

**Charlie Watts for QLDC – Summary of Evidence, 24 July 2017
Queenstown Mapping – Hearing Stream 13**

1. I have provided rebuttal evidence for Queenstown Lakes District Council (**QLDC**) on specific geotechnical issues for various rezoning requests in the Queenstown area of the District.

GROUP 1B

Bruce Grant (318, 434)

2. The submitter seeks rezoning of an area of 5516m² on Frankton Road near Marina Drive, from Rural to Low Density Residential Zone (**LDRZ**). Lucy Millton for the submitter has attached a report by Canterprise dated 19 August 1997 and a geotechnical review by Tonkin & Taylor dated March 1998 to her planning evidence.
3. "Falling debris and slippage" are noted as the main geotechnical constraints. These relate specifically to the active landslide mass to the north east (affecting Lots 8, 9 and 10). I recommend that further investigation is completed to determine the risk of movement of the active landslide during seismic (Serviceability Limited State (**SLS**) and Ultimate Limited State (**ULS**)) or static conditions before development is approved on the site. During this investigation the rockfall risk to the development should be assessed.
4. Overall, I do not consider that Lots 8, 9 and 10 are suitable for development of LDRZ, based on the information included within the Canterprise Report and the Tonkin & Taylor review.

Land Information New Zealand (661)

5. LINZ has sought the rezoning of an area of 66,155m² at Peninsula Road from Rural to LDRZ. The Geoconsulting report (attached to Scott Edgar's planning evidence) identifies the following natural hazards on the site:
 - (a) two landslide hazards, the first a large inactive landslide and the second the potential instability of glacial and post glacial material on the lower slopes;
 - (b) rockfall hazard from the schist outcrops above Peninsula Road with particular emphasis on the eastern end of the development;
 - (c) debris flow hazard that is present in the central gully between the two blocks of low density housing; and

(d) liquefaction hazard which Mr Bryant concludes "*is not considered to be an issue affecting the site.*"

6. The Geoconsulting report recommends more detailed study on the rockfall and debris flow hazards, to determine if the risks are of an acceptable level or whether some mitigation measure is necessary. I would recommend that the above more detailed study proposed by the Geoconsulting report also includes further investigation to refine the geological model for the landslide hazard on site. This investigation should also consider if the landslide could be reactivated during seismic (SLS and ULS) or static conditions before development is approved on the site.
7. In my view, the Geoconsulting report does not contain sufficient information on the natural hazards of the site to demonstrate it is suitable for LDRZ.

Kerr Ritchie Architects (48)

8. The submitter has sought the rezoning of an area of 10,524m² at 48 and 50 Peninsula Road, Kelvin Heights, from Rural to LDRZ. Page 2 of the report attached to Mr Bryant's evidence for the submitter refers to and makes a number of comments about the presence of a large landslide
9. As the development is sited on an existing dormant landslide, I would recommend that further investigations are required to refine the geological model for the landslide and if the landslide could be reactivated during seismic (SLS and ULS) or static conditions before development is approved on the site.
10. Based on Mr Bryant's report, there appears to be uncertainty as to the magnitude of the rockfall risk on the site, and I recommend that this risk is assessed and quantified further before a decision on the suitability for development on the site can be made.

GROUP 1C

Middleton Family Trust (336)

11. The submitter seeks to retain the LDRZ zoning and remove the Queenstown Heights Overlay over a 38.6ha area. The overlay requires a 1500m² minimum lot area due to natural hazards issues on the site.

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12. Paul Faulkner has filed geotechnical evidence on behalf of the submitter, referring to three reports. These reports refer to the close proximity of the Queenstown Hill Landslide to the Remarkables View subdivision, which is adjoining land to the east and is not part of the submitter's site. Mr Faulkner states that the findings of these reports are not representative of the entire landslide hazard.
 13. As the reports referred to in Mr Faulkner's evidence do not provide any information relating to the land in question, I consider the submitter needs to provide the equivalent type of information for the site itself to support the retention of LDRZ and removal of the Queenstown Heights Overlay.

Mount Crystal Limited (150)

14. The submitter seeks rezoning from LDRZ to Medium or High Density Residential Zone, for a site of 2.736 ha at 634 Frankton Road. Sean Dent has attached a report by GeoSolve Ltd dated August 2016 as Appendix B to his planning evidence for the submitter.
15. Overall, based on the Geosolve Report, I consider that the land is suitable for development of a medium or high density residential zone as long as the above risks are considered during the development, and I recommend the Proposed District Plan (**PDP**) require this at the consenting stage.

Gertrude's Saddlery Limited (494) and Larchmont Developments Limited (527)

16. In relation to a site of 6.6353 ha at 111 Atley Road, Arthurs Point, the submitter has sought that part of the site be rezoned from Rural to LDRZ.
17. Having reviewed Mr Nicolson's geotechnical evidence on behalf of the submitter, it appears reasonable and he has raised some key issues which should be examined and assessed during any detail design process. I would recommend any LDRZ ensures that there is an ability to consider these issues at subdivision or development stage.

GROUP 1D

Jardine Family Trust, Remarkables Station Limited and Homestead Bay Trustees Limited (715)

18. The submitter seeks to rezone an area of 162.46 ha at Homestead Bay, from Rural to Jacks Point Zone. David Rider has filed geotechnical evidence on behalf of the submitter.
19. Overall, I consider Mr Rider's evidence to be reasonable and I have no significant comments other than to advise that the current level of reporting presented provides only an overview of the geotechnical risks that exist on the site. Targeted, site specific investigation and specific engineering design should be carried out to assess whether mitigation is needed for the risks listed at specific construction sites within the wider area, and I recommend this is a requirement in the PDP under any new urban zone.

GROUP 2

Lake Wakatipu Station Limited (478)

20. The risks highlighted by Mr Faulkner for the rezoning from Rural to Rural Visitor of 14,305 ha at Halfway Bay are in my view conventional geotechnical risks encountered in alluvial areas. In my opinion, the comments regarding development being possible subject to appropriate engineering assessment and design are reasonable, and I would recommend the PDP requires such assessments at the consenting stage.

Queenstown Park Limited (806) and Remarkables Park Limited (807)

21. At 2,000ha, the proposed Queenstown Park Special Zone (**QPSZ**) is significant in area, with various geotechnical hazards present in specific zones across the site. For this reason it is not possible to be prescriptive about engineering measures to mitigate these risks across the whole site. I recommend that as development is considered in the specific pods addressed by Mr Bond, as a minimum, the following geotechnical risks (discussed in the submissions) be considered:
- (a) liquefaction, soft ground, slope stability, rockfall, shallow bearing capacity and settlement issues for all structures that may be sensitive to ongoing movements; and
 - (b) in order to assess these risks, further localised site investigation and evaluation will be required.

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22. I would recommend the PDP zone requires this. Overall, based on Mr Bond's evidence, I am satisfied that the specific pods of land could be rezoned as suggested.
23. Mr Faulkner's evidence for QPL, focused on the gondola, includes a summary of the natural hazards that include; landslides, rockfall, debris flows, liquefaction and lateral spreading, alluvial fan risk, flooding and avalanches. Mr Faulkner notes that the "*hazards in the corridor are expected to be manageable over the lifetime of the structure provided the detailed design phase addresses local conditions along the route.*"
24. Mr Faulkner's evidence acknowledges the multiple natural hazards. I agree with Mr Faulkner that his evidence is only a preliminary risk assessment, and I strongly agree that there will be a need for further investigations and assessment to "*ensuring risk is at an acceptable and tolerable level*".
25. I recommend the PDP require these further assessments (discussed in the submission) to be undertaken, prior to issuing of any consent.