

**Before a Board of Inquiry  
Northern Corridor Improvements Project**

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Under the Resource Management Act 1991 ('the Act')

In the matter of a Board of Inquiry appointed under section 149J of the Act to consider notices of requirement for designations and resource consent applications by the New Zealand Transport Agency for the Northern Corridor Improvements Project

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**Rebuttal evidence of David William Hughes for the New Zealand  
Transport Agency (Stormwater)**

Dated 15 June 2017

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## STATEMENT OF REBUTTAL EVIDENCE OF DAVID WILLIAM HUGHES FOR THE NEW ZEALAND TRANSPORT AGENCY

### 1 Qualifications and experience

- 1.1 My full name is David William Hughes. I am an Associate Civil Engineer employed by Aurecon NZ Ltd, where I have worked for the past six years.
- 1.2 My qualifications and experience are set out in my Evidence in Chief ('**EIC**') dated 20 April 2017.
- 1.3 I repeat the confirmation that I provided in the EIC that I have read, and agree to comply with the Code of Conduct for Expert Witnesses 2014.
- 1.4 My rebuttal evidence relates to the notices of requirement and resource consent applications lodged by the New Zealand Transport Agency ('**Transport Agency**') with the Environmental Protection Authority ('**EPA**') on 14 December 2016 for the Northern Corridor Improvements Project ('**Project**').

### 2 Scope of evidence

- 2.1 In this rebuttal evidence, I will address matters raised in the evidence of:
  - a Mr Turner on behalf of Auckland Council ('**Council**') (Planning Evidence – Resource Consents);
  - b Ms Barrett on behalf of Council (Public Open Space and Community Facilities); and
  - c Mr Lee on behalf of Council (Stormwater).
- 2.2 The fact that this rebuttal statement does not respond to every matter raised in the evidence of submitter witnesses within my area of expertise should not be taken as acceptance of the matters raised.

### 3 Aspects of Mr Turner's evidence relating to stormwater effects

- 3.1 Mr Turner proposes a change to stormwater condition SW.7 to clarify that existing Council stormwater assets need to be kept in operation until 'replacement' stormwater assets are commissioned.<sup>1</sup> I agree with, and accept this proposed change to the condition.
- 3.2 Mr Turner states that the Project does not address the existing flood risks around the Greville Road interchange, and argues this is not entirely consistent with objectives/policies B10.2.1(1), B10.2.2(9) and (10), E36.2(2) and E36.3(4) of the Auckland Unitary Plan (Operative in Part) ('AUP').<sup>2</sup> Mr McGahan addresses the interpretation of these policies in his evidence and concludes that the proposal is consistent with the objectives and policies.<sup>3</sup>
- 3.3 Mr Turner proposes a new condition NU.8 requiring the Transport Agency, amongst other things, to thoroughly explore and implement where practicable, opportunities to reduce existing flood risks in this area as part of the detailed design process.<sup>4</sup> The existing flooding issue at Greville Road is largely a result of uncontrolled stormwater runoff from upstream Auckland Transport catchments that are outside of the Project area as noted in Mr Lee's evidence.
- 3.4 As stated in my EIC, the Project does not exacerbate existing flooding issues on Greville Road. I acknowledge that there is potential to undertake further mitigation works to reduce flooding in this area and it is likely to be efficient if these Council works could be undertaken at the same time as the NCI Project. However, while it may be possible to reduce the flooding, an assessment of the potential effects of any such mitigation works will be required (particularly on the existing Council landfill pond and the Oteha Valley Stream).
- 3.5 On this basis, I do not oppose the new advice note on the resource consent conditions proposed in **Mr McGahan's** evidence. It makes practical sense for the Transport Agency to work collaboratively with

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<sup>1</sup> Paragraph 10.32 and Appendix 2 (page 60) of Mr Turner's evidence.

<sup>2</sup> Paragraphs 11.9 and 11.14 of Mr Turner's evidence.

<sup>3</sup> Paragraph 4.7 of Mr McGahan's rebuttal evidence.

<sup>4</sup> Appendix 2 (page 58) of Mr Turner's evidence.

Council in relation to the Council's flood mitigation works at Greville Road, at the same time as the Project.

#### **4 Ms Barrett's evidence**

- 4.1 Ms Barrett requests further assessment to determine how often the Alexandra Creek underpass will be flooded and will be inaccessible once the Project is constructed.<sup>5</sup> As stated in paragraph 13.18 of my EIC, further assessment has been undertaken post-lodgement to determine the frequency of flooding at Alexandra Underpass. In summary, the flood modelling results indicate that the flooding frequency of Alexandra Creek underpass will not be measurably increased as a result of the Project. These results have been accepted in paragraph 6.1 of Mr Lee's evidence.

#### **5 Mr Lee's evidence**

- 5.1 Mr Lee requests new conditions which will ensure the continued operation of Council stormwater assets affected by the Project during construction.<sup>6</sup> Mr Lee also requests that the conditions ensure that unrestricted access is provided to Council assets at all times during construction.<sup>7</sup> I confirm that condition SW.7 as set out in **Mr McGahan's** rebuttal evidence already provides as follows:

*SW.7 Existing Council stormwater management devices that are to be removed as part of the Project must remain operational, have retained access and be protected during construction works, until the commencement of the operation of the proposed replacement stormwater management system.*

- 5.2 Mr Lee also raises concerns about access to the Constellation and ARC Refuse ponds post construction. As noted in my EIC, permanent unrestricted access will be provided to the replacement Constellation Pond from the roundabout on the SH18, Caribbean Drive off-ramp as shown on the Stormwater Layout Plans included in Section 5 of Volume 5 Scheme Plans and Drawings of the Assessment of Environmental Effects. A concept design has also been prepared for permanent unrestricted access for the Council to the proposed replacement ARC Refuse Pond

<sup>5</sup> Paragraph 7.69 of Ms Barrett's evidence.

<sup>6</sup> Paragraph 6.3(a)(ii) of Mr Lee's evidence.

<sup>7</sup> Paragraphs 6.3(a)(iii) and (iv) and 7.1(a)(iii) of Mr Lee's evidence.

from the same access point off the roundabout on the SH18 Caribbean Drive off-ramp.

- 5.3 As acknowledged in paragraphs 6.3(c) and (d) of Mr Lee's evidence, the land between the ARC Refuse Pond and the roundabout is owned by Watercare. Access to the proposed replacement ARC Refuse Pond will need to be resolved between Watercare and Council, in consultation with the Transport Agency. This matter is addressed in the new condition NU.9 proposed in **Mr McGahan's** rebuttal evidence.
- 5.4 Mr Lee's opinion is that the existing flooding at Greville Road can be practically improved by the Project and that the Project's failure to improve the existing flooding issues at this location is not in accordance with the AUP's objective set out in E36.2(2).<sup>8</sup>
- 5.5 As noted above in paragraph 3.5, I do not oppose as the new advice note proposed by **Mr McGahan**. Advice note on proposed condition NU.9 signals that the Transport Agency will take reasonable steps to work with Council to facilitate its flood works to the extent that it is reasonable and practicable. I note however, that improving the existing flooding situation at Greville Road may not be practicable without causing potential adverse effects adjacent to the Rosedale Closed Landfill as well as adverse flood impacts downstream at the Oteha Valley Stream as noted by Mr Lee<sup>9</sup>.
- 5.6 Mr Lee also argues that the serviceability requirements set out in *Auckland Transport Code of Practice (Chapter 17 Road Drainage)* and the *Transport Agency's Stormwater Specification P46* cannot be achieved without eliminating flooding at Greville Road. I again reiterate the position in my EIC and set out at paragraphs 3 (c) and (d) above, that the existing flooding at Greville Road is not worsened by the Project and is predominantly a result of uncontrolled stormwater runoff from upstream of, and outside, the Project area. No detailed assessment has been undertaken by either the Council or the Transport Agency to assess the wider flood risk within the catchment as a result of providing additional flood mitigation measures on Greville Road.

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<sup>8</sup> Paragraphs 6.5(d), (e), (g) and (h) of Mr Lee's evidence.

<sup>9</sup> Paragraph 6.5(b) of Mr Lee's evidence

- 5.7 Mr Lee also requests that the detailed design of the culvert at Meadowood Reserve is undertaken in consultation with, and approved by, Council, In particular, Mr Lee wishes to ensure that the proposed works do not preclude the Council's future flood works in this area.
- 5.8 I have already addressed this issue in paragraph 13.17 of my EIC. To reiterate, I understand the flood mitigation works being undertaken by Council in the Meadowood Reserve have not been confirmed and are not mitigation for, or related to, this Project. However, I support a new condition NU.8 as proposed in Mr Turner's evidence (with minor amendments in condition NU.9 as proposed in **Mr McGahan's** rebuttal evidence). This condition will facilitate the collaboration between the Transport Agency and Council during the detailed design of the proposed culvert CU-NEW-13A / 13B as shown on Stormwater Layout Plan 250310-3PRE-3DES-DRG-1408-B included in Section 5 of Volume 5 Scheme Plans and Drawings of the Assessment of Environmental Effects.
- 5.9 Mr Turner proposes that the downstream potential effects from increased stormwater discharges from stormwater pipe outfall OF12 are addressed within the resource consent conditions.<sup>10</sup> Mr Lee has confirmed in Item (d) in Attachment 1 of his evidence that additional armouring of the channel banks around OF12 is an acceptable mitigation measure. This detail will be confirmed within the 'stormwater strategy' proposed within the resource consent conditions. This matter is addressed in the new conditions NU.9 and NU.10 proposed in **Mr McGahan's** rebuttal evidence.

## 6 Conclusion

- 6.1 In conclusion, I confirm that my assessment and conclusion in the *Assessment of Stormwater Management* and my EIC remain unchanged.

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<sup>10</sup> Paragraph 10.18 of Mr Turner's evidence.



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**David William Hughes**

15 June 2017