

**Before the Hearings Panel
At Porirua City Council**

Under Schedule 1 of the Resource Management Act 1991

In the matter of the Proposed Porirua District Plan

Between **Silverwood Corporation Limited**

Submitters

And **Porirua City Council**

Respondent

**Statement of evidence of Andreas Giannakogiorgos on behalf of Porirua City
Council (Miyamoto International NZ Ltd | Technical Director – CPEng
Geotechnical Engineer)**

Date: 16/12/2021

INTRODUCTION:

1 My full name is Andreas Giannakogiorgos, and I am the Geotechnical Engineering Technical Director at Miyamoto International New Zealand Ltd.

2 I have prepared this statement of evidence on behalf of the Porirua City Council (**Council**) in respect of technical related matters arising from the submissions and further submissions on the Proposed Porirua District Plan (**PDP**).

3 Specifically, this statement of evidence relates to Submission 172, addressing the geotechnical suitability of site to be re-zoned from General Rural Zone (GRZ) to Future Urban Zone (FUZ), by undertaking a high-level review of the submitted geotechnical report, namely:

- Appendix 8 of Submission 172 Silverwood Corporation Ltd “Geotechnical Suitability Report – Silverwood, Whitby”, prepared by ENGEO Ltd (ENGEO) dated 16 November 2020 (project no. 17754.000.000)

4 I am authorised to provide this evidence on behalf of the Council.

QUALIFICATIONS AND EXPERIENCE

5 I am a Chartered Professional Engineer (CPEng - Geotechnical), Chartered Member (CMEngNZ) and an International Professional Engineer on the Engineering New Zealand (EngNZ) register.

6 I have a Master of Science (MSc) and have a Diploma in Soil Mechanics and Engineering Seismology from the Imperial College of Science, London.

7 I am also a member of:

7.1 The New Zealand Geotechnical Society.

- 7.2 The New Zealand Society for Earthquake Engineering and the Structural Engineering Society of New Zealand.
 - 7.3 The Structural Extreme Events Reconnaissance (**StEER**) Network (Level 4 membership) eligible to participate in StEER's Virtual Assessment Structural Teams and serve as a team leader on Field Assessment Structural Teams.
 - 7.4 The British Geotechnical Association.
 - 7.5 International Society of Soil Mechanics and Geotechnical Engineering.
 - 7.6 International Society of Rock Mechanics.
 - 7.7 The Hellenic Scientific Society of Soil Mechanics and Foundation Engineering.
- 8 I have over 22 years' experience in geotechnical engineering consulting for large scale civil infrastructure, commercial and residential projects in New Zealand, Australia, US (California, Nevada, New Mexico), Mexico, Indonesia (Palu), Myanmar (Yangon), India (Northern Bihar), Samoa, UK, Cyprus, and Greece.
- 9 I have conducted numerous geotechnical investigations for New Zealand insurers, individual property owners and developers in relation to residential and commercial earthquake claims and new developments. In my current role as a Technical Director with Miyamoto International NZ Ltd, I oversee a team of eight geotechnical engineers and geologists and have been responsible for the technical review and signoff of the final reports.
- 10 I have a technical background in Ground Engineering with experience in deep and shallow foundations, slope stability, geotechnical earthquake engineering, rock falls, rock mechanics, site investigations, evaluations of site and laboratory testing, site reconnaissance, embankments and earthworks, soil liquefaction assessments and hazard analysis, ground improvement scheme designs and large-scale land development employing such tools as numerical modelling and soil-structure interaction.

11 I'm currently member of the National Seismic Hazard Model Technical Advisory Group (NSHM TAG) representing NZGS, for the revision of NZ's seismic hazard.

12 I have also published papers on liquefaction susceptibility, and ground reinforcement for soils susceptible to liquefaction.

Code of conduct

13 I have read the Code of Conduct for Expert Witnesses set out in the Environment Court's Practice Note 2014. I have complied with the Code of Conduct in preparing my evidence and will continue to comply with it while giving oral evidence before the Environment Court. My qualifications as an expert are set out above. Except where I state I rely on the evidence of another person, I confirm that the issues addressed in this statement of evidence are within my area of expertise, and I have not omitted to consider material facts known to me that might alter or detract from my expressed opinions.

SCOPE OF EVIDENCE

14 I have been asked by the Council to undertake a high-level review to ensure that the information provided in the ENGEO geotechnical report are sufficient to justify future site's development for urban purposes and whether there are any constraints making it undevelopable for future urban purposes.

EVIDENCE

15 In my opinion, ENGEO undertook a detailed desktop study and site walkover assessment for the site, presenting their findings for likely geotechnical related hazards for the potential future subdivision. Their detailed report also presents the regional geological conditions, waterways, and anticipated ground conditions, near faults from GNS active faults database, and slip scarps as identified from their site assessment.

- 16 The ENGEO report clearly identifies the likely geotechnical hazards as per Section 106 of the Resource Management Act (1991) while providing and commenting on the potential mitigation measures for global and shallow slope instabilities, settlements in low lying areas, liquefaction, and erosion.
- 17 ENGEO is further 'subdividing' the area under investigation to different levels of engineering input required to facilitate the future urban development based on existing slope angles, as presented in section 5 and Appendix 1 of their geotechnical report.
- 18 It is my professional opinion that the ENGEO geotechnical suitability report follows geotechnical best practice, and the conclusions are sound for the site conditions, scope of their work (i.e., preliminary geotechnical advice for a zone change of the property from rural zone to a future urban zone) and intent future development.
- 19 I agree with the conclusions of ENGEO's geotechnical report emphasizing the need for a detailed geotechnical investigation and specific design for any future plan change and subsequent Resource Consent.

Date: 16/12/2021



electr. signature

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