

**IN THE MATTER** of the Resource Management Act  
1991

**AND**

**IN THE MATTER** of Proposed Private Plan Change 2 to  
the Hamilton City Operative District  
Plan: Te Awa Lakes Private Plan  
Change

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**JOINT WITNESS STATEMENT OF GRANT ROBERT ECCLES AND JOHN BLAIR OLLIVER  
IN RELATION TO GEOTECHNICAL MATTERS**

**28 NOVEMBER 2019**

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## INTRODUCTION

1. This memorandum records the statement of the witnesses Grant Robert Eccles and John Blair Olliver on the above topic further to the direction of the Chair at the commencement of the hearing that there be ongoing informal caucusing between the Hamilton City Council's section 42A report expert consultants and the Applicant's experts on geotechnical and related planning matters regarding LDP Areas Q and R, and Area X in the Te Awa Lakes Business 6 Zone.
2. Further informal caucusing took place between Ms Williams from BECA and Mr Eccles for HCC, and Mr Lentfer from CMW Geosciences and Mr Olliver for the Applicant, at various times during the hearing between 25 and 27 November 2019. Mr Eccles and Mr Olliver have relied on the advice of Ms Williams and Mr Lentfer in preparing this joint statement and producing the proposed amended planning provisions annexed to this joint statement to be incorporated into PPC2, if it were to be recommended by the Hearing Commissioners.

## CODE OF CONDUCT

3. Mr Eccles and Mr Olliver confirm that in producing this joint statement they have read and complied with the Environment Court Expert Witness Code of Conduct contained within the Environment Court Practice Note 2014.

## ISSUE

4. The sole remaining planning issue still outstanding at the start of the hearing from Mr Eccles' section 42A report was whether it was appropriate at this time to zone Areas Q & R within the Te Awa Lakes Medium Density Residential Zone for residential use, and Area X within the Te Awa Lakes Business 6 Zone for business use.
5. As explained in Mr Olliver's primary evidence, the structure of the plan change requires a resource consent for land development in any of these three areas, as well as for the development of the main linear lake (which is Areas I & J within the Te Awa Lakes Medium Density Residential Zone).

6. Ms Williams advised, during the further informal caucusing, that what needed to be addressed at the resource consent stage and was not adequately covered at that point in the PPC2 provisions was the maintenance at all times of an acceptable hydraulic gradient between the linear lake and the Waikato River. The maintenance of an acceptable hydraulic gradient (agreed by Ms Williams and Mr Lentfer to be 2%) will minimise groundwater pore pressure and thus the potential for preferential groundwater flow paths to be created from the linear lake to the Waikato River. The engineering mechanism to ensure an acceptable hydraulic gradient is the provision of a second outlet from the linear lake to the Waikato River, located at the northern end of the lake – at present the only outlet from the linear lake is at the south end of the lake adjacent to Hutchinson Road. This dual outlet approach will allow the level of the linear lake to rise and fall with minimal lag to the level of the Waikato River and thus achieve the maximum hydraulic gradient requirement.

#### **AGREED AMENDMENTS**

7. Based on Ms Williams' advice on the issue and the matters that need to be addressed in relation to it through the consenting stage, Mr Eccles has drafted a set of further provisions. The rationale underpinning the further provisions is that the importance of achievement of the hydraulic gradient through the provision of a second (northern) outlet from the linear lake should be made clear in the District Plan provisions, as well as the need for the Land Development Plans for Areas I and J (the linear lake) and Q and R, and resource consents for Area X (which is in the Business 6 zone) to be sought as one package to allow an integrated design and consenting solution to be put in place.
8. The further provisions work as follows:
- i. Figure 19 – Framework Plan will include reference to linear lake discharge points at RL 14.5 at southern and northern end of the lake.

- ii. The information requirements in 1.2.2.28 for Land Development Consents for the main linear lake will require information about the details of engineering measures to be implemented, including at the northern and southern outlets of the lake, to achieve a maximum 2% hydraulic gradient between the linear lake and the Waikato River.
- iii. An independent engineering peer review will be required to be commissioned by the applicant (in consultation with Hamilton City Council) and the outcomes of that peer review provided as part of the required information for an application for Land Development Consent in Areas I, J, Q, R, and resource consent in X.
- iv. Resource consent for Areas I, J, Q, R and X must be obtained at the same time and before any other Land Development Plan Areas (apart from Area A which has already been remediated and can thus more readily be developed). It will be a prohibited activity to apply for a LDP resource consent out of this order.
- v. It will be a prohibited activity to apply for a subdivision consent in Land Development Plan areas Q, R and X ahead of a Land Development Consent in those areas having been granted.
- vi. Policy 3.8.1.2f is amended to require the main linear lake to be designed and built in a manner that minimises the potential for preferential groundwater flow paths to be created between the linear lake and the Waikato River, by ensuring a maximum groundwater hydraulic gradient of 2% between the linear lake and the Waikato River is maintained at all times. An addition to the matters of discretion in criteria N13b (what an engineering design report to support LDP and resource consent applications must cover) using the same wording, is also introduced.

- vii. The vision for the Te Awa Lakes development is amended to add a new clause requiring the development of the site and particularly the landform that separates the main linear lake from the Waikato River to be undertaken in a manner that is resilient to natural hazard effects and minimises the potential for health and safety effects for landowners and occupiers.
9. Those provisions are annexed to this joint statement as Attachment A. They may need some minor drafting adjustments but that will not affect the geotechnical requirements. They will be incorporated within the updated set of planning provisions to be provided by Mr Olliver towards the end of the hearing next week.
10. Mr Lentfer has reviewed the proposed provisions and agrees with them. Ms Williams has reviewed the proposed provisions and agrees that this resolves her concerns raised prior to and following the Council's section 42A report.
11. Mr Olliver will provide an updated section 32AA analysis with that updated set of planning provisions. However, for now, the witnesses agree that Residential zoning of Areas Q and R, and Business 6 zoning of Area X can be recommended to the Panel.

DATED 28 November 2019



Grant Robert Eccles



John Blair Olliver



## Figure 2-19: Framework Plan

Amend to include specific reference to linear lake discharge points at RL14.5 at southern and northern end of lake.

### 1.2.2.28 Land Development Consent – Te Awa Lakes Medium Density Residential Zone

f) Add : In addition, for the main linear lake, the details of engineering measures to be implemented at the northern and southern outlets of the linear lake to ensure a maximum hydraulic gradient of 2% between the linear lake and the Waikato River is maintained at all times. For the avoidance of doubt, any engineering measures required to ensure compliance with this rule shall take precedence over any other provisions in the District Plan and the requirements of the Regional Infrastructure Technical Standards (RITS).

w) In Land Development Plan Areas I and J (the main linear lake), Q, R and X the outcomes of an independent engineering peer review commissioned by the applicant in consultation with Hamilton City Council.

### 3.8.5.2 Staging Rules for Development of Te Awa Lakes Structure Plan Area

a) A resource consent for Land Development Plan Areas I and J (the main linear lake), Q, R and X on Figure 2-21 shall be obtained before any other resource consents for Land Development Areas (except for Area A) are granted.

### 3.8.5.5 Staging Activity Status

a) Any application for ~~Land Development Plan Consent~~ or Concept Development Plan Consent or resource consent in the Te Awa Lakes Business 6 Zone not in accordance with Rules 3.8.5.2 and 3.5.8.3 is a discretionary activity.

aa) Any application for Land Development Plan Consent not in accordance with Rules 3.8.5.2a is a prohibited activity.

### Policy 3.8.1.2f

Staged design and consenting shall ensure the main linear Lake is designed and built as a central element of the development ~~and early in~~ at the outset of the residential development sequence, in a manner that minimises the potential for preferential groundwater flow paths to be created between the linear lake and the Waikato River, by ensuring a maximum hydraulic gradient of 2% between the linear lake and the Waikato River is maintained at all times.

## 3.8 Te Awa Lakes

### Vision

viii Ensuring that the development of the site, and particularly the landform that separates the main linear lake from the Waikato River, is undertaken in a manner that is resilient to natural hazard effects and minimises the potential for health and safety effects for landowners and occupiers.

### 3.8.2.7 Main Lake

The main linear lake will be separated from the Waikato River by a landform that varies in width. At its southern end closest to Hutchinson Road, the landform narrows which creates the potential for natural hazard effects (including those associated with the potential movement of groundwater such as land instability) to be generated by the proximity of the linear lake to the Waikato River. As a

result, the formation of the linear lake and its discharge points needs to be the subject of careful engineering design to address these potential issues.

**N13 Te Awa Lakes Earthworks and Land Remediation**

N13b) Add: That the potential for preferential groundwater flow paths to be created between the linear lake and the Waikato River is minimised by ensuring a maximum hydraulic gradient of 2% between the linear lake and the Waikato River is maintained at all times.

**23.6.8 Subdivision in the Medium-Density Residential Zones and Rotorua Town Centre Zone**

e) Any subdivision proposed in LDP Areas Q, R, and X that does not comply with a) ~~d)~~ above is a prohibited activity.

W. S. R. F.