

IN THE ENVIRONMENT COURT OF NEW ZEALAND
WELLINGTON REGISTRY

I MUA I TE KŌTI TAIAO O AOTEAROA
TE WHANGANUI-Ā-TARA ROHE

ENV-2023-WLG-000005

Under the

RESOURCE MANAGEMENT ACT 1991

In the matter of

the direct referral of applications for resource consents
and notices of requirement under sections 87G and
198E of the Act for the Ōtaki to North of Levin project

By

**NEW ZEALAND TRANSPORT AGENCY-WAKA
KOTAHI**

Applicant

JOINT STATEMENT OF HYDROLOGY AND FLOODING EXPERTS

9 August 2023

INTRODUCTION

1. This joint witness statement relates to expert conferencing on the topic of hydrology and flooding.
2. The expert conferencing was held on 9 August 2023, facilitated by Environment Commissioner Buchanan.
3. Attendees at the conference were:
 - (a) Dr Jack McConchie (witness for Waka Kotahi). Dr McConchie authored Technical Assessment G: Hydrogeology and Groundwater, lodged with the application, and peer-reviewed Mr Andrew Craig's Technical Assessment F: Hydrology and Flooding. Dr McConchie also drafted a statement of evidence dated 4 July 2023.
 - (b) Mr Peter Kinley (witness for the Regional Councils). Mr Kinley is the author of Appendix 4 (Hydrology and Flooding) of the section 87F report for the Regional Councils. Mr Kinley provided a note setting out matters that remain in dispute in advance of the conference.
 - (c) Mr John McArthur (witness for the District Councils). Mr McArthur is the author of Appendix 6 (Hydrology / Flooding Natural Hazard) of the section 198D report for the District Councils.
 - (d) Phil Jaggard (witness for Kāinga Ora). Mr Jaggard provided a 'will say' statement in advance of the conference.

CODE OF CONDUCT

4. This joint statement is prepared in accordance with section 9.4 of the Environment Court Practice Note 2023.
5. We confirm that we have read the Environment Court Practice Note 2023 and agree to abide by it.

PURPOSE AND SCOPE OF CONFERENCING

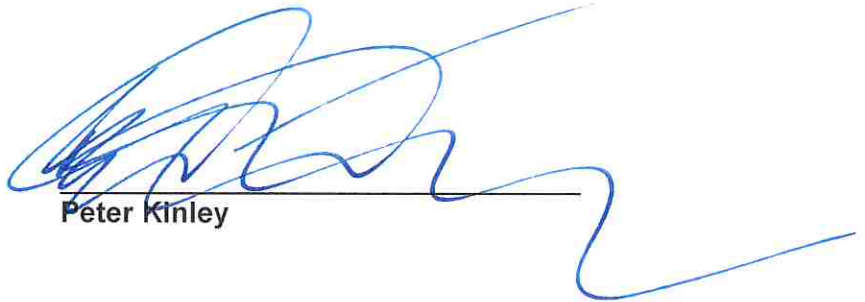
6. The purpose of conferencing was to identify, discuss, and highlight points of agreement and disagreement on hydrology and flooding issues arising from the Project.
7. Conferencing proceeded generally in line with the agenda agreed to by all relevant parties and experts, and provided to Commissioner Buchanan in advance of the conferencing.

8. All attendees reviewed Technical Assessment F and the evidence, council expert reports and notes on issues that remain in dispute in advance of the conference.
9. **Annexure A** records the agreed issues and areas of disagreement.
10. Except where recorded in Annexure A, the attendees agree that the primary data, methodologies and standards, and key facts and assumptions are as set out in the Assessment of Environmental Effects for the Project, and in particular Technical Assessment F.

Date: 9 August 2023



Jack McConchie



Peter Kinley



John McArthur



Phil Jaggard

ANNEXURE A – EXPERT CONFERENCING ON HYDROLOGY AND FLOODING

Participants: Jack McConchie (JMC), Peter Kinley (PK), John McArthur (JMA), Phil Jaggard (PJ)

Issue	Agreed Position	Disagreements or reservations, with reasons
<p>Selection of the largest storm event</p>	<p>All agree that the 1.0% AEP event plus climate change to 2130 is an appropriate basis for assessing effects.</p>	<p>PK and JMA – subject to a planning review in the Horowhenua District Council planning documents. This may be inconsistent with the Horizons and Horowhenua District Planning requirements.</p>
<p>Selection of the threshold used to identify effects</p>	<p>All agree that the conditions currently don't provide any provision for design standards for flood effects and these standards should be added to the conditions. All agree that a condition relating to habitable floor levels would be appropriate.</p>	<p>JMC considers that the following would best deal with this issue. Add to RGA1(a) a new (iii) that says "the project must be undertaken in general accordance with the flood modelling results presented in Technical Assessment F Appendix F.2 (appendix B model results)".</p> <p>PK prefers a zone based thresholds approach which cannot be exceeded and suggests the following text: "(a) The project shall be designed to achieve the following flood risk outcomes outside the designation and river boundaries: (1) No increase in flood levels for existing habitable floors that are already subject to flooding as a result of the building outline overlapping (partially or completely) a flood plain;</p>

<p>(2) No increase of more than 50mm in flood level on land zoned for urban where there is no existing dwelling;</p> <p>(3) No increase of more than 100mm on non-urban land.</p> <p>(b) Compliance with this condition will be demonstrated through flood modelling of the existing environment and with the project in place for the 10% AEP flood event and the 1% AEP + CC flood event or another large flood event that is consistent with the Horizons and Horowhenua District Planning requirements."</p> <p>JMA prefers the zone based threshold approach. This is provisional on a review of the velocity information to be provided.</p> <p>Note: JMC agreed to provide further information related to effect of the project on changes in flow velocity during the design event.</p> <p>PJ notes that either approach to the conditions would have the same outcome for Kainga Ora interests provided they include the threshold for habitable floor levels.</p>		
<p>Assessment of freeboard</p>	<p>All agree that in RBS1 the appropriate version of the Bridge Manual is version 3.4 dated May 2022.</p> <p>All agree that in RWB1 the appropriate version of the Bridge Manual is version 3.4 dated May 2022.</p>	

Relevant version of documents	All agree that references to Waka Kotahi's engineering guidance documents (Bridge Manual etc) are to the relevant version during the design process.	
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