

Selwyn District Council

IN THE MATTER RESOURCE MANAGEMENT ACT 1991

A N D

IN THE MATTER Proposed Private Plan Change 69 to the Operative District Plan:
Lincoln South

APPLICANT Rolleston Industrial Developments Limited

**Summary statement of Tim Morris (Stormwater, flood management and some ground
water and civil construction aspects).**

TONKIN & TAYLOR LTD

26 November 2021

INTRODUCTION

QUALIFICATIONS AND EXPERIENCE

- 1 My full name is Timothy George Morris
- 2 I am a Senior Civil Engineer and Technical Director with Tonkin & Taylor Ltd. I hold the qualification of Bachelor of Civil Engineering and am a Chartered Civil Engineer. I have well over twenty years industry experience in civil engineering in New Zealand and offshore. My experience is relevant to the proposed plan change. I have previous expert witness experience.

CODE OF CONDUCT

- 3 I confirm that I have read the Code of Conduct for expert witnesses contained in the 2014 Environment Court Practice Note and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions I express. In particular, unless I state otherwise, this evidence is within my sphere of expertise, and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

INVOLVEMENT IN THE PROJECT

- 4 Tonkin and Taylor have been engaged by Selwyn District Council to consider, based on information provided to us, the suitability of the land for urban development regarding:
 - a Underlying ground water levels, and;
 - b The potential for surface flooding at design level events.
- 5 I have been to the site, and I am familiar with the locality. I have prepared the Tonkin & Taylor Ltd. reports dated 14 October and 18 November 2021.

SCOPE

- 6 I am familiar with the Infrastructure Report prepared by Inovo Projects¹ including the Storm Water Concept Design Report prepared by E2 Environmental.
- 7 I have considered evidence provided by Mr Eoghan O'Neill, Mr Tim McLeod and Mr Bass Veendrick.

¹ Issue 3, 28 October, 2020.

FLOODING/STORMWATER

- 8 Mr O'Neill advises that from a flooding perspective the proposed Living Z area is appropriate albeit subject to modelling and design to confirm appropriate stormwater management and finished levels for the development.
- 9 Mr O'Neill considers that modelling may be carried out prior to application for the subdivision consent. Subject to the outcome of the plan change, it is agreed with Mr O'Neill's view that the necessary modelling may be undertaken to inform the subdivision consent application.
- 10 At paragraph 39, Mr O'Neill advises that the proposed Living Z area should be located above the 4.0 m RL contour. At paragraph 41 Mr O'Neill advises that stormwater management areas should be located between the 3.5 m RL and 4.0 m RL contour.
- 11 I have interpreted that Mr O'Neill refers to existing levels rather than finished levels. Following earthworks, finished levels may be higher or lower than existing levels at different locations on the site.
- 12 I have not been provided with modelling results/quantitative evidence to support the ground levels summarised above.
- 13 Appropriate freeboard will be necessary above the tail water level created by the stormwater management infrastructure.
- 14 While Mr O'Neill's advice about the proposed extent of the Living Z and stormwater management areas are not supported by modelling, the conclusions seem reasonable, so long as the site is appropriately engineered. Modelling will be necessary to determine appropriate engineering. The modelling and design work is likely to be iterative, to arrive at an appropriate solution. Engineering may involve some combination of the following:
 - a Excavation and filling.
 - b Compensatory and/or attenuation storage.
 - c Conveyance design.
- 15 Mr O'Neill advises that the previously proposed Living X area is not appropriate due to flooding issues. Mr O'Neill's opinion on this matter is considered correct.

CIVIL ENGINEER

- 16 I have considered the evidence prepared by Mr Tim McLeod dated 4 November 2021 and his 23 November summary, both titled "Civil engineer".

Mr McLeod covers a range of topics; my comments are limited to the matters covered in our 14 October report.

- 17 Firstly, Mr McLeod makes several references to flooding and stormwater. Mr McLeod's opinions are generally consistent with Mr O'Neill's views, and I have already covered these matters.
- 18 Secondly, at paragraphs 23 to 27 and 35 to 38 of his 23 November evidence, Mr McLeod considers groundwater. As outlined in our 14 October 2021 report, I agree that these matters can be addressed by appropriate investigation, design and construction. We consider that more work is required to inform the subdivision consent application if the plan change is successful. It is important that the issues are given due attention at that time.
- 19 Thirdly, at paragraph 36 of his 23 November evidence Mr McLeod refers to advice that he has received from Fraser Thomas Ltd. regarding pavements. There is general agreement on these matters, including the importance of appropriate investigation, design and construction to ensure robust road pavements.

GROUND WATER

- 20 I have considered the evidence prepared by Mr Bass Veendrick dated 4 November 2021 and his 24 November summary, titled "Hydrology". Mr Veendrick covers a range of topics; my comments are limited to the matters covered in our 14 October report.
- 21 At paragraph 25, Mr Veendrick notes *"To help inform mitigation measures I recommend that piezometers will be installed to determine the ground water level range and maximum ground water levels on the site"*. It is agreed that if the plan change is successful this work is important, to inform engineering design and ultimately the construction methodology.
- 22 At paragraph 26, Mr Veendrick identifies that, subject to investigation, mitigation measures may be required. We concur with Mr Veendrick's comment.

CONCLUSION

- 23 By way of summary, I agree with the general conclusions made by Mr Eoghan O'Neill. Also, with Mr Tim McLeod and Mr Bass Veendrick to the extent relevant to my scope of work and/or expertise.

24 I am happy to answer your questions.

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