
Under	the Fast-track Approvals Act ('FTAA')
In the matter of	a substantive application under the FTAA for an alteration to an existing designation, resource consents, a wildlife approval, archaeological authorities and a complex freshwater fisheries activity, to construct, maintain and operate the Belfast to Pegasus Project
By	New Zealand Transport Agency Waka Kotahi Applicant

Third Statement of Evidence of David Patrick Delagarza (stormwater)

Dated 3 July 2026

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Third Statement of evidence of David Patrick Delagarza

1 Introduction

- 1.1 My full name is David Patrick Delagarza
- 1.2 My qualifications and experience are set out in paragraphs 1.2 – 1.5 of my first statement of evidence (dated 15 May 2026), provided as part of the New Zealand Transport Agency Waka Kotahi ('NZTA') response to comments from invited parties.
- 1.3 I repeat the confirmation in my first statement of evidence, that I have read and am familiar with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023, and agree to comply with it.

2 Scope of evidence

- 2.1 This evidence is provided in response to the draft decision and conditions for the State Highway 1 North Canterbury – Woodend Bypass Project (Belfast to Pegasus) ('the **Project**').

3 Response to draft decision and conditions

- 3.1 I have reviewed the stormwater sections of the draft decision, and the conditions dated 26 June 2026.

Condition C2.9

- 3.2 Draft condition C2.9 pertains to requirements associated with culverts within watercourses on the Site. The draft decision has amended this condition to introduce features that are normally associated with channel realignments, including:
 - a "Creation of pool, riffle and run sequences";
 - b "Incorporation of instream woody habitat features"; and
 - c "Incorporation of planted flood plain terrace".
- 3.3 I consider these features more correctly apply to the stream realignments associated with culverts, not to the culverts themselves. I note that draft condition C2.11 pertains to channel realignments and includes similar features to those now added to draft condition C2.9.

- 3.4 In my experience, creation of pool, riffle, and run sequences is not typically utilised in culvert design. This would require complex construction methodology within a confined space to achieve.
- 3.5 Likewise, introducing woody habitat features within culverts is not reasonable, as this would reduce the capacity of the culverts and introduce significant debris clogging risks.
- 3.6 Creation of a planted flood plain terrace within culverts would require complex culvert design, requiring either very wide or multi cell culverts to achieve. I note that plantings within culverts would be inappropriate due to lack of light and carry high debris risk.
- 3.7 It is therefore my opinion that condition C2.11 adequately addresses the incorporation of the features discussed above. Including these features in condition C2.9 would appear to impart complex requirements to the culverts themselves, which would potentially reduce the functionality of the culverts, be technically challenging to construct and result in significant cost increases to the Project.

Condition O3.6

- 3.8 Draft condition O3.6 refers to the design of scour and erosion protection for the Site. This condition includes language requiring that scour and erosion protection:
- a “(c) for minor culverts and minor stream diversions shall be designed in accordance with NZTA P46 Stormwater Management and Minor Stream Diversion Design Specification (Feb 2025)” and;
 - b “(d) for major culverts and stream diversion, including river works, shall be designed in accordance with the NZTA Bridge Manual (3rd edition).”
- 3.9 This language references the NZTA Bridge Manual for major stream diversion. While the NZTA Bridge Manual is an appropriate reference for scour protection for major culverts and bridges themselves, this manual does not include detailed criteria for stream diversions.
- 3.10 The NZTA P46 Stormwater Management and Minor Stream Diversion Design Specification references the Melbourne Water Constructed waterway design manual, which is a comprehensive channel design guidance document.
- 3.11 It is therefore my opinion that draft condition O3.6 (c)) should be modified to reference the NZTA P46 Stormwater Management and Minor Stream Diversion

Design Specification for all stream diversions, major or minor, and reference to stream diversions and river works should be removed from clause (d).

Condition O3.8

- 3.12 Draft condition O3.8 refers to the design of the operational stormwater system. The draft decision has amended this condition to remove “where practicable” clauses as it pertains to water quality treatment and spill control.
- 3.13 As worded, this would require the project to capture, treat and provide spill control for every square metre of trafficable pavement area.
- 3.14 While the proposed design captures the vast majority of trafficable pavement area within the Site, there are small areas that would require extensive additional stormwater infrastructure to capture and treat what are relatively small portions of pavement. These situations occur at locations where the project interfaces with existing roadway infrastructure, including:
- a At the existing Kaiapoi and Cam River bridges;
 - b At Gladstone and Woodend Beach Roads, where the ramps transition to the existing roadway alignments;
 - c At the ramps associated with Pegasus Blvd; and
 - d On the northernmost 300m of the project, where the roadway tapers back to dual carriageway.
- 3.15 Providing water quality capture and treatment in these locations would require installation of complex local stormwater infrastructure that would carry disproportionate cost to build and maintain relative to associated roadway area.
- 3.16 In the case of the existing Kaiapoi and Cam River bridges, this requirement (i.e. by the deletion of the ‘where practicable’ clause) would necessitate extensive retrofitting of the existing bridge structures with stormwater infrastructure to capture runoff.
- 3.17 Likewise, providing spill control, and hydrocarbon and reduction for all pavement area (as would be required under O3.8(d)(i) and (ii) as currently drafted by the Panel) would likely require complex outlets at swale ends to ensure that spills occurring at the point of swale discharge could be full contained locally.

- 3.18 In my experience, “where practicable” language is common in consents, and recognises the nature of site-specific limitations such as those discussed above.
- 3.19 It is therefore my opinion that excluding provisions that provide for limited design flexibility could result in project costs that are disproportionate to the incremental benefits of fully treating these areas.
- 3.20 Draft condition O3.9 has been modified to remove the phrase “in general accordance” as it relates to condition O3.8 discussed above. I acknowledge that removal of this language is appropriate, provided that the ‘where practicable’ clause is reinstated into draft condition O3.8.

4 Conclusion

- 4.1 In conclusion, I recommend the Panel consider the following modifications to the draft conditions.
- a Removal of reference to features associated with channel realignments from draft condition C2.9 (which pertains to culverts), as these requirements are adequately covered by draft condition C2.11, which addresses features required for channel realignments.
 - b Modification of draft condition O3.6 to refer to the NZTA P46 Stormwater Management and Minor Stream Diversion Design Specification for all stream diversions, major or minor.
 - c Reinstatement of the ‘where practicable’ clause into draft condition O3.8(b), O3.8(d)(i) and O3.8(d)(ii) to recognise existing constraints and avoid imposing complex and costly requirements where the environmental benefits would be disproportionate to the level of assessed effects.

David Delagarza
3 July 2026