

Project Title Weigh Right Programme **Prepared By** Michael Spittal
Project No. IZ105200 **Reviewed By** Jerry Spinks
Client New Zealand Transport Agency **Date** 28 February 2020

The following table summarises a high level geotechnical desktop assessment of the site options for the proposed commercial vehicle safety centre (CVSC) for Kāpiti as part of the Weigh Right Programme. The proposed ratings have been derived on the qualitative basis and are based on the following criteria:

GREEN for 'favourable ground' and no remediation required, only earthworks;

ORANGE for 'unfavourable ground', and is expected to be relatively economical (7) to remediate;

RED for 'unfavourable ground' and may be uneconomical (7) to remediate.

The notes at the base of this table, and the Limitation Statement thereafter provide important clarifications in respect to the geotechnical desktop assessment, and this assessment report.

Site ID	Site Name	Greater Wellington Regional Council's Hazard Maps ¹				Q Map Geology ⁵	Active Faults ⁶	New Zealand Geotechnical Database ²	Other	Proposed Rating
		Liquefaction Potential	Ground shaking hazard zone	Slope Failure	Combined Earthquake Risk					
A	Taylors Road (North of Otaki)	No Potential	2 – Low to moderate	Low	Moderate	Q5b / Small area of Q2a1	None	Confirms geology – some organic silts (approx. 2m) overlying dense gravels.		GREEN
B	Otaki	Variable (low to high) Low based on available NZGD logs,	2 – low to moderate	Low	Moderate	Q1a1 - gravel	None	Confirms geology – indicates gravel/cobbles/boulders	Adjacent to industrial facility (Stresscrete) and storage lagoon? Potential for contamination.	GREEN
C	Peka Peka Interchange	Moderate	3 – Moderate	Low	Moderate to High	Q1ds – Aeolian dunes	Ohariu Fault located approx. 280 m south-east	Surrounding geology indicates poor ground conditions incl. loose saturated sand, peat, organic silts etc.		RED
D	Te Moana Road	Variable (low to high)	3 - Moderate	Low	Moderate	Q1a1 – Alluvium	None	No data in site however surrounding bores indicate loose and organic sands / soft silts (approx. 3m) overlying Pleistocene Alluvium.		RED
E	Kapiti Road	3 Moderate	3 Moderate	1 Low	4 Moderate to High	Q1ds – Aeolian dunes	None		There is an engineered drainage SUDs pond on the site.	RED
F	Poplar Avenue	3 Moderate	3 Moderate	1 Low	4 Moderate to High	Q1ds – Aeolian dunes	None	Approx. 5m of organic, loose and saturated sands / soft silts and peat.	Engineered SUDs pond or wetland just to the north of sites.	ORANGE
G	Poplar Avenue West	3 Moderate	3 Moderate	1 Low	4 Moderate to High	Q1ds – Aeolian dunes	None	Approx. 5m of organic, loose and saturated sands / soft silts and peat.	Engineered SUDs pond or wetland just to the north of sites.	ORANGE

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H	Whareroa Farm (Emerald Glen Road)	1 Low	1 Low	1 Low	3 Moderate	Q2af – Fan deposits	Ohariu fault runs through site.	Site specific GI indicated conditions were favourable for foundations and non0-liquefiable. Refer to site location risk memorandum ⁴ .		ORANGE
I	QEII Park	3 Moderate	3 Moderate	1 Low	4 Moderate to High	Q1ds – Aeolian dunes	Ohariu Fault located approximately 150 m south-east.	Borehole data indicates more Holocene alluvium and soft / organic silts.		ORANGE
J	Sang Sue Corner North	3 Moderate and Variable (low to high) at western extent	3 Moderate	1 Low	3 Moderate to 4 Moderate to high	Q1ds – Aeolian dunes	Ohariu Fault located approximately 70 m south-east.	No data available		ORANGE
J2	Kāpiti	3 Moderate	3 Moderate	1 Low	3 Moderate to 4 Moderate to high	Q1ds – Aeolian dunes	Ohariu Fault located approximately 250 m south-east.	No Data available		ORANGE
K	Sang Sue Corner South	None at eastern end, variable (low to high) at western end	1 Low to 2 Low to moderate	3 Moderate	5 High	Q1ds – Aeolian dunes, Tt – greywacke and Q2af – fan deposits	Ohariu Fault runs through site	No Data available	Would require significant earthworks and intrusive investigations	RED
L	Paekakariki Interchange	3 Moderate and variable (low to high)	2 Low to moderate	1 Low	3 Moderate and 4 Moderate to high	Q1ds – Aeolian dunes	Ohariu Fault located approximately 400 m south-east.	Limited data of use available		ORANGE
M	Plimmerton (Existing Weigh Station)	1 Low	1 Low	1 Low	2 Low to moderate	mQal – fan gravel and Tt – greywacke	None	No data available		GREEN
N	Lane's Flat (Current TG Site Office)	Variable – low to high	5 High	1 Low	4 Moderate to High	Q1b – Beach Deposits	None	Limited data – consistent with published geology		ORANGE

Notes:

- 1) The earthquake hazard ratings have been taken directly from Greater Wellington Regional Council's earthquake hazard study. These maps were produced in 1996 therefore may not be entirely consistent with the latest published information.
- 2) Geotechnical data has been retrieved from the New Zealand Geotechnical Database. Jacobs has assumed this data to be representative of the conditions and has made no effort to verify the data.
- 3) The CVSC site names and boundaries were provided by the New Zealand Transport Agency and do not reflect the current property boundaries.
- 4) Refer to memorandum from Jacobs issued to the New Zealand Transport Agency (document reference IZ105200-1000-CG-MEM-0001) detailing the geotechnical risks at Site H, dated July 25, 2018.
- 5) Q Map references obtained from GNS Science's geological maps.
- 6) Active fault information retrieved from GNS Science's active fault database.
- 7) The scope of the treatment is not defined, nor a has a cost estimate been developed, as part of this assessment. The basis for determining 'economical' should therefore be treated as an indicator only.

Limitation Statement

The sole purpose of this high level desktop assessment, and the associated services performed by Jacobs in this respect, is to review each short-listed site for the Kāpiti CVSC project. The assessment comprised a high level review of publicly and locally available information. The desktop assessment will feed into the wider MCA process, covering planning and other related engineering considerations. The desktop assessment has been performed in accordance with the scope of services set out in the contract between Jacobs and the New Zealand Transport Agency ('the Client'). That scope of services was developed with the Client.

In preparing this report, Jacobs has relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by the Client and/or from other sources as listed in this document. Except as otherwise stated in the report, Jacobs has not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change. In addition, the high level nature of this assessment and the lack of publicly available information means that the certainty of each individual site assessment comes with a degree of uncertainty, in particular for those with no site specific data.

Jacobs derived the data in this report from information sourced from the Client (if any) and/or available in the public domain at the time or times outlined in this report. The passage of time, manifestation of latent conditions or impacts of future events may require further examination of the project and subsequent data analysis, and re-evaluation of the data, findings, observations and conclusions expressed in this report. Jacobs has prepared this assessment in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above and by reference to applicable standards, guidelines, procedures and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

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