
Under	the Fast-track Approvals Act 2024 ('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

**Joint Statement of Evidence of Fiona McIntosh,
Patrick Lees and Jamie MacKay (ecology)**

Dated 3 July 2026

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1 Introduction

- 1.1 This is a joint statement of evidence of Fiona McIntosh, Patrick Lees and Jamie MacKay.
- 1.2 We have all previously provided individual evidence in relation to this Application, as part of the New Zealand Transport Agency Waka Kotahi ('**NZTA**') response to comments from invited parties:
 - a The qualifications and experience of Fiona McIntosh are set out in paragraphs 1.2-1.5 in her first statement of evidence (dated 15 May 2026).
 - b The qualifications and experience of Patrick Lees are set out in paragraphs 1.2-1.4 in his first statement of evidence (dated 15 May 2026).
 - c The qualifications and experience of Jamie MacKay are set out in paragraphs 1.2-1.5 in his first statement of evidence (dated 15 May 2026).
- 1.3 This evidence has been prepared to support the NZTA response to the draft conditions in relation to ecological offsetting.
- 1.4 The proposed conditions relating to the Ecology Offset Plan and residual effects management apply to a range of affected ecological values (including wetlands, freshwater and terrestrial ecological values). This joint statement of evidence allows an integrated discussion of the proposed approach.

2 Code of conduct

- 2.1 We confirm that we have read the Code of Conduct for Expert Witnesses as contained in section 9 of the Environment Court Practice Note (2023), and have complied with it in preparing this evidence. We have not omitted material facts known to us that might alter or detract from our evidence.
- 2.2 Paragraphs 5.3 – 5.12 and 6.12 – 6.15 are specifically within the expertise of Fiona McIntosh. However, as a senior ecologist, she understands and agrees with all evidence in this joint statement.

- 2.3 Paragraphs 5.13 – 5.20 and 6.16 – 6.19 are specifically within the expertise of Patrick Lees. However, as a freshwater ecologist, he understands and agrees with all evidence in this joint statement.
- 2.4 Paragraphs 5.21 – 5.25 and 6.20 are specifically within the expertise of Jamie MacKay. However, as a senior ecologist, he understands and agrees with all evidence in this joint statement.

3 Scope of evidence

- 3.1 Our evidence responds to the Panel's insertion of new condition EM.3(b) regarding minimum required offset areas and the Panel's proposed additions to MP.8 on what information must be set out regarding residual effects management in the Ecological Management Plan ('EMP').
- 3.2 To provide a full response to these matters, this evidence will:
- a Set out the proposed high-level approach to offsetting;
 - b Explain why specifying a minimum offset area in the conditions is onerous and inappropriate, as effects may decrease (not only increase) from what is assessed in the Ecological Impact Assessment ('EclA') report; and
 - c Provide a basis for our proposed revisions to condition MP.8(p), (q), and (r) regarding content of the EMP.

4 Executive summary

- 4.1 We consider that EM.3(b) should be deleted for the following reasons:
- a Setting a minimum offset area does not provide for reassessment of residual effects. Reassessing residual effects is a common approach for projects of this nature, and recognises that the measures required to achieve a no net loss outcome may change through finalised design and construction methodology. Residual effects may increase or decrease, and given the conservative approach taken within the EclA there is a genuine potential for residual effects to decrease.
 - b Allowing for a reassessment of residual effects drives positive behaviour to reduce effects through design and the construction methodology.
 - c The two concepts of 'minimum required to achieve no net loss', and 'available area', are different and should not be conflated. Available areas were provided in the application simply to demonstrate that sufficient land

was available to accommodate offsets required to achieve no net loss. Imposition of the 'available area' as the 'minimum area required' is more onerous than necessary and exceeds the no net loss outcomes proposed by the Project. In the case of wetlands, imposing the 'available area' as the minimum required equates to a significant (3.5 fold) increase compared to that necessary to achieve no net loss.

- 4.2 In regard to Conditions MP.8 ((p), (q), and (r)), the intent of the condition is acceptable, however we have suggested amendments to better reflect the offset and compensation measures proposed.

5 Approach to offsetting

Overview

- 5.1 The Project seeks to achieve a no net loss outcome for biodiversity. This is achieved through biodiversity offsetting and compensation measures that provide measurable conservation outcomes to balance any more than minor residual adverse effects.
- 5.2 Net gain scenarios were also calculated in the EclA to inform the policy assessment within the Substantive Application Report. However, the Project is not seeking to achieve a net gain.

Approach to wetland offsetting

- 5.3 I (Fiona McIntosh) provide the following summary of the offsetting approach to residual effects on wetlands. A full description of this approach is provided in Sections 3.2.7.2, 7.2, 7.4.2, and Appendix G of the EclA report (Volume 3I lodged together with the Substantive Application Report ('**SAR**')).
- 5.4 There are three known impacted wetlands within the Project designation which have been conservatively assessed as being fully lost: one in the Cam River area (CR_W2) and two along the Waihora Stream (WC_W6 and WC_W1).
- 5.5 In summary, eight key wetland biodiversity / habitat metrics were assessed as the measurable attributes at each of the three known impacted wetlands. This data was entered into a Biodiversity Offset and Accounting Model ('**BOAM**') in accordance with the BOAM guidelines to determine component Net Present Biodiversity Value ('**NPBV**') at each impact site.

- 5.6 The BOAM guidelines for offsetting were then used to determine potential offset area values for the impacted wetlands to achieve a no net loss biodiversity outcome.
- 5.7 To ensure a no net loss outcome of each biodiversity / habitat metric, the combined component NPBV for each wetland after taking into consideration the achievable targets for the offset site was set at a minimum of 0.00.
- 5.8 As outlined in Table G6 of the EclA, taking this approach and combining the individual minimum offset area required for each impacted wetland resulted in a total minimum Project wetland offset area of 0.74 ha to achieve a no net loss outcome.
- 5.9 This offset area value was presented in the table insert for the Ecological Offset Plan map provided in Volume 4E of the SAR.
- 5.10 A suitable wetland offset site (the South Lake remnant) has been identified within the Kaiapoi Quarry Lakes. The remnant lake area, once the causeway has been established, is c.2.6 ha. This is the total area suitable and available for development into a constructed wetland, should it be required.
- 5.11 The 2.6 ha is not the calculated offset requirement, but was included in the SAR to demonstrate that, should the offsetting recalculation required by proposed condition EM.4 result in a larger offset area being required, then the Project has the capacity within the nominated offset site to realise this larger area.
- 5.12 This 'available area' selected for the wetland offset is 3.5 times larger than what is necessary to achieve a no net loss outcome.

Approach to stream offsetting

- 5.13 I (Patrick Lees) provide the following summary of the offsetting approach to residual stream effects. A detailed description of this approach is provided in Sections 3.2.6.5, 7.3, and 7.4.3 of the EclA report.
- 5.14 For the current designs, the permanent loss of, or modification to, 368 linear metres of stream values due to culvert works and stream realignments will result in adverse residual effects.
- 5.15 The Environmental Compensation Ratio ('**ECR**') method was used to assess whether the loss of stream values could be offset. Two ECR approaches have been calculated: the "Standard ECR approach" and "Current value ECR approach". Together these provide a recommended range in the minimum offset

quantum, with the upper value being more conservative and more likely to result in a no net loss outcome.

- 5.16 Depending on the ECR approaches used, this results in a requirement for between 0.135 ha and 0.180 ha of stream bed habitat enhancement to achieve no net loss.
- 5.17 The McIntosh Drain has been selected as the stream values offset site. Across the McIntosh Drain offset site and the realigned channels, approximately 0.194 ha of stream bed is available. Of this, 0.011 ha falls within the realigned channels, leaving 0.183 ha of stream bed available at the McIntosh Drain offset site.
- 5.18 Therefore, there is capacity available at McIntosh Drain offset site to achieve no net loss for residual stream effects; i.e., 0.135 ha to 0.180 ha of stream bed offset is required, compared with the 0.183 ha of stream bed available at the McIntosh Drain offset site.
- 5.19 The offset measures will be achieved by planting and fencing both sides of the stream to a minimum of 10 m from the edge the active stream channel. The offset site at McIntosh Drain equates to an 800 m linear stream length with an average wetted width of 2.28 m. Planting to a minimum of 20 m riparian width¹ requires 1.6 ha of planted area. The 'area available' for native riparian planting at the McIntosh Drain offset site is 2.5 ha.
- 5.20 The 'available area' selected for the stream offset is larger than what is necessary to achieve a no net loss outcome.

Approach to terrestrial compensation

- 5.21 I (Jamie MacKay) provide the following summary of the compensation approach to residual terrestrial effects.
- 5.22 Up to 0.66 ha of moderate value lizard habitat within the Designation will be removed. This is a conservative estimate as it includes removal of all moderate value lizard habitat across the full Designation, and the quantum of habitat loss may reduce. However, regardless of the eventual overall quantum of loss, there will be residual effects of habitat loss that will need to be managed. I have used

¹ Where each side of the stream is planted to a minimum of 10 m, resulting in a minimum 20 m planted riparian width along the 800 m McIntosh Drain channel.

professional judgement to determine appropriate measures to manage residual effects, as outlined below.

- 5.23 As outlined in Section 7.1 of the EclA, these residual effects will be addressed through enrichment planting and woody debris/log placement (hereafter termed “lizard habitat enhancement”). Lizard habitat enhancement will be undertaken throughout the Designation in areas of low stature landscape planting. In total, at least 5 ha of the low stature planting areas are suitable for lizard habitat enhancement. Within this 5 ha, 12 m per ha of logs will be placed, equating to roughly 60 m across all planting areas.
- 5.24 The EclA recommended that up to 5.94 ha of lizard habitat enhancement would be appropriate for the assumed loss of 0.66 ha. As outlined in my first statement of evidence (dated 15 May 2026), following refinement of the landscape and mitigation design, the quantum of lizard habitat enhancement has been reduced to approximately 5 ha. I consider that 5 ha of lizard habitat enhancement is appropriate compensation for the loss of 0.66 ha of moderate value lizard habitat because it will provide stable habitat of moderate to high value to lizards.
- 5.25 If, as a result of detailed design, more or less than 0.66 ha of moderate value lizard habitat is to be removed, proposed condition EM.4 will require the reassessment of compensation provided, so that no net loss is still achieved. I consider that the area available for compensation is sufficient to achieve no net loss of ecological values associated with lizard habitat.

Overall offsetting / compensation outcome

- 5.26 For all the residual ecological effects requiring management there is sufficient ‘available area’ to achieve the no net loss outcomes proposed by the Project. The Project does not propose to develop the full areas available; these available areas were only presented in the SAR to provide confidence that sufficient area is available to achieve a no net loss outcome for the Project.
- 5.27 The table below summarises the areas required to achieve no net loss and the ‘available areas’ for offset/ compensation measures to be completed.

	Area to achieve a no net loss outcome (based on current calculations)	Available area for offset/compensation
Wetlands	0.74 ha	2.6 ha

Stream	0.135 - 0.180 ha (stream bed) Note: Planting area required to achieve this is approximately 1.6 ha at McIntosh Drain.	0.194 ha (stream bed). Note: Planting area available for offset is approximately 2.5 ha at McIntosh Drain.
Fauna habitat	5 ha of lizard habitat enhancement	At least 5 ha of low stature planting

6 Response to draft conditions

Condition EM.3 requirements

- 6.1 We have reviewed the draft decision and the proposed draft consent conditions provided by the Panel.² We note that the Panel, in Paragraph 318 of the draft decision, states that:

Regarding impacts on other ecological values, we agreed with the tenor of NZTA's argument; namely that affected habitats are highly modified and their loss is adequately compensated by the total area and quality of ecological offsetting.

- 6.2 Based on the above and in considering the assessment of impacts approach undertaken in the EclA, we consider that a minimum offset/ compensation quantum should not be stipulated within consent condition EM.3. The reasons for this are set out below.
- 6.3 A conservative approach was taken when determining the areas and quantum of ecological values affected by the Project. This approach assumed that all vegetation and habitats within the Project designation would be impacted by the final road footprint and associated construction and operational infrastructure such as temporary and/or permanent stormwater ponds, and laydown areas. This assumption offers flexibility during design and construction works, but it is unlikely that all habitats within the designation will be lost by the completion of the Project.
- 6.4 Due to this conservative approach, the actual effects on ecological values may be further avoided, minimised, or remediated through subsequent Project design iterations and refinement of construction methodology. The finalised Project designs and construction methodology may therefore result in any actual residual effects being less or more (in quantum) than outlined in the EclA.

² Record of Draft Decision of the Expert Panel under Section 87 of the Fast-track Approvals Act 2024. Appendix B: Expert Panel Draft Consent Conditions. 26 June 2026

- 6.5 The Project has proposed to reassess residual effects; this is secured by Schedule 3 conditions. This is a standard approach and accounts for flexibility in design and drives positive behaviour to reduce effects via design and construction methodology wherever possible. This approach may result in ecological effects being less within the effects management hierarchy.
- 6.6 Reassessment of the offset requirements will be included within a Residual Effects Management ('**REM**') section in the Project EMP (per condition EM.4). The EMP will be prepared as a condition of consent (MP.8). Including these measures in the Project EMP provides a process to accurately and transparently calculate the minimum offset required to achieve no net loss of ecological values for the 100% designs and construction methodology, using accepted offset accounting tools.
- 6.7 The REM section of the EMP will also include specific chapters outlining the recommended REM measures. These measures will include:
- a the offset or compensation actions to be undertaken;
 - b the location of the offset or compensation actions; and
 - c any monitoring measures required to show that offset or compensation actions have been achieved.

This is required through condition MP.8(o).

- 6.8 As such, it is not necessary for minimum offset areas to be stipulated in the condition set, and in our opinion this condition (EM.3(b)) should be removed.
- 6.9 We also note that 'available areas' for offset shown in the Ecological Offset Plan (Volume 4E), have been put forward by the Panel as 'minimum offset' areas.
- 6.10 The problem with this is two-fold:
- a It does not allow flexibility to incorporate a reduced quantum of offset recalculation or drive positive behaviour to reduce effects through design and the construction methodology (as outlined in paragraph 6.5 above); and
 - b Imposition of the 'available area' as the 'minimum area required' is more onerous than necessary and exceeds the no net loss outcomes proposed by the Project. In the case of wetlands, this is a significant 3.5 fold increase.

Condition MP.8 requirements

- 6.11 Draft condition MP.8 (p), (q), and (r) specify design targets that are to be included within the REM chapters of the EMP. Where these targets relate to wetlands (q), streams (p), and lizards (r) we have provided the following responses.

Response to condition MP.8 (p) – wetlands

- 6.12 In my (Fiona McIntosh) opinion the details for the South Lake Remnant offset creation specified in condition MP.8 (p) are too prescriptive for inclusion as conditions of consent because:
- a The area of open water suggested is too large to be able to effectively manage the remnant for pest fish.
 - b There is seasonal and inter-annual groundwater level variability within the South Lake that needs to be incorporated into the design and management of the final wetland creation plan.
 - c This variability requires an adaptive approach to wetland creation, staging, and the planting palette.
- 6.13 Flexibility is therefore required within any consent conditions and subsequent management plans so that end-point wetland composition targets remain practicable and achievable.
- 6.14 The mechanism for including the detail sought by the Panel is provided for in the inclusion of REM chapters within the EMP. The REM chapters for wetland habitat will include provisions for an adaptive wetland restoration and design approach. These will be refined through updates to the EMP as more information becomes available.
- 6.15 Therefore, the following changes to condition MP.8 (p) are suggested:
- a Retain suggested clauses (i), (iii), (iv), and (vii) as written.
 - b Amend clauses (v), (vi), and (ix) as follows (changes in red text):
 - (v) Undertaking wetland restoration planting with a range of locally appropriate native species suited to establishment on constructed wetland substrate;
 - (vi) Creating 4 to 6 different habitat types across the wetland planting area suitable to the hydrological conditions;

(ix) Requiring wetland habitat planting maintenance for 10.45 years.

- c Remove suggested clauses (ii) and (viii) because:
 - i Retaining 30% of the lake remnant as open water is likely to limit the ability to maintain any open water areas free of pest fish.
 - ii Including specific habitat types within the conditions may reduce the flexibility of the adaptive wetland creation approach to modify or choose key plant species and/or habitat types that are suited to the hydrology of the created wetland area. This could result in a perpetual maintenance programme that is unrelated to achieving the over-arching principles and objectives of the offset (i.e. creating a self-sustaining wetland system appropriate to the area).
- d Include a new clause that requires the EMP to set out the process through which the details on plant species selection, wetland creation and staging will be monitored and adapted to achieve the required offset outcomes. See the revised condition set for suggested wording for this clause.

Response to condition MP.8 (q)

- 6.16 In my (Patrick Lees) opinion the targets specified in proposed condition MP.8(q)(i), (ii), and (iii) are not relevant to the McIntosh Drain offset site, as the Project offset measures are limited to native riparian planting and fencing along the stream length calculated through the REM process.
- 6.17 No direct stream channel modifications will occur within the McIntosh Drain offset site, meaning there is no requirement to design and construct a low flow channel, pool/riffle/run sequences, or instream habitat features — as required by MP.8(q)(i), (ii), and (iii) respectively. In my opinion, retaining conditions (iv) and (v) is appropriate as these are targets included within the proposed stream offset measures.
- 6.18 My reasoning is that over the longer-term (e.g., > 10 years), restoration of the riparian zone via the proposed offset measures will result in the natural development of some instream habitat features within the offset reach. An increase in instream habitat, and as such, an increase in stream function/value appears to be the intent of including specific design targets in condition MP.8 (q).
- 6.19 Over this timeframe, it is my opinion that instream habitat development is expected to include greater woody debris accumulation and a more natural

stream geomorphology, which will likely include increased scour and erosion processes and greater flow heterogeneity. Therefore, achieving an increase in stream function/value relative to the current McIntosh Drain.

Response to condition MP.8 (r)

- 6.20 In my (Jamie MacKay) opinion, condition MP.8 (r) requires a small alteration, whereby the word “offset” should be replaced with the word “areas”. This is because lizard habitat enhancement is considered compensation not offset. Also, the term “lizard habitat enhancement areas” will be used in management plans and this alteration means that terminology in the conditions will match the terminology in management plans.

7 Conclusion

- 7.1 We consider that EM.3(b) should be deleted because a minimum offset/compensation quantum should not be stipulated in the conditions. Our reasoning is that:
- a It does not allow flexibility to incorporate a reduced quantum of offset via reassessment or drive positive behaviour to reduce effects through design and the construction methodology.
 - b Imposition of the ‘available area’ for offset as the ‘minimum area required’ for offset is more onerous than necessary and significantly exceeds the no net loss outcomes proposed by the Project.
- 7.2 We have suggested important amendments to MP.8 (p), (q) and (r). The intent of the condition is acceptable, however, we have suggested amendments to better reflect the offset and compensation measures proposed. This is due to the proposed design targets in MP.8 (p), (q), and (r) not being achievable within the currently proposed offset or compensation measures. Where there is alignment with these measures, we have proposed that these be included in Condition MP.8.

Fiona McIntosh, Patrick Lees and Jamie MacKay.
3 July 2026