



To: Minister for Canterbury Earthquake Recovery

Canterbury Earthquake Recovery Authority

IN CONFIDENCE

### White Zone Rock Roll Properties – Zoning Considerations

Date	3 August 2012	Priority	HIGH
Report No	M/12-13/041	File Reference	

Action Sought	Deadline
Hon Gerry Brownlee Minister for Canterbury Earthquake Recovery	Monday 6 August

### Contact for Telephone Discussion (if required)

Name	Position	Telephone	1st Contact
Diane Turner	General Manager, Strategy, Planning and Policy	Withheld under section 9(2)(a)	
John WA Scott	Senior Adviser, Strategy, Planning and Policy		<input checked="" type="checkbox"/>

### Minister's office comments

<input type="checkbox"/> Noted <input type="checkbox"/> Seen <input type="checkbox"/> Approved <input type="checkbox"/> Needs change <input type="checkbox"/> Withdrawn <input type="checkbox"/> Not seen by Minister <input type="checkbox"/> Overtaken by events <input type="checkbox"/> Referred to	<p><b>Comments</b></p> <p>Discussed directly with officials</p> <p>Kelly 15/8/2012.</p>
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# White Zone Rock Roll Properties – Zoning Considerations

## Purpose

- 1 This paper very briefly outlines the key decisions that will need to be taken shortly in relation to the Port Hills. The paper deals with cliff collapse and rock roll properties only.

## Background

- 2 On 29 June 2012 you announced zoning decisions for the bulk of properties remaining in the Port Hills White Zone at that time. It has been indicated that announcements on the outstanding properties in the White Zone would be made on 17 August 2012. This paper outlines the most major decisions in this regard.

## The Scale of the Issue

- 3 Over the last few weeks, there has been an intensive exercise to validate the data on the number of properties at risk from rock roll and cliff collapse, using the implicit criteria that sat behind the 29 June decisions. This has involved a far more accurate categorisation of properties into residential, vacant, commercial and other types than was previously possible, and has also included consideration of the following (this list is not exclusive):
  - Properties that are in the green zone where the Council (often after consultation with CERA) have considered the geotechnical risks too high to remove a s124<sup>1</sup>; and
  - Properties in either the red or white zones that may not face an unacceptable life risk.
- 4 As a result of this work, an "at-risk" group of properties for both cliff collapse and rock roll has been defined. This includes the same kind of properties as on the flat (i.e. residential, residential part build or not for profit), and consists of properties for which it is considered that red or white zoning is appropriate given current definitions. It also includes properties in the Green Zone where the Council have placed / are placing a geotechnically-related s124 notice. The number of properties deemed to be at risk (along with their capital values in brackets) as compared to the number of properties in question in the 29 June decisions, is shown below.<sup>2</sup>

Risk Category	29 June	Adjusted (current) figures
Cliff collapse immediate life safety risk	191 (\$144m)	196 (\$148m)
Rock roll unacceptable life safety risk (white and red zone as at 29 June)	252 (\$134m)	249 (\$136m)
Lucas Lane decisions in October	8 remain white	8 remain white

<sup>1</sup> Some of these are in areas which were not covered by the GNS modelling, and some were identified through site specific considerations by geotechnical engineers.

<sup>2</sup> These figures are currently subject to one final check by CERA and the Council prior to formal sign off.

- 5 There are some issues to do with particular properties which are masked in these aggregate totals – and decisions on specific properties will be required in a small number of cases. We propose to provide more detail on the properties affected in a separate briefing once the final signoff from both CERA and the CCC referred to in footnote 2 is complete.

### Rock roll properties – defining the appropriate group in question

- 6 Since the previous tranche of zoning decisions on 29 June 2012, CERA and the Christchurch City Council have commissioned further work by GNS Science to help us better understand how the level of risk will change over time, and how the numbers of properties reaching the 1 in 10,000 risk line will change over time.
- 7 The results of this work are that if a 1 in 10,000 risk line is chosen for the 2018 year (as opposed to the 2016 year), the number of affected properties drops by 20. There is a further drop of 9 properties if a 1 in 10,000 risk line as at 2021 is chosen. The implication of these relatively small changes after 2016 is that beyond that date, the predicted seismic situation is relatively close to what will become the long term background seismic risk level, and only relatively small improvements occur over long periods of time going forward from 2016. These small changes make it difficult to identify real changes in the risk to individual properties (i.e. the changes are close to the margin of error for the model).
- 8 A decision needs to be taken to define the group of properties that are at risk and thus require a policy response. One view – for discussion – is that there are good reasons to use the risk criterion used in the 29 June decisions: a risk tolerance level of 1 in 10,000 in 2016 (approximately 1 in 5,000 in 2012). This group of properties would usefully be augmented by the list of properties that are in the Green Zone where geotechnically-related s124 notices are very likely to remain in place, despite them falling outside the 2016 1 in 10,000 risk zone identified in the GNS model.
- 9 The reasons behind our current view are as follows:
- To the extent that decisions have been made in this area, the 1 in 10,000 level has been judged to be appropriate and aligns well with Council decisions on section 124 notices (i.e. the Council may not remove s124 notices regardless of central government zoning decisions);
  - The modelling indicates there will be relatively little reduction in risk between 2016 and 2021, so extending the timeframe for reaching a 1 in 10,000 risk line to 2018 or 2021 would not allow significantly more properties to be zoned green; and
  - There is now a level of public understanding and acceptance of this level and timeframe.
- 10 If a risk tolerance of 1 in 10,000 in 2016 is used (augmented by properties in the green zone with s124 notices as discussed above), green zoning will be effectively ruled out for the existing White Zone unless mitigation is put in place. The major decision in this scenario would then become the potential for mitigation works as an alternative to red zoning for affected properties.
- 11 Other options exist. For example, deferred occupancy models exist, as do options in which some form of buy-out and resell models can be developed. These have been explored in earlier conversations with you.

## Mitigation Options

- 12 While mitigation options have not been pursued as an alternative to red zoning on the flat land, the distinct characteristics of the Port Hills rock roll areas means mitigation may be a viable option for some properties. Life-safety risk, rather than area-wide land damage, is the key driver of zoning decisions for the Port Hills. The range of factors to be considered when weighing up the benefits of mitigation include effectiveness, cost, timeliness, impact on homeowners, perception about protection effectiveness, ownership, maintenance responsibility, funding and legal liability.
- 13 The key difference is that the case for mitigation in some areas of the Port Hills is far stronger than the case was on the flat. The issues, and options, are very localised on the Port Hills. In Gilmour Terrace in Lyttelton, for example, two houses zoned red on 29 June, with a combined capital value of approximately \$1 million could be protected at an estimated cost of \$100,000 by mitigation works at the rockfall source on Council-owned land. An adjacent vacant lot would also be protected by that work.
- 14 There are other areas for which the potential solution is more complicated, but likely to be both effective and economic. In the Avoca Valley, possible mitigation works comprising a long bund with a short length of fence and some at-source protection would protect 28 properties (27 white and one red). Many – but not all – of the Avoca valley residents have indicated an interest in remaining in their homes behind protective structures. The protection works would be sited on portions of about half of the protected properties, as well as an adjacent green zone property and Council land. The estimated benefit cost ratio of these works is 1.6 : 1.
- 15 Maps outlining the possible protection works at both Gilmour Terrace and Avoca Valley are attached – the Avoca Valley area provides a useful contrast to the relatively simple Gilmour Terrace area. There are other areas in the Port Hills where mitigation appears to be cost-effective. We would propose – should you wish to discuss this subject with officials – to prepare similar maps for different areas for your consideration to highlight some of the options available.
- 16 If mitigation were to be pursued in any scale, there are a number of questions that would need to be considered. While none of these are considered insurmountable, it is clear that the construction of protective structures does add a level of complication to the Port Hills policy. The sorts of issues that would need to be considered are:
- Whether any contribution from the beneficiaries of the protective structures would be sought, and if so, the value of and mechanism for collecting this contribution;
  - Whether protection works only apply to properties currently zoned white, or whether they also are constructed to protect properties zoned red;
  - Whether there is a process to allow owners of at-risk properties to construct (and fund potentially) their own mitigation works, rather than accepting the Crown's purchase offer, subject to independent engineering review of the proposed structure and agreement regarding maintenance/monitoring;
  - Whether the Crown is willing to play an ongoing role in facilitating mitigation including establishing the eligibility criteria for mitigation, funding, securing access to land for mitigation and designing standards for protection;

- Whether to allow any input from residents into the decision-making process on whether to develop a protective structure or not;
  - How the construction of any protective structures is best promulgated given issues such as access to land; and
  - How decisions to build protection works in some locations, but not others, would be explained to residents (one risk to manage in this regard is ensuring that Red Zone residents who will not be protected do not launch unproductive efforts to build their own protection works).
- 17 The extent of Crown support for mitigation zone will send a strong signal to the community. The work to date has demonstrated that mitigation is feasible in many instances and cost effective. The potential complexities surrounding the criteria for eligibility, any funding package and, in some cases, the separation between land where mitigation is required and the beneficial land suggests that the Crown would ideally remain involved in the process for some time to come.

### **Other Work Underway**

- 18 There is a range of Port Hills advice being prepared for your consideration. Most prominent amongst this is advice relating to transaction design. We intend to provide this to you in the week starting August 6.
- 19 The paper referred to in paragraph 5 that will provide details on the numbers of properties involved will also include a discussion on the relationship between the properties identified and infrastructure developments that may take place. It will also outline the numbers of properties that could be rezoned from – for example – red to green, given the analytical work that has been undertaken. There are implications in cases like this in terms of expectations that have been created. This paper that details the figures will also be completed in the week starting August 6.

### **Consultation**

- 20 The Treasury and the Christchurch City Council were consulted in the preparation of the paper. The Department of the Prime Minister and Cabinet were informed.

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## Recommendations

21 It is recommended that you:

- 1 Discuss this paper with CERA officials YES/NO
- 2 Forward this paper to the Minister of Finance and the Associate Minister of Finance (Hon Steven Joyce) YES/NO



Diane Turner  
General Manager, Strategy Planning and Policy

NOTED / APPROVED / NOT APPROVED	
Hon Gerry Brownlee Minister for Canterbury Earthquake Recovery	
Date:	/ / 2012

Attachment A: Maps of mitigation options for rock roll affected white zone properties

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