4415
13 January 2020

GEOTECH
consulting ltd

Selwyn District Council
PO Box 90
Rolleston

Attention: R. Love

Dear Sir,

RE: Private Plan Change PC63 – Todd
Kimberley road, Darfield
Geotechnical Summary Peer Review

Geotech Consulting has been asked to carry out a peer review of the geotechnical report submitted as part of plan change application PC63. In particular the review is to confirm that the report contains sufficient information to understand the effects relating to geotechnical risk and hazard, and is consistent with MBIE guidance for geotechnical assessment of subdivisions.

The report forwarded is titled *Geotechnical Investigation Report, Proposed Plan Change – Darfield Preferred Development Area 7 (Malvern Area Plan)* by Fraser Thomas, dated 4 September 2019, for M. Todd.

The letter outlines the desk study and site testing carried out. The testing included twelve machine excavated test pits, six hand auger boreholes and scala penetrometer tests. The tests confirmed that the soils are topsoil over a relatively thin layer of silt and sand and then sandy gravel below 0.4 – 0.9m depth. Reference to an Ecan well log indicates that the gravel extends to a "significant" depth and that the groundwater depth is at least 10m.

A liquefaction assessment has been included and concludes that liquefaction is unlikely. Although not stated, the inference is that future performance with respect to liquefaction can be considered to be equivalent MBIE Foundation Technical Category TC1.

Shallow foundations are deemed suitable, with the possible exception of the relatively small areas previously used as sediment control ponds and a soak pit, where specific engineering input is needed.

The report concludes that the subject area is suitable for its intended use (i.e. residential subdivision)

Review Comments

The number of tests is consistent with the MBIE Guidance, and while shallow, is sufficient for this plan change stage, given the deep gravel soils known to be present under the Darfield area. RMA section 106 hazards are not specifically considered, other than the conclusion with respect to liquefaction hazard. However, the report does conclude that the site is suitable for residential subdivision. Common sense tells us that the land is free of any significant geotechnical hazard. The land is flat and therefore not subject to slippage, rockfall or serious erosion, distant from any river and hence free of significant flooding, river erosion or avulsion risk.

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We also note that the site area adjoins land that either has already been subdivided or is in the process of being developed on two of its three sides. It is well known that the Darfield area is free of significant geotechnical hazard.

Review Conclusion

Although the report does not state this, the liquefaction potential is likely to be equivalent TC1. The report also does not specifically cover the full range of RMA s106 hazards, but the geotechnical conditions are consistent with those underlying most, if not all, of the Darfield area and it can be concluded that there are no geotechnical risks of any magnitude that would prevent the land in question being suitable for residential subdivision and development. The extent of work as summarised complies with the intent of the MBIE Guidance requirements, in our professional opinion, and is sufficient for the assessment of risk for the private plan change application.

Yours faithfully
Geotech Consulting Limited

Ian McCahon