

**BEFORE THE HEARINGS PANEL
FOR THE PROPOSED QUEENSTOWN LAKES DISTRICT PLAN**

IN THE MATTER of the Resource
Management Act 1991

AND

IN THE MATTER of re-notified Stage 1
submissions: Gertrude's
Saddlery Limited and
Larchmont
Developments Limited
at Arthurs Point

**STATEMENT OF EVIDENCE OF ROBERT BOND
ON BEHALF OF QUEENSTOWN LAKES DISTRICT COUNCIL**

GEOTECHNICAL ENGINEERING

18 OCTOBER 2022

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1. INTRODUCTION

- 1.1 My full name is Robert Bond. I hold the qualification of Bachelor of Engineering in Industrial Geology. I am a registered and Chartered Engineer with Engineering New Zealand (formerly IPENZ) with specialist areas in geotechnical engineering and management. I have been employed as a Technical Principal – Geotechnical Engineering at WSP New Zealand (formerly Opus Consultants) since 1998.
- 1.2 I have worked in New Zealand for over 10 years, my recent experience in terms of natural hazard risk assessment and rockfall management includes providing assessments and advice on landslides, debris flow, rockfall events and completing natural hazard assessments on behalf of various councils such as Christchurch City Council following the Christchurch Earthquake, Central Otago District Council, Queenstown Lakes District Council and providing, and leading, the Geotechnical response to NZ Transport Agency (**NZTA**) following the Kaikōura earthquake prior to the establishment of the North Canterbury Transport and Infrastructure Recovery (**NCTIR**).
- 1.3 I currently manage the Geotechnical team responsible for the data collection and management of natural hazard risks in Central Otago for the NZTA State Highway network and Queenstown Lakes District Council (**QLDC** or **Council**) local roading network. I have advised other councils and regulatory authorities on natural hazard risk and in determining suitable forms of mitigation, as geotechnical expert on natural hazard assessments for residential, commercial and infrastructure schemes. I have more recently provided expert evidence on the natural hazard aspects of the Stage 3 rezoning requests on behalf of QLDC.
- 1.4 Although this is a Council hearing, I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

1.5 The key documents I have used, or referred to, in forming my view while preparing this brief of evidence are:

- (a) Natural Hazards Chapter (Chapter 28) of the PDP;
- (b) Statement of evidence of Mr Peter Nicolson, dated 09 June 2017, on behalf of the submitters;
- (c) Section 42A Report of Ms Rosalind Devlin on behalf of QLDC dated 24 May 2017;
- (d) Queenstown Lakes District Council Independent Hearing Report 17.4 – Mapping of Arthurs Point;
- (e) The relevant submissions and further submissions relating to the proposed rezoning that raise geotechnical matters; and
- (f) Existing technical reports produced by WSP including but not limited to the Edith Cavell Bridge replacement feasibility study.¹

2. SCOPE

2.1 I have been asked to provide evidence in relation to submissions on Stage 1 of the Queenstown Lakes Proposed District Plan (**PDP**) by Gertrude's Saddlery Limited (**Gertrude's Saddlery**) and Larchmont Developments Limited (**Larchmont**), seeking site specific re-zoning of land at Arthurs Point from Rural Zone to Lower Density Suburban Residential (**LDSR**), which I understand will provide for approximately 89 lots. My evidence focuses on geotechnical and natural hazard issues only.

2.2 As part of my assessment I have completed a walkover of the perimeter of the site area, where existing access tracks permitted. In assessing the geotechnical / natural hazard risks at the site, I have reviewed the QLDC and Otago Regional Council available data relating to natural hazards, including technical reports from recent resource consents, as well as WSP's (formerly Opus) available data. This includes a technical report compiled by WSP on the proposed replacement of the Edith

¹ Arthurs Point Bridge Preliminary Geotechnical Appraisal dated 26 August 2020 and provided as part of the QLDC/Waka Kotahi business case: <https://www.qldc.govt.nz/media/xt1eys2g/2a-arthurs-point-crossing-ssbc-final-draft-20201221-cc.pdf>.

Cavell Bridge at Arthurs Point. I have also considered the Natural Hazards Chapter (Chapter 28) of the PDP.

3. EXECUTIVE SUMMARY

3.1 I do not oppose the re-zoning of the land at Arthurs Point to LDSR on the basis of natural hazards and geotechnical risk. I have assessed the qualitative level of risk posed to the site from natural hazards and conclude it to be **Low**.

4. PROPOSED EXTENSION TO THE LOW DENSITY RESIDENTIAL ZONE

4.1 The submissions seek that the land at Part Section 1 SO 24074, Lots 1-2 DP 307630 and Lot 2 DP 398656, Arthurs Point (**submission site**) be rezoned from Rural Zone to LDSR. Alongside this, the submitters are seeking changes to the Urban Growth Boundary (**UGB**) to include the rezoned LDSR as well as changes to exclude the submission site from the Outstanding Natural Landscape (**ONL**).

4.2 I note that part of the site closest to 9, 10 and 12 Larchmont Close Road is presently zoned Low Density Residential under the PDP.

5. ASSESSMENT OF NATURAL HAZARD AND GEOTECHNICAL RISK AT THE SUBMISSION SITE

5.1 I concur with Mr Nicolson's assessment that in terms of natural hazards, potential slope stability hazards, within or near the site, are confined to some limited areas located on or close to the southern boundary.² Subject to standard engineering assessments and design, which would occur as part of the resource consent process, these areas of instability would not, in my view, preclude residential development.

5.2 I consider that the existing PDP provisions under Chapters 25 (Earthworks), 27 (Subdivision and Development) and 28 (Natural Hazards) will be sufficient to address any geotechnical engineering matters.

² Mr Nicolson, EIC dated 9 June 2017, at paragraph 9.

- 5.3 It is my opinion, based on my own observations of the area and understanding of the submission site geology, that slope instability is most likely associated with the Shotover River gorge and is likely to be limited in extent. It is my assessment that instability would be identified as slow creep of the slopes on the far eastern margin of the submission site and with larger block toppling of the schist bedrock beyond the submission site boundary to the south and west along the gorge itself. This would however be limited to the gorge face and not likely to extend back to the submission site boundary. These areas of instability are unlikely to affect any future development of the submission site.
- 5.4 My assessment of the submission site has not identified any other natural hazard to be present, either on, or within close proximity, that would pose a geotechnical risk to the site.
- 5.5 As part of my assessment I have also considered the right of way along Atley Road and any potential hazard risks associated with this. This access road is relatively narrow and has been historically cut in to the side of a hill. The road is bounded by slopes above and below the road. No evidence of slope instability was noted during my site walkover. It is therefore my opinion that with appropriate engineering investigation and appropriate design, as would be required as part of the resource consent process, a suitable access road can be constructed. This is likely to require appropriate retaining structures. I did not identify any hazard that would inhibit or preclude such a development.
- 5.6 For the reasons outlined above, I do not oppose the rezoning request. I consider that the qualitative level of risk posed to the site from natural hazards is low.



Robert Bond
18 October 2022