

## Recommendations to Council from the Statutory Management Committee

Date: 23 June 2015

Councillors

### WANGANUI DISTRICT COUNCIL

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<b>Subject:</b>	<b>Plan Change 38 – Land Stability Assessment Areas (Durie Hill, Bastia Hill and Ikitara Rd study areas)  Decisions on Submissions</b>
<b>Meeting Date:</b>	<b>4<sup>th</sup> May 2015</b>

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#### 1.0 INTRODUCTION

- 1.1 Council is presently reviewing the District Plan in phases. This Plan Change is the second of multiple stages of work relating to land stability.
- 1.2 This report records the public notification and hearing process in relation to Plan Change 36. It records the Statutory Management Committee's recommendations and Council's decisions on submissions.
- 1.3 For details of the deliberations discussion refer to the formal Council Minutes of the meeting.

#### 2.0 PROCEDURAL MATTERS

- 2.1 The Committee was convened to hear submissions on 4<sup>th</sup> May 2015. A total of 5 submitters attended. The Committee reviewed tabled evidence from submitters and listened to the reporting officer's recommendations before deliberating on submissions.
- 2.2 The Committee members were: Councillors Hamish McDouall (Chair), Jenny Duncan, and Independent Commissioner Alan Taylor.
- 2.3 Submitters who tabled or presented information to support their submissions were:
  - R Goudie
  - Mark Buckley
  - Rosemary McGregor
  - Chris Heywood
  - Colin Ogle
- 2.4 PC38 was publicly notified in accordance with Clause 5 of the 1st Schedule of the Resource Management Act 1991 (the Act) on 10th September 2014, with the period for submissions closing on Friday 10th October 2014..
- 2.5 A total of 7 submissions, were received at the close of submissions.
- 2.6 All submissions received were summarised and the decisions requested by submitters were publicly notified in accordance with Clause 7 of the First Schedule of the Act. The further submission process closed on Friday 21<sup>st</sup> November 2014. No further submissions were received.

### **3.0 SCOPE OF THE PROPOSED PLAN CHANGE**

- 3.1 This Plan Change is one of a series of changes proposed as part of Phase 6 of the wider District Plan review which also address district wide matters and archaeological sites protection.
- 3.2 One of the significant natural hazards affecting the Wanganui District is land instability. Lack of public awareness and knowledge of the extent of land instability hazards has limited opportunities to avoid or mitigate potential effects on people and property.
- 3.3 The Local Government Act 2002 and Resource Management Act 1991 (the Act) both require councils to manage various aspects of natural hazards. This is supplemented by the provisions of the Regional Policy Statement (Horizons One Plan) which defines specific responsibilities and frameworks for natural hazard management, which the Wanganui District Plan must 'give effect to'.
- 3.4 Council identified ten priority areas within the urban area for investigation as they are considered likely to be at least partially susceptible to land instability hazards. Study of five of these areas has now been completed. Sites that are confirmed as being susceptible to land instability hazard are identified in the LSAA overlays as follows:
  - Area A comprises sites of very high landslide risk that are unsuitable for future development.
  - Area B comprises marginal land requiring geotechnical investigation to confirm suitability for development.
- 3.5 The purpose of Plan Change 38 (PC38) is to amend the District Plan maps to include additional sites as either LSAA A or B, as recommended by the second stage of research, which investigated land instability issues in the Bastia Hill, Durie Hill and Ikitara Road areas of Whanganui.
- 3.6 PC38 will partially 'give effect' to Section 10 of the Horizon's One Plan, and the Regional Policy Statement and build on previous work completed for the now Operative provisions of Plan Change 25 which introduced the Land Stability Assessment Area (LSAA) overlays A and B, including issues, objectives, policies and rules for activities likely to affect or be affected by land stability issues.
- 3.7 This will ensure that appropriate assessment and regulation of development occurs to minimise any adverse effects of the hazard risk for the specific property and surrounding area.

## 4.0 STATUTORY AND LEGISLATIVE FRAMEWORK

### 4.1 Resource Management Act 1991

Section 74 of the Act requires the Council to change the District Plan in accordance with its functions under Section 31, the purpose of the Act in section 5 and the other matters under sections 6, 7 and 8.

Territorial authorities have the following functions under the Act:

#### *31 Functions of territorial authorities under this Act*

1. *Every territorial authority shall have the following functions for the purpose of giving effect to this Act in its district:*
  - a. *The establishment, implementation, and review of objectives, policies and methods to achieve integrated management of the effects of the use, development or protection of land and associated natural and physical resources.*
  - b. *The control of any actual or potential effects of the use, development, or protection of land, including for the purpose of –*
    - i. *the avoidance or mitigation of natural hazards*
2. *The methods used to carry out any of the functions under subsection (1) may include the control of subdivision.*

The Council is given these functions for the purpose of promoting the sustainable management of natural and physical resources, which is defined as:

- 5(2) *In this Act, “sustainable management” means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while:*
- a. *Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
  - b. *Safeguarding the life-supporting capacity of air, water, soil and ecosystems; and*
  - c. *Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

In accordance with Section 5 of the RMA, PC38 has been developed with a focus on providing for the community’s health and safety whilst avoiding or mitigating any adverse effects of activities on the environment, including people and property.

Section 7 matters to which particular regard shall be had in assessing this Plan change are:

- (aa) *stewardship:...*
- (f) *maintenance and enhancement of the quality of the environment:*

PC38 identifies areas prone to land instability, and as such addresses particular issues associated with subdivision, use or development of sites within such areas. Council is

acting constructively and proactively to inform the community about known hazards and their extent. This will assist landowners to make decisions in full knowledge of the potential risks and potential costs. In addition Council will assess development on a case by case basis, subject to specified criteria. This will facilitate an informed decision encouraging efficient use and development of land in hazard prone areas. In turn such an approach will facilitate maintenance of the quality of the environment.

Further guidance and direction on the way in which resources are to be managed is provided in sections 6, and 8 of the RMA.

## 5.0 RELEVANT POLICY STATEMENTS AND PLAN PROVISIONS

### 5.1 National Policy Statements and Environmental Standards

There are no National Policy Statements or National Environmental Standards relevant to this Plan change.

### 5.2 Regional Policy Statement and Regional Plan (the One Plan)

Sections 75 (3) and (4) of the Act require that a district plan must give effect to any regional policy statement and must not be inconsistent with any regional plan. Horizons Regional Council's One Plan is considered to be relevant to this proposed Plan change where they include requirements for the avoidance and mitigation of natural hazards generally and rules in relation to managing land instability risk.

PC38 does not amend any of the objectives policies or methods associated with the LSAA overlay. However for completeness an assessment of how the provisions made Operative by PC25 compare with the objectives and policies of the Operative Horizons Regional One Plan are considered, along with an assessment of how PC38 extends the application of those provisions to additional sites and gives effect to the RPS is provided in Table 1 below.

**Table 1**

Operative Regional One Plan (19 December 2014)		Proposed Plan Change 38
Objective	Policy	Evaluation
<b>Objective 9-1: Effects of natural hazard events</b>  The adverse effects of natural hazard events on people, property, infrastructure and the wellbeing of communities are avoided or mitigated.	<b>Policy 9-1: Responsibilities for <i>natural hazard</i> management</b>  In accordance with s62(1)(i) RMA, <i>local authority</i> responsibilities for <i>natural hazard</i> management in the Region are as follows:...  (a) <i>Territorial Authorities</i> must be jointly responsible for:  <i>(i) raising public awareness of the risks of natural hazards^ through education, including information about what natural hazards^ exist in the Region, what people can do to minimise their own level of risk, and what help is available</i>  (c) <i>Territorial Authorities</i> must be responsible for:  (i) developing objectives, policies and methods	Objective 11.2.1 and policy 11.3.11 give effect to regional Policy 9-1(a)  Objective 11.2.2 and 11.2.3 give effect to One Plan Objectives 9-1, 9-3, 9-4 and 9-5  Policies 11.3.2 - 11.3.5 give effect to Policy 9-1 in relation to land instability hazards. Rules for LSAA regulate land instability hazards.  Other hazards are

	<p>(including rules<sup>^</sup>) for the control of the use of land<sup>^</sup> to avoid or mitigate natural hazards<sup>^</sup> in all areas and for all activities except those areas and activities described in (b)(ii) above...</p> <p><b>Policy 9-3: New critical infrastructure*</b></p> <p>The placement of new critical infrastructure* in ..... an area likely to be adversely affected by another type of natural hazard<sup>^</sup>, must be avoided, unless there is satisfactory evidence to show that the critical infrastructure*:</p> <p>(a) will not be adversely affected by floodwaters or another type of natural hazard<sup>^</sup>,  (b) will not cause any adverse effects<sup>^</sup> on the environment<sup>^</sup> in the event of a flood or another type of natural hazard<sup>^</sup>,  (c) is unlikely to cause a significant increase in the scale or intensity of natural hazard<sup>^</sup> events, and  (d) cannot reasonably be located in an alternative location.</p>	<p>progressively being addressed through the phased Plan review process.</p> <p>Rules for the LSAA overlay regulate critical infrastructure on unstable land. PC27 has also addressed this specifically, as will the current PC44 review of Utility provisions in the Plan.</p> <p>Objective 11.2.2 gives effect to One Plan Objective 9-1. Policies 11.3.2 – 11.3.5 give effect to Policy 9-4</p>
	<p><b>Policy 9-4: Other types of natural hazards</b></p> <p>The ... Territorial Authorities must manage future development and activities in areas susceptible to natural hazard events (excluding flooding) in a manner which:</p> <p>(a) ensures that any increase in risk to human life, property or infrastructure from natural hazard events is avoided where practicable, or mitigated where the risk cannot be practicably avoided.  (b) is unlikely to reduce the effectiveness of existing works, structures, natural landforms or other measures which serve to mitigate the effects of natural hazard events, and  (c) is unlikely to cause a significant increase in the scale or intensity of natural hazard events.</p> <p><b>Policy 9-5: Climate change</b></p> <p>The ... Territorial Authorities must take a precautionary approach when assessing the effects of climate change and sea level rise on the scale and frequency of natural hazards, with regard to decisions on:</p> <p>... (c) activities adjacent to rivers, and streams  ...(f) flood mitigation efforts activities, .....</p>	<p>The LSAA overlay as amended via this decision, gives effect to this policy in relation to land instability.</p> <p>It is acknowledged that rules are required along with detailed site specific scale mapping. This is being developed in conjunction with Horizons and as budgets permit completion of technical research.</p> <p>Policy 11.3.3 gives effect to Policy 9-5 by requiring a precautionary approach in respect to assessment of all hazards and this includes consideration of climate change.</p>

## 6.0 SUMMARY OF SUBMISSIONS

- 6.1 Refer to Appendix 1 to this report for a summary of each submission and Council's decision and reasons for each decision.

## 7.0 PRINCIPAL ISSUES IN CONTENTION

- 7.1 Submitters identified the following concerns in relation to PC38:

- Inadequate site specific research and investigation to justify restrictions
- Implications for existing property owners, loss of property value and difficulties obtaining insurance; Council has a duty of care.
- Misleading perception that existing structures are not safe.
- Unreasonable limitation on vegetation clearance.

## 8.0 SUMMARY OF EVIDENCE HEARD

- 8.1 Key evidence presented by submitters is summarised below:

### ***Mr Goudie (Sub 7)***

- Submitter queried why Council had not used the 2012 aerial photography that it had available. He was concerned that his retaining walls show up in the latest photography but not in earlier versions. Submitter requested that the LSAA overlay boundary be amended to take account of work he has done on site, as he believed this had not been the case.

Submitter was concerned that no intrusive investigation or testing was undertaken. He did not accept that a site specific investigation would not alter the overlay boundary for his property.

Concern was expressed that part of site defined as LSAA (A) overlay is flat land.

- Legal duty of care to existing land owners as PC38 will have has significant implications for existing landowners.

Referenced 19 Stark St as an example of a property sold well below the rateable value, as a result of notification of PC38, noting that other properties not affected by PC38 are holding to rateable value in the area.

The submitter opined that Council has an obligation to consult directly, view properties on their individual merits if subdivision or building consents is sought in future and if necessary acquire property under the Public Works Act 1981 at current market value or compensate for loss of value.

### ***Mr Buckley (Sub 3 & 4)***

- Presented a list confirming the building consents obtained for his property at 26 D'Arcy Road. He expressed confidence in the stability of his home.

- Sought that Council:
  - Investigate the added protection that the sandstone underlying his property provides.
  - Work with landowners to solve run off issues.
  - Aid planting to improve stability of sites.
- The submitter expressed concern about Council land that is unstable and creates risk for private property.

***Mrs McGregor (Sub 2)***

- Legal duty of care to existing land owners noting that although the focus of the Plan change is on future subdivision and development it has significant implications for existing landowners.

The LSAA information will be easily available for the public, through LIMs and District Plan information. It is unclear what gradings mean with respect to existing structures. The submitter requested that Council publicise the statement at Clause 10 (pg 21) of the S42A Report.

- Given high level assessment Council should be conservative in imposing restrictions on property.

The Engineering Geology maps identify that at 28 D'Arcy Road all the land below the house is either yellow or blue (20 – 40° slope) with no shading (0-20° slope) on our house site.

Concerned that properties indicated as having 40-60° slopes are not included within Area A, especially given their property is within the Area A when it has a significantly lesser slope.

Site specific cross sections for the submitter's property were provided which demonstrated that the 10m setback zone, 45° slope and 10m run out zone are nonsensical as applied to 28 D'Arcy Road.

With 20-40° slope their property doesn't qualify as cliff. Submitter had no problem with LSAA B applying. She considered there are some areas where Area A has been overzealously applied.

***Mr Heywood (Sub 5)***

- The submitter detailed the stress caused by the potential reduction in value of his property investment.

He was concerned that property has been on site for 64 years, yet the Opus report suggests that it is certain to be destroyed by a natural hazard.

- The submitter observed that the S32 report seemed to indicate that Council accepted that some people would lose as a result of PC38. He queried whether the benefits really outweigh the costs. He was concerned that no economic impact study was undertaken given the significant potential impacts as identified in the S32 report.

No site specific assessment was undertaken. Yet subdivision and development will be actively discouraged on LSAA A sites.

Properties on the cliff are included within the same risk profile as properties on slopes showing no current signs of erosion and some cliff properties are excluded.

The submitter queries whether media comments by Council officer's suggest there may be errors in the research? If Council is acting on new information then compensation is reasonable for those with existing properties as Council allowed them to build in hazardous areas.

- Concern was expressed about the vegetation clearance limit of 5m<sup>2</sup> per year – applying to properties irrespective of the section size.
- Mr O'Leary spoke in support of Mr Heywood. He noted that development in Wanganui is already marginal and a broad brush approach was not appropriate, it needs to be at a site specific level.

**Mr Ogle (Sub 6)**

- Submitter seeks a reassessment of the whole process as he is not persuaded that it is necessary. Attention was drawn to the S42A report evaluation of costs and benefits noting effects of reduced property values and insurance resistance as well as stress and financial hardship this may cause existing owners.
- The submitter considered the research to be a scattergun approach rather than site specific, which means that properties with the same contours as ours are excluded e.g 20 and 22 Forres St.

The research has very little regard to stabilisation works already done on the property. The submitter confirmed that he had obtained a stability assessment prior to purchase and the property was already well terraced with some repairs undertaken in the intervening period in consultation with Bycroft Petherick, who completed the original assessment.

Slopes were already well vegetated which have been maintained and enhanced in the last 15 years.

Recommended an additional overlay be applied to inform about land stabilisation works undertaken by property owners. This would mitigate the adverse effect on property values and would encourage landowners to undertake remedial works.

- In relation to Council road reserve on Durie Vale Road the submitter commented that it has a slope of 50 – 60° with a clear scarp marked on the map just above the road. A 1.5m wall of rotting pine posts is all that retains that slope. The road is in the LSAA A overlay. Vegetation has been removed and not replaced by Council. The submitter noted that he had planted agapanthus. He believes the entire wall needs urgent replacement especially if the LSAA overlay is confirmed.



He wanted to ensure that Council would be required to do works to protect private property which is potentially affected by land instability issues on Council property such as this scenario.

- The submitter noted that he had obtained a valuation from BPL Group in December 2014 which expressly considered the implications of the new LSAA overlay. The valuation notes that: "Any adverse effect of the Council's hillside slip zone could be up to 10% reduction in value".

He seeks that a new property valuation be provided immediately for rating purposes for each affected property to reflect reduced resale value.

## 8.2 Officer's Right of Reply is summarised below:

- Fundamentals of land stability assessment overlay were defined in the Stage 1 PC25 which is operative. Provisions were significantly redrafted as a result of the notification and hearing process. Through that process the name was changed from Hillside Protection Zone A and B to better reflect the assessment criteria, which is susceptibility to land instability. Another outcome included more careful reference to susceptibility. The term Land Stability Assessment Area was promoted by submitters.
- The regulation was moderated to reflect the high level assessment undertaken. The outcome was a set of rules which allows for more consideration of development on land identified as Area A. Whether in Areas A or B a geotechnical assessment is required with a more onerous assessment likely for development in Area A.
- PC38 is the formal process to include additional recently reviewed areas. The principle question to be answered is should those areas identified in the Stage 2 Opus report be incorporated as LSAA in the Plan (on the Planning maps), alongside those areas identified in Stage 1. The implications of that decision will be mean affected properties become subject to the existing LSAA Plan provisions made operative by PC25.
- The process has also added clarity and certainty for landowners in the study whose land has been confirmed as not susceptible to land instability.
- A key focus in all submissions was the lack of detail and the broad-brush approach taken in the research. The Committee's attention was drawn to point 16 of the S42A report which sets out the purpose of PC38. Namely, the One Plan requires Council to take a precautionary approach to hazards, and to identify hazards in the Plan.
- The Officer noted that the information threshold for identifying hazards is less than the threshold for granting a resource consent or building consent to undertake development. The Plan change process identifies areas likely to be vulnerable to risk and this triggers requirements for further assessment when a site specific development is proposed.
- The Plan change and the LSAA overlay do however identify that some of those structures could be vulnerable if future work is carried out without due

consideration to the inherent risks of land instability. The research identifies areas that require more scrutiny if further development is proposed.

- The Officer noted in relation to tabled evidence that:
  - In relation to concern about the aerial photography used for research, that the investigation was focused on the underlying geology and susceptibility to risk rather than whether existing structures were sound.
  - Mr Buckley presented a summary of his building consent history, which illustrates that there is nothing to formally indicate the existence of potential susceptibility to land instability hazard on his property. Any future LIM would include the LSAA information.
  - Mrs McGregor's suggestion that boundaries were altered during the hearing process for PC25 was refuted. No changes were made to the boundaries of any property in PC25. The Plan policies and regulation were significantly amended. This was also endorsed by the Principal Planner present.
  - It was noted that Mr Heywood's property was currently zoned Hillside Protection. Turoa Road is the only area where that zone applies, following PC25. PC38 withdraws that zone and replaces it with the LSAA overlay. The impact in terms of consent requirements will be similar.
  - It was confirmed that s.10 of the RMA would apply and enable rebuilding in the event of a fire or similar.
  - In response to Mr Ogle's comments about lack of engagement, it was noted that Council wrote to all landowners in study areas on numerous occasions namely prior to commencing the study, following receipt of the completed Opus report providing access to the full report and invited landowners to an informal session to discuss one-to-one the implications for each property. These sessions were well attended by residents. Landowners were written to again to advise Council would notify a Plan change and again at notification. The Officer was confident that affected people were aware of the project and had some understanding of it. People understand the need to identify the risks. However perhaps not so well understood, is the rationale of the relatively high level approach.
  - Mark Frampton, who was present as senior geotechnical engineer for the project, noted the purpose of the desktop analysis was to create an overlay to raise awareness to ensure that future development is appropriate given the susceptibility to land instability.
  - Stability in this context relates to the underlying stability of the ground. The study team looked at aerials from the 1940s when there was little vegetation cover. This highlighted instability on hillside slopes, some submitters talked about vegetation controlling stability which it does. The study notes that these areas are susceptible to land instability, however if properly managed landowners can control that risk.

- In relation to the causes of reduced sale price and difficulty in finding a purchaser for 21 Stark St, it was noted that there were additional issues in the background such as an EQC claim on 19 Stark St following a landslide. Nothing has happened to repair that landslide. It is currently an issue that should be addressed.
- Submitters queried the accuracy of site specific lines on the ground. Mr Frampton noted that the study had reviewed information and mapped areas that were considered susceptible. Mr Goudie's interpretation is there is a specific line. Mr Frampton said maps were produced which shouldn't be blown up and measurements taken as it is not that accurate, they are based on information which was quite small scale. The information is sufficient to indicate areas where any development proposed requires further investigation. He noted that he could not make categorical statements about how close to the edge of a slope is safe to develop or how far away. He simply could not make that call on the information currently held.
- The reporting officer noted that the overlay identifies areas of similar susceptibility. A resource consent for a specific development would be the point at which site specific information is required from the developer. It is not Council's responsibility.
- The top of a slope might be flat land but if within a slope failure buffer zone then shown as LSAA. In relation to the 45° line at the McGregor property, below the site geological mapping has shown a series of scarps. This information was used to make a judgment. There may be a flat area at top and a run out zone may also be flat at the bottom and even though indicated within the yellow 40° or less slope, there is also historical evidence of slipping in the vicinity so setbacks, which include the dwelling, are in place because of the slipping. The whole hillside valley was assessed as the same level.
- To change the overlay status on land was possible but would require a Plan change. Council has an obligation to regularly review its hazard information and assumptions. For example the Kai Iwi coastal hazard areas have just been updated, which resulted in some minor adjustments to properties affected.
- Mr Frampton noted the study does not say structures in the LSAA overlay are unstable. However the ground under Wanganui is variable and we don't have the knowledge about the existence of cracks and jointing in sandstone that may affect property in large earthquakes. Rather by looking at slopes we can see examples of landslides and make assumptions based on those, which is more reliable.
- The Officer did not accept that PC38 was antidevelopment, as it provides information about the relative suitability of properties for development. It is helpful for those purchasing properties to identify potential risks and make informed decisions. This is happening nationally, councils are required to be precautionary and identify hazards.

- In relation to concern about the limit of 5m<sup>2</sup> vegetation clearance, it was noted that this was based on the need to avoid wholesale clearance and the limit was determined based on an average sized section, and practical limits for enforcement. Resource consent would potentially enable clearance of a greater area. Presently Mr Heywood would require a consent as removal of any vegetation is a restricted discretionary consent in the Hillside Protection zone.
- The Officer stands by the comments and recommendations of the S42A report.

## **9.0 MAIN FINDINGS ON PRINCIPAL ISSUES**

9.1 The Committee considered each submission and confirmed a decision for each.

Refer to Appendix 1 for the decisions on individual submissions.

### **9.2 Adequacy of the Research**

- The Committee noted that the key points of contention were firstly the level to which the Opus report could be relied upon to identify areas where restrictions of land use and development should occur. Secondly, the extent to which the Opus assessment of risk were appropriate given the level of detailed analysis.
- It was noted that although submitters have critiqued the Opus Report in some detail. No geotechnical evidence was presented to suggest that the findings of the report are not accurate.
- The issue for the Committee was whether they could reasonably accept based on the information available that the identified land is susceptible to land instability.
- The Committee noted that the report confirmed the existence of a potentially significant hazard risk. The Committee was confident that the hazards in the areas identified, needed to be managed. It was accepted that the report identified risk based on accepted professional practice.
- The Committee was persuaded that the report confirms a potential risk to life and the environment within the proposed Land Stability Assessment Areas (LSAA). As a result, the Committee understands it must take a precautionary approach to future development.
- Balancing the costs and benefits to both the wider community and individual property owners, the Committee believes research undertaken to date is sufficient to guide it in establishing broad thresholds for development. It accepts however that there is not sufficient evidence to warrant prohibition of any use or development.
- The cost of further research to identify a more refined area of potentially affected land would likely be significant. The Committee accepted that it is unlikely that the boundaries of the proposed overlay or development restrictions would significantly alter with more detailed analysis.
- Council considers that it is for private land owners to demonstrate that land can be safely developed without adverse effect on the environment. It is not Council's role to investigate the suitability of individual sites for development. It is Council's role to identify natural hazards.

### 9.3 Hazard Overlay Name/ Headline Information:

- The Committee confirmed that Plan Change 25 created the Land Stability Assessment Areas, Council accepted that the naming of this overlay does have influence as suggested by current submitters.
- The name was amended at the request of PC25 submitters, from 'Hillside Protection Zone' which has applied to a limited number of sites since at least 2004, to the more positive term 'Land Stability Assessment Area' to acknowledge the purpose of the overlay is to require detailed assessment of any land instability at the time development is proposed for a site.
- This Plan Change does not propose to amend any of the Plan provisions other than to alter the maps to include additional sites and delete the now superfluous Hillside Protection Overlay Zone.
- The Committee accepted the benefits of publicising the LSAA overlay gradings and meaning in relation to existing structures as promoted by Mrs McGregor. The Committee considered this could be achieved partly as a minor amendment to the Introduction to the LSAA provisions in the Plan.

### 9.4 Effect of Mitigation Works

- The Committee noted that site specific details would be assessed in accordance with performance standard 11.5.1, prior to any future development being approved by Council.

It accepted evidence that existing retaining structures or works may or may not be sufficient to enable future development and, that an assessment will occur for every proposed development to ensure any hazard risk is avoided, remedied or mitigated.

- The Committee considered that evidence of 'deterioration' of hillside stability is demonstrated by the number of properties in the vicinity that have experienced land failure over recent decades. A number of incidents have been reported and researched over an extended period. The issue is that potential land instability exists and poses an unacceptable risk. Council will regulate activity where a risk is identified.
- The Committee noted that planting is an important tool to mitigate some of the impact of land instability. Planting can mitigate land instability to an extent, and should generally be encouraged. However there are some areas within LSAA A where planting is not possible, or situations where vegetation increases instability, and should be removed. It is not a panacea for all land instability. It was noted that Council could undertake planting and protection works on public land where this is appropriate, but this would not replace the need to restrict development. Councillors encourage Officers to collaborate and share planting knowledge with residents.

### 9.5 Overly Restrictive Plan Provisions

- The Committee noted that submitters generally accepted the existence of a land stability risk. However, there was no consensus about the extent of that risk, nor the appropriate methods to address risk. The Committee recognised that having accepted that a hazard risk exists for this area, 'do nothing' was not an option. Council is required to avoid and mitigate natural hazards to give effect to the Regional Plan.

- The Committee also accepted that the Opus report identified that there were different degrees of risk for properties located in Areas A and B. However the Plan would generally manage those risks not with separate rules, but by site specific assessment. Each development will be assessed by a geotechnical engineer who will identify site specific issues and these will be addressed as part of the more generic resource consenting processes adopted for the LSAA.
- The land affected by the LSAA overlay is a mix of developed and undeveloped land. Even small scale development of existing sites may cause unacceptable risk to people and property. Under these circumstances the Committee has determined it necessary to be clear, that sites within these overlays will be subject to geotechnical assessment and must be consistent with the objectives and policies of the Plan which require a precautionary approach.
- The Committee also considered the risks of various thresholds for vegetation clearance and sought to strike a balance between practical needs to maintain properties and any implications for land instability. It was noted that Council's Mr Frampton was comfortable that the 5m<sup>2</sup> threshold was generally appropriate as an upper limit.

#### 9.6 Effects on Existing Owners:

- The Council accepts it has a duty of care to inform residents of natural hazards as knowledge about them becomes available, regardless of previous consents that may have been issued.
- The issue of a Code of Compliance, indicates Council has reasonable grounds to believe that a particular structure has been built in accordance with the Building Consent issued in compliance with the Building Code/ Building Act and Building Regulations in effect at the time of issue. This confirms the structure is appropriate given knowledge at the time of construction, but do not remove the inherent risk identified for the site generally by the LSAA overlay.
- The actual level of risk remains the same as before the study was undertaken. With the LSAA rules in place, Council is better able to manage the risk of future development causing instability and damage to the property or adjacent properties, which is more likely to affect property prices and insurance costs.
- Implications for the market value of individual properties do not outweigh Council's obligation to take a precautionary approach where hazard susceptibility is identified, to inform the community and to avoid works that may worsen the risks to people or property.
- The impact on insurance and property values will be affected by a range of variables for each property such as:
  - Extent to which insurance and market already recognises and accounts for the hazard potential.
  - The portion of the site susceptible to the hazard.
  - The location of dwellings or other buildings relative to the hazard area.
  - The extent to which structures can be demonstrated to have been designed and constructed appropriately for the site specific hazard potential.

- Familiarity of the market to what hazard susceptibility means and recognition that many hazards exist and are recognised in the Plan including flood, coastal and land instability. In future, the Plan is likely to also include identification of sites susceptible to liquefaction and possibly tsunami hazards.
- Extent to which the Plan consistently identifies and controls development on sites of similar hazard vulnerability in the Plan, ie Council has only investigated half of the areas believed to be susceptible to land instability, as these are addressed over time, a greater awareness and a certain normalising effect may occur.

#### 9.7 Existing Stable Houses and Stabilisation:

- The risk overlay applies to the underlying ground, and the LSAA overlay does not imply that existing structures within the Area are inherently unstable. However if development works are undertaken without due regard to the land stability hazards, then people and property may be at increased risk. The LSAA rules attempt to ensure that appropriate consideration of land stability hazards are made before future development works are undertaken.
- The LSAA rules also ensure that good practice is followed when development works are planned, and that poorly planned and executed development work that would likely have a negative impact on property and people is avoided. The LSAA rules require a geotechnical report be prepared before most land disturbance activities are commenced.
- Future works, for instance on neighbouring properties or on the roadway below, will need to consider the risk of instability and ensure any proposed works are appropriately designed.
- The Committed noted that this will over time provide increased certainty for property purchasers that structures have been designed and constructed appropriately taking account of the hazard potential.

#### 9.8 Underlying land is stable 28 D’Arcy Rd:

- In relation to issues raised by Mrs McGregor, the Committee accepted the view of its senior engineering consultant that the material underlying Durie Hill and Bastia Hill form part of the Shakespeare Group, which consists of soft rocks including sandstone, siltstone, limestone and conglomerate. This Group is overlain by younger marine terrace deposits. In the general area of the property, ground contours and visual observations reveal relict landslides from the upper hill area, with deposited landslide material forming the hummocky ground near the base of the hillside. This evidence of previous failures and the slope of the hillside indicates that the general area can be expected to be affected by hillside instability, and stability assessment should be undertaken before any further development works are undertaken.
- The Committee concluded that the evidence of relict landslides on the hillside in the general area of the property, and the similar slope below the property to those areas, indicates that there may be a risk of instability that would require further investigation if future development was proposed at the property.

9.9 Other

- The Committee noted that affected landowners were kept informed as research progressed and as the Plan change process was implemented. A significant number of landowners visited and discussed their site specific circumstance with Council officers at three events held at Durie Hill School, or through individual approaches to Council officers.
- The Committee accepted the Officer's assessment that the S.32 evaluation had been completed appropriately.

**10.0 SECTION 32 REPORT EVALUATION**

No further evaluation for the S.32 report was required as no amendments were made to the Plan change as a result of Council's Decision on Submissions. The S32 report is attached as Appendix 4.

**11.0 STATEMENT OF DECISIONS AND REASONS**

Refer to Appendix 1 to this report for the Council's decision and reasons relating to each submission. Refer to Appendices 2 and 3 for the complete version of the Plan change maps and text.

**12.0 APPENDICES**

- 1: Decisions on Submissions and Reasons for Decisions
- 2: Relevant Planning Maps
- 3: Marked- Up Version of Plan Change 38 following Decisions on Submissions
- 4: Section 32 Evaluation

Signature of Chairman

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Councillor Hamish McDouall

Dated



**APPENDIX 1 – Decisions on Submissions and Reasons for Decisions**

The following are the summary of submissions received and decisions of Council on each submission following consideration of the evidence.

<b>Submitter Name</b>	<b>Sub Number</b>	<b>Page</b>
<b>Horizons Regional Council</b>	1	18
Rowan and Rosemary McGregor	2	19
Mark and Gaylene Buckley	3 & 4	24
Christopher Heywood	5	28
C.C. and R.C. Ogle	6	33
Russell Goudie		37

**Submitter Name: Horizons Regional Council**

**Submission No: 1**

Summary:

Support the proposed plan change. The plan change will give effect to the Proposed One Plan regional policy framework for natural hazards (Chapter 9, Policy 9-1). District Council holds responsibility for developing objectives, policies and methods for address natural hazards including land stability.

Decision Sought:

No explicit decision requested.

**Council Decision:**

That Submission 1 from Horizons Regional Council be **accepted**.

No amendments are made as a result of this submission.

**Council Reasons for Decision:**

The support of the Regional Council is noted and appreciated.

**Submitter Name:** Rowan and Rosemary McGregor

**Submission No:** 2

**Address:** 28 D'Arcy Road

Summary:

Not opposed to intent of Plan change, but lack of sophistication taken by Council, which would not stand up to challenge. Would like to make alterations to the proposed Plan change:

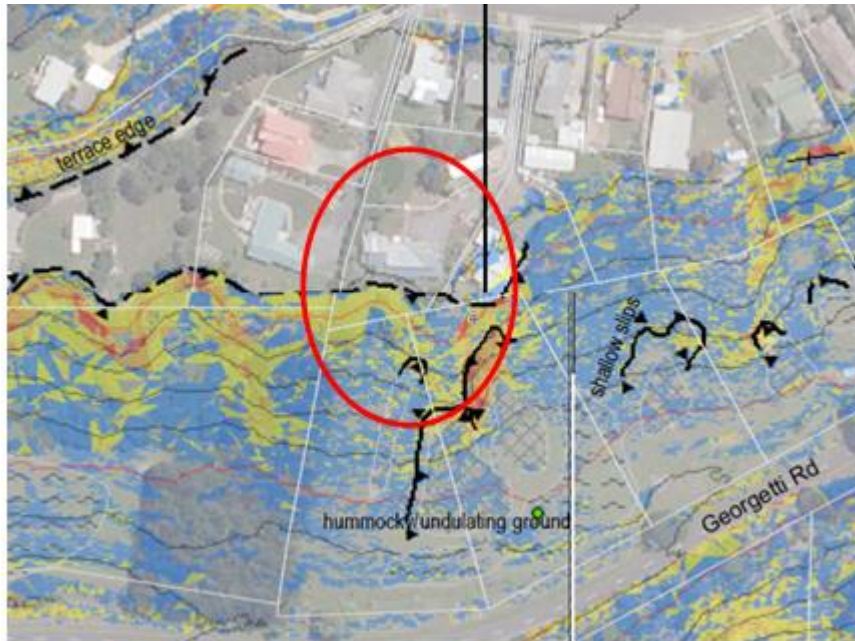
- Consider that Council has a duty of care to property owners as building consents have been approved for their dwelling; and
- That the method of assessing slippage risk is inadequate, having relied on desktop assessment of soil maps and aerial photographs, given what is at stake.
- The dwelling was built in 1977 and shows no signs of settlement as implied by LSAA(A) having risk of failure period of 10-50 years.
- The proposed change will have a negative effect on their property value.
- There is sandstone throughout the area, including approximately 3.7m under the level of their house footings, which provides a stable substrate.

Decision Sought:

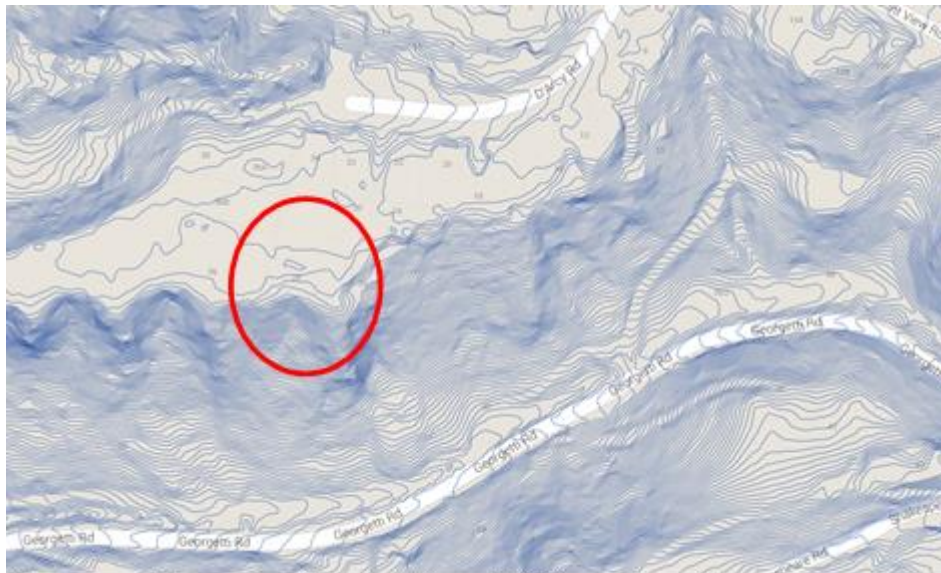
1. That heading wording is less alarming and reflects the intent of the [plan change].
2. Remove the proposed overlay from 28 D'Arcy Road.
3. Would like an explanation for why Area B is proposed over the submitters land, given the research undertaken by the submitter.



**Figure 1: LSAA map -- 28 D'Arcy Road**



**Figure 2: Engineering geology map 28 D'Arcy Road**



**Figure 3: Topographical map 28 D'Arcy Road**

**Council Decision:**

That Submission 2 from Rowan and Rosemary McGregor is appreciated and has been considered but the remedies sought be **rejected**.

The following amendment is made as a result of this submission:

Amend the introduction to Section 11.4 Rules - Land Stability Assessment Areas by inserting the following paragraphs:

*“The investigations do not consider existing structures, rather the focus is on the underlying geology and data of historic landslides as a guide to potential risks of future land instability.*

*Existing lawfully established structures are assumed to be fit for purpose. The application of the overlay to particular properties does not diminish*

*the suitability of existing structures for habitation or use. Rather the focus of regulation of activities in the LSAA overlay is to ensure that any future land disturbance activities are managed appropriately to avoid any increased risk to people or property in the wider vicinity.”*

**Council Reasons for Decision:**

1. Council has a responsibility to the wider community to ensure that any future use or development of potentially unstable land does not worsen or exacerbate the hazard potential, as this would have an adverse effect on the environment and be contrary to the purpose of the Resource Management Act 1991.
2. Council research confirms a potential risk to life and the environment within the proposed Land Stability Assessment Areas. As a result, Council must take a precautionary approach to future development potential as required by the Horizon’s Regional Council One Plan, which Council must give effect to.
3. Balancing the costs and benefits to both the wider community and individual property owners, Council believes research undertaken to date is sufficient to guide it in establishing broad thresholds for development.
4. The cost of further research to identify a more refined area of potentially affected land, would likely be significant. Council accepts the view of its engineering consultants that the boundaries of the proposed overlay and development restrictions would be unlikely to alter significantly with more detailed analysis.
5. Through Plan change 25 which created the Land Stability Assessment Areas, Council acknowledged that the naming of this overlay does have influence as suggested in your submission.
6. The name was amended at the suggestion of submitters, from ‘Hillside Protection Zone’ which has applied to a limited number of sites since at least 2004, to ‘Land Stability Assessment Area’ to acknowledge the purpose of the overlay is to require detailed assessment of any land susceptibility at the time development is proposed for a site.
7. This Plan Change does not propose to amend any of the Plan provisions other than to alter the maps to include additional sites and delete the now superfluous Hillside Protection Overlay Zone.
8. The Council has a duty of care to inform residents of natural hazards as knowledge about them becomes available, regardless of previous consents that may have been issued.
9. The issue of a Code of Compliance, indicates Council has reasonable grounds to believe that a particular structure has been built in accordance with the Building Consent issued in compliance with the Building Code/ Building Act and Building Regulations in effect at the time of issue. This confirms the structure is appropriate given knowledge at the time of construction, but does not remove the inherent risk identified for the site generally by the LSAA overlay.
10. The risk zoning applies to the underlying ground, and the Land Stability Assessment Area (LSAA) overlay does not imply that existing structures within the Area are inherently unstable. However if development works are undertaken without due

regard to the land stability hazards, then people and property may be at increased risk. The LSAA rules attempt to ensure that appropriate consideration of land stability hazards are made before future development works are undertaken.

The LSAA rules also ensure that good practice is followed when development works are planned, and that poorly planned and executed development work that would likely have a negative impact on property and people is avoided. The LSAA rules require a geotechnical report be prepared before most land disturbance activities are commenced.

11. Future works, for instance on neighbouring properties or on the roadway below, will need to consider the risk of instability and ensure any proposed works are appropriately designed.
12. This will over time provide increased certainty for property purchasers that structures have been designed and constructed appropriately taking account of the hazard potential.
13. The actual level of risk remains the same as before the study was undertaken. With the LSAA rules in place, Council is better able to manage the risk of future development causing instability and damage to the property or adjacent properties, which is more likely to affect property prices and insurance costs.
14. Implications for market values of individual properties do not outweigh Council's obligation to take a precautionary approach where hazard susceptibility is identified and to inform the community and to avoid works that may worsen the risks to people or property.
15. The impact on insurance and property values will be affected by a range of variables for each property including the extent to which insurance and the market already recognises and accounts for the hazard potential and the extent to which structures can be demonstrated to have been designed and constructed appropriately for the site specific hazard potential.
16. The study methodology has used remote sensing methods, historical photographs, and existing soil and geological maps, supplemented with a walkover of the study area by an engineering geologist. This has identified areas where further investigations and reporting are required before certain activities are undertaken. Undertaking this site specific work for all properties would be cost prohibitive, particularly when further development work may never occur on a number of properties.
17. The level of information (or certainty about the extent and severity of any site specific hazard) required is significantly more onerous to enable development of a specific site susceptible to land instability, than the level of information required to be provided by Council to demonstrate that areas are susceptible to land instability hazard and as such should be recorded in the Plan.

The rationale for this difference in thresholds of information is that the former would permit development and Council needs to be certain that it will be safe, whereas inclusion of properties within a hazard overlay is simply an indicator that further detailed investigation is required to demonstrate that development can occur without undue risk to people or the environment.

18. It is for private land owners to demonstrate that land can be safely developed without adverse effect on the environment. It is not Council's role to investigate the suitability of individual sites for development, rather it is for Council to take a precautionary approach to the identification of hazards and the management of risks of development on hazard prone sites.
19. The material underlying Durie Hill and Bastia Hill form part of the Shakespeare Group, which consists of soft rocks including sandstone, siltstone, limestone and conglomerate. This Group is overlain by younger marine terrace deposits. In the general area of the property, ground contours and visual observations reveal relict landslides from the upper hill area, with deposited landslide material forming the hummocky ground near the base of the hillside (refer to Figure 2 and Figure 3, in which the scallop-shaped features at the top of the slope indicate head scarps of individual landslide features, and the undulating ground at the base of the slope is the displaced material). This evidence of previous failures and the slope of the hillside indicates that the general area can be expected to be affected by hillside instability, and stability assessment should be undertaken before any further development works are undertaken.
20. Use has been made of gradient maps produced from the Council's terrain model; an extract of the map is produced in Figure 2 above. Using this and observations in the field and from aerial photographs we have attempted to classify the hillside slopes into one of three categories; Area A, Area B, or no classification. Where the character of the hillside is such that relict or more recent landslides can be identified, and the hillside are of the same or similar slopes we have applied the same Area to them. In the vicinity of the property the hillside slope is similar to that to the west (as can be seen in Figure 2, with the yellow and orange colours on the gradient map), while to the east of the property the slope reduces, seen in Figure 2 as the predominance of blue colours.
21. The evidence of relict landslides on the hillside in the general area of the property, and the similar slope below the property to those areas, indicates that there may be a risk of instability that would require further investigation if future development was proposed at the property.



**Submitter Name:** Mark and Gaylene Buckley

**Submission No:** 3

**Address:** 26 D'Arcy Road

Summary:

- Dwelling is built over sandstone, which is considered to be a stable platform for the building; it has building consent; and the foundation was designed by a qualified engineer.
- The method of assessing the slope risk was totally inaccurate for the property.
- The proposed plan change would have a bearing on their property values.

Decision Sought:

1. Remove slip protection zone from 26 D'Arcy Road.

**Submitter Name:** Mark Buckley

**Submission No:** 4

**Address:** 26 D'Arcy Road

Summary:

- Opposed to the plan change, as the proposed slip zone was compiled by a desktop and drive-by study and is inaccurate.
- The dwelling at 26 D'Arcy is constructed on sandstone rock; the surrounding area is also sandstone rock; and the foundation was designed by a qualified engineer.

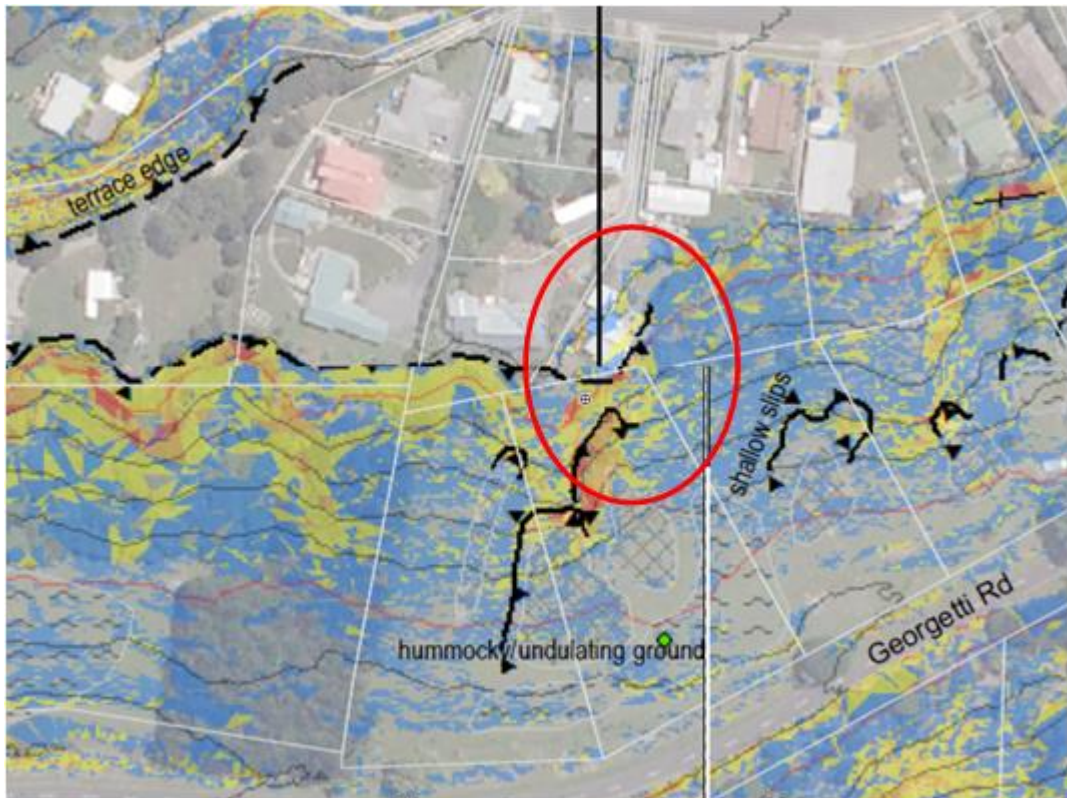
Decision Sought:

1. Remove proposed slip protection zone from 26 D'Arcy Road.

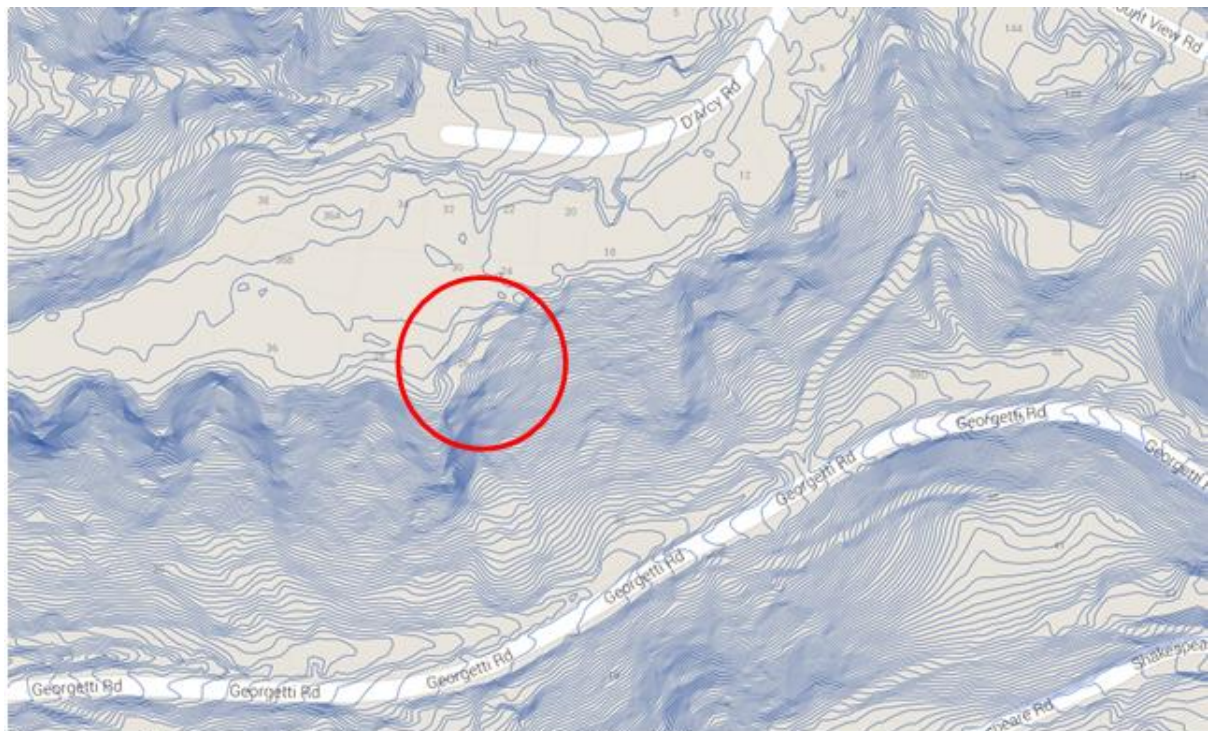


**Figure 4: LSAA map – 26 D'Arcy Road**





**Figure 5: Engineering geology map--26-D'Arcy Road**



**Figure 6: Topographical map--26-D'Arcy Road**

**Council Decision:**

That Submissions 3 and 4 from Mark and Gaylene Buckley are appreciated and have been considered but the remedies sought be **rejected**.

No amendments are made as a result of these submissions.

**Council Reasons for Decision:**

1. Council has a responsibility to the wider community to ensure that any future use or development of potentially unstable land does not worsen or exacerbate the hazard potential, as this would have an adverse effect on the environment and be contrary to the purpose of the Resource Management Act 1991.
2. Council research confirms a potential risk to life and the environment within the proposed Land Stability Assessment Areas. As a result, Council must take a precautionary approach to future development potential as required by the Horizon's Regional Council One Plan, which Council must give effect to.
3. Balancing the costs and benefits to both the wider community and individual property owners, Council believes research undertaken to date is sufficient to guide it in establishing broad thresholds for development.
4. The cost of further research to identify a more refined area of potentially affected land, would likely be significant. Council accepts the view of its engineering consultants that the boundaries of the proposed overlay and development restrictions would be unlikely to alter significantly with more detailed analysis.
5. The Council has a duty of care to inform residents of natural hazards as knowledge about them becomes available, regardless of previous consents that may have been issued.
6. The issue of a Code of Compliance, indicates Council has reasonable grounds to believe that a particular structure has been built in accordance with the Building Consent issued in compliance with the Building Code/ Building Act and Building Regulations in effect at the time of issue. This confirms the structure is appropriate given knowledge at the time of construction, but does not remove the inherent risk identified for the site generally by the LSAA overlay.
7. The risk zoning applies to the underlying ground, and the Land Stability Assessment Area (LSAA) overlay does not imply that existing structures within the Area are inherently unstable. However if development works are undertaken without due regard to the land stability hazards, then people and property may be at increased risk. The LSAA rules attempt to ensure that appropriate consideration of land stability hazards are made before future development works are undertaken.  
  
The LSAA rules also ensure that good practice is followed when development works are planned, and that poorly planned and executed development work that would likely have a negative impact on property and people is avoided. The LSAA rules require a geotechnical report be prepared before most land disturbance activities are commenced.
8. Future works, for instance on neighbouring properties or on the roadway below, will need to consider the risk of instability and ensure any proposed works are appropriately designed.
9. This will over time provide increased certainty for property purchasers that structures have been designed and constructed appropriately taking account of the hazard potential.

10. The actual level of risk remains the same as before the study was undertaken. With the LSAA rules in place, Council is better able to manage the risk of future development causing instability and damage to the property or adjacent properties, which is more likely to affect property prices and insurance costs.

11. Implications for market values of individual properties do not outweigh Council's obligation to take a precautionary approach where hazard susceptibility is identified and to inform the community and to avoid works that may worsen the risks to people or property.

The impact on insurance and property values will be affected by a range of variables for each property including the extent to which insurance and the market already recognises and accounts for the hazard potential and the extent to which structures can be demonstrated to have been designed and constructed appropriately for the site specific hazard potential.

12. The study methodology has used remote sensing methods, historical photographs, and existing soil and geological maps, supplemented with a walkover of the study area by an engineering geologist. This has identified areas where further investigations and reporting are required before certain activities are undertaken. Undertaking this site specific work for all properties would be cost prohibitive, particularly when further development work may never occur on a number of properties.

13. The level of information (or certainty about the extent and severity of any site specific hazard) required is significantly more onerous to enable development of a specific site susceptible to land instability, than the level of information required to be provided by Council to demonstrate that areas are susceptible to land instability hazard and as such should be recorded in the Plan.

The rationale for this difference in thresholds of information is that the former would permit development and Council needs to be certain that it will be safe, whereas inclusion of properties within a hazard overlay is simply an indicator that further detailed investigation is required to demonstrate that development can occur without undue risk to people or the environment.

14. It is for private land owners to demonstrate that land can be safely developed without adverse effect on the environment. It is not Council's role to investigate the suitability of individual sites for development, rather it is for Council to take a precautionary approach to the identification of hazards and the management of risks of development on hazard prone sites.

**Submitter Name:** Christopher Heywood

**Submission No:** 5

**Address:** 26 Turoa Road

Summary:

Not opposed to intent of Plan change, but lack of sophistication taken by Council compared to what is at stake would not stand up to challenge.

- Council has a duty of care to property owners as building consents have been approved for their dwelling; and
- The dwelling was built in 1963 and shows no signs of settlement as implied by LSAA (A) having risk of failure period of 10-50 years. Our property has no recorded landslides or slips since 1963, and we see no evidence of excessive erosion through water runoff or evidence of erosion. We have completed due diligence and do not believe we are in imminent danger of a landslide occurring.
- Purchasers and insurance companies react to headlines. The plan change and slip protection zone at 26 Turoa Street will reduce property value and increase insurance costs unduly.
- The method of assessing slippage risk is inadequate, having relied on desktop assessment of soil maps and aerial photographs, given what is at stake. The research has been under-resourced.
- Without inspection Council has no justification for the LSAA going right through our house. Council is not undertaking its RMA role.
- Our property has similar gradient as sites treated differently in the study, when our property also has abundant trees and vegetation and ground cover and uncompromised retaining walls.

Decision Sought:

1. That heading wording is less alarming and reflects the intent of the [Plan change].
2. Remove reference to LSA Area A, retaining area B until a more comprehensive study has been carried out.
3. An explanation of inconsistency of the report.
4. Make zoning of hill slope south of Turoa Road consistent with the zoning of the hill slope to the north of Turoa Road.





Figure 7: LSAA map -- 26 Turoa Road

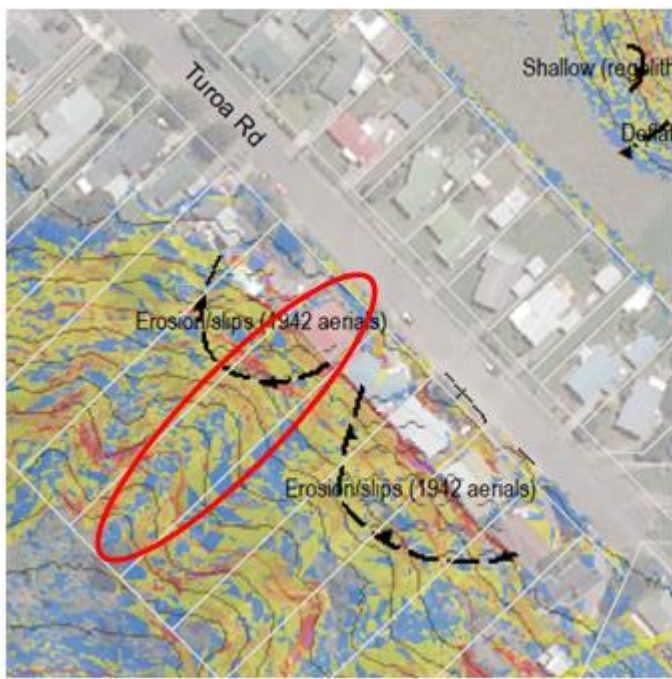
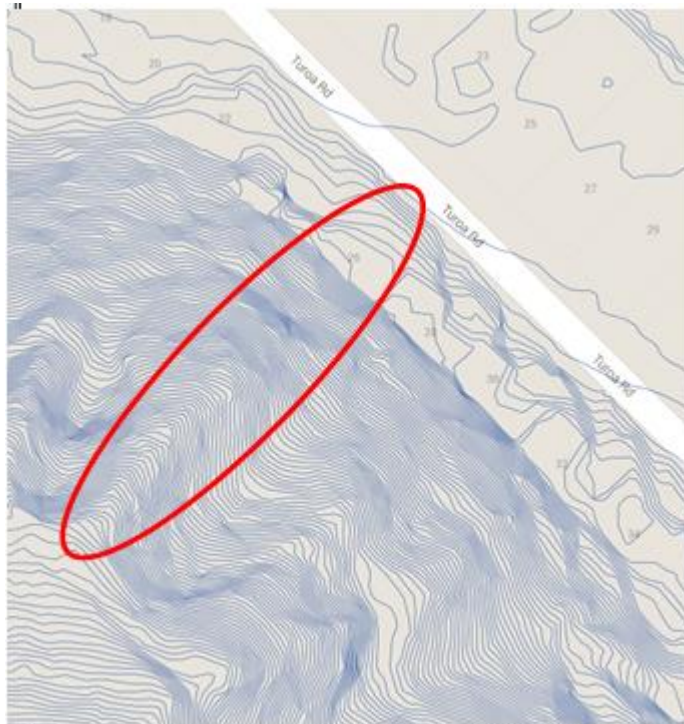


Figure 8: Engineering geology map -- 26 Turoa Road



**Figure 9: Topographical map -- 26 Turoa Road**

**Council Decision:**

That Submission 5 from Christopher Heywood is appreciated and has been considered but the remedies sought be **rejected**.

No amendments are made as a result of this submission.

**Council Reasons for Decision:**

1. Council has a responsibility to the wider community to ensure that any future use or development of potentially unstable land does not worsen or exacerbate the hazard potential, as this would have an adverse effect on the environment and be contrary to the purpose of the Resource Management Act 1991.
2. Council research confirms a potential risk to life and the environment within the proposed Land Stability Assessment Areas. As a result, Council must take a precautionary approach to future development potential as required by the Horizon's Regional Council One Plan, which Council must give effect to.
3. Balancing the costs and benefits to both the wider community and individual property owners, Council believes research undertaken to date is sufficient to guide it in establishing broad thresholds for development.
4. The cost of further research to identify a more refined area of potentially affected land, would likely be significant. Council accepts the view of its engineering consultants that the boundaries of the proposed overlay and development restrictions would be unlikely to alter significantly with more detailed analysis.
5. Through Plan change 25 which created the Land Stability Assessment Areas, Council acknowledged that the naming of this overlay does have influence as suggested in your submission.

6. The name was amended at the suggestion of submitters, from 'Hillside Protection Zone' which has applied to a limited number of sites since at least 2004, to 'Land Stability Assessment Area' to acknowledge the purpose of the overlay is to require detailed assessment of any land susceptibility at the time development is proposed for a site.
7. This Plan Change does not propose to amend any of the Plan provisions other than to alter the maps to include additional sites and delete the now superfluous Hillside Protection Overlay Zone.
8. The Council has a duty of care to inform residents of natural hazards as knowledge about them becomes available, regardless of previous consents that may have been issued.
9. The issue of a Code of Compliance, indicates Council has reasonable grounds to believe that a particular structure has been built in accordance with the Building Consent issued in compliance with the Building Code/ Building Act and Building Regulations in effect at the time of issue. This confirms the structure is appropriate given knowledge at the time of construction, but does not remove the inherent risk identified for the site generally by the LSAA overlay.
10. The risk zoning applies to the underlying ground, and the Land Stability Assessment Area (LSAA) overlay does not imply that existing structures within the Area are inherently unstable. However if development works are undertaken without due regard to the land stability hazards, then people and property may be at increased risk. The LSAA rules attempt to ensure that appropriate consideration of land stability hazards are made before future development works are undertaken.

The LSAA rules also ensure that good practice is followed when development works are planned, and that poorly planned and executed development work that would likely have a negative impact on property and people is avoided. The LSAA rules require a geotechnical report be prepared before most land disturbance activities are commenced.
11. Future works, for instance on neighbouring properties or on the roadway below, will need to consider the risk of instability and ensure any proposed works are appropriately designed.
12. This will over time provide increased certainty for property purchasers that structures have been designed and constructed appropriately taking account of the hazard potential.
13. The actual level of risk remains the same as before the study was undertaken. With the LSAA rules in place, Council is better able to manage the risk of future development causing instability and damage to the property or adjacent properties, which is more likely to affect property prices and insurance costs.
14. Implications for market values of individual properties do not outweigh Council's obligation to take a precautionary approach where hazard susceptibility is identified and to inform the community and to avoid works that may worsen the risks to people or property.

15. The impact on insurance and property values will be affected by a range of variables for each property including the extent to which insurance and the market already recognises and accounts for the hazard potential and the extent to which structures can be demonstrated to have been designed and constructed appropriately for the site specific hazard potential.
16. The study methodology has used remote sensing methods, historical photographs, and existing soil and geological maps, supplemented with a walkover of the study area by an engineering geologist. This has identified areas where further investigations and reporting are required before certain activities are undertaken. Undertaking this site specific work for all properties would be cost prohibitive, particularly when further development work may never occur on a number of properties.
17. The level of information (or certainty about the extent and severity of any site specific hazard) required is significantly more onerous to enable development of a specific site susceptible to land instability, than the level of information required to be provided by Council to demonstrate that areas are susceptible to land instability hazard and as such should be recorded in the Plan.

The rationale for this difference in thresholds of information is that the former would permit development and Council needs to be certain that it will be safe, whereas inclusion of properties within a hazard overlay is simply an indicator that further detailed investigation is required to demonstrate that development can occur without undue risk to people or the environment.

18. It is for private land owners to demonstrate that land can be safely developed without adverse effect on the environment. It is not Council's role to investigate the suitability of individual sites for development, rather it is for Council to take a precautionary approach to the identification of hazards and the management of risks of development on hazard prone sites.
19. Area A and B take into account the run out areas at the base of slopes and the area at the top that may be affected by slope instability. Therefore some areas that appear similar may be in different overlays.
20. The historic aerial photos showed evidence of erosion and instability, particularly over the lower part of the slopes. The retaining walls constructed along the base of these slopes would have been constructed into the accumulated slip/fan materials. These would be to provide space for construction of the houses along the road, rather than to provide toe stability to landslide deposits extending some 20 - 25 metres up the hill. The slope angles are commonly steeper than 40°, with some scarp features within the gullies on that slope being steeper than 50°. The overall height of the slope is over 80 metres from the crest of the hill down to road level, and is 50 metres in height where the slope angles are >30°. By comparison, the slopes on the other side of the road are shallower (generally less than 40°) and less than 30 metres from the ridge crest to the base of the slope. The assessment was based on the potential impacts to people and property, and the height, angle and historic precedence of erosion on these slopes suggests significant volumes of material could be mobilised by future instability that would place developments at high risk.



**Submitter Name:** C.C. and R.C. Ogle

**Submission No:** 6

**Address:** 22 Forres Street

Summary:

Opposed to the plan change in its proposed form.

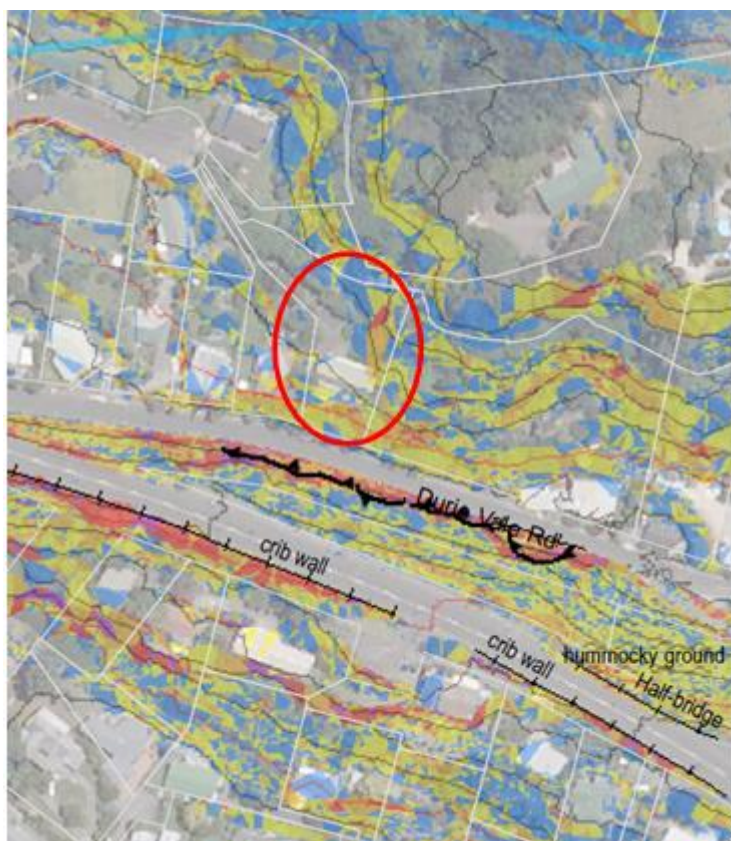
- The need for the Plan change at 22 Forres Street and Durie Hill/Vale area is to meet a perceived and unproven need on the wider scale – using a scattergun approach, rather than targeted.
- Proposal is unfair in that land with the same contour as our land is not included in the Plan change.
- The proposed change has no regard to stabilisation already carried out; and
- The LSAA overlay may decrease property values for affected land.

Decision Sought:

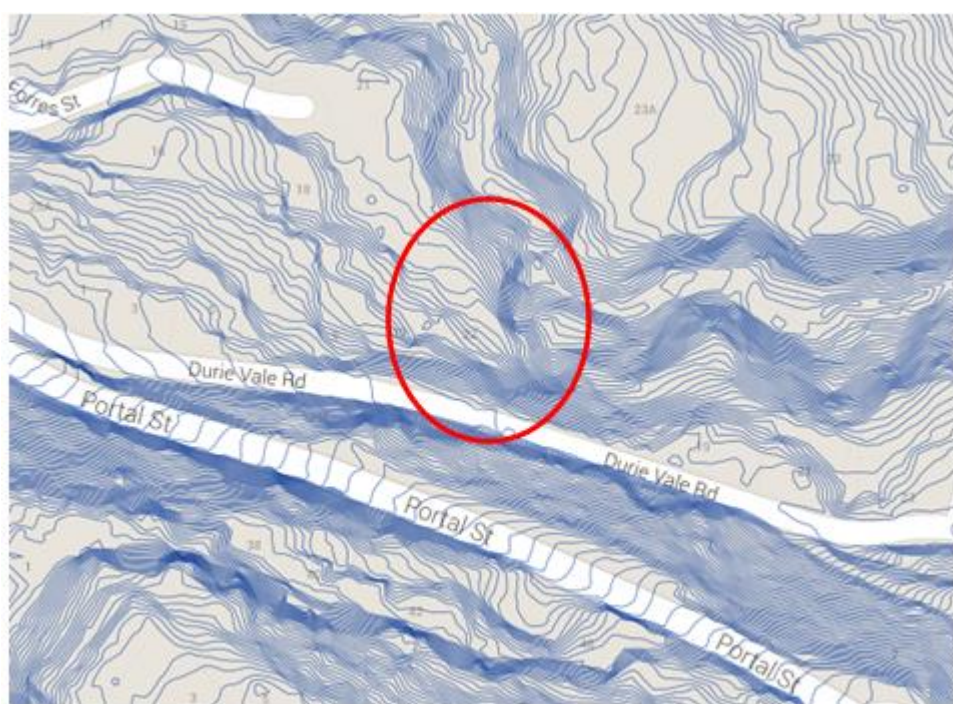
1. Total reassessment of the need for the Plan change process, especially to demonstrate the need for it.
2. Reassessment of land stability at 22 Forres Street and neighbouring properties to ensure fairness of changes.
3. An overlay which reflects land stabilisation measures such as retaining walls, trees for each property.
4. A new property valuation to reflect re-sale value.



**Figure 10: LSAA map – 22 Forres Street**



**Figure-11:-Engineering-geology-map-22-Forres Street**



**Figure-12:-Topographical-map-22-Forres Street**

**Council Decision:**

That Submission 6 from C.C. and R.C. Ogle is appreciated and has been considered but the remedies sought be **rejected**.

No amendments are made as a result of this submission.

**Council Reasons for Decision:**

1. Council has a responsibility to the wider community to ensure that any future use or development of potentially unstable land does not worsen or exacerbate the hazard potential, as this would have an adverse effect on the environment and be contrary to the purpose of the Resource Management Act 1991.
2. Council research confirms a potential risk to life and the environment within the proposed Land Stability Assessment Areas. As a result, Council must take a precautionary approach to future development potential as required by Horizon's Regional Council One Plan, which Council must give effect to.
3. Balancing the costs and benefits to both the wider community and individual property owners, Council believes research undertaken to date is sufficient to guide it in establishing broad thresholds for development.
4. The cost of further research to identify a more refined area of potentially affected land, would likely be significant. Council accepts the view of its engineering consultants that the boundaries of the proposed overlay and development restrictions would be unlikely to alter significantly with more detailed analysis.
5. The risk zoning applies to the underlying ground, and the Land Stability Assessment Area (LSAA) overlay does not imply that existing structures within the Area are inherently unstable. However if development works are undertaken without due regard to the land stability hazards, then people and property may be at increased risk. The LSAA rules attempt to ensure that appropriate consideration of land stability hazards are made before future development works are undertaken.  
  
The LSAA rules also ensure that good practice is followed when development works are planned, and that poorly planned and executed development work that would likely have a negative impact on property and people is avoided. The LSAA rules require a geotechnical report be prepared before most land disturbance activities are commenced.
6. Future works, for instance on neighbouring properties or on the roadway below, will need to consider the risk of instability and ensure any proposed works are appropriately designed.
7. This will over time provide increased certainty for property purchasers that structures have been designed and constructed appropriately taking account of the hazard potential.
8. The actual level of risk remains the same as before the study was undertaken. With the LSAA rules in place, Council is better able to manage the risk of future development causing instability and damage to the property or adjacent properties, which is more likely to affect property prices and insurance costs.
9. Implications for market values of individual properties do not outweigh Council's obligation to take a precautionary approach where hazard susceptibility is identified and to inform the community and to avoid works that may worsen the risks to people or property.
10. The impact on insurance and property values will be affected by a range of variables for each property including the extent to which insurance and the market already

recognises and accounts for the hazard potential and the extent to which structures can be demonstrated to have been designed and constructed appropriately for the site specific hazard potential.

11. Area A and B take into account the run out areas at the base of slopes and the area at the top that may be affected by slope instability. Therefore some areas that appear similar may be in different zones.
12. The historic aerial photos showed evidence of erosion and instability, particularly over the lower part of the slopes. The retaining walls constructed along the base of these slopes would have been constructed into the accumulated slip/fan materials. These would be to provide space for construction of the houses along the road, rather than to provide toe stability to landslide deposits extending some 20 - 25 metres up the hill. The slope angles are commonly steeper than 40°, with some scarp features within the gullies on that slope being steeper than 50°. The overall height of the slope is over 80 metres from the crest of the hill down to road level, and is 50 metres in height where the slope angles are >30°. By comparison, the slopes on the other side of the road are shallower (generally less than 40°) and less than 30 metres from the ridge crest to the base of the slope. The assessment was based on the potential impacts to people and property, and the height, angle and historic precedence of erosion on these slopes suggests significant volumes of material could be mobilised by future instability that would place developments at high risk.
13. The proposed Land Stability Assessment Areas are based on topographical and geological data, a walkover of the area, and examination of historical photographs. Historic instability features have been identified during this process. Areas with similar characteristics to those where failures have occurred have been identified as having the potential for future instability.
14. The study attempts to categorise the study area into Area A, Area B, or areas that are unlikely to be affected by land instability. Areas that have not been affected by instability in the past, but have the same or similar characteristic as those that have, are considered likely to have stability issues. The LSAA rules require that these be investigated and addressed if future works not meeting the rules, are planned.



**Submitter Name:** Russell Goudie

**Submission No:** 7

**Address:** 21 Stark Street

Summary:

Accepts that western end of the site above Portal Street would be classified as LSAA A for a length of 10 metres

Opposed in part to the plan change in its current form, as it is based on desktop and historical information only.

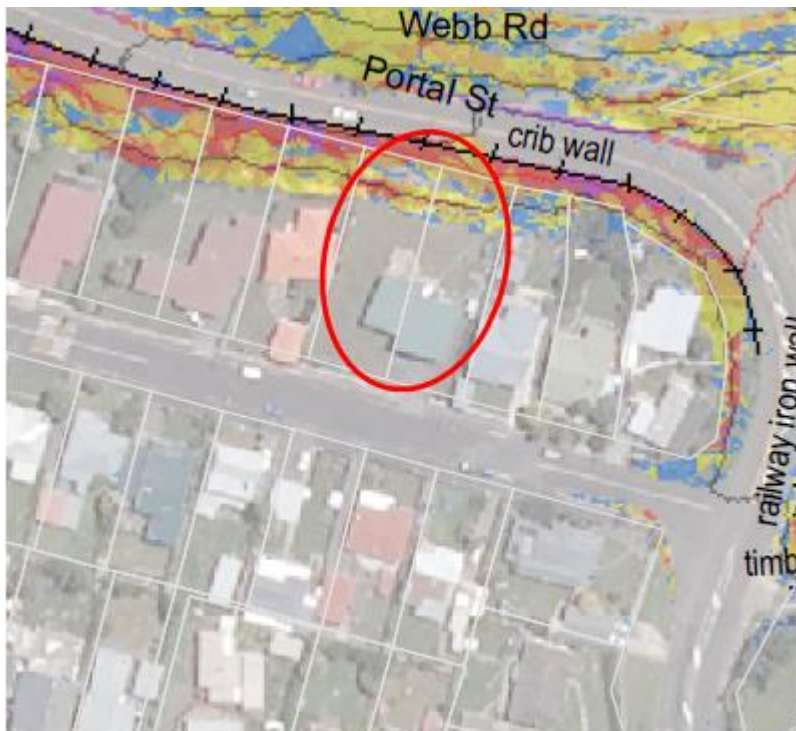
- Survey lines do not accurately reflect the topography.
- Zone A does not take into account remedial and stabilising work such as drainage, retaining walls, lawn, landscaping and reduction in the gradient of the bank.

Decision Sought:

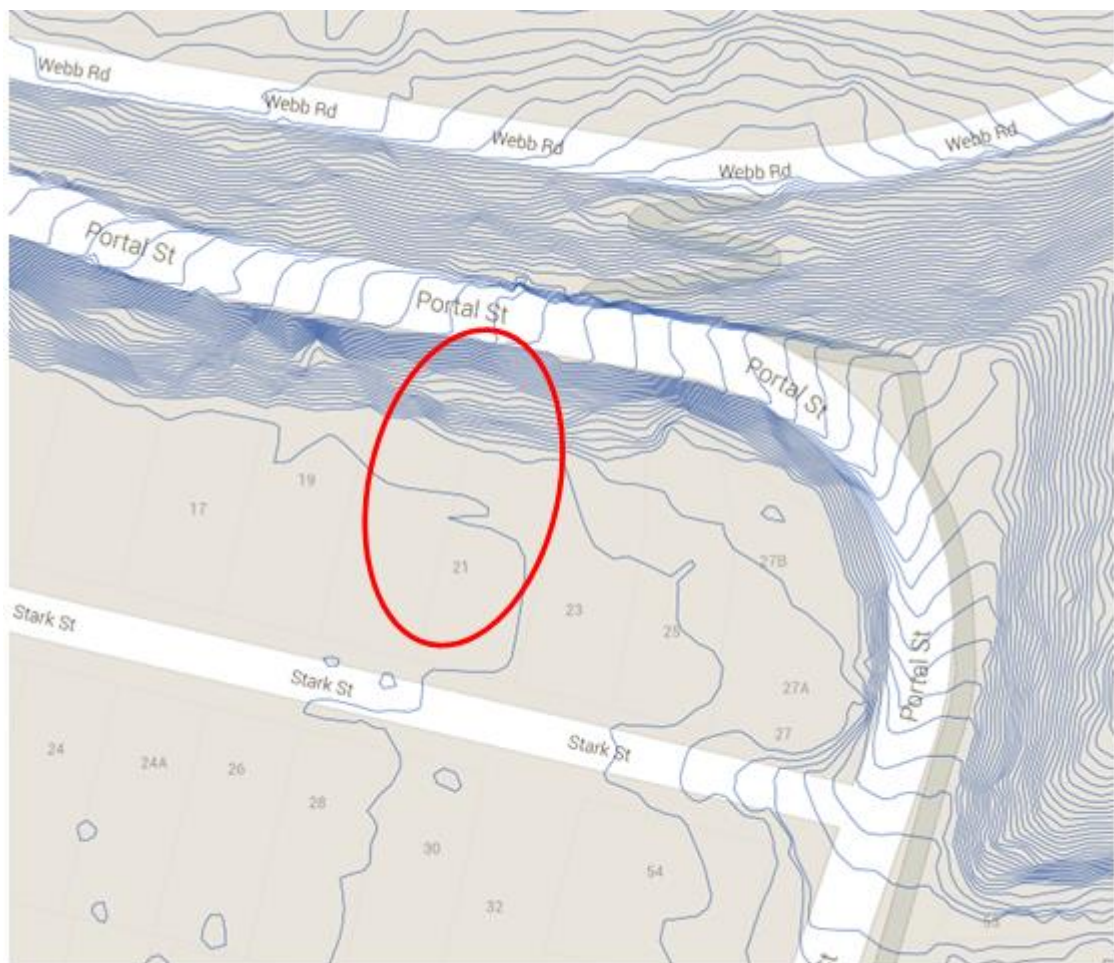
1. Carry out a site investigation of the section above Portal Street, and reconsider the zone beyond 10m from the western boundary.
2. Move several properties [unspecified] out of A overlay into B overlay, or remove classifications altogether.



**Figure 13: LSAA map – 21 Stark Street**



**Figure-14::Engineering geology map-21-Stark-Street¶**



**Figure-15::Topographical map—21-Stark-Street¶**

**Council Decision:**

That Submission 7 from Russell Goudie is appreciated and has been considered but the remedies sought be **rejected**.

No amendments are made as a result of this submission.

**Council Reasons for Decision:**

1. Council has a responsibility to the wider community to ensure that any future use or development of potentially unstable land does not worsen or exacerbate the hazard potential, as this would have an adverse effect on the environment and be contrary to the purpose of the Resource Management Act 1991.
2. Council research confirms a potential risk to life and the environment within the proposed Land Stability Assessment Areas. As a result, Council must take a precautionary approach to future development potential as required by the Horizon's Regional Council One Plan, which Council must give effect to.
3. Balancing the costs and benefits to both the wider community and individual property owners, Council believes research undertaken to date is sufficient to guide it in establishing broad thresholds for development.
4. The cost of further research to identify a more refined area of potentially affected land, would likely be significant. Council accepts the view of its engineering consultants that the boundaries of the proposed overlay and development restrictions would be unlikely to alter significantly with more detailed analysis.
5. The risk zoning applies to the underlying ground, and the Land Stability Assessment Area (LSAA) overlay does not imply that existing structures within the Area are inherently unstable. However if development works are undertaken without due regard to the land stability hazards, then people and property may be at increased risk. The LSAA rules attempt to ensure that appropriate consideration of land stability hazards are made before future development works are undertaken.

The LSAA rules also ensure that good practice is followed when development works are planned, and that poorly planned and executed development work that would likely have a negative impact on property and people is avoided. The LSAA rules require a geotechnical report be prepared before most land disturbance activities are commenced.

6. Future works, for instance on neighbouring properties or on the roadway below, will need to consider the risk of instability and ensure any proposed works are appropriately designed.
7. This will over time provide increased certainty for property purchasers that structures have been designed and constructed appropriately taking account of the hazard potential.
8. Submitter 7 seeks that Council carry out a site investigation of the section above Portal Street, and reconsider the overlay beyond 10m from the western boundary. However in response, it is not Council's role, in this District Plan process, to undertake site specific investigations, as this is the responsibility of the landowner in the event that works are proposed. Council must be satisfied that it is reasonably likely that the land is susceptible to instability and that a precautionary approach

prior to development being permitted is the most appropriate way to give effect to Horizon's One Plan and to achieve the purpose of the Act.

9. The topographical data reviewed was obtained from LIDAR survey data from which 0.5m contours through the urban area have been created. This is the most accurate topographical data available. Observations of the hillside above Portal St indicate these contours to be generally correct.