POST ENGAGEMENT PREFERRED OPTION UPDATE REPORT TO DISTRICT PLAN COMMITTEE

DATE: **28 November 2018**

TOPIC NAME: **Natural Hazards**

SCOPE DESCRIPTION: **Managing geotechnical risk**

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EXECUTIVE SUMMARY

Summary of Preferred Option Endorsed by DPC for Further Engagement:	*That Option 2 (adopting the recommendations of the baseline report) for Managing Geotechnical Risk is endorsed for further development (targeted stakeholder engagement, Section 32 and Drafting Phase).*
Summary of Feedback Received:	*That any controls introduced need to be supported by robust justification.*
Recommended Option Post Engagement:	*The Project Team recommends that the Preferred Option previously endorsed by DPC progresses to the 'Drafting and Section 32 Evaluation Phase'.*
DPC Decision:	*That the Preferred Option previously endorsed by DPC progresses to the 'Drafting and Section 32 Evaluation Phase'.*

1.0 Introduction

1.1 Overview of Preferred Option Endorsed by DPC

The preferred option endorsed by DPC on 19 June 2018 was to adopt and progress the recommendations provided in the Baseline Report, being:

Faultlines

1. Follow the guidance and advice provided in the Planning for Development of Land on or Close to Active Faults: A guideline to assist resource management planners in New Zealand, MfE. It is considered that the Hurunui District's (HDC) approach to fault avoidance and fault awareness provisions is a useful approach for Selwyn District to adopt. That approach follows closely the MfE Guideline. It is recommended that the risk-based approach outline from the MfE Guideline (provided in Appendix B of the Baseline Report) be used for an initial higher level consideration of priority areas.

   For the RI Class V Greendale Fault with a recurrence interval between 20,000 and 30,000 years, establish a fault avoidance zone (buffer area) similar to that developed in Hurunui District Plan for the Hanmer and Hope faults and determine the Building Importance Category. Under the MfE Guideline, the Greendale Fault would require provisions making structures in building importance category 4 a non-complying activity. This process should be repeated for other active faults where there is sufficient information or adopt the fault awareness zone approach used in the HDP.

2. Develop an objective and policy framework for faultlines similar to the examples below that have been developed for HDC:

   Policy 15.3

   To avoid the subdivision, use or development of land within the Fault Avoidance Zone unless the adverse effects of fault rupture can be mitigated so as to ensure that there is no greater risk to health and safety during and after an earthquake.

   Policy 15.4

   To avoid the development of land within any Fault Awareness Zones for post emergency infrastructure or infrastructure which large numbers of people congregate in, unless that infrastructure has been appropriately designed and sited in relation to the fault hazard.

Liquefaction

3. Adopt an approach similar to Christchurch City (CCC) in terms of a policy framework for managing liquefaction risk (acknowledging that the areas of liquefaction prone land is much smaller in Selwyn District and the district is less populous and experiences less development pressure). The following policy from the Christchurch District Plan (CDP) could be adapted, or form the basis for consideration of a policy:

Policy 5.2.2.4:

a. Map the Liquefaction Management Area based on a district-wide assessment of where damaging liquefaction is more likely to occur; and

b. Provide for rezoning, subdivision, use and development on flat land where liquefaction risk has been appropriately identified and assessed, and can be adequately remedied or mitigated.

4. Identify a Liquefaction Management Area (or other label) on the planning maps using information from SDC's technical consultants, as identified in the Baseline Report.

5. Develop provisions relevant to both subdivision, development and use and provide reasonably detailed information requirements for developing on land prone to liquefaction.

Slope instability including rockfall and mass movement

6. Further investigate areas on the Port Hills and possibly also Malvern Hills where rock fall, mass movement and soil erosion may occur (see baseline report section 2.3.5 as a starting point and the high erosion risk maps in the Land And Water Regional Plan (LWRP)). Consideration should also be made in respect to the level of development anticipated in these areas over the life of the district plan.

7. Develop specific provisions in respect to slope stability rather than relying on the Outstanding Natural Landscape (ONL) and Visual Amenity Landscape (VAL) provisions to trigger this consideration. These areas do not sufficiently overlap or align with areas of high erosion risk or closely align with areas of known slope instability. The existing provisions are focused on identifying the outstanding natural areas and visual amenity landscapes not natural hazard risk.

8. A useful policy that could assist in providing a framework is the slope instability policy for the remainder of the Port Hills in the CDP. This policy is as follows:

Policy 5.2.2.4.3a.

a In areas not already identified in Policy 5.2.2.4.1a as being subject to cliff collapse, rockfall or mass movement, but where the land may be subject to slope instability:

- *to the extent appropriate, require proposals for subdivision, use and development to be assessed by a geotechnical specialist to evaluate the presence of hazards and level of risk to people and property (including infrastructure) from slope instability hazards; and*
- *only allow subdivision, use and development where risk can be reduced to an acceptable level.*

This policy recognises that large areas of the Port Hills have not been investigated but a slope instability risk, such as rockfall, could still be present should development be proposed and could be usefully adapted for the Selwyn District.

Geotechnical risk and earthworks

9. Develop a clearer connection between earthworks and geotechnical related natural hazards as well as exploring the areas where duplication with the LWRP including setbacks from waterbodies and differing maximum volumes thresholds occur. In respect to potential for overlapping functions explore the use of section 33 of the RMA to transfer powers to ECan for earthworks associated with large dam construction, hard protection structures adjacent to mean high water springs (MHWS) and similar structures. Clearer provisions could include development of matters of control and matters of discretion that specifically target geotechnical risk when earthworks are being undertaken.

10. Consider a lower threshold volume specifically for high erosion risk areas and other areas of likely slope instability. The LWRP already has a low threshold in the High Erosion Risk Areas and this could be relied upon, but those areas are not confirmed to also be an accurate representation of areas of slope instability in the Selwyn District (rockfall, cliff collapse and mass movement) and this requires further investigation.

General Approach to geotechnical risk

11. Consider setting up a register of suitably qualified and experienced geotechnical professionals to assist in reviewing resource consents and building consents, and potentially plan changes. This register should be governed by a select panel (approximately 3) of best practice geotechnical industry leaders. Professionals within the register could be sought to 'screen' and review the most complex or geotechnically challenging applications.

12. Continue to manage the geotechnical risk through the subdivision consent process using the updated Section 106 of the RMA, but include clearer provisions in the district plan relating to liquefaction, faults, and slope instability areas to support assessment processes. The Living Zones in the Township Volume contain more robust assessment matters for subdivision where liquefaction and lateral spread occur than the Rural Volume and this inconsistency could be easily addressed in the review of the district plan.

13. Investigate the 15 lot cut off for requiring geotechnical assessment for subdivisions in the low to very low geotechnical risk area to determine whether this is appropriate and update the district plan provisions to be consistent with what will happen in practice.

14. Given the concern over the effects of coastal erosion and climate change at the Taumatu coastline including Te Koru and other cultural sites of significance and ancestral lands, consult with iwi as part of determining appropriate district plan provisions in respect to geotechnical risk.

15. Develop appropriate district plan provisions for all other land developments types in terms of geotechnical risks. Ensure that the provisions are clearly related to the risk from natural hazards.

16. Include additional matters of control, matters of discretion and additional information requirements to guide resource consent planners, developers and others using the Plan for liquefaction, slope instability, active faults and any other geotechnical risks identified.

17. Include a statement in the reviewed plan similar to that of HDC recognising the seismically active nature of the district and its potential exposure to a number of geotechnical risks.

18. Investigate policy provisions that will assist in relation to the location of critical and strategic infrastructure within Selwyn District to give effect to the Canterbury Regional Policy Statement.

19. Give effect to section 6(h) of the RMA. It is recommended that the DPR process be used to re-focus and strengthen natural hazards provisions overall, including those relating to geotechnical risk, with greater cross boundary consistency with the approaches taken by CCC and HDC.

2.0 Summary of Feedback Received

2.1 Landowner Feedback

IPort / RIDL / RIHL

A risk-based approach towards managing geotechnical risk is supported, where the focus on managing hazards is to achieve acceptable / appropriate levels of risk. An 'avoidance' approach should be resisted except for significant natural hazards with significant risks that are unable to be managed to acceptable levels. If geotechnical features (with associated risk) are to be specifically identified on planning maps with corresponding regulatory controls, it is imperative that there is robust and generally accepted evidence establishing the physical extent of the feature.

New Zealand Defence Force

The NZDF requests further engagement if their property in the Malvern Hills is to be subject to additional natural hazard constraints, but had no further feedback at this time.

Other landowners

Three individual landowners responded to the letter they were sent regarding the potential introduction of fault awareness areas that may impact their property. One expressed support, while the other two were of the opinion that earthquakes are insufficiently frequent to justify any form of management through the District Plan.

Four surveys were completed by people who live in the district, while a fifth was completed by an absent landowner. Of the four who live in the district, three surveys were completed by residents of Selwyn Central Ward (one who lives in a township, the others rural), while the fourth was completed by a rural resident of Malvern.

Liquefaction was the geotechnical risk most commonly mentioned as something Council needs to focus on, while active faults (seismic shaking) and slope instability were also mentioned.

Three of the completed surveys express opposition to the concept of managing liquefaction or active faults through the district plan. This opposition is based on the opinion that earthquakes happen insufficiently frequently to justify the imposition of district plan controls that would increase building cost or adversely impact property values.

2.2 Partner/Stakeholder Feedback

Environment Canterbury

Environment Canterbury supports the development of provisions that are specifically targeted at addressing geotechnical risk. Environment Canterbury would support an assessment of the overlaps or potential overlaps in management between the District Plan and the LWRP.

Department of Conservation

As a landowner in the High Country, the Department of Conservation supports site specific assessments in areas of geotechnical risk, including from earthquakes and landslides.

2.3 Public Feedback

One survey was completed by a person who works in Selwyn, but does not live or own land in the district. Their response seeks to primarily manage liquefaction and supports the existing approach to addressing risk at subdivision stage.

3.0 Analysis of Feedback Received

3.1 Should geotechnical risk be managed through the district plan:

Analysis

As noted in the Preferred Option Report of 19 June 2018, the current Selwyn District Plan (SDP) natural hazard provisions predate the New Zealand Coastal Policy Statement (2010), the Canterbury Regional Policy Statement (2013) and the 2017 amendment to the RMA introducing the management of significant risks from natural hazards as a matter of national importance that must be recognised and provided for.

A 'natural hazard' is defined in s2 RMA as meaning *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*, while the s3 RMA meaning of 'effect' includes *any potential effect of low probability which has a high potential impact*.

Conclusion

Geotechnical risks have a low probability of occurring, but do have a high potential impact in certain areas. No change to the existing preferred option is therefore recommended in relation to this aspect of the feedback received.

3.2 Which geotechnical risks should the district plan focus on:

Analysis

Feedback identified liquefaction, active faults and land instability as areas that should be addressed through the Proposed District Plan. This is consistent with the issues raised in the Preferred Option Report.

Conclusion

No change to the existing preferred option is therefore recommended in relation to this aspect of the feedback received.

3.3 How geotechnical risks should be mitigated:

Analysis

Where feedback supports the management of geotechnical risk through the district plan, support is generally expressed for management where there is a strong evidence base behind it. A balance is sought between the cost to landowners of additional controls and the benefits of those controls, which will be tested through the s32 evaluation phase.

Conclusion

No change to the existing preferred option is therefore recommended in relation to this aspect of the feedback received.

4.0 Recommended Option Post Engagement

The Project Team recommends that:

- The Preferred Option previously endorsed by DPC progresses to the 'Drafting and Section 32 Evaluation Phase'.