4415
23 September 2022

Selwyn District Council
PO Box 90
Rolleston

GEOTECH
consulting ltd

Attention: Justine Ashley,

Dear Ms Ashley,

RE: Proposed District Plan
DPR-0136 Stewart, Townsend & Fraser
1153 Springs Road, Lincoln
Geotechnical Evidence Peer Review

Geotech Consulting has been asked to carry out a peer review on the geotechnically related evidence submitted in support of the re-zoning of land from that in the Proposed District Plan. The review is an assessment of the evidence presented and the appropriateness of the submitted land use for the site. Any information gaps are to be identified.

The geotechnical evidence submitted on behalf of L & M Stewart, L & C Townsend, R & D Fraser is

- *Geotechnical Engineering Investigation, Proposed Plan Change, 1153 Springs Road, Lincoln*, dated 9 September 2022, by KGA Geotechnical, for Lyn Townsend
- Brief of evidence of Abilio Nogueira, dated 14 September 2022, before the SDC Hearings Panel

A peer review of the proposed General Industrial Zone only is required, as the residential component overlaps the Intensification Variation on the Proposed Plan. The proposed GIZ is to the northwest of the transmission line with frontage onto Springs Road and covering about half of the land. The geotechnical evidence relates to the whole site.

The subject site is a 33.1 hectare area in seven titles (Lots 1,2 3 & 4 DP 26847, Lots 1 & 2 DP 335366, Lot 1 DP 67090 and Lot 2 DP 70736) of approximately rectangular shape with Springs Road on the northwest side and Tancreds Road on the northeast side. Recent residential subdivision adjoins the site to the south east. It is essentially flat.

1. Geotechnical Investigation Report

The purpose of the KGA report was to address the geotechnical suitability of the land for rezoning to commercial and residential use. A desk top review of available geotechnical information (4.2) found six well logs and 8 CPT tests on or close to the site. Liquefaction reporting indicates that this hazard needs assessment (4.2). Geological mapping (6.0) demonstrates the general area is underlain with Holocene (geologically recent) gravel, sand and silt soils. A visual inspection (5.0) shows a terrace riser across the site; otherwise, the site is near level.

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Site testing (6.3) was carried out with six hand auger boreholes to between about 0.2m and 3m depth, 18 scala penetrometer tests and ten CPT tests to between 1 and 7m depth. Based on the 30 tests, the site has been divided into three zones. Area A covers the northern half of the GIZ area and is where gravels are deeper at about 5m. Area B is the southern third of the GIZ area where gravel is shallower and within 2m of the surface. Area C is a strip of variable width between the two where the soil profile transitions. Overall, there is about 0.5m of topsoil over sands and silts underlain by sandy gravels at the depths indicated for the two areas A & B. The water table was recorded at various depths in Area A only, and a depth of 2m has been assessed as being realistic for the current purposes.

Liquefaction is discussed in (8.0) with analysis of the ten on-site and 8 close by CPT tests. There is very little liquefaction predicted for the Area B area of shallower gravel and liquefaction induced settlements at SLS of 10 – 15mm and 40 – 65mm at ULS for Area A. These place Area B as equivalent TC1 Foundation Technical category and Area A as TC2. With the limited testing to date, KGA have conservatively given a TC1/TC2 classification to Area B. Area C has not been classified, but obviously will fall between the two. It is noted (10.0) that the site has experienced strong shaking likely to have been close to ULS levels in September 2020 without record of any ground damage.

Natural hazards are assessed in section (12.0) with the conclusion that the site is suitable for the proposed plan change use in terms of geotechnical constraints.

2. Evidence of Mr Nogueira

Mr Nogueira's evidence summarises the findings of the geotechnical report. He concludes that the site is suitable for the proposed plan change use in terms of geotechnical constraints. Identified geotechnical hazards "can be managed using common engineering solutions".

3. Conclusion

The report adequately characterizes the geotechnical conditions. The extent of testing meets the recommendations of the MBIE Guidance for Plan Change. The evidence submitted is sufficient to demonstrate that the Proposed GIZ land is geotechnically suitable for development. No further information is required for Plan Change consideration.

Yours faithfully
Geotech Consulting Limited

Ian McCahon