Before the Expert Panel

under: the Fast-track Approvals Act 2024

in the matter of: an application for resource consents, approvals and a notice of requirement to alter a designation, to construct a four-lane, median divided highway to replace existing State Highway 2 corridor between Te Puna and Ōmokoroa, known as 'Takitimu North Link - Stage 2'

applicant: **NZ Transport Agency Waka Kotahi**
Requiring Authority and Applicant

Statement of Evidence of **Jeremy Garrett-Walker** for NZ Transport Agency Waka Kotahi

Dated: 16 December 2025

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STATEMENT OF EVIDENCE OF JEREMY GARRETT-WALKER FOR NZ TRANSPORT AGENCY WAKA KOTAHI

1 My full name is Jeremy Garrett-Walker.

2 I am a Senior Freshwater Ecologist at Boffa Miskell. I have held this role for nine years. Prior to Boffa Miskell, I worked as a Research Officer at the University of Waikato within the aquatic sciences department. An overview of my relevant experience and qualifications is set out in the Ecological Effects Assessment lodged with the Application.[1]

3 I have been involved in the Project since 2022. I am the co-author of the Ecological Effects Assessment lodged with the Application.[2]

CODE OF CONDUCT

4 Although this matter is not before the Environment Court, I confirm that I have read the Code of Conduct for expert witnesses as contained in section 9 of the Environment Court Practice Note 2023. I agree to comply with that Code. My qualifications as an expert are set out in the Ecological Effects Assessment. I am satisfied that the matters which I address in this statement of evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

SCOPE OF EVIDENCE

5 My evidence has been prepared to support the NZ Transport Agency Waka Kotahi's (*NZTA*) response to comments from the Department of Conservation (*DOC*) and the Bay of Plenty Regional Council (*BOPRC*)[3] on the Application. Specifically, my evidence responds to comments made in relation to:

(a) Effects management approach for freshwater;

(b) Stream alignment as a remedy rather than as an offset; and

(c) Relevance of potential values in the assessment of stream values and effects management.

6 Throughout, I acknowledge the intent of DOC and BOPRC and their technical experts to secure ecological outcomes with certainty, and I show how NZTA's approach already provides that certainty via

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1 Appendix 9.4.4. Ecological Effects Assessment.

2 Ibid.

3 Made pursuant to s53 Fast-track Approvals Act 2024.

outcomes-based design, SQEP[4] certification, verification, and adaptive management with triggers to remedy any failings. Where my views and those of DOC and BOPRC's experts differ, I explain why the difference is academic, ie it does not change the ecological outcome (no net loss and net gain in extent/values) secured by conditions.

Effects management approach for freshwater

Waterway values

7 DOC suggests that I have not adequately considered the presence of At Risk-Declining species in my assessment and accordingly have undervalued waterway values.[5]

8 I agree with DOC that At Risk/Threatened species (eg, longfin eel) are important. However, in the EIANZ EcIA Guidelines (2018, 2nd ed.), such species are considered under rarity/distinctiveness, alongside representativeness, diversity/pattern, and ecological context (as the other matters for consideration). The Guidelines require an integrated, multi-attribute assessment to derive overall site value. Over-weighting a single attribute (in this case, species presence) is cautioned against. This caution is because focusing on a single attribute can risk mischaracterising ecological importance. For example, over-weighting rarity/distinctiveness (via species presence alone):

8.1 Ignores representativeness and ecological context, two matters that are critical in small, modified rural watercourses where channel condition, riparian structure, connectivity and functional integrity are often poor, thus resulting in an inaccurate assessment of ecological values; and

8.2 May drive disproportionate mitigation/offset requirements that do not reflect actual ecological function (eg, where the habitat is degraded, poorly representative, or of limited ecological context), which is contrary to the EIANZ guidelines intent of proportional, transparent assessments.

9 As documented in section 3 of the Ecological Effects Assessment, the watercourses affected by the Project are predominantly highly modified streams in an agricultural landscape, with tolerant, simplified aquatic assemblages, intermittent/perennial mosaics, and limited riparian integrity.[6] Higher-value reaches (where representativeness and ecological context are better) are avoided/bridged, and realignments are used in lower-value areas to

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4 Suitably Qualified and Experienced Practitioner.

5 See paragraphs 3.5-3.7 of DOC's comments and the supporting memorandum prepared by Mr Jacob Williams dated 27 November 2025.

6 Appendix 9.4.4. Ecological Effects Assessment.

remedy physical habitat and function, including the provision of habitat for present species.

10 My assessment determined magnitude of effect at the catchment/sub-catchment scale by considering the proportion of same river order habitat potentially affected. This approach is consistent with the EIANZ guidelines Chapter 6 (assessing effects and levels of effect), which emphasises scale and context (connectivity, recolonisation, and distributed habitat resources, for example) when describing magnitude. Conversely, a site/reach-only frame can inflate apparent magnitude by ignoring the ecological scale at which fish populations and macroinvertebrate assemblages interact and recover.

11 I then combined integrated value (Section 6.1 above) with magnitude criteria (negligible to very high) using the value × magnitude matrix (EIANZ guidelines Section 6.4), to derive a level of effect for each location. For the majority of culvert and realignment works in these short, degraded reaches, the magnitude is low/very low, and the level of effect is low/very low when performance-based designs (eg natural substrate beds, appropriate velocities, structured bedforms) and standard construction controls are applied.

12 To test DOC's single-species weighting contention, I hypothetically re-ran the value pathway for eel habitats under Moderate and High assumptions (rarity/distinctiveness). Even on those conservative assumptions, the overall level of effect of the Project remained low because:

12.1 Magnitude is very low (short habitat lengths; degraded baseline function) at the catchment/sub-catchment scale;

12.2 Higher value, main-stem habitat is avoided/bridged by the design; and

12.3 Effects management (culvert natural substrate, hydraulic envelopes; realignment design) is robust and outcomes-based (and it is worth noting that these outcomes would have been required regardless of the overall level of effect).

13 The results of this exercise confirm that even if longfin eel presence is weighted up in the value matrix, the integrated EIANZ guidelines approach still produces low/very low levels of effect in these modified watercourses, once scale-appropriate magnitude and performance measures are included. I agree with Mr Blayney that the EIANZ guidance framework of assessing values, magnitudes of effect and level of ecological effects are methods with which to

contextually communicate effects and assessments.[7] They do not ultimately change the effects management approaches.

14 I therefore disagree with DOC's suggestion that I have underestimated the level and magnitude of effects in my assessment. I reaffirm my assessment and conclusions in relation to waterway values as set out in the Ecological Effects Assessment.

Reliance on stream realignment

15 DOC has suggested that stream realignment is "inherently unreliable" or "unproven" and results in poor ecological outcomes.[8] I do not accept that characterisation and consider it to be misleading.

16 There is a large publication base of stream realignment techniques and successes (eg Roni et al. 2008,[9] Palmer et al. 2014[10], Flatley et al. 2018[11]) which demonstrate that stream realignment occurs successfully throughout the world. I am aware of (and have been directly involved in) several stream realignments within New Zealand that have had successful outcomes. Examples include upper and lower Duck Creek (Brookside development, Whitby), Kakariki Stream, Paitawa stream, Maurice Smith Way stream, Waimeha stream, upper Mazengarb stream, and Rata Road wetlands (M2PP[12]).

17 In my opinion, reliability depends on context-appropriate design, construction quality, and performance-based conditions that secure ecological outcomes, not on the method alone. I consider the suite of regional consent conditions proposed by NZTA as part of the Application contain appropriate safeguards and will ensure positive ecological outcomes are achieved.

18 NZTA's proposal, which accords with my recommendations and those of other relevant experts,[13] are provided for in NZTA's

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7 Statement of Evidence of Mr Andrew Blayney, 16 December 2025, at paragraphs 6-10.

8 See paragraphs 3.13 - 3.16 of DOC's comments and the supporting memorandum prepared by Dr Martin Neale dated 25 November 2025.

9 Roni.P; Hanson, K. Beechie, T. 2008. Global review of the physical and biological effectiveness of stream habitat rehabilitation technics. North American Journal of Fisheries Management 28:856–890, 2008 American Fisheries Society 2008.

10 Palmer, M.; Hondula, K.; Koch, B. 2014. Ecological Restoration of Streams and Rivers: Shifting Strategies and Shifting Goal. Annu. Rev. Ecol. Evol. Syst. 2014. 45:247–69.

11 Flatley, A.; Rutherford, I.; Hardie, R. 2018. River Channel Relocation: Problems and Prospects. Water 2018, vol. 10, 1360; doi:10.3390/w10101360.

12 MacKays to Peka Peka Expressway.

13 Specifically, those of Mr Eugene Vodansky as set out in Appendix 9.4.9. Stormwater Assessment and Mr Andrew Blayney as set out in Appendix 9.4.4. Ecological Effects Assessment.

proposed suite of regional consent conditions. Catchment size, stream dynamics, and landscape context are relevant to consider, with some of Dr Neale's examples differing fundamentally from what NZTA are proposing. For example:

18.1 No concrete-lined trapezoids are provided for - channels are constructed with natural substrate gradations suited to stream order, with grade control to prevent downcutting while allowing natural variability.

18.2 Hydraulic performance envelopes (velocity–depth–wetted width) are set and checked at relevant flows so surface-flow continuity is retained, and low-flow thalweg remains connected.

18.3 Habitat complexity is built in (riffle–run–pool sequences, local sinuosity, microhabitat/woody material where appropriate), and fish passage outcomes are verified post-livening.

18.4 Adaptive monitoring with triggers to remedy any failings is required so that if the defined performance outcomes are not met, remedial works must be implemented.

18.5 Design acceptance criteria embedded in conditions, with certification by a SQEP.

19 These safeguards, (which have been incorporated into NZTA's proposed suite of conditions[14]) directly address the shortcomings DOC describes and provide the certainty they seek without locking in a single method. Prescriptive, one-size-fits-all geometries can hinder ecological optimisation and do not guarantee function. Where DOC/BOPRC request more certainty, in my opinion the appropriate response is to classify outcomes, not to mandate a single shape or method.

20 DOC suggests riparian planting is "tried and trusted",[15] implying superiority to realignment. While I agree that riparian planting is valuable, I disagree with the sentiment that riparian planting is superior as it cannot substitute for stream loss as it does not consider instream habitats, functions, or communities.

21 Furthermore, plant survival/cover is easier to "prove" than instream functional performance, which can lead to the assumption that ecological recovery has occurred where in reality instream values remain lost or impaired. NZTA's proposed mitigation package, in line with my recommendations and those of other relevant experts, therefore prioritises instream remediation and fauna outcomes, with

[14] Proposed Resource Consent Conditions 27.1(a), 27.1(c), 38 and 39.

[15] See paragraphs 3.15 of DOC's comments.

riparian planting as support. This approach aligns with National Policy Statement for Freshwater Management (*NPS-FM*) Policy 7 ("avoid loss of river extent and values to the extent practicable") and managing the ecosystem health components (habitat, aquatic life, ecological processes) in Appendix 1A of the NPS-FM.

22 DOC's comments outline a list of risks such as loss of water through the bed, downcutting, and subsequent armouring.[16] NZTA's proposed suite of conditions manage these risks through the Culverts and Stream Hydraulic Design Report and Stream Monitoring and Management Plan (*SMMP*), which are required to be prepared by a SQEP, and therefore will require:[17]

22.1 Subgrade preparation & filters to stabilise seepage and promote hyporheic exchange suited to small rural streams, without impervious linings.

22.2 Grade control and substrate sizing to prevent downcutting while maintaining coarse bed features and micro-complexity.

22.3 Hydraulic performance tests/modelling ensure low-flow continuity and passage, which is then verified post-livening.

22.4 Monitoring and triggers to remedy any failings require remedial works if flow or habitat targets are not met as the realignment 'naturalises'.

23 These measures shift uncertainty from method to enforceable outcomes, which I believe is the appropriate standard under the NPS-FM.

24 I do not support rigid prescriptions such as "match original dimensions" or pre-determined lengths, as these prescriptions do not guarantee ecological performance and do not allow for optimisations. The correct standard is functional equivalence or improvement, not geometric mimicry.

25 The Proposed Resource Consent Conditions set outcomes and provide a process that I consider provide sufficient ecological certainty while remaining optimisation-friendly, including the requirement to consider:

25.1 Design & pre-construction (Culverts and Stream Hydraulic Design Report):

(a) Hydraulic range design targets: specify target velocity–depth–wetted width ranges for agreed flow percentiles

[16] Paragraphs 3.13-3.16.

[17] Proposed Resource Consent Conditions 27.1, 38 and 5.3.

(including low-flow continuity), and require SQEP certification that the design achieves them.

(b) Substrate & stability: require natural substrate gradations, grade-control spacing, bank stability and no concrete-lined channels; set as-built verification requirements.

(c) Habitat complexity: require riffle–run–pool sequences and local sinuosity/complexity appropriate to stream order; specify woody material/microhabitat inclusion where ecologically justified.

(d) Fish passage outcomes: require post-livening verification that passage is maintained/improved consistent with NPS-FM Clause 3.26 (Design deliverables will have regard to the 2024 Fish Passage Guidelines (Version 2.0) while conditions remain outcome-focused, ensuring passage performance objectives are met without constraining site-specific optimisation).

25.2 Post-livening monitoring & adaptive management (Stream Management and Monitoring Plan):

(a) Verification checks against the hydraulic range design targets, surface-flow continuity, and wetted width targets at agreed times post-livening.

(b) Ecological performance, for example, macroinvertebrate integrity (eg MCI/QMCI/ASPM[18]), fish passage/F-IBI[19] trending toward improvement at representative sites, sediment risk managed against NPS-FM attributes (visual clarity/deposited sediment), etc.

(c) Remediation triggers, for example: clearly defined remedial actions (eg augment bed material, add habitat structures, adjust low-flow controls) if targets are not met, with time-bound implementation and re-verification.

(d) Monitoring duration being tied to success measures rather than an arbitrary period.

[18] MCI = Macroinvertebrate Community Index; QMCI = Quantitative MCI; ASPM = Average Score Per Metric.

[19] Fish Index of Biotic Integrity.

25.3 An approach incorporating the above requirements implements NPS-FM Clause 3.24 (Rivers) by demonstrating how the Effects Management Hierarchy (*EMH*) is applied to loss of extent and values, while avoiding over-specification that may reduce ecological performance at particular sites.

Stream realignment as remedy not offset

26 Both DOC and BOPRC consider that stream diversions should be considered an offset, not a remedy in the EMH.[20] I disagree.

27 Under the EMH (as defined in NPS-FM Clause 3.21), remedy is one of the sequential steps after avoidance and minimisation and before offsetting and compensation. The EMH applies to adverse effects on the *extent or values* of a river and is assessed in terms of whether the activity reinstates the ecological values and conditions at the point of impact following the effect.

28 In the Project's case, where a road footprint reclaims a short degraded reach of stream, remediation is delivered immediately at the point of impact by reinstating stream extent and function in the designation (i.e. within the affected footprint) via new, functioning stream channel that is designed to achieve hydraulic performance, habitat complexity, and fauna outcomes appropriate to the river order and catchment context. This outcome is not a distant offset. It is a direct replacement of lost extent and values in situ (spatially within the Project's affected corridor), achieved through context-appropriate design and construction, post-livening verification, and monitor and triggers to remedy any failings secured by conditions (see Proposed Resource Consent Condition 27 and Conditions 38–39).

29 DOC's contention that once the original bed is filled remedy is "*impossible*"[21] conflates restoration of the same physical substrate with the remedy of extent and values. The EMH is directed at extent and values, and remedy is achieved when those values are reinstated at the impact location, even if the landform is re-graded or the channel alignment is adjusted within the designation to accommodate the road. That situation is analogous to terrestrial remediation where remediation is achieved via revegetating cleared land after earthworks, sometimes on re-shaped landforms, but it still constitutes remedy at the point of impact because it reinstates the lost ecological values there. The NPS-FM framework does not require the original stream bed material to remain unaltered; it requires loss of extent and values to be addressed through the EMH,

[20] See paragraphs 3.17-3.19 of DOC's comments and paragraphs 6.2 and 6.3 of BOPRC comments received part 1.

[21] See page 34 of DOC's comments, the supporting memorandum prepared by Dr Martin Neale dated 25 November 2025.

and remedy is available, in accordance with the EMH, where practicable.

30 Ultimately, in my opinion, what matters is the overall ecological outcome for river extent and values, regardless of what step of the EMH is being considered and whether that step is a 'remedy' or an 'offset'.

31 NZTA's proposed approach for the Project achieves a no net loss in river extent in values and targets overall increases in ecological values. The academic distinction between remedy and offset therefore becomes less material. The gain(s) achieved by the Project can be quantified across multiple measures (and not relying on a single tool, such as the Stream Ecological Valuation (*SEV*) which DOC and BOPRC advocate for (as discussed further below)). These measures include:

31.1 Functional performance and biodiversity outcomes (examples to be specified in the SMMP):

31.2 Hydraulic outcomes at new channels: verified velocity and depth for relevant flows, low-flow thalweg continuity to maintain surface flow and passage, wetted width continuity across seasons, etc.

31.3 Habitat outcomes: established riffle–run–pool sequences where appropriate, substrate gradation suited to river order, woody material/micro-habitat where appropriate, bank stability and riparian shade targets that support instream condition (not merely planting survival), etc.

31.4 Fauna outcomes: fish passage verification in accordance with NPS-FM Clause 3.26 outcomes (passage maintained/improved except where blocking undesirable species is ecologically justified), macroinvertebrate integrity (MCI/QMCI or ASPM) trending toward improvement compared to pre-existing, fish IBI improvements where applicable, etc.

31.5 Sediment risk outcomes: construction controls focused on deposited fine sediment risk, with triggers and fixes for minor rainfall events.

31.6 Spatial/extent outcomes:

(a) Minimum like-for-like stream length replacement within the designation (remedy) with functional improvement to enhance overall values.

(b) Preferential avoidance/bridging of higher-value segments.

(c) Net increase in functioning stream length across the designation (where design provides additional channelisation to achieve ecological performance and resilience).

32 These measures can be conditioned, monitored, and enforced (as proposed through NZTA's suite of consent conditions for the Project) without relying on SEV/ECR as the sole test. The SEV can be used as an additional numeric "check" or secondary verification metric, but it is not necessary to demonstrate the net gain delivered by the performance outcomes outlined above.

33 DOC and BOPRC emphasise offsetting as their preferred position. While I disagree, as remedy still seeks to achieve at least a no-net-loss outcome, I can nevertheless demonstrate that the Project meets (and often exceeds) the NPS-FM Appendix 6 offsetting principles (without positioning SEV/ECR as the defining measure). I demonstrate this as follows:

33.1 *Principle 1 – Adherence to EMH*: The Project avoids higher-value reaches, minimises works in sensitive segments, and remedies loss of extent/values at the point of impact through functional replacement channels. Where any more-than-minor residual effects remain, these will be captured by the required monitoring and addressed in a targeted manner in accordance with the proposed consent conditions.[22]

33.2 *Principle 2 – When offset is not appropriate:* NZTA's proposed actions target small, modified rural watercourses where values are not irreplaceable, and uncertainty will be managed (via the SMMP) by requiring post-livening verification and triggers to remedy any failings, addressing the risk concern.[23]

33.3 *Principle 3 – No net loss and preferably net gain:* The Project demonstrates this by a minimum stream extent replacement (no net loss) and improved condition (net gain), using the outcome measures described above (hydraulics, habitat, fauna, sediment/DO/clarity attributes), rather than a single tool output.

33.4 *Principle 4 – Additionality:* Gains are additional to minimisation/remedy steps; eg new channel habitat complexity and fish passage improvements beyond the baseline degraded state. These improvements would not occur without the Project going ahead.

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[22] Proposed Resource Consent Condition 27.1.

[23] Proposed Resource Consent Condition 27.1(a)6.

33.5 *Principle 5 – Leakage:* Offset/remedy actions are within the designation and do not displace harm elsewhere; riparian and instream measures avoid downstream leakage.

33.6 *Principle 6 – Long-term outcomes:* NZTA's proposed conditions secure monitoring and maintenance until the stream realignments are considered successful (and thus the effect has been managed).

33.7 *Principle 7 – Landscape context:* Actions occur at the point of impact (same designation and ecological district), designed to maintain spatial/hydrological connections and ecosystem function.

33.8 *Principle 8 – Time lags:* Realignment channels are designed and livened promptly as they are needed for conveyance purposes as construction progresses; instream communities in small modified systems typically re-establish within months under best practice, minimising lag.

33.9 *Principles 9–11 – Science, mātauranga Māori, participation, transparency:* The design and monitoring are documented, science-informed, with the potential to allow tangata whenua/stakeholder input via plan certification frameworks, and will be reported through the management plans and consent conditions.

34 This assessment of the proposed effects management for the Project against the NPS-FM offsetting principles shows that even if DOC and the BOPRC's "offset" frame was adopted, the Project meets the NPS-FM principles for aquatic offsetting.

35 The performance outcomes outlined above, as required under NZTA's proposed suite of conditions, provide definitive tests which directly operationalise NPS-FM requirements for no net loss and preferable net gain in extent and values. The SEV could be used as a verification metric (eg a check at Year 1 and Year 5, which is a common approach), but I do not consider it necessary.

Relevance of potential values in the assessment of stream values and effects management

36 DOC suggests that I have only assessed the current state of the streams affected by the Project and have not accounted for potential values.[24]

37 This is incorrect. Clause 3.24 of the NPS-FM requires applicants to demonstrate how each EMH step applies to any loss of extent or

[24] See paragraphs 3.20-3.22 of DOC's comments, and page 34, the supporting memorandum prepared by Dr Martin Neale dated 25 November 2025.

values, including potential values. In my view, the correct place to consider current realistic potential values (which I have assessed), is as part of determining outcomes to be realised through remedy and offset actions, not as a way to up-rate current site value to a hypothetical and in many instances unrealistic or unreasonable level. Accordingly, my assessment is that, given the current land use, regulatory environment, and lack of evidence for likely restoration, there are no realistic potential values for these streams.

38 DOC's framing sometimes implies high "potential" values could be readily achieved with generic measures in the absence of the Project (ie under a status quo scenario). In my opinion, "potential" must be realistic and grounded in:

38.1 Current land use and catchment context (agricultural landscape; intermittent/perennial mosaics; modified channels);

38.2 Probable land use in the absence of the Project (continuation of existing farming/management, not wholesale restoration);

38.3 Regulatory levers and incentives (what is actually required or incentivised locally for restoration, and over what timeframe); and

38.4 Observed restoration behaviour (if landowners were keen to restore, we would already see more evidence of fencing/planting and functional upgrades, which we do not see currently both within the Project Designation or the wider landscape).

39 A fair judgement is that, for most reaches in a highly modified, agricultural landscape (which is the case in this context), the "current" values equate to the "realistic potential" values, because the land-use setting and practical restoration drivers do not support large uplift beyond the low/moderate condition already observed.

40 Furthermore, elevating present or hypothetical potential site value to Moderate/High because a stream could theoretically be improved (eg via fencing/planting), as requested, would distort level-of-effect matrices by combining an inflated value with the requested site-only magnitude, a double inflation that the EIANZ guidelines cautions against. The right place to reflect potential is in EMH design targets and conditions, not in re-scoring present value.

41 Even though I believe current value is also the realistic potential value in these contexts, I have still addressed potential values appropriately through my assessment and recommendations (which have been adopted through NZTA's proposed suite of conditions) by

targeting outcomes that secure and, where practicable, improve values over time at the impact location.

Conclusion

42 In summary, I acknowledge the concerns raised by DOC and BOPRC. I also appreciate and agree with the intent of those concerns - to secure ecological outcomes with certainty. I have shown how NZTA's approach and proposed suite of conditions already secures ecological outcomes through, for example, avoidance/bridging of higher-value segments, context-appropriate realignments, SQEP-certified designs, post-livening verification, and adaptive management with triggers to remedy any failings. Differences in terminology or valuation method do not change the ecological outcome. NZTA's proposed suite of conditions guarantee functional stream reinstatement, fish passage, and adaptive management until success is achieved.

Jeremy Garrett-Walker
16 December 2025