

To: Hon Gerry Brownlee

Minister for Canterbury Earthquake  
Recovery



IN-CONFIDENCE

### Port Hills White Zone - Update

Date	20 January 2012	Priority	Medium
Report No	M/12/0195	File Reference	

#### Action Sought

		Deadline
Hon Gerry Brownlee <i>Minister for Canterbury Earthquake Recovery</i>	Read this report	26 January 2012

#### Contact for Telephone Discussion (if required)

Name	Position	Telephone	1st Contact
Diane Turner	General Manager, Strategy, Planning & Policy	Withheld under section 9(2)(a)	<input checked="" type="checkbox"/>
Angela Mellish	Senior Advisor, Strategy, Planning & Policy		<input 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 Withdrawn 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 checked="" type="checkbox"/> Overtaken by events <input type="checkbox"/> Referred	<b>Comments</b> Minister read report. Further report M/12/213 signed, returned to Dept.  Scott Meffandy - P&A Secs
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# Port Hills White Zone - Update

## Purpose

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- 1 This report provides an update on progress for rezoning decisions in the Port Hills and recommends you consider further advice in making decisions on cliff collapse areas.

## Executive Summary

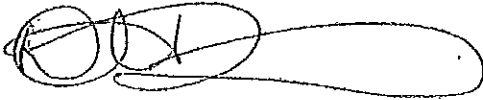
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- 2 Around 2,100 properties remain in the Port Hills White Zone. As more geotechnical and scientific analysis becomes available, it is expected that the Green Zone in the Port Hills will be able to be expanded. Rezoning the remaining areas with an appropriate policy response is expected to be achievable within 5 months, subject to the scientific and geotechnical information becoming available as expected.
- 3 Around 80 properties located at the top and bottom of cliff faces that have failed during earthquakes have been identified by the Port Hills Geotechnical Group (PHGG) to be unsafe for residential use in the future.
- 4 EQC has advised that of its initial assessment for the 80 properties referred to above, 11 properties are a write-off and for a further 12 properties, the building may be a write-off but the land is repairable. For the remaining properties, EQC considers damage to the land and/or buildings can be repaired.
- 5 Officials recommend that the worst-affected cliff-collapse properties be rezoned in March. While a decision on these properties now would provide certainty to property owners sooner, it would be prudent to first consider advice on council consenting, EQC/insurer liabilities and the GNS report on cliff collapse.
- 6 Many areas within the remaining White Zone are at an elevated risk of rockfall since the earthquakes. Immediate life safety risks are being addressed through the application of s.124 notices.
- 7 In making recommendations on the zoning of properties at an elevated risk of rockfall, further geotechnical and scientific analysis underway by GNS, PHGG and Geovert needs to be considered. This information is expected to come forward over the next few months, and will be used to make rezoning recommendations progressively and as soon as possible.
- 8 The rezoning framework developed for the worst-affected areas of flat land in greater Christchurch is not immediately applicable to rockfall-affected areas of the Port Hills. Officials are developing policy options in parallel to the geotechnical and scientific assessments so that recommendations can be made once the technical information becomes available.
- 9 Subject to the GNS reports being finalised by the end of February, ground-truthing finalised by end of March and the Geovert study available by mid-April, officials could expect to provide rezoning advice to you on rockfall areas by early May.
- 10 Roughly 70 properties are on landslip areas on Clifton Hill and in Huntsbury which slipped during the large earthquakes – the ongoing stability of the land is being monitored by PHGG, GNS and EQC. Officials will provide further advice to you on whether the government's rebuild objectives are likely to be met via the usual EQC/insurance process in these areas.

## Recommendations

It is recommended that you:

- 1 **Note** that of around 80 residential properties that were considered by the PHGG to be *"unsuitable (unsafe) for residential use in the future"* (CERA report M/11/0149 refers), EQC has advised that 11 properties are a write-off and for a further 12 properties, the building may be a write-off but the land is repairable (based on initial assessment).
- 2 **Agree** that consideration of rezoning the worst-affected cliff-collapse properties could occur in March 2012 following advice on council consenting, EQC/insurer liabilities and the GNS report on cliff collapse. **YES / NO**
- 3 **Note** further geotechnical and policy analysis is required before zoning recommendations on rockfall and landslip areas within the White zone can be made.
- 4 **Direct** officials to report back to you by 10 February with a further update **YES / NO** on progress on the Port Hills White Zone.



Diane Turner  
General Manager, Strategy, Planning &  
Policy

NOTED / APPROVED / NOT APPROVED

Hon Gerry Brownlee  
Minister for Canterbury Earthquake Recovery

Date: / / 2012

Released by the Minister for Canterbury Earthquake Recovery

## Context

- 11 Around 2,100 properties remain in the Port Hills White Zone. Properties are affected by:
- 11.1 Cliff collapse – around 80 properties have been identified by the Port Hills Geotechnical Group (PHGG) to be unsafe for residential use in the future (and are located at the top and bottom of cliff faces that have failed during earthquakes). All of these properties (and a further ~20 which could be repaired and reoccupied) have s.124 notices attached.
  - 11.2 Rockfall – around 430 properties have Building Act s. 124 notices attached due to the life risk from rockfall). Christchurch City Council (CCC) is considering a further 250 notices as more geotechnical information comes to light.
  - 11.3 Land movement – roughly 70 properties are on areas on Clifton Hill and in Huntsbury which slipped during the large earthquakes – the ongoing stability of the land is being monitored by PHGG, GNS and EQC.
- 12 To date, a conservative approach to zoning decisions has been taken in the Port Hills. This is appropriate due to the elevated risk to human life which has occurred as a result of the earthquakes.
- 13 As more geotechnical and scientific analysis becomes available, it is expected that the Green Zone in the Port Hills will be able to be expanded. Rezoning the remaining areas with an appropriate policy response is expected to be achievable within 5 months, subject to the scientific and geotechnical information becoming available as expected.
- 14 Immediate life safety risks are being addressed through the application of s.124 notices and CCC is taking enforcement action where it is apparent that notices are not being complied with.

### 23 December aftershocks

- 15 CERA staff undertook an aerial survey directly following the second main aftershock on 23 December (Richter magnitude 5.9). This survey included the Port Hills affected in previous earthquakes by cliff collapse, rock fall and land movement. Detailed assessment and data evaluation will be undertaken by EQC (T&T) and CCC (PHGG) in the next two weeks.

#### Cliff collapse

- 16 Repeated cliff collapse occurred along all previously identified cliff sections. Material shed off the near vertical cliff faces was in the tens to hundreds of cubic metres, rather than thousands as in February and June 2011 earthquakes. Peacock's Gallop, Richmond Hill (above Wakefield Avenue in Sumner) and Whitewash Head exhibited the largest material loss. No loss of life or injuries was reported.

#### Rock Fall

- 17 Rockfall occurred from Lyttelton, Sumner to Bowenvale Valley. Some houses with Building Act section 124 notices attached were affected and one vehicle in Avoca Valley was struck. No loss of life or injuries was reported. New rockfall was noted in an unpopulated area of Banks Peninsula, notably in Purau. Both Sumner Road (Evans Pass to Lyttelton) and Summit Road (below Mt Cavendish) suffered new rockfall.

### Land Movement

- 18 Most monitored land movement areas were reactivated on the eastern Port Hills. Monitors on main cliff top sections indicated co-seismic movement, with no subsequent movement noted. GPS and terrestrial surveys correlated well (i.e. land reference positions largely unchanged).

## Port Hills' Rezoning

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### Cliff collapse

- 19 Around 100 properties are at danger from cliff collapse – of which 80 are unlikely to be able to be repaired or reinstated or suitable for residential use and of which the remaining ~20 properties are expected to be able to be repaired and the risk adequately mitigated.
- 20 The Christchurch City Council (CCC) has attached Building Act section 124 notices to these properties (requiring that properties are not entered) to protect people from life-risk situations. CCC has indicated (Informally) that it would not issue building consents for these properties in the future based on there being no practical engineering solutions to make the land safe for residential occupation. However, provisions in the Building Act require that this be considered on a case-by-case basis.
- 21 CERA previously advised you to request advice from EQC about payments likely to be made to the owners of around 80 residential properties that were considered by the PHGG to be "unsuitable (unsafe) for residential use in the future" (CERA report M/11/0149 refers). These properties are located at the top and bottom of cliffs which have suffered severe damage in the earthquakes. The combined capital value for these 80 properties is approximately \$68M based on the 2007 rating valuation.
- 22 EQC has advised that of its initial assessment for the 80 properties referred to above, 11 properties are a write-off and for a further 12 properties, the building may be a write-off but the land is repairable. For the remaining properties, damage to the land and/or buildings can be repaired. The status of the private insurance assessments for these properties is unknown.
- 23 Where possible, the costs of repair and rebuild should be met by insurers according to their policies. Based on EQC's initial assessment, the repair/rebuild for many of these properties will not be adequately addressed through the usual insurance process.
- 24 It is likely that Red Zoning these properties would help provide certainty and confidence to those property owners about the future of their land/properties, and would provide clarity to insurance companies in progressing claims.
- 25 However, Red zoning provides a further incentive to EQC and insurers to minimise their payout of claims to government on purchased properties (as is becoming apparent in relation to Red Zones on the flat land).
- 26 Officials advise that while a decision now would provide certainty to property owners sooner, it would be prudent to first consider advice on:
  - 26.1 The legal basis on which the Council can refuse to grant resource and building consents in respect of life-safety risk in a residential area (and how this may relate to the review of the Resource Management Act currently underway).

- 26.2 If EQC/insurers require a building consent to repair a property, but which is not granted by the Council on grounds of life-safety risk, what are the liabilities of EQC and insurers (e.g. does this constitute "reasonable sufficient reinstatement" by EQC in respect of its land liability?). Clarifying the liabilities for EQC and insurers will provide a better estimation of the insurance recoveries that the Crown could expect from purchased properties.
- 26.3 If a property does not require a building consent for repair, but a Building Act section 124 notice has been attached as a direct result of changes to the stability of the land during the earthquakes, what is EQC's liability?
- 26.4 The GNS report on cliff collapse. This report has been commissioned by CCC and is due at the end of February. CCC has agreed to share the report with CERA. If a decision is made prior to the delivery of the GNS report, there is a risk that the report will identify issues not considered in the rezoning.
- 27 Red zoning these cliff collapse properties could be seen to set a precedent for other cliff areas of New Zealand affected by natural hazards (e.g. the recent heavy rainfall events in Nelson). However, the Red Zoning approach for severely-affected properties on or below cliffs in the Port Hills must be framed in the context of the scale of damage from the Canterbury earthquakes and the impact this is having not only on the local community but also the national economy.
- 28 Officials recommend that the worst-affected cliff-collapse properties are rezoned following receipt of the above advice in March.

## Rockfall

- 29 Around 430 properties in the Port Hills White Zone are at an immediate risk of rockfall. While the combined value of these particular properties has not been calculated, a rough estimate assuming an average capital value in the range of \$0.6M-\$0.8M indicates a combined value in the range \$260M-\$340M.
- 30 GNS has recently reported to CCC on assessing life-safety risk from rockfalls in the Port Hills<sup>1</sup>. The report identifies that there is an elevated risk of rockfall due not only to the increased seismic activity, but also to an increased susceptibility to rockfall resulting from the earthquakes (the rockfall source areas are now much more unstable than they were previously). The probabilistic modelling indicates that there is a relatively high risk to life in some areas.
- 31 Based on evidence of boulder impacts or near misses in these areas, CCC has affixed s.124 notices under the Building Act to properties which are considered to be at an unacceptably high life risk (i.e. the ~ 430 properties noted above). This provides an immediate measure to protect people from the risk while a further refinement of analysis and risk mitigation measures are investigated. CERA understands that a further ~250 notices are being considered by the CCC over the coming weeks due to advice provided in the recent GNS report and ground-truthing being undertaken.

<sup>1</sup> The report is still in draft form, and CERA understands it has been provided to Christchurch City Councillors on an In-confidence basis. CERA is seeking to work with CCC on any public communications or release of the report.

32 In making recommendations on the zoning of these properties, the following geotechnical and scientific analysis underway by GNS, PHGG and Geovert needs to be considered:

- "Ground-truthing" being undertaken by PHGG for CCC (to be completed by the end of March), to refine the GNS analysis of life-risk by taking account of the specific characteristics within each area. This work could be phased such that areas identified without an elevated risk can be recommended for release from the White Zone as soon as possible.
- GNS assessment of the balance of the Port Hills (initially only pilot areas of high residential occupation were considered).
- A 3D rock fall modelling study by Geovert (commissioned by CERA) to help assess the viability of rockfall mitigation measures such as rock fall fences and earthen bunds. The results of this study are expected mid-March (preliminary results may be available progressively in about a month's time).

#### Policy analysis

33 While it is unclear what the exact outcome of the scientific and geotechnical assessments will be, it is likely that the following scenarios will eventuate:

- Some properties (or groups of properties) may be at a very high risk of rockfall, which cannot be practically or cost-effectively mitigated to a reasonable level, and are unsafe to live in. EQC/insurance is not likely to pay out on risk that has not yet eventuated (unless considered imminent by EQC). *The government's rebuild objectives are unlikely to be met in some areas without some sort of facilitated exit of the area.*
- Some properties (or groups of properties) may be at a very high risk of rockfall, which can reasonably be mitigated to an acceptable level (e.g. a bund or rock fence could be engineered at reasonable cost and timeframe to protect properties below). *The government's rebuild objectives could likely be met provided the council and/or government facilitated the construction of the bund/fence.*
- Some properties (or groups of properties) may be at an elevated but acceptable risk of rockfall. *Government's rebuild objectives could be met with the provision of information to property owners and insurers.*

34 The rezoning framework developed for the worst-affected areas of flat land in greater Christchurch is not immediately applicable to rockfall-affected areas of the Port Hills. Development of options for a government facilitated exit of such areas is required. The existing Red Zone offer of purchase as developed for the flat land may not be appropriate in the Port Hills because:

34.1 Affected properties in the Port Hills may be more scattered in terms of location (and the same type of area-wide approach may not be appropriate)

34.2 Elevated future risk to life is a key issue, and as a result insured property owners may not be eligible for much in the way of insurance claims.

34.3 Where life-risk is involved, the appropriateness of a voluntary mechanism versus a compulsory one needs further consideration

35 Other considerations include:

- Liability/responsibility of land owners (many of the rockfall source areas are on publicly-owned land – principally CCC and the Department of Conservation).
  - The review of the Resource Management Act that is currently underway. Government action in the Port Hills should be focussed on addressing elevated risk resulting from the earthquakes, rather than the risk that existed prior to the earthquakes (so as not to set a national precedent for managing pre-existing hazards in residential areas).
  - EQC's cover of rockfall events in past events. CERA is seeking advice from EQC on how they have interpreted their cover in respect of rockfall from previous non earthquake-related events in the Port Hills.
  - Cost-sharing between Crown, Council and property owners (where costs are not met by EQC/insurers where relevant). \$60M has been included in forecasts for the Canterbury Earthquake Recovery Fund for the Crown's share of rockfall risk, and \$423 M remains in the contingency for land decisions (this excludes ~\$72M recommended for upcoming Orange Zone decisions). Until more geotechnical information becomes available and policy options are developed, it is unclear if the costs to Crown can be met from within these allocations.
- 36 Subject to the GNS reports being finalised by the end of February, ground-truthing finalised by end of March and the Geovert study available by mid-April, officials could expect to provide rezoning advice to you on rockfall areas by early May.

### Land slips

- 37 The Port Hills White Zone contains two areas of landslips, containing around 70 properties. The ongoing stability of the land is being monitored by PHGG, GNS and EQC. Properties which are unsafe for occupancy have had Building Act s.124 notices attached.
- 38 Officials will provide further advice to you on the potential outcome for property owners in potentially catastrophic landslip areas (e.g. where there is an elevated life-risk situation) via the usual EQC/insurance process.

### Communications

- 39 There is increasing community frustration at the amount of time it is taking to get a decision on zoning on the remaining White Zones. Unfortunately the data gathering and risk assessment process has been time consuming, and ongoing aftershocks have required reassessments of damage and risk.
- 40 CERA needs to provide clarity to residents about the process they will be following to come to zoning decisions and how these are linked to those decisions being carried out by the Council.
- 41 Key messages for the public are:
- We appreciate the frustration and uncertainty faced by property owners.
  - Human life and safety is our first consideration.



- Damage to properties and risk to life in the Port Hills have had to be reassessed after each major aftershock. The impact of the recent aftershocks on 23 December appear to be consistent with what the scientists and geotechnical engineers are saying, although further checks are being undertaken over the next couple of weeks.
- Several properties with Building Act Section 124 notices (red stickers) were impacted by rockfalls caused by the 23 December earthquakes. This illustrates the need to adhere to the advice given by the geotechnical engineers, especially given the likelihood of further aftershocks.
- CERA and the Council are working together to ensure people are safe, and are developing a process for recovery in the Port Hills as quickly as possible.
- To inform zoning decisions, CERA is using a range of expert analysis as follows:
  - GNS Science analysis on cliff collapse and rockfall risk (provided by the Christchurch City Council)
  - Port Hills Geotechnical Group "ground-truthing" (for Christchurch City Council) – which takes account of the specific characteristics of each area
  - Geovert study on 3D rockfall modelling and potential rockfall mitigation measures.
- This information is expected to come forward over the next few months, and will be used to make decisions progressively and as soon as possible.

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