Westland District Council Plan Change 7: Managing Fault Rupture Risk in Westland Section 42A Hearing Report and amended Section 32

Introduction

This report has been prepared on behalf of Westland District Council. It sets out the process of proposed Plan Change 7 which seeks to introduce additional rules, definitions and alterations to the planning maps of the Westland District Plan in order to introduce two fault rupture avoidance zones. This section 42A report provides an assessment of the proposed plan change under the Resource Management Act, including an assessment of submissions and an amended assessment under section 32 of the Act.

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Scope

This report:-

1) Introduces the changes to the Westland District Plan sought by the plan change;
2) Describes the District and the area site subject to the plan change request;
3) Outlines the process of this plan change;
4) Discusses the statutory framework against which the plan changes must be assessed;
5) Outlines and assesses the matters raised by the submission, by topic, and recommends decisions on those submissions;
6) Assesses the plan changes against Section 32 of the Resource Management Act 1991 (RMA);
7) Outlines the proposed amendment to the wording of the plan change in response to submissions; and
8) Lists the conclusion and recommended decision on submissions.

Section 1. The Proposed Plan Change

Background

1.1 The Alpine Fault traverses the length of the South Island and is New Zealand's most active fault, with an average recurrence interval of 1 in 333 years (Class 1). An earthquake on the Alpine Fault poses a significant hazard for New Zealand and in particular the townships within close proximity to the Alpine Fault. An earthquake on the Alpine is predicted to be large in Magnitude (M_w >8).

1.2 One hazard created during an earthquake event is fault rupture. In 2010, the Institute of Geological and Nuclear Science predicted that the probability of an Alpine Fault earthquake event, with a fault rupture to the surface occurring, was 20% within the next 30 years. Along the fault rupture, it is estimated that there will be approximately 8-9 metres of horizontal displacement on the west (Australian plate) side, and 1-2 metres of vertical uplift on the east (Pacific plate) side. Land deformation is predicted to be greater on the vertical uplift or "hanging wall" side of the fault rupture.

1.3 A number of factors, including the length of the fault line, challenges of accessibility, separation from populated townships and land tenure have led to variations in the extent of study and therefore detail available in relation to the precise location of the Alpine Fault throughout the West Coast region, and specifically within Westland District.

1.4 In October 2010, Westland District Council was provided a report prepared by Dr. Robert Langridge and William Ries of the Institute of Geological and Nuclear Sciences (GNS) for the West Coast Regional Council, which mapped the location of the Alpine Fault within the West Coast Region and overlaid a suggested Fault Avoidance Zone utilising the guidelines set within the Ministry of Environment's 2004 guidance "*Planning for Development of Land on or Close to Active Faults".* The report was titled:
Langridge, R and Ries W, 2010. Mapping and fault rupture avoidance zonation for the Alpine Fault in the West Coast region. GNS Science Consultancy Report 2009/18. 47p.

1.5 The report was constrained by the data available on the location of the Alpine Fault throughout the region, which led to wide exclusion zones being proposed where information on the fault location was of an inadequate scale. Buffers were imposed to reflect horizontal uncertainty of between 20 and 100 metres depending on the fault's classification as well defined, distributed or constrained. The avoidance zone was further widened along the eastern side to reflect the possible uneven distribution of deformation along the hanging wall side of the fault, and, finally, a margin of safety of 20 metres was added.

Table 1 Development of Fault Avoidance Zone (FAZ) widths for mapped data along the Alpine Fault. *(Reproduced from Langridge, R & Ries, W. (2010) Mapping and fault rupture avoidance zonation for the Alpine Fault in the West Coast region. GNS Science Consultancy Report 2009/18 Table 1 page 20.)*

Table 1 Development of Fault Avoidance Zone (FAZ) widths for mapped data along the Alpine Fault.

Fault Complexity terminology	Horizontal Location Uncertainty (m)	Asymmetric Buffer Width (m)	Margin of Safety Buffer (m)	Total Width of Fault Avoidance Zone (FAZ) (m)
Well-Defined	± 20	+ 20	± 20	100
Distributed to Well-Defined	± 30	+ 30	± 20	130
Distributed	± 50	+ 50	± 20	190
Uncertain - Constrained	± 100	+ 100	± 20	340

1.6 The Langridge and Ries (2010) report consequently proposed a Fault Avoidance Zone of between 100 and 340 metres in width as shown in the table above.

1.7 Although the entirety of the Westland District is located within approximately 30 kilometres of the Alpine Fault, within the West Coast, there are limited locations where settlements are directly located within the Fault Rupture Avoidance Zone. One of these locations is Franz Josef/Waiau township, and it was stated within the report that further study would enable the proposed 190 metre fault rupture avoidance zone to be reduced. The Regional Council, supported by the Westland District Council, applied for and obtained further Envirolink funding to enable further research into the location of the fault trace within Franz

Josef/Waiau and also to suggest possible planning responses to this proposed fault avoidance zone, given that it was clearly going to impact on the Franz Josef/Waiau community.

1.8 In May 2010 GNS undertook GPS georeferencing and created an RTK-GPS which indicates the location of the Alpine Fault scarp and the location of the streets within Franz Josef/Waiau Township. This was followed by airborne LiDAR flown in August 2010. A digital elevation model was created. The results of the more accurate LiDAR modelling and the 'ground truthing' of the GPS data was utilised to create Geographic Information System (GIS) maps of the Alpine fault location. This information meant that the fault line was now considered to be "well-defined" under the Ministry for the Environment guidelines and the fault rupture avoidance zone within this area consequently reduced. This report:
Langridge, R.M. and Beban, J.G 2011. Planning for a safer Franz Josef-Waiau community, Westland District: considering rupture of the Alpine Fault, GNS Science Consultancy Report 2011/217 61p
was received by Council on October 5th 2011.

1.9 As a result of the reports, the Westland District Council now held detailed information on the areas considered to be most at risk of ground deformation during an earthquake event. This plan change proceeds to introduce these 'fault avoidance zones' into the Westland District Plan, and to manage development within these areas predicted to be subject to increased deformation risk. It is noted that fault rupture risk is distinct from any other seismic hazards that may occur in an earthquake event such as ground shaking, liquefaction, range front collapse (landslide), alluvial fan processes and river blockage and breakout. For that reason, the zone has been referred to as a "Fault rupture avoidance zone" (FRAZ). To differentiate between the two distinct zones proposed through the two separate reports, the 2010 FRAZ identified throughout the Westland District has been labelled the "General Fault Rupture Avoidance Zone". The updated FRAZ created by further study undertaken as part of the 2011 report is labelled the "Franz Josef/ Waiau Fault Rupture Avoidance Zone" and replaces the original "General Fault Rupture Avoidance Zone" in this location.

1.10 The two reports outline areas subject to significant risk during a fault event and consequently potentially significant repercussions for

landowners and businesses located within the two fault rupture avoidance zones. As the Council reviews the Westland District Plan and plans for development over a 100 year planning horizon, it has elected to address the risk of fault rupture and to focus on providing a framework for activities in this area of known hazard. The plan change has consequently been developed to avoid the intensification of land use within these areas.

Proposed Plan Change as Notified.

The following section outlines the proposed alterations or additions to the Westland District Plan.

- Add additional wording into Policy 4.14 Explanation, page 99

> The Alpine Fault is located within Westland and there is significant risk posed by an Alpine Fault earthquake which has a probability of occurrence, calculated at 20% over the next 30 years (Langridge, RM; Beban, JG 2011).

- Amend Rule 5.6.2.2 B, (Page 153) Controlled Activities in the Rural Zone to include reference to the General Fault Rupture Avoidance Zone and the Franz Josef/ Waiau Fault Rupture Avoidance Zone. New wording is underlined.

> "The establishment of new buildings for the purposes of any residential activities except in
> - the Waiho River General Flood Hazard Area as shown on Planning Map 14A ,
> - the Franz Josef/Waiau Fault Rupture Avoidance Zone; or
> - within the General Fault Rupture Avoidance Zone.
>
> Applications may be considered without the need to obtain the written approval of affected persons or publicly notify the application. The matters over which control is reserved are:

- Add new section 5.8 General Fault Rupture Avoidance Zone and 5.9 Franz Josef / Waiau Fault Rupture Avoidance Zone (detailed on following pages).

5.8 General Fault Rupture Avoidance Zone

5.8.1 Description

The General Fault Rupture Avoidance Zone is an area of between 20 and 200 metres wide located on either side of the Alpine Fault as it runs through the length of Westland District. This zone is the area that is predicted to be seriously affected by fault rupture during an earthquake on the Alpine Fault.

The zone has been created and mapped by the Institute of Geological and Nuclear Sciences (GNS) utilising data from a number of sources. The width of this zone depends firstly on the type of fault at any given point and therefore its performance during an earthquake event, and secondly, variations in the accuracy of data available at any particular location.

GNS predict the probability of an Alpine Fault earthquake event, with fault rupture to the surface, occurring is 20% within the next 30 years. Along the fault rupture it is estimated that there will be approximately 8-9 metres of horizontal displacement (to the north) on the west (Australian Plate) side, and 1-2 metres vertical uplift on the east (Pacific Plate) side. As land deformation will be greater on the vertical lift or "hanging wall" side of the fault rupture, the Fault Rupture Avoidance Zone is wider on the east (Pacific Plate) side.

In order to manage the risk to human life and reduce effects on the long term recovery of the Westland District from an Alpine Fault earthquake event, it is necessary to restrict the types of activities that can occur within areas susceptible to fault rupture. However, in recognition of the fact that in some areas the location of the fault is not well defined, landowners are given the opportunity to obtain further technical advice regarding the fault location on specific sites. If the further report identifies a narrower area of predicted fault rupture, then this may be approved through consent. Subdivision, commercial activities, and dwellings are discouraged in the General Fault Rupture Zone due to the increased hazard risk and the lack of available mitigation measures.

5.8.2 Zones

5.8.2.1 General Fault Rupture Avoidance Zone

A. Permitted Activities

Any agricultural or forestry activity, subject to:

(1) Compliance with the standards for permitted activities in the Rural Policy Unit rules 5.6.2.2 and set out in Table 5.7;

(2) Compliance with the general rules in Part 8;

(3) Any buildings that are not used for residential purposes, subject to:

(a) The provision of a report to Council from a suitably qualified person in geology or geotechnical engineering with specialisation in earthquake risk assessment that :

i. Records the survey and mapping of the site to identify and indicate as accurately as possible the location of the surface position of the plane of any active fault.

ii. Establishes the area that is likely to be subject to fault rupture and includes any buffers for uncertainty and establishes that the proposed building is located entirely outside of this area.

(b) Compliance with all other rules in Part 5.6.2.2A, 5.7 and Part 8 of the Plan.

B. Controlled Activities

- The establishment of new buildings for the purposes of any residential activities that are accompanied by:

a) A report from a suitably qualified person in geology or geotechnical engineering with specialisation in earthquake risk assessment that :

i. records the survey and mapping of the site to identify and indicate as accurately as possible the location of the surface position of the plane of any active fault.

ii. Establishes the area that is likely to be subject to fault rupture and includes any buffers for uncertainty and

establishes that the proposed building is located entirely outside of this area.

Applications may be considered without the need to obtain the written approval of affected persons or publicly notify the application. The matters over which control is reserved are:

- financial contributions relating to the provision of potable water and roading
- location of access points
- method of effluent disposal
- distance from existing activities which may have nuisance effects
- visual and aesthetic values

C. Non complying activity

Any new building, building extension or alteration of an activity to increase the scale of effects of an activity within a building located within the Fault Rupture Avoidance zone.

Explanation

Through restricting the use of land subject to fault rupture, Council is managing natural hazard risk and providing for the health and safety of the residents and visitors to Westland.

Farming activities may occur without consent, however any building, including farm sheds require a consent as these buildings can be significant investments in the infrastructure of a farm and will have significant economic effects if destroyed by fault rupture. This will adversely affect Westland's recovery from an Alpine Fault Earthquake.

Council acknowledges that the detail and accuracy of the underlying information that formed the Fault Avoidance Zone was varied, so in situations where the fault is not well defined, a further report can be presented that provides additional detail into the location of the fault on the specific site, and the risk of fault rupture. This will allow the margins of error to be reduced and may allow the development to proceed without consent.

Development of new buildings within the General Fault Rupture Avoidance Zone that are not established through further study to be outside of fault rupture risk are non-complying and are unlikely to be approved.

5.9 Franz Josef / Waiau Fault Rupture Avoidance Zone

5.9.1 Description

The Alpine Fault passes through the township of Franz Josef/Waiau and subsequently the town is subject to significant risk from fault rupture. A detailed study has been undertaken to map the location of the Alpine Fault through Franz Josef/Waiau and the surrounding area utilising LiDAR imagery and RTK GPS mapping. Within this area, the fault is considered "well defined" in this location and it is unlikely that further study would reduce the area of land identified as subject to fault rupture risk any further than that set out in the 2011 GNS report. Developments and increases or alterations to activities within this area are heavily restricted in order to ensure the health and safety of residents and visitors.

5.9.2 Zones

5.9.2.1 Franz Josef / Waiau Fault Rupture Avoidance Zone

A. Permitted Activities

Any commercial or residential activity, subject to:

(1) No buildings other than temporary buildings are permitted in association with these activities;

(2) Compliance with the standards for permitted activities in the Tourist Policy Unit or Franz Alpine Resort;

(3) Compliance with the general rules in Part 8;

B Non complying activities

The construction of any new building, or extension of any existing building, or change or increase in an activity within a building on site within the Franz Josef Waiau Fault Rupture Avoidance Zone

5.9.3 Explanation

Existing use rights under Section 10 of the Resource Management Act are not impinged by the above rules.

The location of the fault line within Franz Josef/ Waiau is well defined and therefore there is no opportunity for additional information to be provided in order to reduce the margin of error of the predicted rupture risk area.

Ancillary commercial and residential activities that do not require buildings are permitted. This allows activities such as carparking and gardens to occur without consent however any structures will be unlikely to be approved due to the risk to human safety.

- Make the following alterations and additions to the subdivision section (Part 7.3 of the Plan, from page 182). New wording is underlined.

7.3.3 Discretionary Activities

Any subdivision which complies with the rules for discretionary activities in Table 7.1. All subdivision in the Waiho River General Flood Hazard Area as defined on Planning Map 14A. Any subdivision that is partially located within the Franz Josef/Waiau Fault Rupture Avoidance Zone or the General Fault Rupture Avoidance Zone.

7.3.4 Non-complying Activities

Any subdivision which is not a permitted, controlled or discretionary activity. All subdivision in the Waiho River Severe Flood Hazard Zone as defined on Planning Map 14A. Any Subdivision of land that is entirely located within either the Franz Josef/Waiau Fault Rupture Avoidance Zone or the General Fault Rupture Avoidance Zone.

7.6 Assessment of Discretionary Subdivision

- When a proposed subdivision includes land partially within the Franz Josef/Waiau Fault Rupture Avoidance Zone, or the General Fault Rupture Avoidance Zone, whether a report has been provided from a suitably qualified person in geology or geotechnical engineering with experience in earthquake assessment to demonstrate that any buildings are located

outside of the relevant fault rupture avoidance zone, whether access can be achieved and if ground topography will cause additional adverse effects during fault rupture. Whether any mechanisms have been volunteered to prevent development within the Fault Rupture Avoidance Zone.

- Insert the following definitions into Part 9: Definitions section of the Plan.

> **Franz Josef/Waiau Fault Rupture Avoidance Zone**: means the area encompassing the active fault system within Franz Josef/ Waiau and suggested to be subject to elevated risk of a fault rupture hazard. This section of the Alpine Fault has been accurately determined utilising LIDAR and GPS mapping. Shown on the planning maps as Franz Josef/ Waiau Fault Rupture Avoidance Zone
>
> **General Fault Rupture Avoidance Zone:** means the area encompassing active fault systems in the District and suggested to be subject to elevated risk of a fault rupture hazard. Shown on the planning maps as General Fault Rupture Avoidance Zone

- Replace the existing planning maps with new maps (shown on following pages) into Part 10 Appendices indicating the General Fault Rupture Avoidance Zone within the Westland District, and the Franz Josef/ Waiau Fault Rupture Avoidance Zone within Franz Josef/Waiau and the surrounding area.

Section 2. The area affected by the plan change - Westland District

2.1 The Westland District stretches for 330 kilometres from the Taramakau River in the north to Awarua Point in the south. The eastern boundary of the 11,400km^2 District is the Southern Alps/ Ka Tirititi o te Moana.

2.2 The District is home to a usually resident population of 8307, with the majority of population settled in the middle to northern sections of the District in Hokitika (3450) and the surrounding rural hinterland, and townships of Kumara, Ross, Whataroa, Harihari and Haast settled to service rural industry such as forestry, fishing, gold mining and agriculture. These industries remain important to the Westland economy with the Westland Milk Products dairy factory in Hokitika providing a significant contribution to the Westland economy. The dominance of tourism has grown significantly and contributes significantly to the Westland economy.

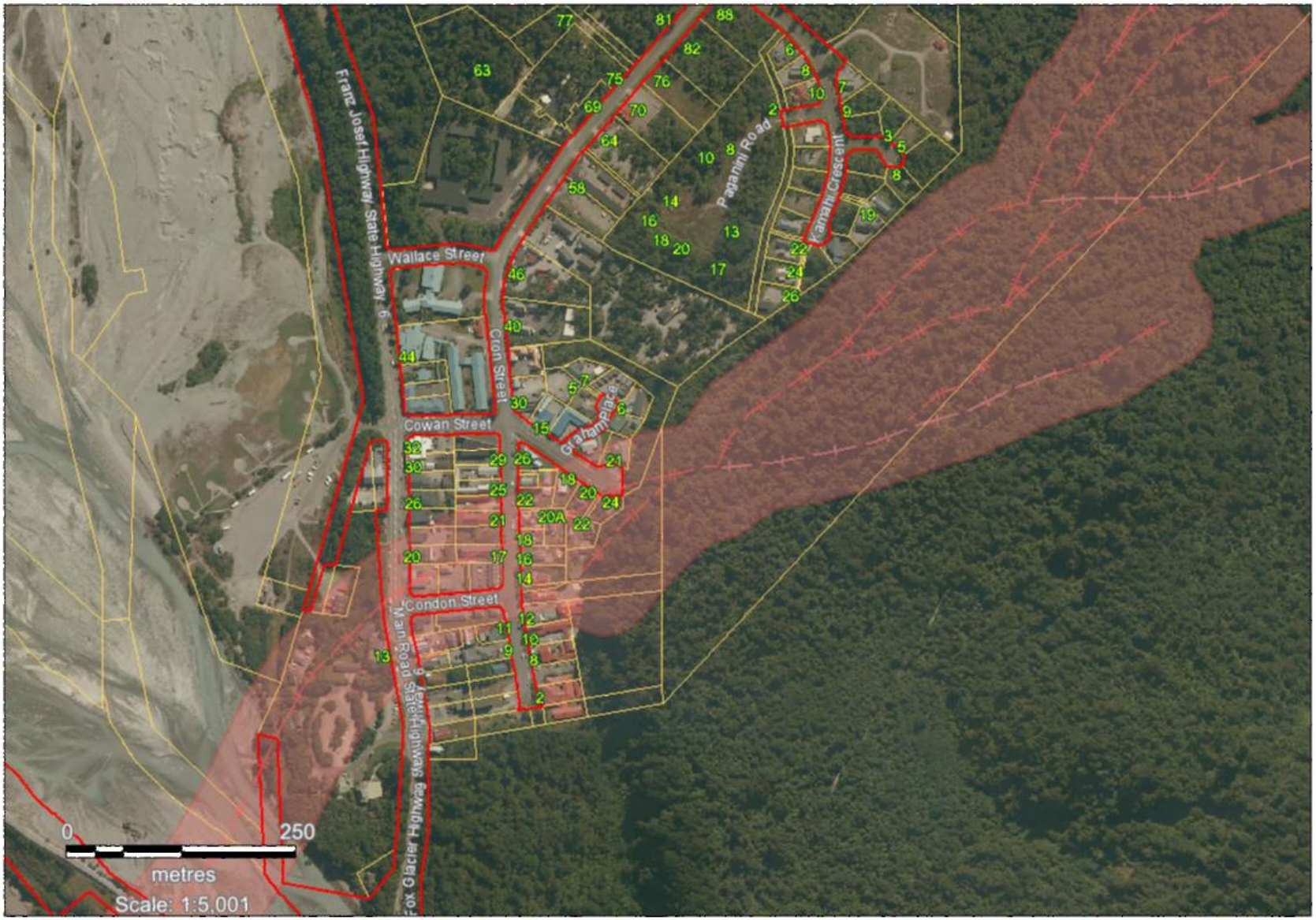
2.3 Franz Josef/Waiau in particular is a key economic driver for the Westland District. The "Glacier Country," which includes Fox Glacier, is high on the list of any tourist visiting New Zealand, with just over 500,000 visiting Franz Josef Glacier /Ka Roimata o Hine Hukatere each year. The iconic images of the glaciers, surrounding Southern Alps and bush clad rivers are a key feature of New Zealand tourism's image. Although home to approximately 450 usually resident population, there are over 1000 visitors staying in Franz Josef/ Waiau each night.

2.4 The shape of the District means that it can be isolated following hazard events, with one State Highway providing access throughout the length of the District, and connections to the rest of New Zealand via the mountainous passes of the Haast Pass, Arthurs Pass or from Greymouth to the north. Infrastructure such as power and phone lines often share this access, along with the bridges crossing the many rivers that separate the settlements. These lifelines can be vulnerable and consequently the communities are resilient and well organised to respond to hazard events. Following an Alpine Fault earthquake event, there is expected to be significant disruption to lifeline services, some expected to take months to be reinstated, especially to smaller Westland townships.

Area within the General Fault Rupture Avoidance Area

2.5 The General Fault Rupture Avoidance Zone stretches throughout the majority of the District, largely to the east of existing settlements. The majority of the zone is within vegetated steep hillside land managed by the Department of Conservation. Areas where the fault crosses open valleys include Grassy Creek in Haast, and the Paringa River next to the State Highway Bridge including the South Westland Salmon Farm. The fault line passes to the east of Fox Glacier and behind Harihari. The area varies in width significantly, with areas that have been subject to academic study, such as the Toaroha and Kokatahi River valleys, containing data of increased accuracy and therefore reduced margins of uncertainty. The fault traverses further through the Southern Alps and runs along the Taramakau River valley near farmland beside the Taipo River, before crossing the Taramakau River and heading towards Lake Poerua in the Grey District.

2.6 The Franz Josef Waiau Fault Rupture Avoidance Zone crosses the Waiho River almost directly at the State Highway bridge and crosses in an almost easterly direction into the vegetated hills behind the township before crossing the Tatare and the top of the alluvial fan of Franz Alpine Resort. A total of 3.95 hectares of land (7.5%) of tourist zoned land within Franz Josef township is affected, which corresponds to 32 private landowners. The proposed Franz Josef Waiau Fault Rupture Avoidance Zone is overlaid on an aerial on the following page.


Franz Josef Highway State Highway 6
Wallace Street
Cron Street
Cowan Street
Graham Place
Pagani Road
Kamahi Crescent
Condon Street
Main Road Franz Josef
Glacier Highway
0
250
metres
Scale: 1:5,001

Section 3. Notification of the plan change and submissions received

3.1 Following circulation of the two underlying reports in November 2010 and December 2011 , a draft report of the plan change and meetings held with the Franz Josef Community Council and Franz Inc in February 2012 and April 2012, along with presentations to the Planning and Development Committee of Council in October 2010 and the Strategy Committee of Council in November 2011, February 2012, May 2012, August 2012 the Westland District Council resolved to notify the proposed change to the District Plan.

3.2 The Plan Change was publicly notified on Friday 24th August 2012 and submissions closed on Monday 24th September 2012.

3.3 A total of 20 submissions were received: 13 on behalf of Franz Josef residents and businesses, 4 from statutory bodies, and 3 in relation to the General Fault Rupture Zone.

3.4 Two late submissions were received:

Mark and Kelsey Williams on behalf of the Fern Grove Trust and Fern Grove Holdings Ltd submitted on 27th September, 3 days after the closure of submissions. This submission did not raise additional topics to those received as part of other submissions. The submission was summarised and notified will all other submissions. I recommend that this late submission, submission number 19, is accepted.

Dene Bristowe on behalf of Taipo Farm submitted on 25th September. This submission raised similar opposition topics in relation to the effect on development rights and associated economic effect, although focussed on the General Fault Rupture Avoidance Zone rather than the Franz Josef Fault Rupture Avoidance Zone.

3.5 The summary of submissions was notified on 19th April 2013. Four parties made further submissions in support of 9 original submissions.

3.6 Progress of the plan change was hampered through staff resourcing issues within the Planning and Regulatory Department meaning that policy work was postponed as staff focussed on other priorities. There has consequently been a long delay between closure of further submissions and the circulation of this report. At their meeting on 24th

July 2014, the full Westland District Council considered the plan change and resolved to extend the timeframes in which to process the plan change by two years under section 37 of the Resource Management Act until 24 August 2016.

Section 4 Statutory Framework

4.1 Following notification of summary of submissions relating to this plan change, the Resource Management Act was altered by the Resource Management Amendment Act 2013. The plan change had reached the closure of further submission stage at the time that these amendments became operative, therefore this plan change process proceeds in accordance with the previous Section 32 provisions.

4.2 Section 32 of the Resource Management Act required any proposed changes to District Plans to be evaluated to ensure that the proposal is the most efficient and effective method of achieving the Act and that alternatives, benefits, costs and risk have been assessed.

4.3 Section 32 required:

32 **Consideration of alternatives, benefits, and costs**

(1) *In achieving the purpose of this Act, before a proposed plan, proposed policy statement, change, or variation is publicly notified, a national policy statement or New Zealand coastal policy statement is notified under section 48, or a regulation is made, an evaluation must be carried out by—*

…

(c) the local authority, for a policy statement or a plan (except for plan changes that have been requested and the request accepted under clause 25(2)(b) … of Schedule 1); or

…

(2) A further evaluation must also be made by—

(a) a local authority before making a decision under clause 10 or clause 29(4) of the Schedule 1; and

…

(3) An evaluation must examine—

(a) the extent to which each objective is the most appropriate way to achieve the purpose of this Act; and

(b) whether, having regard to their efficiency and effectiveness, the policies, rules, or other methods are the most appropriate for achieving the objectives.

(3A) This subsection applies to a rule that imposes a greater prohibition or restriction on an activity to which a national environmental standard applies than any prohibition or restriction in the standard. The evaluation of such a rule must examine whether the prohibition or restriction it imposes is justified in the circumstances of the region or district.

(4) For the purposes of the examinations referred to in subsections (3) and (3A), an evaluation must take into account—

(a) the benefits and costs of policies, rules, or other methods; and

(b) the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods.

(5) The person required to carry out an evaluation under subsection (1) must prepare a report summarising the evaluation and giving reasons for that evaluation.

(6) The report must be available for public inspection at the same time as the document to which the report relates is publicly notified or the regulation is made.

The Purpose of the Act

4.5 The Resource Management Act seeks to promote "*sustainable management of natural and physical resources*". It goes on to define this as 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 while sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and safe guarding the life supporting capacity of air water soil and ecosystems and avoiding remedying or mitigating any adverse effects of activities on the environment. "*

4.6 This plan change proceeds in order to provide for the health and safety of Westland residents and visitors in accordance with the purpose outlined above. The plan change seeks to avoid exposure to increased levels of risk from fault rupture. Alongside mitigating the risk to life and safety, restricting development within an area of known hazard also reduces the economic costs of an earthquake event through reducing the amount of investment within the zone. Natural hazards are devastating to the social fabric of the community. Reducing the potential impact of a fault rupture event, the plan change seeks to increase the resilience of Franz Josef and Westland, thus providing for the social, economic and cultural wellbeing through reducing this risk.

4.7 Section 31 of the Act sets out Westland District Council's functions and requires the Council to "*achieve integrated management of the effects of use, development, or protection of land and associated natural and physical resources of the district", including (s31(b) i) the control of the use, development, or protection of land, including for the purposes of the avoidance or mitigation of natural hazards"*

4.8 Section 106 of the Act allows Council to consider the effects of erosion, falling debris and flooding that may impact on a proposed subdivision and to decline the subdivision or impose conditions accordingly. This does not include fault rupture effects specifically.

4.9 Section 2 of the Act defines natural hazard as:

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

4.10 Effect as defined within this section also includes:

"*3(c) any past, present or future effect; and"…*

"3(f) any potential effect of low probability that has a high potential impact".

The effects of fault rupture are considered to be a natural hazard, and an effect on the environment that is one of the functions of territorial authorities, including the Westland District Council, to avoid or mitigate.

Regional Policy Statement

4.10 Section 75(3 - 4) of the RMA requires that the district plan gives effect to the regional policy statement and shall not be inconsistent with any regional plan of its region in regard to any matter of regional significance or for which the regional council has primary responsibility. The West Coast Regional Policy Statement (RPS) was made operative on 10 March 2000 and is currently under review. The Proposed West Coast Regional Policy Statement was notified on 16th March 2015. Given the early stage of the proposed policy statement in the plan process, it is considered that weight will be given to the existing provisions of the RPS. There are no significant changes in the intent of the Regional The relevant objectives and policies within the current RPS are:

Objective 11 *The protection of human life and the avoidance or mitigation of damage to property and environmental values resulting from natural hazards*

Policy 11.1 *Promote appropriate responses when a natural hazard is possible, likely to occur or imminent including:*

a) Timely warning and advice;

b) Evacuation of people and stock from high risk areas;

c) Mobilisation of rescue and welfare groups; and
d) Identification of at risk areas.

*Policy 11.2 Recognise the risks to proposed and existing development from natural hazards and promote measures to reduce this risk to an acceptable level. Where necessary further development in hazard-prone areas will be restricted (refer Policy1.3(*sic*)).*

POLICY 11.3 Consult with people and communities directly affected when making decisions on levels of risk from natural hazards. When making decisions on levels of risk matters to be considered will include:
a) The probability of occurrence, magnitude and location of events;
b) The potential consequence of an event including potential loss of life, injury, social and economic disruption, civil defence implications and cost to the community;
c) The measures proposed to avoid or mitigate the effects of the event, the degree of mitigation they will provide and effects on the environment from adopting such measures;
d) The benefits and costs of alternative mitigation measures; and
e) The possibility of locating activities away from areas at risk.

POLICY 11.4 Adopt a user pays approach to hazard avoidance or mitigation.

4.11 The introduction of the two proposed fault rupture avoidance zones achieves the intent of the above policies through identifying areas of fault rupture risk within the District, and imposing further restrictions to reduce the effects of a fault rupture event on residents and the community.

Regional Plans

4.12 The Regional Land and Water Plan, Regional Coastal Plan and Regional Discharge to Air plans do not contain any specific provisions relating to earthquake risk. Earthworks in areas of erosion prone or non-erosion prone land are required to ensure that the work does not contribute to slope or land surface instability including subsidence or erosion. It is not clear whether Regional Council staff would take into account fault rupture risk when making this determination. It is not considered that other regional rules that inform this plan change.

Westland District Plan

4.13 Objective 3.13.1 of the Westland District Plan states:

> *Rules for the avoidance and mitigation of natural hazards have been incorporated in the District Plan given that severe hazards pose a significant threat to the built resource and infrastructure of the District and people and communities.*

4.14 The background to this objective states:
A potentially devastating hazard in Westland is earthquakes. The Alpine Fault runs through Westland and is one of the world's largest faults. Consequently, earthquakes are probably the most destructive hazard threatening the district.

4.15 A rupture occurring along the Alpine Fault during an earthquake is a significant hazard for the District. The proposed plan change has been written in order to meet Objective 3.13.1, to mitigate the effects of fault rupture through avoiding further development being affected by fault rupture.

4.16 Policy 4.14 sets out that

> *Development and subdivision for the purposes of accommodating and/or servicing people and communities should avoid areas of known hazard risk unless the risk of damage to property and infrastructure, community disruption and injury and potential loss of life can be adequately mitigated.*

4.17 The method associated with this policy include:

> *The Council shall work with the West Coast Regional Council, other agencies, local communities and stakeholders to facilitate the identification, adoption and implementation of a comprehensive "package" of measures, statutory and non-statutory, to avoid, remedy or mitigate the adverse effects of natural hazards in the District.*

4.18 This policy particularly highlights the wider effects on the community of a hazard event. The policy highlights the need to address risk on residential, accommodation, and commercial activities, along with other 'service activities'. The associated method sets out Council's intent to work collaboratively to identify hazard areas as has happened in this case, and to implement responses in a variety of methods. This is addressed through this proposed plan change, assessment under the

Building Act, community education and awareness, and Civil Defence planning. It is considered that in order to achieve the intent to 'avoid' the areas of known hazard, a statutory response through the District Plan is required.

Other Documents

- *Ministry for the Environment (2004) Planning for Development of Land on or Close to Active Faults. A guideline to assist resource management planners in New Zealand*

4.19 The Ministry for the Environment published guidance in 2004 that sought to manage development adjacent to fault traces through building importance category, and the amount of information held on the fault line (location and recurrence interval). The less accurate the information on the fault trace location, the wider the margin of error and the further away buildings of importance need to be. The proposed fault rupture avoidance zones follow these guidelines and vary in width between 100 metres and 340 metres.

4.20 In the context of the guidelines, the LiDAR mapping and GPS ground truthing utilised to create the Franz Josef Fault rupture avoidance zone are considered to create a "well defined" avoidance zone, therefore reducing the required error margin. The zone remains at a width of 130 throughout the Franz Josef/Waiau township, therefore affecting a number of properties. However, because of the low recurrence interval, correlating with a high probability of fault rupture event, the guidelines suggest that new development within the Fault Avoidance Zone is limited to BI category 1 – temporary buildings only. In reality, the majority of land within the mapped Fault Avoidance Zone is already developed, and provided that the scale of the land use activity is not increased, any existing development has 'existing use rights' and would be able to continue.

- *Australia New Zealand Standard 1170: Structural Design Applications*

4.21 This standard which informs assessment under the Building Act and Building Code introduces Building Importance Categories and specifically relates these classifications to consequences following failure of the

building. Level 1 is defined as "low consequence of failure". This is stated to be defined as low consequence for loss of human life, or small or moderate economic, social or environmental consequences. This classification includes structures smaller than $30m^2$, farm buildings, isolated structures, towers in rural situations, fences, masts, walls and in-ground swimming pools.

- *West Coast Regional Group Civil Defence Plan*

4.22 The West Coast Region, along with Westland District and individual communities such as Franz Josef/ Waiau, have written Civil Defence Plans to outline the preparation, response and recovery from hazard events. A key tenet of the Civil Defence plan is the 4 R's: Reduction of risk, readiness, response, recovery. Through identifying an area of increased hazard risk and restricting development within that area, Council is contributing to the intent of the 4 R's.

Section 5: Summary of submissions and recommended decisions.

5.1 This section summarises the 20 submissions received on the plan change, links to the 9 further submissions and provides suggested decisions on those submissions and associated reasons. The reasons provided within the table are based on the amended section 32 analysis set out in Section 6, and the amended plan change wording set out in Section 7.

Section 5: Summary of Submissions by Topic and Recommended Decisions

Submission topic	Submitter	Further Submission	Recommended decision	Reason
Provide clarity around other activities within the rural zone Further guidance required for activities that are not buildings or permitted activities. Activities within the rural zone should retain their existing restricted discretionary and discretionary status	**0 West Coast Planning**	**F08 WestPower** in support.	**Accept in part**	The proposed wording as notified followed a similar structure to other hazard overlays within the Plan: the Waiho General Flood hazard area and the Severe Flood hazard area which do not replicate all rules within the Rural zone. However, it is accepted that further guidance should be provided within the General Fault Rupture avoidance zone to clarify that there is no intention to amend provisions within the rural zone that relate to prospecting, mining and vegetation clearance. It is considered that there is sufficient scope within these provisions to address hazard risk, or that these matters are better addressed through Regional Plans. Additional permitted, controlled, restricted discretionary and discretionary activities have now been added to the General Fault Rupture zone. The proposed amendments are set out in section 7 of this report. Utility rules are not considered necessary to be explicitly addressed within the two proposed new zones as these are solely subject to Section 6 of the District Plan only.
Strengthen plan provisions Consider rezoning Tatare River as "General Flood Hazard". River will aggrade significantly post earthquake. Introduce prohibited activities into Severe Flood Hazard zone. Do not renew any resource consents and only grant low impact activities. Consider all hazards facing Franz Josef / Waiau and include this within the plan change.	**1 Robert Glennie** **13 Cushla Jones and Chris Roy** **18 Diane Ferguson**	**F02- 05 Colmat Motors** in support.	**Reject in part**	Council acknowledges that an earthquake event will create significant hazard in addition to Fault Rupture. These will include avulsion and aggradation of the Waiho and other rivers throughout the District. The District Council is continuing discussions at a regional level as to how hazards in addition to fault rupture are best addressed. Council staff are also participating in a current study in community preparedness which is taking a 'whole hazard' approach. It is considered that other hazards within Franz Josef/Waiau and the wider Westland District will not be contained solely within the same proposed hazard zone and it is not considered efficient to include these provisions within Plan Change 7. Further review of the hazard provisions of the Westland District Plan will continue as part of the review of the District Plan progresses.
Withdraw plan change. Adopt rules to allow buildings with appropriate design to be constructed. Consult with residents to adopt new rules to permit modern buildings and techniques that can withstand quakes. Proposed rules go too far and are unnecessary. Modern buildings and techniques can withstand large earthquakes without risk to life or unacceptable damage.	**2 Scenic Circle Hotels**		**Reject**	The submitter has not provided any example of building techniques that can withstand a rupture of 8-10 metres horizontally and 1-2 metres vertically. It is considered that building techniques that can withstand fault rupture can be considered under the non-complying activity status. Any such building method is likely to be a significant undertaking for a land owner and mapping the area where this work is required will assist and educate landowners when considering developments in the future. Further clarification has been received in relation to assessment of building consents under the Building Act which clarified that building applications could be approved if sufficient information was provided in relation to how the provisions of the Building Code and the Building Act were met through the Verification Method.

Allow strengthening of buildings within the identified zones The plan change is simplistic. It does not address the risk to those landowners within the identified fault rupture risk area. The report states that building consents are unlikely to be approved which means that strengthening will be unable to occur, and the Council's earthquake prone building policy will be unable to be complied with. The Council is obligated to address the health and safety of those within the risk area.	**2 Scenic Circle Hotels** **7 Community Public Health** **10 Franz Josef Community Committee** **13 Cushla Jones and Chris Roy**		**Reject**	The plan change does not restrict the strengthening of buildings within the avoidance areas. The Council has obtained further information from the Ministry Business, Innovation and Employment and building consents that comply with the relevant aspects of the Code and Act may be able to be granted. Applications for building strengthening accompanied by sufficient information will be able to be approved. The Council will continue to utilise non RMA plans such as the Civil Defence Plan and lifeline studies to specifically provide for the immediate response and recovery following an earthquake event.
Support plan change Support plan change having facilitated the identification of the fault rupture avoidance zone. A plan which ensures future building restriction is a significant step towards ensuring health and safety of the public in this area. Support the plan change. Higher population density increases the risk of injury or death during an earthquake event. Agree with evidence based methodology to assess the risk and address established settlements. Minor wording suggestions are recommended to the explanation and introductory sections	**2 West Coast Regional Council** **7 Community and Public Health**	**F01 Robert Glennie** in support	**Accept in part**	The support of the WCRC in providing the underlying reports that inform this plan change is acknowledged. The proposed amendments proposed sought within the explanation and introduction sections do not alter the meaning of the plan change but a number provide clarity. A number these suggestions has been accepted. The changes are set out in section 7 of this report.
Relocate landowners within the proposed FRAZ zones with associated compensation Relocation should be offered, or a rate rebate. An approach such as that offered to relocate residents from the south of the Waiho bridge. The Council has not investigated external sources of funding for managed retreat and has dismissed this process as financially unviable	**4 Anje Kremer** **5 South Westland Salmon** **8 Colmat Motors** **15 Gavin Molloy,** **14 Rob and Jan Nicholl** **19 Mark and Kelsey Williams**	**F10 Colmat Motors** in support	**Reject**	Landowners will be able to continue to operate and maintain businesses within the two proposed zones. The relocation of the residents from the Waiho Severe Flood hazard area south of the Waiho bridge was a joint project between the West Coast Regional Council, the Ministry of Civil Defence, and the Westland District Council to relocate a discrete number of properties immediately south of the Waiho River. Land within the Severe flood hazard area was offered to be purchased by the Government. This Plan Change has been promulgated by the Westland District Council only and it is not consequently within the means of Council to offer compensation to either the 32 private land owners within the Franz Josef Waiau Fault Rupture Avoidance Zone, or the wider General Fault Rupture avoidance zone. The total capital value of private properties at least partially affected by the proposed Franz Josef/Waiau Fault Rupture Avoidance Zone is $22,805,000. The Council is

	10 Franz Josef Community Committee			not in a position to offer compensation or to fund the relocation of such investment. The previous Westland District Council Mayor Maureen Pugh facilitated meetings between representatives of the Franz Josef Community Committee and Prime Minister John Key to discuss the effects of hazards on the community and the possibility of assistance. As the Westland District is subject to a number of significant hazards, it would create a precedent to create a fund to compensate landowners within each area of hazard. The Council's priority at this stage is to identify areas of hazard risk and implement mitigation measures to address this risk over time. The Council has supported work undertaken by the Franz Josef community to shape the future development of Franz Josef/Waiau. In order to continue to decrease the post earthquake recovery of Franz Josef, the Council may elect to work with specific building owners to relocate buildings with high importance post disaster, such as the Police Station, and possibly to investigate management programmes with the petrol station. This work would be likely to be undertaken by the West Coast Regional Civil Defence Group and is more efficiently managed outside of the District Plan. Any rates rebate would not be set out within the District Plan, but the Long Term Plan for Westland. This does not currently form part of the proposed Long Term Plan for the next ten year period, however this does not preclude Council from introducing it in the future if they felt that there was a benefit to the District through subsidising the relocation of these properties. Some of these properties will be able to be developed outside of the portion that is within the proposed zone.
Reject the Plan Change on the basis of economic and financial effects The plan change affects a business that represents a lifetime of work and retirement plan. Plan change does not adequately consider financial and social effects on affected businesses and community. Landowners within the zone will be 'stuck' with little chance to sell.	**5 South Westland Salmon** **8 Colmat Motors Ltd** **6 Helen Jones** **10 Franz Josef Community**	**F02 – 05 Colmat Motors** in support	**Reject**	It is accepted that the additional restrictions brought about by the proposed plan change will impact on those who own or occupy land within the two proposed zones. Land which is only partially within the zone can be developed without restriction in the area outside of the proposed zone . The plan change as proposed will also not restrict the ability of businesses to continue to operate, maintain, improve and reconfigure in the same scale as present, or continued residential use. Permitting further expansion of activities within an area of known hazard increases the effect of a fault rupture hazard event and the financial and social effects of this. Allowing the continued expansion and investment within this zone is not providing for health and safety of residents through reducing hazard, or meeting the purpose of the Resource Management Act.

Consider managing effects of infrastructure and existing activities Note the need to continue to provide infrastructure within the proposed zone. Consider contamination risk from structures within zone eg fuel storage and post event use	**7 Community and Public Health** **20 Andrew Hocken**		**Accept**	The plan does not alter Council's provision of infrastructure within this area. The proposed provisions will allow for strengthening of buildings subject to the requirements of the Building Act which may facilitate the strengthening of buildings with required post event use. Planning for the response and recovery following an event is a matter for the Regional Civil Defence Group. This body may elect to enter into specific discussions with building owners at a later date.
Central Government Liaison Further liaison required with the community and Government to determine future of Franz. The plan change should be withdrawn until a combined community, local and central government review to take into account the social economic and cultural consequences.	**10 Franz Josef Community** **8 Colmat Motors**		**Reject**	The Council has facilitated meetings between members of the Franz Josef Community and the Government, including John Key. Council has provided information to government ministries on request to facilitate discussions. This will continue. However, it does not follow that the plan change should not continue. It is not considered efficient to allow intensification in fault rupture hazard zones while an integrated community based all hazard review takes place. It is unlikely that further hazards zone that may be created would directly follow the same delineation as the two proposed zones within this plan change and it is not considered the most effective approach to delay a response until these further hazard provisions are developed.
Clarify technical expression of risk Provide clarification as to whether the 30 year timeframe discussed within the Langridge and Beban report begins in 2011.	**9 George Tripe and Clare Ashton**		**Reject**	It is not considered necessary to add further explanation on this matter into the Plan Change. The statement relating to the probability of a rupture event occurring along the Alpine Fault being 20% in the next 30 years is a method of expressing the likelihood of an event occurring. As new research is undertaken this % could go up or down. Principally in relation to this plan change, the % is high and the recurrence interval is short.
Inability of landowners to continue to utilise land and buildings within zone. It is questionable whether property owners will be able to utilise existing use when have knowledge of health and safety risk. Will businesses be able to continue to operate as it's possible insurers will decline cover or the costs may be prohibitive and alongside other costs make the businesses uneconomic. The intent of the plan change is to effectively end occupation of the zone.	**10 Franz Josef Community Committee** **13 Cushla Jones and Chris Roy**	**F02 – 05 Colmat Motors Ltd** in support.	**Reject**	This plan change has been developed following the provision of further detailed information in relation to the location of the Alpine Fault within Westland, and the associated mapping of the fault rupture risk. This information is publicly available and exists regardless of the Plan Change. Insurance cover is controlled by the Earthquake Commission Act. Over time, Council acknowledges that a result of this plan change may be a reduction of buildings and activities within the identified FRAZ, in particular within Franz Josef. This is seen to be a positive effect as it will further reduce the potential risk to property damage and injury from an earthquake event and therefore increase the resilience of Westland to an Alpine Fault fault rupture event. However, this plan change does not require immediate movement out of the area. This allows business owners to continue to operate their business and to make informed choices. This can be funded over time.
Deficiencies and inaccuracies in plan change. The FRAZ may need to be widened. Adopting the plan change under urgency	**10 Franz Josef Community Committee**		**Reject**	The area of the proposed FRAZ, both throughout the General FRAZ, but in particular the Franz Josef FRAZ, has been created as narrow as possible with current technical information, with margins of error relating to where the fault may rupture, and a twenty metre buffer. Council is satisfied that there are no deficiencies in the science or

has added to material deficiencies and has not included discussion around acceptable risk. A more pessimistic view could be that the FAZ encompassed all of Franz Josef.				methodology that created the proposed fault rupture avoidance zones. Alterations have been made to some wording within the proposed changes to the District Plan and these relate to clarity and have been set out in section 7 of this report. It was Council's desire to implement the proposed fault rupture avoidance zones into the District Plan promptly. However consultation, public meetings and circulation of drafts of the plan change occurred under the Schedule 1 process.
Accuracy of boundary of the zone If the 130m FRAZ is conservative, what is the pessimistic view? What is the acceptable basis to imply that those outside of the 130m will be safe	**10 Franz Josef Community Committee**		**Reject**	The information supplied by the Institute of Geological and Nuclear Sciences has applied a margin of error to both zones and therefore estimates are described as conservative. The methodology utilised to create the proposed fault rupture avoidance zone follows the guidelines from the Ministry for the Environment. The report relates to fault rupture and the associated ground deformation. It does not address all the other individual hazards that will occur during an Alpine Fault earthquake eg ground shaking, liquefaction, subsidence, landslide and flooding. These will be addressed through the Building Act, Civil Defence Plans, Regional Plans, and if necessary, further District Plan changes.
Database created and maintained of heritage buildings and owners Following an earthquake, there is a necessity for decisions to be made very quickly regarding the damage status of a building, including heritage buildings. Heritage buildings play an important part in post earthquake cultural and social identity. A database containing contact details of all heritage building owners, especially within Franz Josef would enable this information to be provided to Civil Defence Management	**11 Heritage New Zealand**		**Accept**	The importance of heritage buildings to our District is acknowledged. The submission does not seek any changes to provisions of the plan change. The suggestion of a database will be discussed with Civil Defence staff to determine an appropriate format for this information.
Maintenance and repair of Heritage structures encouraged and facilitated. Consider specific activity status. Seek that Council actively promote maintenance and repair of structures within the zones. A change in activity status would facilitate this, or fee or rates reduction. Council should work in partnership with owners of St James' Church and Defiance Hut to seek comprehensive methodology to treat these buildings following an earthquake event.	**11 Heritage New Zealand**		**Reject in part**	No specific activity status has been applied to heritage buildings. However maintenance and repair of all heritage listed buildings is encouraged through the Plan and the activity status of this work would not be changed by proposed Plan Change 7. This submission has been discussed and provided to the Westland District Council Civil Defence Officer who update the District and Regional Civil Defence plans to encourage further discussion around the management of heritage buildings post-earthquake event.

Clarify permitted activity rule 5.9.2.1 (A) Temporary building is not defined and the defined 'temporary activity' does not appear to meet the intent of the proposed rule. If Council intends these buildings to be linked to Building Importance Categories, this should be clarified.	**12 The Helicopter Line**		**Accept in part.**	Reference to Temporary Buildings should read as Temporary Activities. This is proposed to be amended. Reference to "temporary activities" duplicates the permitted activity provisions elsewhere within the District Plan and temporary activities are defined within the District Plan: *"Temporary activity means any land use or structure of a short-term duration of up to 12 months and buildings and scaffolding incidental to a construction project provided that they are dismantled within 5 days of the project's completion or 12 months, whichever is the lesser; sporting events, galas and uses of a similar character provided that they do not occur more than 5 days per year; hawker carts and mobile shops which are licensed by Council; and temporary buildings provided that they are moved off the site within 5 days."* This definition is not linked to Building Importance categories. It is not considered appropriate or necessary to amend this definition through this plan change process.
Introduce Restricted Discretionary category for non-habitable buildings. The proposed plan change is too restrictive for buildings that have come to the end of their lives and sites will become devalued. Non-habitable buildings should be specifically provided for to provide balance between avoiding and mitigating effects whilst also providing for economic wellbeing of owners. Discretion could be restricted to: - Building height - Building materials - Intended use - Frequency and duration of human occupation; and - Numbers of staff/ occupants	**12 The Helicopter Line**		**Reject**	Although some non-habitable buildings will have low consequence of failure, it is not considered that commercial buildings are within this category. It is proposed to amend the proposed plan change to allow buildings of Building Importance Category 1 to be permitted activities. This will allow some of the outcomes that the submitter was seeking: use of the land for storage, carports and small scale structures. Structures greater than Building Category I represent further investment and occupation of an area established to be subject to fault rupture risk. It is not considered an effective or efficient method to achieve the purpose of the Act through utilising a restricted discretionary status. The non complying category will allow specific applications to be considered on their individual merits.
Utilise correct risk based approach suggested from the Langridge and Beban report	**10 Franz Josef Community Committee** **18 Diane Ferguson**	**F02-05 Colmat Motors** in support	**Reject**	This plan change has been informed by best practice within hazard planning in New Zealand, which includes the use of risk based planning. However, as concluded in the two reports, the consequence and likelihood of a fault rupture event occurring within the proposed fault rupture avoidance zones were 'Major' and 'Likely' respectively. Therefore, utilising the risk based matrix, the level of risk would be calculated to be 30, or 'Intolerable". This corresponds to a non-complying activity or prohibited activity. The Council did not consider that a further detailed consultation round was necessary in relation to this specific status in addition to the plan change process. Although suggesting use of the 'risk based approach' the submitters have not addressed the aspect of the non-complying status that is disagreed with, or made suggestions to be considered.

General Fault Hazard Zone does not have sufficient detail. Local residents will have greater knowledge of the location of the fault line and associated rupture zone	**14 Rob and Jan Nicholl**	**F07 Dene Bristowe** in support	**Reject**	The general rupture zone width varies throughout the zone to reflect the difference in quality of data and therefore the increased margin of error. The proposed rules within the general fault rupture avoidance zone allow for further study to be undertaken on specific sites and provided to Council. If this further study identifies the location of the fault in greater detail and establishes that the proposed building is located outside of the fault area, then any building is a permitted activity. I accept that local residents have significant understanding of the locations that they reside in. However Council will need to ensure that these reports are provided by a suitably qualified professional.
Risk of fault rupture should be borne by landowners and managed through insurance	**14 Rob and Jan Nicholl** **19 Mark and Kelsey Williams**	**F07 Dene Bristowe** in support	**Reject**	Further risk reduction can occur through Civil Defence planning, Insurance and the Building Act. However, introducing provisions to the District Plan allows Council to manage and reduce the risk of fault rupture prior to the event through locating activities outside of the zone where possible. The proposed fault rupture zones are considered necessary to meet the purpose of the Resource Management Act through preventing intensification of risk within these areas. Activities within the proposed zones will be able to continue to operate.
Council should provide further geotechnical advice directly to landowners rather than leave it to developers to obtain.	**14 Rob and Jan Nicholl**	**F07 Dene Bristowe** in support		The Council has supported the West Coast Regional Council to obtain the funding necessary to be able to undertake the two studies that have provided the proposed Fault Rupture Avoidance Zones. The General Fault Rupture Avoidance Zone is at an appropriate scale for the West Coast Region and largely covers 'rural' land. The second report was generated in relation to Franz Josef due to the density of development affected by the proposed zone and the lack of detailed data in relation in that location. Although Council acknowledges that the implementation of the proposed rules within the General Fault Rupture Avoidance Zone will mean landowners may incur additional costs to obtain reports, it provides a method for owners who wish to utilise land within the proposed zone. It would not be economic for the Council to undertake further detailed study in relation to individual properties. Landowners have the ability to obtain further reports if this will assist them to realise development goals, or to avoid that particular area of their property if it is part of a larger rural block. This approach reflects the Regional Policy Statement which seeks a 'user pays' approach to hazard mitigation.
Effect on Urban Revitalisation Plan for Franz Josef Council supported the "Urban Revitalisation Plan for Franz Josef" (2010) Council was fully aware of the reports and did not advise this information. This has cost the community time and money	**13 Cushla Jones and Chris Roy** **19 Mark and Kelsey Williams**		**Reject**	The Council circulated the individual reports to all land owners identified within the areas of fault rupture hazard upon the receipt of each report. Franz Inc, a business development society of Franz Josef, was sent a copy of the GNS reports in 2010 prior to its consideration by the Strategy Committee to facilitate discussion around the Franz Josef Revitalisation Plan or Master Plan that the Council was aware was in development. The Chair of Franz Inc met with the Strategy Committee to discuss the proposed plan change and the Revitalisation Plan at their November 2011 meeting. Council has set aside a fund of $100000 in the 2012 LTP which is targeted for the Franz Josef Urban Revitalisation Plan. This fund remains available to be utilised to implement the Master Plan. The Council remains of the view that this plan requires amendment in

				relation to the identified Fault Rupture Avoidance Zone.
Non regulatory assistance Non regulatory policies should be developed to assist and encourage development outside of the risk area.	**15 Gavin Molloy**		**Reject**	Although Council will continue to consider methods to encourage development within all communities, especially in areas outside of hazard risk, it does not form a specific part of this proposal. The Council continues to wish to facilitate development in accordance with an amended Master Plan that avoids the proposed Fault rupture zone.
Building Importance Category 1 should be permitted. This addresses ability of farmers who have already invested in farm planning and infrastructure in a certain method to continue without significant adverse economic effect that is outweighed by risk. This also reflects the guidance from MfE "Development next to Fault lines".	**16 Federated Farmers**	**F06 Dene Bristowe** in support **F09 WestPower Ltd.** In support	**Accept**	It is agreed that buildings of Low Importance category should become a permitted activity. The Plan Change has been amended on this basis.
Development should be able to occur The plan change should be withdrawn to allow future plans for properties to be realised, in particular subdivision and construction of new and extended dwellings	**17 Dene Bristowe**		**Reject**	The Council considers that this Plan Change is necessary to avoid and mitigate the effects of a fault rupture event and to meet the purposes of the Resource Management Act. The submitter concerned owns land within the proposed General Fault Rupture Avoidance Zone, so parts of the land outside of this zone will remain able to be built upon. The areas within the proposed zone are not considered suitable locations for new dwellings to be constructed due to the threat to life and property.

Section 6 Section 32 assessment

6.1 The following assessment considers the effectiveness and efficiency of the rules and other methods that are appropriate to avoid and mitigate the risk of fault rupture. The assessment will also address the benefits and costs of each method. This assessment has been amended following analysis of submissions.

6.2 As required by the previous Section 32 of the Resource Management Act, this report outlines possible options to achieve Policy 3.13.1 of the Westland District Plan in relation to fault rupture hazard, and provides an assessment of the appropriateness of each approach.

6.3 The development of this report has drawn heavily on the two technical reports prepared by GNS and these should be considered to form part of the Section 32 assessment.

Langridge, R and Ries W, 2009. Mapping and fault rupture avoidance zonation for the Alpine Fault in the West Coast region. GNS Science Consultancy Report 2009/18. 47p.

Langridge, R.M. and Beban, J.G 2011. Planning for a safer Franz Josef-Waiau community, Westland District: considering rupture of the Alpine Fault, GNS Science Consultancy Report 2011/217 61p

- **Option 1: Do nothing**

6.4. Continuing the current situation will mean that the location of the Alpine Fault within Westland remains undefined in the District Plan, and that land identified as being located within an area that is likely to be susceptible to fault rupture during an earthquake event will not have any different status.

Existing provisions of the Westland District Plan

6.5. The Westland District Plan contains provisions which require subdivision applications to identify if the land is subject to hazard, however the existence of a hazard does not affect the status of the application. Subdivision within the Tourist Policy settlements such as Franz Josef / Waiau would remain a controlled activity. Hazards associated with fault rupture, such as erosion, subsidence, slippage or flooding, could be considered under section 106, although not rupture itself.

6.6. Commercial activities within the Tourist Zone and residential activities within the Tourist Policy Unit of Franz Josef/ Waiau would remain permitted activities subject to performance standards which do not include avoidance of hazard risk.

6.7. Dwellings within the rural zone are controlled activities and Council does not retain control over hazard identification or mitigation. Applications for rural dwellings on or in close proximity to the Alpine Fault would not be restricted by the Westland District Plan. For activities where Council has retained full discretion, fault rupture hazard risk can be considered.

6.8. It is not considered that the existing provisions within the District Plan, or within the Resource Management Act, provide Council or the community with certainty. This is because development could continue to occur within an area identified to be subject to fault risk, therefore increasing the value of investment, buildings and potentially people that will be located within these areas during an earthquake and associated fault rupture, and therefore natural hazard risk.

Existing provisions of the Building Act

6.9. If no additional rules or methods are added to the Westland District Plan, structures erected within areas known to be subject to fault rupture risk would not receive any specific classification under the Building Act. Fault rupture is not classified as a hazard that enables Councils to decline building consent under section 71 of the Building Act 2004 due to hazard risk. However, the New Zealand Building Code Clause B1 relating to Structures includes an objective to safeguard people from injury caused by failure of a structure and loss of amenity due to behaviour of the building.

6.10 The Building Code requires that new buildings must be ensured to be of "Low probability of rupturing during the life of the building" and ensure that there is a "Low probability of loss of amenity". Building Consent processors are able to take into account the importance level of the building when making this determination. In order to be able to approve a building consent within the area affected by the proposed plan change, the processors need to ensure that the building has a function that will not be likely to cause injury during a fault rupture event, and will not cause a loss of amenity in a fault rupture event. Specific advice has now been obtained from the Ministry of Business,

Innovation and Employment that proposed buildings that meet B1VM1 by way of the verification method and apply near-fault factors will not be able to be declined on the basis of location on the fault line.

6.11 Under the current Building Act, alterations and additions to existing buildings require reassessment of the entire building against the current Building Code. Alterations and additions to non-residential building that affect over 30% of the building must meet the requirements of the Earthquake Prone Building Policy building assessment and an engineering assessment will be required. There is some building work that can proceed without the need for building consent and accordingly are not considered by Council. Imminent changes to the Building Act that are awaiting regulations will reduce processing and inspection requirements of buildings defined as "low risk".

Benefits and Costs

6.12 Without the introduction of restrictions, landowners within the proposed fault rupture areas will be able to continue to realise their development goals for their sites.

6.13 Existing buildings will be subject to the provisions of the Insurance Act to assist in post disaster recovery. If the plan change does not proceed, existing investment may be protected from alterations to insurance premiums, although Council staff have been informed that insurance companies are paying greater attention to potential hazard risk following the Canterbury earthquakes and may utilise the public information relating to the Alpine Fault location to make decisions independent of any Council led process.

6.14 The most significant cost relating to the retention of the current situation is the continued development of additional activities in a location known to be at significant risk during an earthquake event. This will increase the risk to occupants of buildings and the potential for loss of life and significant injury.

6.15 It is unlikely that any building could be built to withstand the projected rupture of up to 9 metres horizontally and up to 2 metres vertically. This will exacerbate the costs of rebuilding, slowing Westland's recovery from an earthquake, alongside insurance, and inconvenience to the community as buildings lose their function. Within Franz Josef, there is currently $22,805,000 of investment located on land that is at least partially impacted by the proposed

Franz Josef Waiau Fault Rupture avoidance zone. Development within Franz Josef is steady, as businesses establish, expand and alter to meet the needs of the tourism industry and associated service buildings and dwellings. It is likely that this amount of investment would increase over time.

6.16 Owners wishing to develop areas known to be subject to fault rupture risk may invest significantly in their project prior to lodging for building consent and becoming aware of the certification required to achieve compliance with the Building Code by way of the Verification Method. If applicants are then unable to obtain this certification from a suitably qualified professional, this will create a cost. Building applicants will also need to meet the costs of obtaining technical advice. However, this may not exceed the cost of that required for a normal building consent application.

6.17 It is considered that allowing development in areas subject to fault rupture risk will significantly increase costs to the community. Over the long term, development and investment will continue in areas known to be subject to significant hazard. This does not increase the post-disaster resilience of the community and can lead to increased costs for recovery.

Efficiency and Effectiveness

6.18 Relying on the Building Act will not address fault rupture risk over a long period of time and will not prevent an increase in scale of an activity on a site unless this triggers the need for a building consent. It may also be costly to building consent applicants who may invest in building plans and discover at building consent that their activity is unable to meet the requirements of the Building Act. This is not considered efficient planning for development within Westland.

6.19 If Council does not respond to this information it will be failing to meet the purpose of the Resource Management Act as it is not providing for the long term future of Westland or the health and safety of residents. It is also considered that there is a public expectation that Council will respond to detailed information locating a hazard, such as the two reports generated by the Institute of Geological and Nuclear Sciences. The Westland District Plan will not be giving effect to the provisions of the West Coast Regional Policy Statement, or putting measures in place to reduce hazard risk as promoted by the West Coast Civil Defence Plan.

- **Option 2: Proposed Plan change**

6.20 Through identifying and mapping the Alpine Fault within Westland and mapping buffers around the fault line, the areas susceptible to fault rupture have been identified. Council has then created a specific set of provisions to manage development that can occur. Two separate avoidance zones are proposed, to separate the Franz Josef / Waiau area where the fault location is very well defined, from the rest of the District which contains the variations in accuracy.

6.21 The benefits of this approach are that the areas at risk of rupture are clearly defined and land owners within these areas are able to readily ascertain the process in which development may occur and what restrictions apply.

6.22 Through management of activities within the area of defined risk, the resilience of the community will increase, as over time there will be a reduction in hazard as buildings and activities move away from the areas of established risk. The risk to life during an Alpine Fault event will be reduced or will not increase.

6.23 The Council is mindful of the fact that existing use rights under section 10 of the Resource Management Act will not be altered by the introduction of this proposal. Strengthening of proposed buildings will also remain unaffected by the provisions of the District Plan although will be required to meet the Building Act and Code.

Evaluation of specific rules:

General Fault Rupture Avoidance Zone

6.24 Activities within the General Fault Rupture Avoidance Zone require compliance with the Rural rules for the wider Westland District, with specific additional rules relating to built structures. Any building currently located within the General Fault Rupture Avoidance Zone that has obtained a report that establishes in greater accuracy the location of the Alpine Fault trace, and establishes an appropriate buffer for fault rupture risk and then certifies that the proposed building will be outside that area, will remain a permitted activity. These provisions apply also for dwellings, although the activity status in this case reverts to the controlled activity status for dwellings in rurally zoned land elsewhere in the District.

6.25 Buildings that are not accompanied by a technical report, and are located within the General Fault Rupture Avoidance Zone, will be non-

complying activities. This will discourage the location of buildings within this area, thereby achieving the intent of Objective 3.13.1.

Franz Josef/ Waiau Fault Rupture Avoidance Zone

6.26 To reflect the greater accuracy of mapping data available for the Franz Josef/Waiau township, reference to the ability to obtain further data to establish that proposed buildings are outside of an area of possible fault rupture deformation has been removed from the proposed Franz Josef/ Waiau Fault Rupture Avoidance Zone. The plan change consequently strongly discourages additional development within the zone through a non-complying activity status for any new building work that is not Building Category 1.

Subdivision Rules

6.27 Two differing activity statuses are suggested for subdivision within the District that is subject to either of the Fault Rupture Avoidance Zones. Subdivision of land that is partially affected by the Fault Rupture Avoidance Zone is a discretionary activity, whereas land located entirely within an area subject to fault rupture risk is an noncomplying activity. This allows land that is partially affected to be subdivided, along with specific consideration of the fault rupture risk being addressed during the subdivision process, such as through the use of consent notices. Subdivision of land entirely within an area subject to fault rupture is discouraged through a non complying activity status.

Benefits / Costs

6.28 The proposed fault rupture avoidance zone within Franz Josef/Waiau crosses properties owned by 32 private landowners. A total of 14 of these properties are entirely located within the zone, and 4 properties have less than 10% of their land area affected by the proposed zone. The total capital value of the privately owned properties impacted in some way by the proposed zone is $22,805,000. The introduction of the rules will significantly restrict the future development on these properties. However, the plan change also seeks to ensure that the amount of investment at risk within these properties is not significantly increased. This will consequently reduce the financial cost of the effects of a fault rupture event, and will increase the ability of these landowners, along with the wider community, to recover economically.

6.29 Of the 47.75 hectares of Tourist Zoned Land within Franz Josef/Waiau, the proposed Fault Rupture Avoidance Zone affects 3.95 hectares. The Council considers that these areas are sufficient to ensure that landowners who choose to purchase alternative properties outside of the hazard areas will be able to do so without further rezoning and with limited need for land use consent. In addition, the Franz Alpine Resort is zoned to be a future growth area of Franz Josef which is also largely unaffected by the proposed fault rupture avoidance zone.

Ongoing risk to existing activities.

6.30 A number of existing buildings that have important post disaster functions, such as the Police Station, are located within the proposed fault rupture avoidance zone. Other buildings, such as the community hall and fire station are located on the opposite side of the fault scarp from the rest of the Franz Josef, and deformation will prohibit access to and use of these buildings post disaster. In order to further facilitate response and recovery post-earthquake, the relocation of such facilities should be considered and discussed with the landowners concerned. It is considered that these matters are best addressed through lifelines discussions as part of the West Coast Regional Civil Defence Group, and funded by those agencies overtime, rather than specifically directed through this plan change.

6.31 Development within the established zones will not realise an immediate reduction in risk as businesses such as the existing accommodation and restaurants could continue to operate, thus not reducing any risk to the community over the short term. Under section 10 of the Resource Management Act the Council does not have the ability to remove existing use rights. However, property owners and occupiers may make individual decisions on risk exposure and chose to relocate. Alternatively owners of properties that are partially affected will be able to continue to develop outside of an area of known hazard, reducing potential risk to those buildings.

6.32 It is likely that the plan change will lead to a reduction in investment in the fault rupture avoidance areas and could lead to the stagnation of buildings within the avoidance zone and a decline in urban form over time. This will be dependent on the stage of building life and condition of the buildings on site. Within Franz Josef, the community has produced an Urban Revitalisation Plan, which currently includes a walkway along the fault trace. With amendment, this zone could be recaptured as a green space or town square over time. Any

amendments to the Urban Revitalisation Plan will incur costs on the community.

6.33 Obtaining technical advice in order to better locate the fault line on a specific site in order to demonstrate the location of a building outside of the fault rupture zone will place costs on the landowner concerned. However, within the 'General Fault Rupture Avoidance Zone', the majority of the land is zoned rural and therefore it is likely that alternative suitable building sites will exist outside of the avoidance zone. Council has contributed to further more detailed study in Franz Josef/ Waiau to remove these costs for residents.

6.34 Clearly identifying the areas subject to hazard risk enables certainty for those not subject to this risk. This will allow Franz Josef to continue to expand, providing continued economic growth to the District, whilst also facilitating development outside of the area of hazard.

Effectiveness and efficiency

6.35 It is not considered necessary to require consent for any building or activity if only a part of a site is affected by the fault avoidance zone. The fault avoidance zones contain margins for uncertainty so it is not necessary to impose a further buffer to the edge of properties. This also reduces costs on those who have only part of their site within the zone.

6.36 Through heavily restricting the type of building in the fault rupture avoidance zone, the potential risk to health and safety and the economic and social effects of a fault rupture event are reduced. Permitting buildings with low consequence of failure allows landowners scope to continue to utilise land in a manner that will not increase the consequences of fault rupture. Commercial building and residential dwellings pose a significant risk to health and safety and therefore retain their non-complying status.

6.37 As a result of allowing existing uses to continue to operate within the two fault rupture avoidance zones, the existing risk experienced by those landowners and occupiers is not immediately reduced. However, the Council considers that the plan change, along with its supporting information, will fully inform land owners and allow individuals and

businesses to make decisions based on risk. It is expected that over time, this will lead to a reduction of occupation of these areas.

6.38 Whilst continued discussion around the range of hazards affecting Westland District and in particular Franz Josef/ Waiau is supported by Council, it is not considered that efficiency would be added to this plan change through the use of a 'whole hazard' approach. Hazards such as flooding or landslide risk may affect similar or completely different areas of the township and will require separate detailed study to establish the extent of the risk and possible regulatory responses to mitigate or avoid any such risk. It is not considered that delaying the identification of fault rupture risk will benefit the approach to hazard mitigation for the Westland District. Further hazard review should occur as the Regional and District Councils review their relevant plans.

- **Option 3: Risk Based Planning**

6.39 The Langridge and Beban report suggested utilising an emerging method for assessing and planning for hazards: "risk-based planning" as an approach to the Franz Josef/Waiau Fault Rupture Avoidance Zone. This approach involves consulting with the community to establish levels of acceptable risk, and using the response, along with information on the consequences of the hazard alongside the likelihood of it occurring, to create a matrix that is then utilised to create consent status.

6.40 There is a benefit in this approach that it involves the consideration of a number of factors over and above the return period of an event. A number of submissions stated a view that the Council had not undertaken a thorough 'risk-based analysis' as suggested by the GNS reports. The risk based approach anticipates further in depth discussion with the community to further explore varied activity statuses for buildings and associated risks. The reason for the Council's limited use of this approach was that the significant social, health, economic and environmental effects, coupled with the high recurrence interval, meant that the weighting of the hazard would be very high. The Council is not aware of further methods available to further identify the location of the Fault or the area subject to fault rupture risk, therefore the width of the hazard area could not be further reduced. It was therefore considered that further work to add additional detail and considerations into the matrix was not efficient and the non-complying status has been utilised.

6.41 The risk based assessment matrix is discussed in further detail on the following pages.

1. *Determine the severity of the consequences*

6.41 Two papers of Saunders 2011 are referenced within the GNS report. The table below sets out possible descriptions of consequences.

Figure 1: Scale and impact of consequences.
(Reproduced from Langridge, R & Beban, J. (2011) Mapping and fault rupture avoidance zonation for the Alpine Fault in the West Coast region. GNS Science Consultancy Report 2011/217 Figure 19 page 39. Original source Saunders 2011)

Scale of impact	Description of consequences				Severity of Consequence
	Health & safety	Social	Economic	Environmental	
Major	Multiple fatalities, or significant irreversible effects to >50 persons.	On-going serious social issues. Significant damage to structures and items of cultural significance	Severe i.e. over $10 million -or- more than 50 % of assets	Severe, long-term environmental impairment of ecosystem functions	VI
Severe	Single fatalities and / or severe permanent disability (>30%) to one or more people.	On-going serious social issues. Significant damage to structures and items of cultural significance	Major i.e. between $1 million and $10 million -or- 10-50 % assets	Very serious, long-term environmental impairment of ecosystem functions	V
Moderate	Moderate irreversible disability or impairment (<30%) to one or more persons.	On-going social issues, permanent damage to buildings and items of cultural significance	Moderate i.e. between $100,000 and $1million -or- 10 % of assets	Moderate, short term effects by not affecting ecosystem functions	IV
Minor	Reversible injury possibly requiring hospitalisation.	On-going social issues, temporary damage to buildings and items of cultural significance	Minor i.e. between $10,000 and $100,000 -or- 1 % of assets	Minor effects on physical environment	III
		Medium-term social issues, minor damage to dwellings	Minor i.e. between $10,000 and $100,000 -or- 0.1% of assets		II
Negligible	Minor first aid or no medical treatment required.	Negligible short -term social impacts on local population, mostly repairable	Small i.e. less than $10,000 -or- 0.01% of assets	Insignificant effects on physical environment	I

6.42 Saunders then sets out the MCDEM "seriousness ranking" which suggests that the components of the above consequences are weighted when considering the overall consequences of an event.
The weighting is set out in the table on the following page, along with the corresponding scale of impact described in Figure 1 above.

Consequence	Weighting	Scale of impact
Social	50%	Major – VI (multiple fatalities)
Built	25%	Severe – Significant damage to structures and items of cultural significance
Economic	15%	Major– over $10 million damage. More than 50% of damage to assets
Natural	10%	Moderate – Moderate, short term effects by not affecting ecosystem functions.

6.43 Utilising the above weighting, the overall weighting is Major, or a severity of consequence of VI.

2. *Evaluate the likelihood of the event*

6.43 Utilising Figure 20, adapted from Saunders 2010, the risk of the earthquake reoccurrence is given as a 333-year event. This corresponds to be between 5 and 6 on the consequence scale.

6.44 Inputting these into the corresponding table (Figure 21), this corresponds to a score of 30, which is suggested to be a non-complying activity. This is depicted in Figure 25 of the Langridge Beban (2011) report and reproduced below.

Figure 2: The risk based planning framework*(Reproduced from Langridge, R & Beban, J. (2011) Mapping and fault rupture avoidance zonation for the Alpine Fault in the West Coast region. GNS Science Consultancy Report 2011/217 Figure 25 page 43. Original source Saunders 2011)*

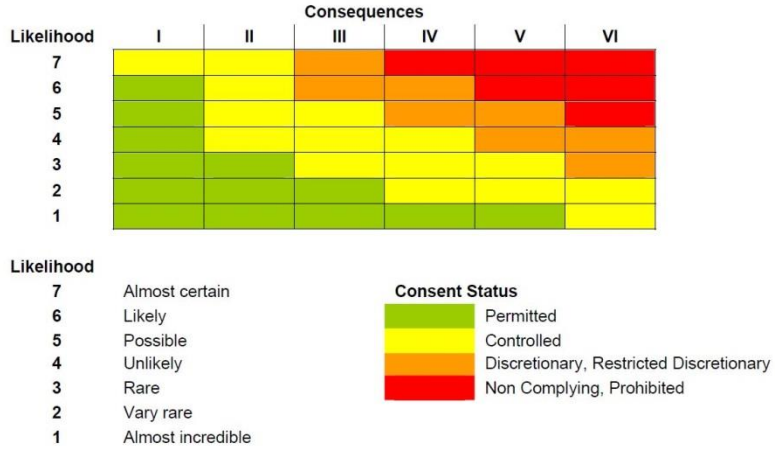


Figure 25 The risk-based planning framework (Source: Saunders 2011).

6.45 The results of the risk based approach supports the non-complying activity status proposed. It was not considered efficient to utilise the risk based approach further as a method of approaching fault rupture

hazard mitigation in Westland District due to high likelihood and consequences of the hazard. There was similarly no opportunity for variation in the width of the Franz Josef /Waiau Fault Rupture Avoidance Zone, although over time the General Fault Rupture Avoidance Zone will be able to be reduced through further study. It was considered that the community will be involved in discussions around acceptable risk during the Plan Change process. Following feedback within submissions the plan change has been amended to allow buildings of low importance category as a permitted activity.

6.46 As the conclusion of the assessment above is that rules will be implemented into the District Plan to control development and introduce a non-complying status, the costs and benefits of implementing a plan change would be identical to those of the current proposed plan change.

- **Option 4: Relocation**

6.47 In order to require all existing activities within the proposed fault rupture avoidance zones to cease, Council must provide compensation. This would need to be funded through the Annual Plan and Long Term Plan process, or through external funding. Council would also need to source land for relocation to. In the case of Franz Josef /Waiau, there is available land at present for individual landowners to choose to move to, to north of the township, and also within the Franz Alpine Resort.

6.48 It is not considered that relocation represents a 'reasonably practical' option for the Council as it is not in a position to offer compensation and therefore relocation wouldn't be considered to be within Council's resources, duties and powers. The capital value of land and improvements affected by the proposed Franz Josef fault rupture avoidance zone is over $22 million. Further improvements and buildings are also located to a lesser extent within the proposed General Fault Rupture avoidance zone. This would be a significant burden on ratepayers within the District to meet the costs of compensation or relocation. Relocation of all buildings out of the two fault rupture zones would be a significant undertaking. Council will instead continue to contribute towards the planning of the District to ensure that there is attractive land outside of the fault rupture hazard areas, and Civil Defence planning to assist in the immediate response and recovery post event.

- **Risks of not acting/ acting on current level of information.**

6.49 Council has proceeded with this plan change in order to respond to two reports from GNS which provide the most up to date information on the fault line location and corresponding fault rupture risk zones. Some areas of the fault line are not well-defined and there will be a cost to those owners to obtain further advice if they wish to develop within the zone, however this is considered to be an appropriate sharing of cost between Council and the community.

6.50 The risk of not acting is that development and activity would continue to expand within the Fault Rupture avoidance zone and the potential hazard would therefore be increased. The Council considers that the detail of the location of the fault line and the area of land subject to deformation during fault rupture is sufficient to introduce specific provisions into the District Plan. The plan change has proceeded on that basis.

Section 7: Recommended changes to the Westland District Plan

7.1 Following the analysis of submissions, and of the plan change under Section 32, the following section outlines the proposed alterations or additions to the Westland District Plan. Any additional alteration to the District Plan following notification and the analysis of submissions is noted in **blue**.

- Add additional wording into Policy 4.14 Explanation, page 99

> The Alpine Fault is located within Westland and there is significant risk posed by **the next** ~~**an**~~ Alpine Fault earthquake which has a probability of occurrence calculated at 20% over the next 30 years (Langridge, RM; Beban, JG 2011).

- Amend Rule 5.6.2.2 B, (Page 153) Controlled Activities in the Rural Zone to include reference to the General Fault Rupture Avoidance Zone and the Franz Josef/ Waiau Fault Rupture Avoidance Zone. New wording is underlined.

> "The establishment of new buildings for the purposes of any residential activities except in
> - the Waiho River General Flood Hazard Area as shown on Planning Map 14A ,
> - the Franz Josef/Waiau Fault Rupture Avoidance Zone; or
> - within the General Fault Rupture Avoidance Zone.
>
> Applications may be considered without the need to obtain the written approval of affected persons or publicly notify the application. The matters over which control is reserved are:

- Add new section 5.8 General Fault Rupture Avoidance Zone and 5.9 Franz Josef / Waiau Fault Rupture Avoidance Zone (detailed on following pages).

5.10 General Fault Rupture Avoidance Zone

5.10.1 Description

The General Fault Rupture Avoidance Zone is an area of between 20 and 200 metres wide located on either side of the Alpine Fault as it runs through the length of Westland District. This zone is the area that is predicted to be seriously affected by fault rupture during an earthquake on the Alpine Fault.

The zone has been created and mapped by the Institute of Geological and Nuclear Sciences (GNS) utilising data from a number of sources. The width of this zone depends firstly on the type of fault at any given point and therefore its performance during an earthquake event, and secondly, variations in the accuracy of data available at any particular location.

GNS predict the probability of **the next** ~~**an**~~ Alpine Fault earthquake event **occurring**, with fault rupture to the surface, ~~**occurring**~~ is 20% within the next 30 years. Along the fault rupture it is estimated that there will be approximately 8-9 metres of horizontal displacement (to the north) on the west (Australian plate) side, and 1-2 metres vertical uplift on the east (Pacific Plate) side. As land deformation will be greater on the vertical lift or "hanging wall" side of the fault rupture, the Fault Rupture Avoidance Zone is wider on the east (Pacific Plate) side.

In order to manage the risk to human life and reduce effects on the long term recovery of the Westland District from an Alpine Fault earthquake event, it is necessary to restrict the types of activities that can occur within areas susceptible to fault rupture. However, in recognition of the fact that in some areas the location of the fault is not well defined, landowners are given the opportunity to obtain further technical advice regarding the fault**'s** location on specific sites. If the further report identifies a narrower area of predicted fault rupture, then this may be approved through consent. Subdivision, commercial activities, and dwellings are discouraged in the General Fault Rupture Zone due to the increased hazard risk and the lack of available mitigation measures. **Buildings with low consequence of failure remain permitted activities. There is similarly no alteration to general activities within the rural zone.**

5.10.2 Zones

5.10.2.1 General Fault Rupture Avoidance Zone

A. Permitted Activities

- Any agricultural or forestry activity, subject to:

(1) Compliance with the standards for permitted activities in the Rural Policy Unit rules 5.6.2.2 and set out in Table 5.7;

(2) Compliance with the general rules in Part 8;

(3) **Any buildings that meet the definition of Building Importance Category I.**

(4) Any buildings **that are not considered Building Importance Category I and** are not used for residential purposes, subject to:

(a) The provision of a report to Council from a suitably qualified person in geology or geotechnical engineering with specialisation in earthquake risk assessment that :

i. Records the survey and mapping of the site to identify and indicate as accurately as possible the location of the surface position of the plane of any active fault.

ii. Establishes the area that is likely to be subject to fault rupture and includes any buffers for uncertainty and establishes that the proposed building is located entirely outside of this area.

(b) Compliance with all other rules in Part 5.6.2.2A, 5.7 and Part 8 of the Plan.

- **Prospecting activities as defined by the Crown Minerals Act 1991 and all reconnaissance exploration activities up to and including drilling, scout trenching and geophysical surveys, subject to compliance with all rules in Part 5.6.2.2A, 5.7 and Part 8 of the Plan.**

B. Controlled Activities

- The establishment of new buildings for the purposes of any residential activities that are accompanied by:

(a) A report from a suitably qualified person in geology or geotechnical engineering with specialisation in earthquake risk assessment that :

i. records the survey and mapping of the site to identify and indicate as accurately as possible the location of the surface position of the plane of any active fault.

ii. Establishes the area that is likely to be subject to fault rupture and includes any buffers for uncertainty and establishes that the proposed building is located entirely outside of this area.

Applications may be considered without the need to obtain the written approval of affected persons or publicly notify the application. The matters over which control is reserved are:

- financial contributions relating to the provision of potable water and roading
- location of access points
- method of effluent disposal
- distance from existing activities which may have nuisance effects
- visual and aesthetic values

- **Advanced exploration activities (i.e. matters subject to reconnaissance exploration, but still able to be carried out under an exploration permit) including geophysical surveys using explosives and machine scout trenching, subject to compliance with the standards for controlled activities (Table 5.7), general rules in Part 8. Control matters are listed within rule 5.6.2.2B**

C. Discretionary Activities

- **Forestry above an altitude of 1000m.**
- **The clearance of more than 2000m^2 of indigenous vegetation per 5 years per site:**
  - **(a) Where the contiguous land is managed for conservation purposes, or;**
  - **(b) From an area of indigenous vegetation in excess of 5 hectares.**
  - **(c) From a natural wetland**

  This rule does not include:
  - **(a) Exotic plantation forest area**
  - **(b) The clearance of regrowth vegetation to maintain existing tracks and stock crossings**

(c) The incidental clearance of indigenous vegetation to control gorse, broom or other exotic plant pests.

D. Restricted Discretionary Activities

- **Mining. The matters over which discretion is restricted is set out in rule 5.6.2.2D.**

E. Non complying activity

Any new building, building extension or alteration of an activity to increase the scale of effects of an activity within a building located within the Fault Rupture Avoidance zone.

Explanation

Through restricting the use of land subject to fault rupture, Council is managing natural hazard risk and providing for the health and safety of the residents and visitors to Westland.

Farming activities may occur without consent, **and prospecting, vegetation clearance and mining activities receive no additional restriction. However, any buildings over building category 1**, ~~**including farm sheds**~~ require consent. **In addition to the risk to occupants of these buildings during rupture, these** buildings can be significant investments ~~in the infrastructure of a farm~~ and will have significant economic effects if destroyed by fault rupture. This **in turn** will adversely affect Westland's recovery from an Alpine Fault Earthquake.

Council acknowledges that the detail and accuracy of the underlying information that formed the Fault Avoidance Zone was varied, so in situations where the fault is not well defined, a further report can be presented that provides additional detail into the location of the fault on the specific site, and the risk of fault rupture. This will allow the margins of error to be reduced and may allow the development to proceed without consent.

Development of new buildings within the General Fault Rupture Avoidance Zone that are not established through further study to be outside of fault rupture and are not considered of low risk are non-complying and are unlikely to be approved.

5.11 Franz Josef / Waiau Fault Rupture Avoidance Zone

5.11.1 Description

The Alpine Fault passes through the township of Franz Josef/Waiau and subsequently the town is subject to significant risk from fault rupture. A detailed study has been undertaken to map the location of the Alpine Fault through Franz Josef/Waiau and the surrounding area utilising LiDAR imagery and RTK GPS mapping. Within this area, the fault is considered "well defined" ~~in this location~~ and it is unlikely that further study would reduce the area of land identified as subject to fault rupture risk any further than that set out in the 2011 GNS report. New developments and increases or alterations to activities within this area are heavily restricted in order to ensure the health and safety of residents and visitors.

5.11.2 Zones

5.11.2.1 Franz Josef / Waiau Fault Rupture Avoidance Zone

A. Permitted Activities

Any commercial or residential activity, subject to:

(1) No buildings other than temporary activities ~~buildings~~ or buildings of Building Importance Category I are permitted in association with these activities;

(2) Compliance with the standards for permitted activities in the Tourist Policy Unit or Franz Alpine Resort;

(3) Compliance with the general rules in Part 8;

B Non complying activities

The construction of any new building not permitted under section 5.11.2.1A(1) above or section 6 of this Plan, or extension of any existing building, or change or increase in an activity within a building on site within the Franz Josef Waiau Fault Rupture Avoidance Zone

5.11.3 Explanation

Existing use rights under Section 10 of the Resource Management Act are not impinged by the above rules.

The location of the fault line within Franz Josef/ Waiau is well defined and therefore there is no opportunity for additional information to be provided in order to reduce the margin of error of the predicted rupture risk area.

Ancillary commercial and residential activities that do not require buildings are permitted, **along with structures with a minor consequence of failure such as small storage sheds and non-commercial or residential buildings will be permitted.** This allows activities such as carparking, **storage, recreation areas, art installations** and gardens to occur without consent. ~~**however any**~~ **Buildings that do not meet this classification** will be unlikely to be approved due to the risk to human safety **and to reduce the risk of social, economic and environmental effects caused by a fault rupture event** .

- Make the following alterations and additions to the subdivision section (Part 7.3 of the Plan, from page 182). New wording is underlined.

7.3.3 Discretionary Activities

Any subdivision which complies with the rules for discretionary activities in Table 7.1. All subdivision in the Waiho River General Flood Hazard Area as defined on Planning Map 14A. Any subdivision that is partially located within the Franz Josef/Waiau Fault Rupture Avoidance Zone or the General Fault Rupture Avoidance Zone.

7.3.4 Non-complying Activities

Any subdivision which is not a permitted, controlled or discretionary activity. All subdivision in the Waiho River Severe Flood Hazard Zone as defined on Planning Map 14A. Any Subdivision of land that is entirely located within either the Franz Josef/Waiau Fault Rupture Avoidance Zone or the General Fault Rupture Avoidance Zone.

7.6 Assessment of Discretionary Subdivision

- When a proposed subdivision includes land partially within the Franz Josef/Waiau Fault Rupture Avoidance Zone, or the General Fault Rupture Avoidance Zone, whether a report has been provided from a suitably qualified person in geology or geotechnical engineering with experience in earthquake assessment to demonstrate that any buildings are located outside of the relevant fault rupture avoidance zone, whether access can be achieved, if ground topography will cause additional adverse effects during fault rupture **and w**hether any mechanisms have been volunteered to prevent development within the Fault Rupture Avoidance Zone.

- Insert the following definitions into Part 9: Definitions section of the Plan.

Franz Josef/Waiau Fault Rupture Avoidance Zone: means the area encompassing the active fault system within Franz Josef/ Waiau and suggested to be subject to elevated risk of a fault rupture hazard. This section of the Alpine Fault has been accurately determined utilising LIDAR and GPS mapping. Shown on the planning maps as Franz Josef/ Waiau Fault Rupture Avoidance Zone

General Fault Rupture Avoidance Zone: means the area encompassing **the** active fault system~~s~~ in the District and suggested to be subject to elevated risk of a fault rupture hazard. Shown on the planning maps as General Fault Rupture Avoidance Zone

Building Importance Category I: means structures presenting a low degree of hazard to life and property. These include:

- **Structures with a total floor area less than 30m^2.**
- **Farm Buildings**
- **Isolated Structures**
- **Towers in rural situations**
- **Fences**
- **Walls**
- **In-ground swimming pools.**

- Replace the existing planning maps with new maps (shown on following pages) into Part 10 Appendices indicating the General Fault Rupture Avoidance Zone within the Westland District, and the Franz Josef/

Waiau Fault Rupture Avoidance Zone within Franz Josef/Waiau and the surrounding area.

Section 8 : Conclusion and Recommendations:

8.1 In my opinion, Plan Change 7 is an appropriate method to manage fault rupture risk in the Westland District. The introduction of maps indicating areas of risk and associated restrictions on intensification of activity within these areas will promote and achieve the purpose of the Act. The plan change will impact upon landowners within the proposed zones and more specifically the development of Franz Josef. However this is considered an appropriate method to provide for a resilient future for the Westland District.

8.2 Following analysis of the submissions received amendments have been recommended to allow building of low importance category, and to carry down the existing status for mining, vegetation clearance and other rural activities within the Rural Policy Unit into the General Fault Rupture Avoidance Zone. Minor amendments have also been many to the introduction and explanatory comments. The plan change should proceed in its amended form.

Recommendations:

8.3 That the two late submissions received be accepted.

8.4 That Plan Change 7 as amended in section 7 be approved.

8.5 That the District Plan is altered to incorporate the new rules, explanations, descriptions and maps as set out in the plan change application with the above amendments.

8.6 That decisions be made on the submissions and further submissions as follows:-

Submission number	**Submitter**	**Decision**
0	West Coast Planning	Accept in part
1	Robert Glennie	Reject
2	Scenic Circle Hotels	Reject
3	West Coast Regional Council	Accept in part
4	Anje Kremer	Reject
5	South Westland Salmon	Reject
6	Helen Jones	Reject
7	Community Public Health	Accept in part
8	Colmat Motors Ltd	Reject
9	George Tripe and Clare Ashton	Reject
10	Franz Josef Community Committee	Reject
11	Heritage New Zealand (formerly NZHPT)	Accept in part
12	The Helicopter Line	Accept in part

13	Cushla Jones and Chris Roy	Reject
14	Rob and Jan Nicholl	Reject
15	Gavin Molloy	Reject
16	Federated Farmers	Accept
17	Dene Bristowe	Reject
18	Diane Ferguson	Reject
19	Mark and Kelsey Williams	Reject
20	Andrew Hocken	Reject
F01	Robert Glennie	Accept in part
F02	Colmat Motors	Reject
F03	Colmat Motors	Reject
F04	Colmat Motors	Reject
F05	Colmat Motors	Reject
F06	Dene Bristowe	Accept
F07	Dene Bristowe	Reject
F08	Westpower Ltd	Accept in part
F09	Westpower Ltd	Accept