a natural hazard in respect of land adjoining the open sea coast, Bluff Harbour, the New River Estuary and tidal tributaries. The areas below three metres above mean sea level are most at risk from storm surge and sea level rise over the next 100 years or so.

The district, like the rest of New Zealand, is susceptible to seismic activity. A major rupture of the Alpine Fault is understood to have a ~~6–14% probability occurrence within the next 20 years–30% chance in the next 50 years.~~ The district is also at risk of earthquakes in the Puysegur Subduction zone to the south-west of the South Island. The best information available to the Council indicates that a Modified Mercalli VIII earthquake is the 475 year return period earthquake event⁷ allowing for the risk of amplified ground shaking due to the nature of the underlying soils. The lower lying areas of the Invercargill district have a high, or very high, susceptibility to liquefaction.

The lower lying areas (no change)

Land use activities (no change)

2.11.1 Issues

The significant resource management issues for natural hazards are:

- 1. (No change)
- 2. (No change)
- 3. There is a lack of public awareness of the risks of natural hazards and how they may affect specific sites or areas. Consequently there is a lack of contingency planning for natural hazards ~~and some development decisions appear to be ill-informed with respect to natural hazards.~~
- 4. (No change)
- 5. (No change)

2.11.2 Objectives

Objective 1: Actual or potential effects of natural hazards on people, communities and their businesses, property and infrastructure are understood and avoided, mitigated or reduced, resulting long-term in the Invercargill community becoming more resilient.

Objective 2: (No change)

2.11.3 Policies

Policy 1 Awareness and Understanding: (No change)

Explanation (No change)

Policy 2 Reduced exposure: To encourage organisations and communities to reduce their exposure to natural hazard.

Explanation: ~~Use of hazard-prone properties is likely to become less sustainable as more frequent hazard events affect them and they become more difficult to insure. More frequent hazard events are likely to affect the use of properties in hazard-prone areas and make it more difficult to insure both buildings and their contents. Where it is possible and feasible to shift to less hazard-prone sites, this should be encouraged. Alternately, measures such as design features within the site or building itself may help mitigate the hazard.~~

Policy 3 Identification: To identify areas at risk from the effects of natural hazards using the best information available.

Explanation: (No change)

Policy 4 Identification – Multiple hazards: To identify areas below the three metre contour (AMSL) using the best information available to the Council, and delineate these areas on the Planning Maps as hazard prone.

Explanation: The geography of the Invercargill city district is such that where an area is potentially at risk from one hazard, it is also susceptible to a range of other hazards. Generally areas of land below three metres above mean sea level are most at risk from sea level rise, are also affected or potentially affected by riverine inundation, storm surge, and tsunami.

Policy 5 Identification – Earthquake:

(A) To identify the Modified ~~Mercalli~~-Mercalli VIII earthquake as the 475 year return period event, around which hazard planning for earthquake should be based.

(B) To also identify areas at risk from liquefaction.

Explanation: The best information available to the Council indicates that the biggest earthquake risk to Invercargill is from an earthquake originating in Fiordland and that the shaking felt in Invercargill from a 475 year return period event is likely to be of Modified ~~Mercalli~~-Mercalli VIII. Generally, the lower lying areas of Invercargill are known to be at significantly greater risk from liquefaction than the areas above the three metre contour.

Policy 6 Identification – Riverine inundation (No change)

Explanation: (no change)

Policy 7 Identification – Sea Level rise (No change)

Explanation: (No change)

Policy 8 Subdivision: To avoid subdivision in hazard-prone areas where this would lead to intensification of development that would exacerbate ~~significantly~~ the consequence of a hazard event

Explanation: (No change)

Policy 9 Protection: (No change)

Explanation (No change)

Policy 10 Assessment criterion: (No change)

Explanation (No change)

Policy 11 Precautionary Approach: (No change)

Explanation (No change)

Policy 12 Collaboration: (No change)

Explanation (no change)

2.11.4 Methods of Implementation

Method 1: ~~(A)~~ Delineation of areas ~~indicating areas~~ subject to risk from natural hazard on the District Hazard Planning Maps

Method 2: ~~(B)~~ Rules limiting subdivision and certain activities activity in areas subject to risk from natural hazard,

Method 3: ~~(C)~~ Requiring hazard assessment and mitigation to be addressed in relation to any development requiring resource consent and affected or potentially affected by natural hazards identified by the Council.

Method 4: ~~(D)~~ Initiating environmental advocacy for

- (i) Promoting long-term strategic withdrawal of key infrastructure from hazard-prone areas where this is technically viable
- (ii) Encouraging assessment of natural hazard and response to that hazard to be an integral part of all project planning

Method 5: ~~(E)~~ Dissemination of information:

- (i) Preparing and disseminating information describing the natural hazard environment of the Invercargill city district to inform public and private sector decision-making
- (ii) Issuing hazard information to the best of the Council's knowledge as part of the LIM and PIM processes

Method 6: ~~(F)~~ Collaboration and information sharing with other local authorities and government agencies in order to obtain and share the best and most up to date information on natural hazards

3.12.1 Riverine inundation - Dwellings: *This rule applies only to the erection of new residences and extensions to existing residences in those areas identified on the Hazard Information Maps as having either Level 2, 2A or 3 risk from riverine inundation.*

(A) *Within those areas identified on the Hazard Information Maps having a minimum floor level:*

(a) *Any extension to a residence existing as at 30 July 2013 is a permitted activity to a maximum of 50 square metres above the size that existed as at 30 July 2013.*

(b) *The erection of new residences and extensions greater than 50 square metres to residences existing as at 30 July 2013 is a restricted discretionary activity, provided that there is compliance with the minimum floor level specified on the Hazard Information Maps.*

The matters over which the Council shall exercise its discretion are:

(1) *The siting of the building.*

(2) *The length of time the building is to be on the site.*

(3) *The extent to which the proposed development intensifies land use in a hazard prone area.*

(B) *Within those areas identified on the Hazard Information Maps as having ~~either~~ a Level 3 degree of risk of riverine inundation but excluding those areas with a minimum floor level:*

(a) *Any extension to a residence existing as 30 July 2013 is a restricted discretionary activity to a maximum of 50 square metres above the size that existed as at 30 July 2013.*

The matters over which the Council shall exercise its discretion are:

(1) *The siting of the building.*

(2) *The length of time the building is to be on the site.*

(3) *The extent to which the proposed development intensifies land use in a hazard prone area.*

(b) *Except as provided for in Rule 3.12.1(B)(a) above, the erection of any residence, or any extension to a residence, is a non-complying activity.*

(c) *For the purposes of Rule 3.12.1, "residences" excludes attached carports, garages, laundries and non-habitable accessory buildings.*

(C) *The erection of a new residence or the extension of an existing residence which would result in a floor level below a minimum floor level prescribed on the Planning Maps is a non-complying activity.*

3.12.2 Sea level rise, coastal erosion and storm surge: *This rule applies only to the erection of new residences and extensions to existing residences in those areas identified on the Hazard Maps as being within the area identified as being Most at Risk from Sea Level Rise/Storm Surge Event and less than 50 metres inland from MHWS along any Coastline Most Prone to Erosion.*

- (A) (No change)
- (B) (No change)
- (C) (No change)

3.12.3 *It is a non-complying activity to undertake any earthworks and/or erect any structures in the following areas:*

- (A) *Any land on the seaward side of the line on the Hazard Maps identifying the inland extent of the coastal sand dunes*
- (B) *Any stopbanks identified on the Hazard Maps unless authorised by the asset management authority for the stopbanks.*

Note: This rule does not apply to earthworks undertaken to clear sand from roads or streams to facilitate access or drainage.

2.14 Subdivision

Policy 6 Natural Hazards: *To restrict subdivision in hazard-prone areas and ensure that each new allotment contains a hazard free building site, particularly where new buildings and structures are likely to be constructed.*

Explanation: *Natural hazards are a constraint that should be considered primarily at the subdivision stage as well as the land use and building consent stages. It is considered appropriate to forewarn prospective purchasers through notice on the title at the subdivision stage, rather than being left to the point in time when buildings or changes in land use are proposed.*

Policy 10: Assessment criterion: *To adopt as an assessment criterion the degree to which natural hazard has been understood and addressed, in relation to any resource consent for any development on land affected by one or more natural hazards including storm water flooding.*

Explanation: *No change*

APPENDIX 1

1. INTRODUCTION (No change)

2. INFORMATION TO ACCOMPANY LAND USE RESOURCE CONSENT APPLICATIONS

- (a) (No change)
- (b) (No change)
- (c) (No change)
- (d) (No change)
- (e) (No change)
- (f) (No change)
- (g) Whether or not the site is shown on the Hazard Maps as being within or adjacent to a hazard overlay, a description of any natural hazards affecting the land, together with an assessment of how the proposal will affect, or be affected by any hazard, and any measures proposed to avoid, ~~remedy or mitigate~~ or reduce those effects and the effects of those measures and where necessary the required hazard assessment form completed by a suitably qualified expert and signed as accepted by the applicant.

The drawings must include the details set out below, where appropriate:

- (h) (No change)
- (i) (No change)
- (j) (No change)
- (k) (No change)

3. INFORMATION TO ACCOMPANY SUBDIVISION CONSENT APPLICATIONS

For any applications to subdivide land, the following information requirements may apply (~~in addition to that required by Section 219 of the Resource Management Act~~).

- (a) (No change)
- (b) (No change)
- (c) (No change)
- (d) Two copies of the subdivision report and two full scape copies of the plan along with a good quality A4 reduction shall be supplied. The two copies of the plan drawn accurately to a suitable scale shall show
 - (i) (No change)
 - (ii) (No change)
 - (iii) (No change)
 - (iv) (No change)
 - (v) (No change)
 - (vi) Topographical features including watercourses, buildings, fences and hedges, and also contours and spot heights to show the general fall of the land and appropriate grade of roads or access.
 - (vii) (No change)
 - (viii) ~~Areas identified on the Hazard Information Maps as being subject to a natural hazard and~~ An assessment of how the proposal will affect or

be affected by any natural hazard, and any measures proposed to avoid, ~~remedy or mitigate~~ or reduce these effects.

(e) (No change)

(f)–(m) (No change)

PLANNING MAPS

1. The Hazard Information Map legend needs to show coastline (most) prone to erosion as a purple line.
2. The relevant notation on the fold-out Hazard Information Map Legend needs to read *Coastline Most Prone to Erosion*.
3. Additional text needs to be added after the bullet points listed under “Riverine Inundation” on the page entitled “Explanation of Hazard Data” toward the end of the District Plan Maps as follows:
“Minimum floor levels annotated on the maps are expressed in relation to City Datum .”
4. The line showing coastline most prone to erosion be extended as shown on the map attached as Appendix 3 to this report
5. The five metre contour information should be included for the urban areas of the Invercargill City District in the Hazard Maps or as a separate map within the Planning Maps volume. Appendix 4 contains a Map indicating the 5 metre contour but please note that the final version may vary slightly from that shown.
6. The Coastal Environment is to be extended to include the area identified on the Map attached as Appendix 5.

[THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY]

APPENDIX 3 – RECOMMENDED EXTENSION TO “COASTLINE MOST PRONE TO EROSION”



Figure 1: Tiwai Peninsula



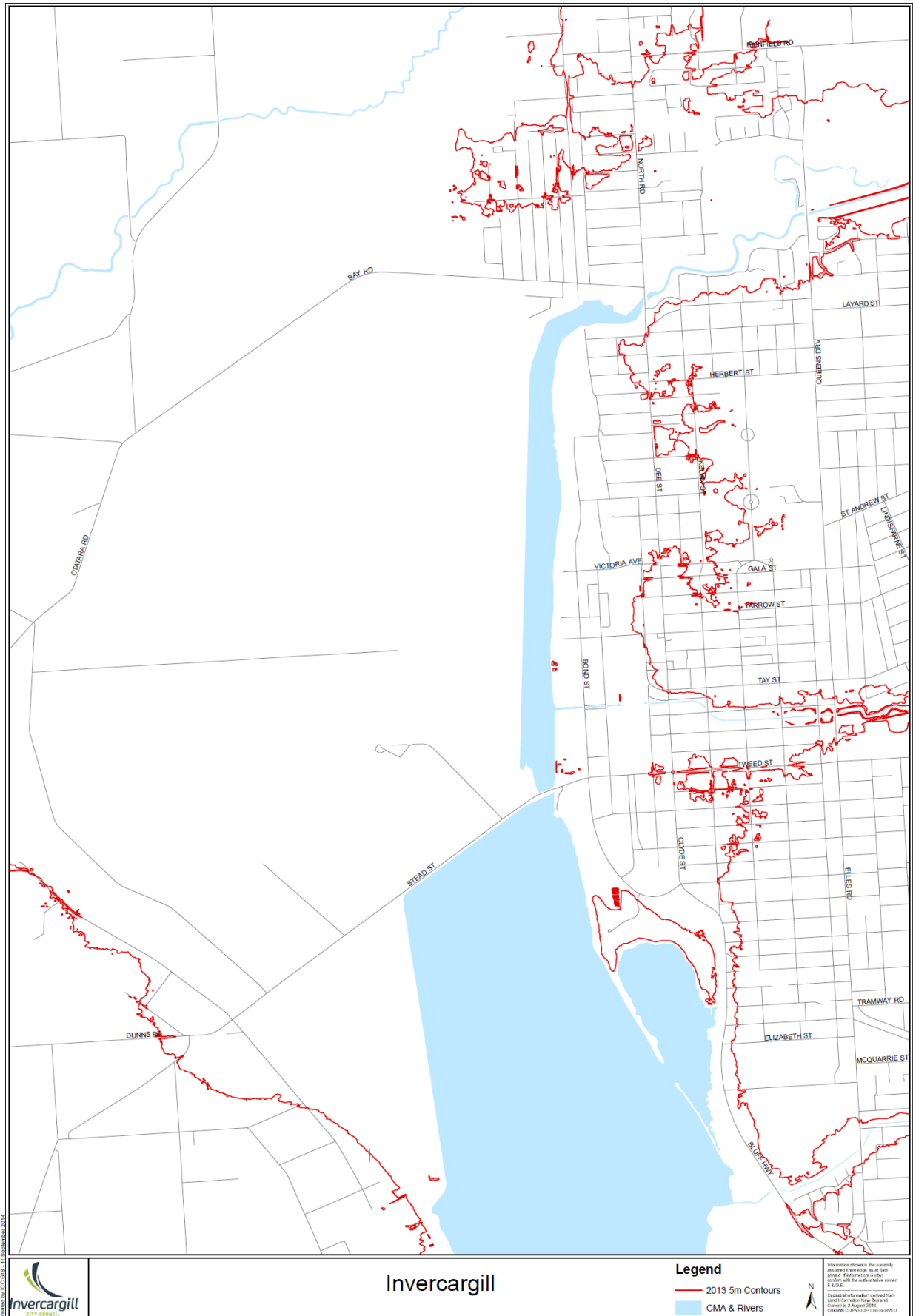
Figure 2: Omaui



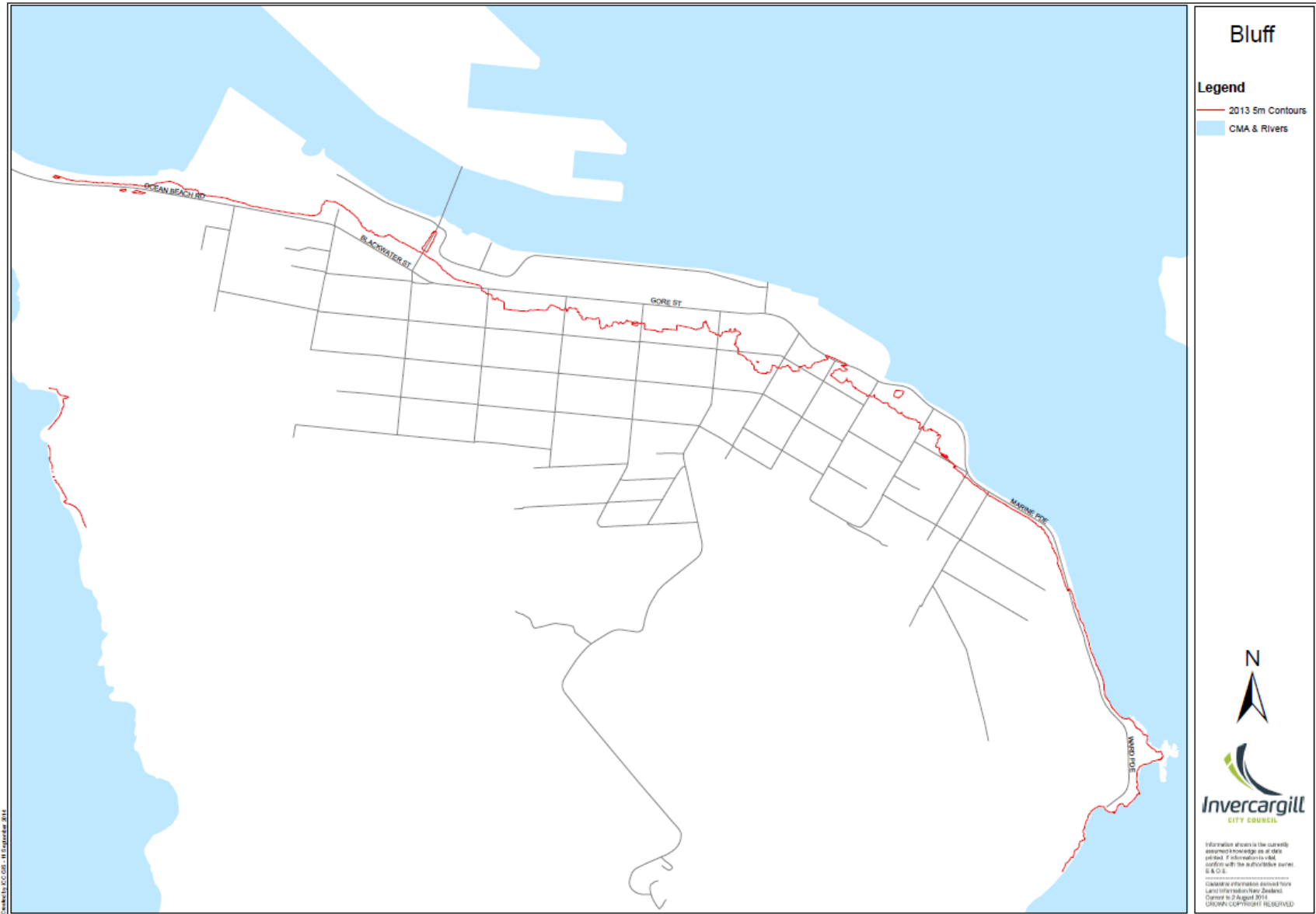
Figure 3: Oreti Beach

[THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY]

APPENDIX 4 - FIVE METRE CONTOUR LINE



[THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY]





APPENDIX 5 – EXTENSION TO THE “COASTAL ENVIRONMENT”

