Before the Expert Consenting Panel

under: the Fast-track Approvals Act 2024 (*FTAA*)

in the matter of: notices of requirement and applications for resource consents, wildlife approvals and archaeological authorities by the NZ Transport Agency Waka Kotahi to develop the Brynderwyn Hills section of the Alternative to the Brynderwyn Hills Project, a state highway from the intersection of State Highway 1 and Baldrock Road in the south, through the Brynderwyn Hills to Waipū in the north.

applicant: **NZ Transport Agency Waka Kotahi**

Requiring Authority and Applicant

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

Dated: 28 October 2026

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STATEMENT OF EVIDENCE OF JEREMY GARRETT-WALKER

INTRODUCTION

1 My full name is Jeremy Garrett-Walker.

2 I am a Principal Freshwater Ecologist at Boffa Miskell. I have held this role for over 10 years. Prior to Boffa Miskell, I worked as a Research Officer at the University of Waikato within the aquatic sciences department.

3 I have the following qualifications:

3.1 Bachelor of Science in Environmental Planning; and

3.2 Master of Science in Biological Sciences with first class honours.

4 I work primarily in the areas of ecological impact assessment, project shaping, determining ecological value and significance, and mitigation and restoration implementation. An overview of my relevant experience and qualifications is attached as **Appendix A** to this statement.

5 My evidence has been prepared to support NZ Transport Agency Waka Kotahi (*NZTA*) as part of the response to comments on the notices of requirement and applications for resource consents, wildlife approvals and archaeological authorities (together, the *Application*) to develop the Brynderwyn Hills section of the Alternative to the Brynderwyn Hills (*Project*), a state highway from the intersection of SH1 and Baldrock Road in the south, through the Brynderwyn Hills to Waipū in the north.

6 I am engaged by NZTA to provide my independent opinion as to the Project's potential effects on, and recommended mitigation measures for, freshwater ecology as it relates to rivers / watercourses.

CODE OF CONDUCT

7 Although this matter is not before the Environment Court, I confirm that I have read the Environment Court's Code of Conduct for Expert Witnesses in its Environment Court Practice Note 2023. I agree to comply with that Code. My qualifications as an expert are set out above. I confirm that the issues addressed in this brief 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 expressed.

SCOPE OF EVIDENCE

8 My evidence will deal with the following matters:

8.1 My review of the Freshwater Ecology Assessment prepared by Dr Vaughan Keesing (*Freshwater Assessment*);[1]

8.2 The Project's potential effects on freshwater ecology (streams);

8.3 Commentary on NZTA's proposed mitigation package;

8.4 My overall conclusion as to the effects of the Project post-mitigation; and

8.5 My response to comments received on the Freshwater Assessment (as relevant to streams) from:

(a) the Department of Conservation on behalf of the Director-General of Conservation (*DOC*);

(b) Te Uri o Hau Settlement Trust on behalf of Te Uri o Hau hapū (*Te Uri o Hau*);

(c) Te Pouwhenua o Tiakiri Kūkupa Trust on behalf of Te Parawhau hapū (*Te Parawhau*); and

(d) Patuharakeke Te Iwi Trust Board (*Patuharakeke*).

9 For the purposes of this evidence, references to rivers and watercourses are intended to align with the definitions adopted for the Project, including the definition of 'river' under the Resource Management Act 1991 and the definition of 'watercourse' contained within the proposed consent conditions. My evidence is therefore focused on the freshwater ecological values associated with, and potential effects on, those rivers and watercourses affected by the Project.

REVIEW OF FRESHWATER ASSESSMENT – RIVERS / WATERCOURSES

Assessment methodology

10 In preparing my evidence, I have reviewed the Freshwater Assessment prepared by Dr Keesing, the proposed resource consent conditions, and the various comments and technical reviews provided in response to the Application.

11 In undertaking my review, I considered the assessment methodology adopted by Dr Keesing against my own experience

[1] Vol B, Appendix D07 – Assessment of Effects on Freshwater Ecology (*Freshwater Assessment*).

preparing and peer reviewing freshwater ecology assessments for infrastructure, development and resource management projects throughout New Zealand. I also considered the assessment in the context of recognised freshwater ecological assessment frameworks and guidance commonly applied within New Zealand, including approaches to ecological valuation, assessment of ecological effects, and the application of the effects management hierarchy in the National Policy Statement for Freshwater Management 2020. My review focused on whether the methodology Dr Keesing applied was appropriate to the receiving environment, supported by available information, and sufficient to inform robust ecological conclusions.

12 At the outset, I would like to acknowledge that different ecologists may reasonably adopt different approaches to particular aspects of ecological assessment in light of the different criteria outlined above. However, for the purposes of my review, I do not consider the key question in this instance is whether I would have undertaken every aspect of the Freshwater Assessment in exactly the same way as Dr Keesing. Rather, the relevant question is whether the information collected and the methodology applied by Dr Keesing were sufficient to understand the freshwater values present, identify the likely ecological effects of the Project, and inform an appropriate effects management response.

13 For the reasons outlined below, I am satisfied that they were.

Sufficiency of baseline information

14 In my experience, a freshwater ecological assessment will generally seek to obtain sufficient information to understand the characteristics and ecological values of the receiving environment, identify the habitats and species present, and assess how those values may respond to proposed works. There is no prescribed set of information that must be collected for every assessment, with the type and extent of investigations typically tailored to the nature of the project, the receiving environment, and the potential effects being assessed. Depending on the circumstances, this can include desktop investigations, field surveys, stream mapping, habitat assessments, fish surveys, and other targeted investigations where warranted.

15 In my opinion, it is important to distinguish between information that is *necessary* to support a robust ecological impact assessment and information that may be *desirable* for such an assessment.

16 Freshwater ecological assessments are not intended to provide complete inventories of every species, habitat feature, or ecological process present within a catchment. Rather, their purpose is to provide sufficient information to understand the values present, identify the likely effects of a proposal, and determine an appropriate response to those effects.

17 In this instance, the Freshwater Assessment was informed by a combination of field investigations, environmental DNA (*eDNA*) sampling, habitat assessments, Stream Ecological Valuation (*SEV*) assessments, macroinvertebrate assessments, desktop review of existing databases, existing fish records, and site inspections. In my opinion, these information sources collectively provide a sufficient understanding of the freshwater environment for the purposes of assessing effects from the Project. While additional investigations and alternative assessment approaches could have been adopted in some instances (as is often the case in freshwater ecology), I do not consider these would have materially altered the identification of key freshwater values, the assessment of likely effects, or the suite of effects management measures available to address those effects.

18 I also note that uncertainty is inevitable in all ecological assessments. The possibility that additional species may be present, or that further survey effort may detect species not currently recorded, does not necessarily mean the assessment is deficient. In many cases, including this Project, the ecological management response is directed at maintaining habitat function, maintaining fish passage, undertaking fish salvage where required, and restoring or enhancing aquatic habitats. For example, it is often not possible to definitively determine all species that may utilise a particular river or watercourse over time, particularly where species are present at low abundance, use habitats intermittently, or move through catchments in response to seasonal or environmental conditions. Similarly, some ecological processes, such as patterns of habitat use, dispersal, recolonisation and species interactions, cannot be fully characterised through pre-construction surveys alone.

19 Having reviewed the information collected for the Freshwater Assessment, I am satisfied that sufficient information was available to identify the key freshwater ecological values, characterise the receiving environment, assess the likely effects of the Project, and inform the development of appropriate avoidance, mitigation, offsetting and compensation measures. While additional information could potentially be obtained through further investigations, I do not consider any identified information gaps are of a nature or significance that would materially alter the conclusions of the Freshwater Assessment or the freshwater management responses proposed.

20 I also note that ecological assessment and project design are often iterative processes. While assessments are necessarily undertaken using the information available at the time, further ecological investigations and field verification are commonly undertaken during detailed design to refine the understanding of affected habitats, species and ecological values. In the case of this Project, the proposed consent conditions require additional ecological input into detailed design, watercourse management measures, fish passage

provisions and other freshwater management responses. In my opinion, these processes provide an appropriate mechanism to further address any residual uncertainty and refine management measures where necessary as the Project progresses towards implementation.

Assessment of ecological values

21 The Environment Institute of Australia and New Zealand (*EIANZ*) Ecological Impact Assessment (EcIA) Guidelines (*Guidelines*)[2] provide a framework for assessing ecological value. However, they do not prescribe a rigid formula for how information must be combined or weighted. The Guidelines require the exercise of professional judgement when interpreting ecological information and reaching conclusions regarding ecological value (Section 6.1 of the Guidelines).

22 In undertaking an ecological valuation, ecologists will typically consider a range of attributes, including ecosystem condition, rarity and distinctiveness, ecological context, connectivity, and the presence of threatened or at-risk species. These attributes help inform an understanding of the ecological importance of a river or watercourse and may influence both the assessment of effects and the nature of any management response. However, ecological value is not typically determined by any single attribute in isolation. Rather, these considerations are weighed collectively, together with the exercise of professional judgement, to reach an overall conclusion regarding ecological value.

23 In my opinion, Dr Keesing has generally adopted that approach; however, he has placed considerable emphasis on ecological condition in his assessment.

24 In my experience, the existing condition of a river or watercourse is an important consideration when assessing ecological value. The Guidelines primarily describe ecological value with reference to matters such as rarity and distinctiveness, ecological context, connectivity and resilience, and the presence of threatened species. However, the Guidelines also acknowledge that additional considerations may be relevant depending on the circumstances of a particular project.

25 In my view, the existing condition of a river or watercourse can provide a useful indication of its ecological integrity and its ability to support ecological functions, indigenous biodiversity, and ecological processes. Existing condition may also inform several of the commonly applied factors used to assess value. For example, the condition of habitat, riparian margins, ecological connectivity, and

[2] Ecological Impact Assessment (*EcIA*): EIANZ Guidelines for Use in New Zealand: Terrestrial and Freshwater Ecosystems, 2018, 2nd ed.

the degree of modification can all influence the overall understanding of ecological value.

26 For this reason, I consider the existing condition of a river or watercourse to be a relevant consideration when undertaking an assessment of ecological value. While I would generally consider condition alongside the broader suite of factors informing value, rather than as a standalone determinant of value, I consider it appropriate to place weight on condition when characterising the freshwater environment and assigning ecological values.

27 In my opinion, the approach adopted by Dr Keesing places greater emphasis on existing condition than may sometimes be seen in other ecological assessments. However, I do not consider that approach unreasonable, particularly where condition is considered alongside the broader range of factors contributing to ecological value.

28 Based on my review of the information presented within the Freshwater Assessment, I generally agree with the ecological values assigned to the affected freshwater environments. I have not personally undertaken field investigations of the rivers and watercourses affected by the Project and have therefore relied on the information collected and presented in the Freshwater Assessment. However, having reviewed that information, there are no rivers or watercourses for which the assigned ecological value clearly appears inappropriate or unsupported by the available evidence.

29 As noted elsewhere in this evidence, ecological valuation involves the exercise of professional judgement, and it is possible that another ecologist may place different weight on particular attributes when assigning value. Based on the information available to me, I do not consider there is a material risk that any rivers or watercourses have been fundamentally mischaracterised, nor do I consider that any reasonably foreseeable differences in valuation would materially alter my overall conclusions regarding freshwater ecological effects or the appropriateness of the proposed effects management framework.

Assessment of magnitude and level of effect

30 In undertaking an assessment of freshwater ecological effects, the magnitude of effect provides an indication of the scale, extent or degree of ecological change that may result from a proposed activity. When considered alongside the ecological value of the receiving environment, it assists in determining the overall level of effect and provides a structured framework for describing and comparing ecological effects.

31 In my opinion, it is important to recognise that ecological value, magnitude of effect, and level-of-effect categories are tools used to describe and communicate ecological effects. While these

categories assist in understanding the relative importance of effects, they are not ecological outcomes in and of themselves, nor do they automatically dictate the form or extent of ecological management that should follow. Rather, they help inform decisions regarding the avoidance, mitigation, offsetting and compensation of ecological effects.

32 I have also considered the August 2026 EIANZ explanatory note titled *Interpretation of Scale in Assessment of Ecological Values and Magnitude of Ecological Effects*. In my view, the explanatory note reinforces two important principles. First, ecological values should be assessed at a scale that is ecologically appropriate to the feature, species or process being considered. Secondly, the magnitude of effects should generally be assessed at the same scale as the ecological value assessment. I agree with both principles.

33 In the freshwater environment, many ecological processes operate at scales that extend beyond individual stream reaches. Fish populations, ecological connectivity, habitat networks and catchment processes frequently extend across multiple watercourses and sub-catchments. Accordingly, I consider it appropriate in many circumstances to consider ecological values and effects within a broader catchment context, provided that the same scale is applied consistently when assessing both value and magnitude. In my opinion, this is consistent with both the Guidelines and the explanatory note.

34 In relation to the Project, I understand Dr Keesing considered freshwater values and effects within a catchment context rather than focusing solely on the individual reaches directly affected by the works. Having reviewed the Freshwater Assessment, I consider Dr Keesing's approach to be ecologically reasonable given the nature of the freshwater environment affected and the ecological processes being evaluated. While another practitioner may have chosen to place greater emphasis on individual reach-scale assessments in some locations, I do not consider that would materially alter my overall conclusions regarding the magnitude of effects or the appropriateness of the proposed effects management framework.

35 Overall, I consider Dr Keesing's assessment of magnitude and level of effect presented in the Freshwater Assessment to be appropriate in the context of the Project.

Overall conclusions on methodology

36 Overall, I am satisfied that the Freshwater Assessment provides a suitable and robust basis for understanding the stream ecological values present within the Project area and assessing the likely ecological effects of the Project.

37 While ecologists may differ regarding certain aspects of methodology, value assignment, or the interpretation of magnitude

and level of effect, I do not consider those differences materially alter the overall understanding of the freshwater environment, the broad conclusions reached regarding ecological effects, or the nature of the freshwater management response that is appropriate for the Project.

ASSESSMENT OF EFFECTS

38 In my experience, the assessment of ecological effects and the development of ecological management measures are closely related, as the identification and characterisation of effects informs the selection of measures available to avoid, remedy, mitigate, offset or compensate for those effects. While the magnitude and level of effect provide a useful framework for describing and communicating ecological effects, the assessment of effects and the development of appropriate management responses are not necessarily dependent on a particular effect exceeding a specific threshold or category.

39 In this regard, my approach would generally be to first identify the relevant ecological effects and then consider the management measures available to address those effects, with the final management approach reflecting a combination of ecological, engineering, planning and consenting considerations. While I generally agree with the management measures identified within the Freshwater Assessment, I may not have framed their necessity in the same manner as Dr Keesing. In some instances, the Freshwater Assessment presents management measures as being precautionary or optional because the assessed level of effect is low. While that is a legitimate approach, I would typically view such measures as tools available to manage identified effects, irrespective of whether the decision is ultimately made to implement them.

40 Notwithstanding this difference in framing, I do not consider it materially affects my assessment of the Project or the appropriateness of the freshwater management framework now proposed. My assessment has therefore focused on whether the relevant ecological effects have been appropriately identified and whether the proposed management framework is capable of appropriately managing those effects. From my review of the Freshwater Assessment, I offer commentary on the following matters:

40.1 Stream habitat loss and modification (including by way of groundwater drawdown);

40.2 Headwater streams;

40.3 Fish passage;

40.4 Stream realignments;

40.5 Sedimentation; and

40.6 Cumulative effects.

Stream habitat loss and modification

41 The Project will result in the modification of freshwater habitats through culverting, stream realignments, reclamation of some stream sections and associated construction activities, and groundwater drawdown. These effects are identified and described in the Freshwater Assessment.[3]

42 The Freshwater Assessment appropriately identifies stream habitat loss and modification as a key effect arising from the Project. These effects include the permanent loss or modification of some river and watercourse reaches through culverting, reclamation and stream realignment, together with associated changes to habitat availability, channel form and aquatic ecological function. In addition, it appropriately identifies groundwater drawdown as a potential ecological effect pathway and appropriately incorporates the findings of the specialist groundwater assessment into the ecological effects assessment. In my opinion, these effects have been appropriately characterised and considered within the Freshwater Assessment.

43 In reviewing the Freshwater Assessment, I considered both the assumptions adopted and the approach used to determine the magnitude of effects associated with stream habitat loss and modification. While I generally agree with the conclusions reached, there are aspects of the Freshwater Assessment that I may have approached somewhat differently. For example, in some locations I may have placed greater emphasis on the proportion of similar habitat types available within a catchment, rather than solely considering the proportion of stream length affected. This is particularly relevant where some watercourses contain distinct habitat types or geomorphic characteristics that are not necessarily representative of the wider catchment.

44 By way of example, the Pine North watercourse contains reaches with different physical characteristics and habitat values. Had I been undertaking the assessment myself, I may have considered some of those habitat types separately when assessing magnitude, rather than treating the watercourse as a single unit. This may have resulted in some differences in the assigned magnitude of effect for particular reaches. However, based on the information available to me, I do not consider those differences would have materially altered my overall conclusions regarding the level of ecological effect associated with stream habitat loss and modification.

[3] Freshwater Assessment, section 4.

45 Overall, I consider the assessment of stream habitat loss and modification presented in the Freshwater Assessment to be reasonable and fit for purpose. While alternative approaches to assessing magnitude are available and may result in some variation in effect classifications, I do not consider there is a material risk that the Project's effects associated with stream habitat loss and modification have been understated or mischaracterised. Nor do I consider that any differences in methodology would have altered the freshwater management measures available to address those effects.

Headwater streams

46 The Freshwater Assessment recognises the ecological role of headwater streams in a number of places, including discussions relating to freshwater values, stream habitat characteristics, fish habitat, stream loss and modification, and the assessment of freshwater ecological effects. In particular, the Freshwater Assessment acknowledges that headwater streams can contribute to broader catchment processes and ecological functioning, while also recognising that the ecological values associated with individual headwater streams may vary depending on their characteristics, condition and ecological context.

47 I acknowledge that headwater streams can provide important ecological functions, including, for example, flow attenuation, organic matter processing, nutrient cycling, spawning habitat, refuge habitat and contributions to downstream ecological processes. However, I do not consider it appropriate to assume that all headwater streams perform these functions to the same degree, or that all headwater streams should therefore automatically be assigned elevated ecological values.

48 In my opinion, ecological values should reflect the attributes of the stream being assessed, placed in the context of the wider catchment. This includes consideration of habitat condition, hydrological permanence, ecological context, aquatic communities, connectivity and the extent to which ecological functions are currently expressed. The fact that a stream is located in a headwater position is an important consideration, but it is only one consideration.

49 In my opinion, there are circumstances where effects on headwater streams could warrant a different valuation outcome or a higher level of effect than might otherwise be assigned. For example, this may occur where a headwater stream supports uncommon habitats, important spawning habitat, threatened species populations, or other ecological features that make a disproportionately important contribution to catchment-scale ecological values. In those situations, the headwater position of the stream may be only one factor contributing to a higher overall ecological value.

50 However, based on my review of the information presented in the Freshwater Assessment, I do not consider that the affected headwater streams associated with the Project are of a nature that would warrant a materially different approach to valuation or effects assessment solely because of their headwater position. While some streams support meaningful ecological values and functions, I am satisfied those values have generally been recognised within the Freshwater Assessment.

51 For these reasons, I generally agree with the approach adopted in the Freshwater Assessment. While some affected headwater streams support meaningful ecological values, many of the streams affected by the Project are also modified systems situated within agricultural and plantation forestry landscapes. Accordingly, while the headwater position of a stream is an important ecological consideration, I do not consider it should automatically result in elevated ecological values or effects ratings in the absence of other attributes supporting that outcome. Overall, I agree with the values Dr Keesing assigned headwater streams.

Fish passage

52 The Freshwater Assessment recognises the importance of maintaining connectivity for migratory fish species and considers both fish passage requirements and upstream habitat availability when assessing potential effects. In my opinion, this is an appropriate approach because the significance of a fish passage effect is influenced not only by the potential barrier itself, but also by the ecological value of the habitat to which access may be affected.

53 I consider that maintaining fish passage is important. However, the ecological benefit derived from providing fish passage is heavily dependent on the habitat that exists upstream of a crossing. Ultimately, the purpose of fish passage is to provide access to habitat. Accordingly, understanding the amount, quality and ecological function of habitat located upstream of a crossing is a fundamental part of determining the presence and/or scale of a fish passage effect.

54 For that reason, I generally agree with the approach adopted in the Freshwater Assessment, which considers both likely species presence and upstream habitat availability when determining fish passage requirements. In my opinion, neither factor should be considered in isolation. A large area of accessible upstream habitat can elevate the importance of maintaining passage, while very limited upstream habitat may substantially reduce the ecological significance of a potential passage constraint.

55 In the absence of appropriate design measures, culverts and other stream modifications have the potential to affect fish passage and reduce access to upstream habitats. These are legitimate adverse effects requiring consideration within the assessment process.

However, the ecological significance of those effects is highly dependent on the characteristics of the affected watercourse, the species present or likely to be present, and the extent and quality of habitat located upstream. Having reviewed the Freshwater Assessment, I consider these factors were appropriately considered when assessing fish passage effects, and I generally agree with the conclusions reached.

56 While I generally agree with the Freshwater Assessment outcomes, if undertaking the assessment myself, I may have placed greater emphasis on describing the relationship between fish passage and habitat availability when explaining the significance of particular effects. However, based on the information available to me, I do not consider this would have materially altered my conclusions regarding the ecological significance of fish passage effects associated with the Project.

Stream realignments – spoil sites

57 Stream realignments are one of the more important freshwater considerations associated with the Project because a number of watercourses affected by the Project, particularly in association with spoil disposal areas, cannot be entirely avoided and will require permanent relocation. As a result, the assessment of effects is not limited to the direct loss or modification of existing stream habitat but also requires consideration of whether the proposed realignments can maintain appropriate ecological function, habitat values and aquatic connectivity over the longer term.

58 The Freshwater Assessment identifies stream realignments as a key component of the Project and considers both the potential effects associated with relocating watercourses and the extent to which those effects can be addressed through stream design. In my opinion, it is appropriate that stream realignments receive particular attention within the Freshwater Assessment, as they represent one of the principal mechanisms by which freshwater effects associated with spoil disposal areas are proposed to be managed.

59 I acknowledge that stream realignments associated with spoil fills introduce a greater degree of uncertainty than realignments undertaken wholly within natural ground. In the absence of successful design and implementation, potential risks could include the loss of habitat complexity, reduced ecological function, reduced habitat suitability, instability of channel form, and constraints on fish passage. Consequently, if stream realignments were ultimately unsuccessful, adverse ecological effects could be greater than those anticipated within the Freshwater Assessment.

60 However, I do not consider that uncertainty should be treated as evidence that the proposed realignments will fail or that poor ecological outcomes should be assumed from the outset. In my opinion, uncertainty is a common feature of ecological restoration and rehabilitation projects generally. The more relevant question is

whether the target ecological outcomes are reasonably achievable and whether those outcomes have informed the assessment of effects.

61 The relevant question is whether the proposed ecological outcomes are achievable and whether an appropriate framework exists to design, construct, monitor and, where necessary, modify works to achieve those outcomes. I address the post-mitigation level of effects further in my review of NZTA's proposed mitigation measures below.

62 In assessing stream realignments, I consider the focus should be on ecological outcomes rather than simply whether a stream has been relocated from its original position. The key issue is whether the resulting watercourse is capable of supporting appropriate stream function, habitat diversity, aquatic communities and fish passage. In this regard, I note that the Freshwater Assessment considers matters such as channel morphology, hydraulic function, habitat complexity, substrate composition, riparian condition and fish passage when assessing likely outcomes.

63 While I generally agree with the conclusions reached in the Freshwater Assessment, I may have placed greater emphasis on describing the uncertainty associated with stream realignments and the assumptions underpinning the predicted ecological outcomes. However, based on the information available to me, I do not consider there is a basis to conclude that the stream realignments are unlikely to achieve their intended ecological function. Nor do I consider that any differences in emphasis would materially alter my conclusions regarding the likely effects associated with stream realignments.

64 Accordingly, while I acknowledge that spoil site stream realignments carry greater uncertainty than some other aspects of the Project, I consider it reasonable for the Freshwater Assessment to conclude that appropriate ecological outcomes are achievable and to assess effects on that basis.

Sedimentation

65 Construction-related sedimentation has appropriately been identified in the Freshwater Assessment as a potential ecological effect of the Project.

66 Sedimentation represents a common effect pathway for infrastructure projects of this nature, with the potential to affect water quality, instream habitat, aquatic invertebrates, fish habitat and ecological functioning if not appropriately managed. In my opinion, the Freshwater Assessment appropriately recognises these potential effects and identifies sedimentation as a relevant freshwater ecological consideration during the construction phase of the Project.

67 I also consider it important to assess sedimentation effects in the context of the wider receiving environment, particularly where multiple activities have the potential to contribute sediment to the same catchment or watercourse. In that regard, sedimentation effects can be cumulative in nature, with the ecological significance of effects depending on factors such as the sensitivity of the receiving environment, the duration and extent of sediment inputs, existing catchment pressures, and the ability of the receiving environment to recover following disturbance.

68 Having reviewed the Freshwater Assessment, I am satisfied that sedimentation has been appropriately identified and considered as a potential ecological effect pathway. I also consider it appropriate that the Freshwater Assessment recognises sedimentation effects as primarily a construction-phase effect requiring management through project-specific erosion and sediment control measures. Based on my review, I do not consider there is a material risk that the potential freshwater ecological effects associated with sedimentation have been understated or mischaracterised within the Freshwater Assessment.

Cumulative effects

69 Cumulative effects arise where individual effects combine to create a larger overall effect. In the context of this Project, the relevance of cumulative effects stems from the fact that the Project extends across multiple catchments and interacts with a large number of rivers and watercourses over a substantial geographic area.

70 In my opinion, the assessment of cumulative effects is an important consideration for a project of this scale. While many of the individual effects identified within the Freshwater Assessment are assessed as low or very low, it does not necessarily follow that those effects are insignificant when considered collectively. Put simply, a large number of small effects can combine to create a more meaningful overall impact if they occur across enough locations.

71 For this reason, I would generally place greater emphasis on cumulative effects than is evident in the Freshwater Assessment. In particular, I consider it important to recognise that the overall freshwater ecological outcome for the Project is influenced not only by the magnitude of effects at individual locations, but also by the combined effect of those actions across the wider Project corridor.

72 That does not mean I necessarily disagree with the individual effect assessments presented in the Freshwater Assessment. Rather, it reinforces my view that, for a project of this scale, there remains value in managing effects even where they may be assessed as low or very low at an individual site. In my opinion, this is because the accumulation of unmanaged effects across multiple rivers and watercourses has the potential to result in a greater overall ecological impact than might be apparent when each effect is considered in isolation.

73 For that reason, I consider the management of freshwater effects across the Project to be particularly important. While individual effects may often be best assessed at the scale of the affected river or watercourse, I consider the overall freshwater management response should recognise the scale of the Project and the potential for cumulative effects to occur across multiple locations. In this regard, I consider NZTA's proposed freshwater management framework provides a more appropriate response than would be achieved by relying solely on the low or very low effect ratings assigned to individual effects.

Overall conclusions on effects

74 Overall, I generally agree with the conclusions reached in the Freshwater Assessment regarding the nature of the Project's potential freshwater ecological effects. To the extent I would have approached matters differently, I do not consider those differences materially alter my understanding of the key freshwater effects associated with the Project.

75 As noted throughout this evidence, ecological assessment involves the application of professional judgement and it is not uncommon for ecologists to differ in their interpretation of ecological values, magnitude of effects, stream significance, fish communities, assessment scales or assessment methodology. In my opinion, such differences do not necessarily mean that one assessment is correct and another is incorrect. Rather, the key consideration is whether the relevant ecological effects have been identified and whether the assessment provides a suitable basis for informing ecological management responses.

76 There are circumstances where differences in ecological value assignments, magnitude assessments or level-of-effect classifications can be important, particularly where those classifications influence the application of the effects management hierarchy or the extent of management measures proposed to address a particular effect. However, the significance of such differences should not be overstated.

77 In many cases, including for this Project, alternative but reasonable assessment approaches may result in different classifications while still identifying broadly similar ecological effects and management responses.

78 In my opinion, Dr Keesing has appropriately identified the key freshwater effects associated with the Project. These effects include stream habitat loss and modification (including groundwater drawdown), effects on fish passage and connectivity, stream realignments, sedimentation and cumulative effects. While I may have reached different conclusions from Dr Keesing regarding the magnitude of some individual effects in certain circumstances, I do not consider there is a material risk that the overall freshwater

effects of the Project have been fundamentally understated or mischaracterised.

79 Accordingly, I am satisfied that the Freshwater Assessment provides a suitable basis for understanding the Project's freshwater ecological effects. Subject to the implementation of an appropriate freshwater effects management framework, which I discuss below, I consider the Freshwater Assessment provides an appropriate foundation for identifying and managing the freshwater ecological effects associated with the Project.

RECOMMENDATIONS AND NZTA'S PROPOSED MITIGATIONS

Overview of NZTA's freshwater management framework

80 As discussed above, I consider the principal freshwater effects associated with the Project have been appropriately identified. The key question then becomes whether the proposed management framework is capable of appropriately managing those effects and achieving suitable freshwater outcomes.

81 Having reviewed both the Freshwater Assessment and the proposed consent conditions, I consider the overall freshwater management framework proposed by NZTA to be appropriate. In particular, I note that the framework includes measures directed at stream habitat loss and modification, fish passage, aquatic fauna management, stream realignments, offsetting and compensation, together with a range of monitoring and verification requirements.

82 While I generally agree with the effects identified in the Freshwater Assessment, my approach differs slightly from that adopted by Dr Keesing in relation to the role of effects management. In some instances, the Freshwater Assessment concludes that effects are sufficiently low that additional management may not be strictly necessary. In my experience, however, management measures are often valuable tools for addressing identified effects regardless of whether those effects exceed a particular assessment threshold.

83 This is particularly relevant for a project of this scale. While individual effects may often be assessed as low or very low, the implementation of appropriate management measures provides greater confidence that freshwater outcomes will be achieved and helps address the potential for cumulative effects across the wider Project. For that reason, I consider it appropriate that NZTA has proposed a management package that extends beyond the minimum measures that may have been justified solely on the basis of the effects assessment.

Fish passage and aquatic fauna management

84 The proposed management framework includes measures directed at maintaining fish passage, protecting aquatic fauna during construction, and maintaining connectivity within affected catchments. These include fish salvage requirements, fish passage

provisions, culvert design requirements, and broader ecological design outcomes associated with stream modifications.

85 In my opinion, the proposed management framework appropriately focuses on maintaining the ecological processes that support aquatic fauna, rather than relying on complete certainty regarding the composition of fish communities within every affected watercourse. While ecological surveys provide an important basis for assessing effects, there will always be some uncertainty regarding species presence and distribution. This does not alter the need to maintain connectivity, provide fish passage where appropriate, and protect fish during construction activities.

86 I also understand that further design work has identified one location, being the Pine North tributary culvert, where fish passage may be desirable from an ecological perspective but is unlikely to be practicable due to the anticipated length and gradient of the culvert. In circumstances such as this, I consider it appropriate to focus on the residual ecological effect that remains once all reasonably practicable avoidance and mitigation measures have been considered.

87 In my opinion, where fish passage cannot practicably be achieved, it is reasonable to consider whether alternative management responses are required. The need for any additional response should be proportionate to the ecological consequence of the passage constraint, having regard to matters such as the extent and quality of upstream habitat affected, the species likely to utilise that habitat, and the significance of the resulting connectivity loss.

Stream realignment outcomes, monitoring and triggers for additional mitigation

88 Stream realignments associated with spoil disposal areas remain one of the more important freshwater management considerations for the Project. As discussed earlier in my evidence, these realignments carry a greater degree of uncertainty than many other aspects of the Project because their ecological performance can only ultimately be demonstrated after construction.

89 In my opinion, the focus should therefore be on the ecological outcomes achieved by the realignments rather than simply whether a stream has been relocated. The key question is whether the resulting watercourse is capable of supporting appropriate stream function, habitat diversity, aquatic communities and fish passage.

90 I consider it important that stream realignments are assessed in a manner that recognises ecological performance exists along a continuum rather than as a simple pass-or-fail outcome. A realignment may successfully achieve many of its intended functions while still underperforming in relation to one specific attribute. Conversely, some aspects of a realignment may require refinement over time while the overall stream remains ecologically functional.

91 For that reason, I consider any further remediation, offsetting or compensation should respond to residual ecological effects that remain following implementation of the realignment, rather than being triggered solely because a particular performance objective has not been fully achieved. This is both ecologically logical and broadly consistent with the intent of the effects management hierarchy. In my opinion, the proposed consent conditions support this approach.

92 I also consider this approach helps ensure management responses remain proportionate to actual ecological outcomes and maintains a strong focus on achieving successful stream realignments in the first instance.

Offsetting and compensation

93 I note that NZTA's updated freshwater management package includes additional offsetting provisions where rivers or watercourses cannot be realigned or culverted in accordance with the ecological design outcomes sought by the conditions.

94 In my opinion, this is an appropriate addition to the management framework. It provides a mechanism for responding to residual effects where preferred outcomes cannot be achieved and recognises that the extent of any offsetting response should reflect the ecological consequence of the residual effect.

95 In considering NZTA's proposed freshwater offsetting and compensation package, I have also considered the modifications made to the SEV and Environmental Compensation Ratio (*ECR*) calculations, including the use of current ecological values rather than potential future values and the treatment of temporal lag and implementation uncertainty.

96 In my opinion, SEV and ECR are useful tools for informing ecological impact assessment and offset design, but they should not be applied mechanistically or treated as a substitute for professional ecological judgement. Current ecological values generally provide the most objective and repeatable basis for assessing effects, whereas estimates of future potential value are inherently more uncertain and dependent on factors beyond the Project. In my view, the potential for future ecological improvement is better reflected through the design of mitigation, restoration, offsetting and compensation measures than through increasing the assessed value of the existing environment based on a hypothetical future state.

97 Similarly, I do not consider the application of a 1.5x multiplier, or any other adjustment factor intended to account for temporal lag or uncertainty, should occur automatically. The appropriateness of such multipliers depends on the circumstances of a particular project, including the degree of uncertainty associated with achieving the proposed ecological outcomes and the mechanisms in place to manage that uncertainty. For this Project, I place

considerable weight on the proposed stream design requirements, restoration measures, monitoring requirements, performance standards and adaptive management provisions. Collectively, these provide a robust framework for achieving the intended ecological outcomes and reducing implementation risk. I also consider the capability and experience of the consent holder to be a relevant consideration when assessing implementation risk. In this regard, NZTA has extensive experience delivering large-scale infrastructure projects subject to ecological management, monitoring and consent compliance requirements. While this does not remove uncertainty regarding ecological outcomes, it provides additional confidence that the proposed freshwater management measures will be appropriately implemented and maintained over time.

98 Accordingly, I consider the modified approach adopted for the Project to be appropriate in the circumstances. When considered alongside the proposed mitigation measures and consent conditions, I consider the resulting offsetting and compensation package to be broadly proportionate to the scale and nature of the residual freshwater effects.

99 I also note that the updated framework includes increased offsetting requirements for perennial and intermittent streams on the southern side of the Brynderwyn Hills (north of the Piroa Stream) that are impacted by spoil. In my view, this provides an incentive to avoid impacts during detailed design and strengthens the alignment between the management framework and the overall intent of the effects management hierarchy.

100 Overall, I consider NZTA's proposed offsetting and compensation provisions to be broadly proportionate to the freshwater effects identified. Subject to final drafting of the conditions, I do not currently consider any significant additional offsetting or compensation measures are necessary.

Proposed consent conditions

101 Having reviewed the proposed consent conditions and the updated freshwater management package, I consider the conditions establish specific mechanisms for managing fish passage, fish salvage, stream design, stream loss, offsetting, compensation, groundwater-related effects, and the implementation of further management measures where required. This provides a framework for achieving and maintaining those outcomes throughout detailed design, construction and operation.

102 Particular strengths of the proposed framework include:

102.1 The incorporation of fish passage considerations into watercourse crossing design;

102.2 The ecological design outcomes specified for stream realignments;

102.3 The offsetting provisions proposed where rivers or watercourses cannot be realigned or culverted in accordance with those outcomes; and

102.4 The broader framework for addressing residual freshwater effects where they remain.

103 Collectively, these measures provide confidence that identified effects can be appropriately managed even where some uncertainty remains regarding the precise ecological response of individual watercourses.

104 While there may be opportunities to further refine aspects of the condition wording as the consenting process progresses, I do not currently consider any additional substantive freshwater management measures are necessary beyond those already proposed. Overall, I consider the proposed consent conditions provide an appropriate, flexible and proportionate framework for managing the freshwater ecological effects associated with the Project.

Mitigation conclusions

105 In my opinion, the proposed freshwater management framework is robust, practical and proportionate to the freshwater effects identified for the Project.

106 It focuses on achieving ecological outcomes, incorporates mechanisms for managing uncertainty and residual effects, and provides a framework through which freshwater effects can be addressed in a manner that remains proportionate to the ecological consequences ultimately experienced.

107 Most importantly, the framework provides a suite of tools capable of avoiding, mitigating, offsetting or compensating for freshwater effects where necessary. In my view, this is a particular strength of the proposed approach given the scale of the Project and the potential for cumulative effects to arise across multiple rivers and watercourses.

108 For those reasons, I am satisfied the proposed mitigation package and consent conditions provide an appropriate framework for managing the freshwater ecological effects of the Project.

RESPONSE TO COMMENTS

109 In this section, I respond to freshwater ecology matters raised by DOC, Te Uri o Hau, Te Parawhau, Patuharakeke and other commenters, reviewers and technical experts who have commented on the Project's freshwater ecological values, effects and proposed management responses. Many of the matters raised overlap and relate to common themes. Accordingly, rather than responding to each submission individually, I have grouped my responses by topic.

Where relevant, I have cross-referenced earlier sections of my evidence where I have already discussed the issue in detail.

110 In particular, I address the following matters:

110.1 Information sufficiency and ecological uncertainty;

110.2 Assessment of ecological values;

110.3 Scale of assessment, magnitude of effects and cumulative effects;

110.4 Fish passage and aquatic connectivity;

110.5 Stream realignments and spoil disposal areas;

110.6 Groundwater drawdown and hydrological effects;

110.7 Offsetting, compensation and effects management; and

110.8 Monitoring, detailed design and future management processes.

111 Where comments extend beyond freshwater ecology, including matters relating primarily to cultural values, planning processes, terrestrial ecology, wildlife management or project governance, I have limited my response to those aspects relevant to my area of expertise as a freshwater ecologist.

Information sufficiency and uncertainty

112 A recurring theme within the comments received is that insufficient information was collected to adequately characterise the freshwater environment, particularly in relation to stream mapping, fish communities, eDNA sampling, ecological surveys, threatened species and aquatic habitat values.

113 In summary, I do not consider there is a prescribed set of investigations that must be undertaken for every freshwater ecological assessment. Rather, the relevant question is whether sufficient information exists to identify freshwater values, assess likely effects, and inform appropriate management responses.

114 In my opinion, the information collected for the Project was sufficient for those purposes.

115 I also note that ecological assessments are inherently undertaken in the presence of uncertainty. Complete certainty regarding species distributions, habitat use, ecological processes, or future ecological responses is rarely achievable. In my view, the remaining uncertainty associated with the Project is not of a nature that materially alters the assessment of effects or the development of appropriate management responses. I further note that NZTA's

proposed conditions are flexible and outcomes-based, which will require surveys during implementation of the Project.

Assessment of ecological values

116 Several commenters have expressed concerns regarding the freshwater values assigned to rivers and watercourses, including the weighting given to stream condition, the treatment of headwater streams, the significance of threatened species, and the approach used to determine overall ecological value.

117 As discussed earlier in my evidence, I consider ecological valuation to be an exercise of professional judgement informed by multiple factors. These factors may include condition, rarity and distinctiveness, ecological context, connectivity, threatened species, ecological integrity and other relevant attributes. In my opinion, no single factor should automatically determine ecological value in isolation.

118 As noted above, I do not consider there is a material risk that the affected freshwater environments have been fundamentally mischaracterised.

119 I likewise acknowledge the ecological importance of headwater streams. However, I do not consider it appropriate to assume that all headwater streams necessarily support the same ecological values or functions, nor that a headwater location should automatically result in elevated ecological value. In my opinion, headwater streams should be assessed having regard to their individual characteristics and wider catchment context. And as stated above, I generally agree with the approach adopted in the Freshwater Assessment.

Assessment of scale, magnitude, and cumulative effects

120 A number of commenters have questioned the use of a catchment-scale perspective when assessing ecological values, magnitude of effects and overall ecological outcomes. Related concerns have also been raised regarding cumulative effects and the potential for effects to be understated through the use of broader assessment scales.

121 As set out earlier in my evidence, I consider there is ecological merit in assessing values and effects at a catchment scale where the relevant ecological processes, habitat networks, fish communities and ecological connectivity operate at that scale. In my opinion, this is consistent with accepted freshwater ecological practice, provided the scales used for value and effect assessments remain aligned.

122 I acknowledge that alternative approaches to assessment scale are available and that reasonable ecologists may differ in their preferred methodology. Similarly, I acknowledge that alternative approaches

to magnitude assessment may result in some differences in effect classifications for particular watercourses.

123 I also acknowledge the importance of cumulative effects for a project of this scale. However, having considered the comments received, I do not consider they materially alter my conclusions regarding the overall freshwater effects of the Project (ie effects will be managed such that there are no residual effects that cumulatively result in an adverse effect).

Fish passage and aquatic connectivity

124 Concerns have been raised regarding fish passage, aquatic connectivity, species distributions and the ecological significance of barriers to fish movement.

125 I agree that maintaining fish passage is an important freshwater ecological consideration. However, the ecological significance of fish passage effects is closely linked to the nature and extent of habitat available upstream of the affected location. The purpose of fish passage is ultimately to maintain access to habitat, and therefore habitat availability and fish passage should be considered together.

126 In my opinion, the Freshwater Assessment appropriately considered both likely species presence and upstream habitat availability when assessing fish passage effects.

127 Having reviewed the matters raised by commenters and reviewers, I remain satisfied that fish passage and connectivity effects have been appropriately identified for the Project and that NZTA's proposed management framework is appropriately directed toward maintaining aquatic connectivity where it will provide meaningful ecological benefit.

Stream realignments and spoil disposal areas

128 Stream realignments associated with spoil disposal areas have attracted considerable comment. These comments generally relate to uncertainty regarding ecological outcomes, the long-term viability of realigned streams, and the potential consequences should realignments not perform as anticipated.

129 I acknowledge that stream realignments associated with spoil disposal areas represent one of the more important freshwater ecological considerations for the Project and carry a greater degree of uncertainty than many other freshwater effects.

130 However, I do not consider uncertainty should be treated as evidence that ecological outcomes will not be achieved. In my experience, uncertainty is a common feature of ecological restoration and rehabilitation projects. The more relevant question is whether the intended ecological outcomes are achievable and whether an appropriate framework exists to identify and address any residual effects that remain.

131 In my opinion, the comments received do not materially alter my views regarding stream realignments. While I acknowledge uncertainty exists, I remain satisfied that the proposed ecological outcomes are achievable and that stream realignments should be assessed based on the ecological outcomes ultimately delivered, rather than solely on the fact that a stream has been relocated.

Groundwater drawdown and hydrological effects

132 Concerns have also been raised regarding groundwater drawdown, changes to hydrology, stream drying and potential effects on groundwater-dependent freshwater environments.

133 Based on the information available, I am satisfied that groundwater drawdown has been appropriately identified as a potential effect pathway and that the ecological consequences of those effects have been appropriately considered within the Freshwater Assessment, and NZTA's proposed effects management measures remain appropriate to address these.

Offsetting, compensation, and effects management

134 A number of reviewers and commenters have commented on NZTA's proposed offsetting and compensation framework and the extent to which management responses should be applied to identified freshwater effects.

135 As discussed in the mitigation section of my evidence, I generally support an approach whereby offsetting and compensation respond to residual ecological effects and remain proportionate to the ecological consequences that remain after avoidance, mitigation and restoration measures have been implemented.

136 I acknowledge that alternative views exist regarding the extent to which offsetting or compensation should be applied. However, I do not consider offsetting should become a substitute for achieving successful freshwater outcomes in the first instance. In my opinion, the primary focus should remain on managing effects and achieving functional freshwater environments wherever practicable.

137 Concerns have also been raised regarding the assumptions adopted in the SEV and ECR calculations. I have addressed these matters in paragraphs 95-98 above. For the reasons set out there, I consider the modified approach adopted by NZTA for the Project to be appropriate in the circumstances. I also note that the SEV and ECR methodologies relate specifically to the assessment of offsetting and compensation measures for residual effects, and therefore represent only one component of the overall freshwater effects management framework. In forming my opinion, I place greater weight on the overall ecological outcomes secured through the proposed avoidance, mitigation, restoration, monitoring and consent conditions than on any individual assumption within the offsetting calculations.

138 Having reviewed NZTA's updated mitigation package, I consider the proposed offsetting and compensation framework provides an appropriate mechanism for addressing residual freshwater effects where they remain.

Monitoring, future design, and management plans

139 A recurring concern raised by several parties is the extent to which aspects of freshwater management are proposed to be developed through detailed design, management plans and future project-specific processes.

140 In my opinion, the existence of detailed design processes and management plans does not necessarily indicate that effects have not been appropriately assessed. It is common for ecological assessments to identify likely effects at the consenting stage, while allowing detailed design and implementation measures to be refined as additional information becomes available.

141 The important question is whether sufficient information exists to identify the relevant effects and whether the proposed framework provides an appropriate mechanism for managing those effects through design, construction and operation.

142 For the reasons outlined throughout this evidence, I am satisfied that the Project has reached that threshold and that the proposed management framework provides an appropriate basis for managing freshwater ecological effects as detailed design progresses.

Overall response to comments

143 Having reviewed the comments received from commenters, reviewers and technical experts, I acknowledge that a number of matters raised involve areas where reasonable experts may differ in their interpretation of ecological information, assessment methodology or the relative weighting given to particular ecological factors.

144 In some instances, I may have approached aspects of the Freshwater Assessment differently from Dr Keesing. However, having considered the comments received and undertaken my own review of the information available, I do not consider those matters materially alter my overall conclusions regarding the identification of freshwater values, the assessment of freshwater ecological effects, or the appropriateness of NZTA's proposed freshwater management framework.

145 Accordingly, I remain satisfied that the Project's freshwater ecological effects have been appropriately identified and that NZTA's proposed mitigation package and consent conditions provide an appropriate framework for managing those effects.

CONCLUSION

146 Overall, I am satisfied that the Freshwater Assessment provides a suitable basis for understanding the freshwater environment affected by the Project and assessing its likely freshwater ecological effects. While I acknowledge that alternative approaches are available in relation to ecological valuation, assessment scale, magnitude of effects, and the weighting applied to particular ecological factors, I do not consider these differences materially alter the identification of the key freshwater values affected by the Project or the principal freshwater effects requiring management.

147 As discussed throughout my evidence, there are aspects of the Freshwater Assessment that I may have approached differently. However, having reviewed the Freshwater Assessment, submissions, technical reviews, updated mitigation package and proposed consent conditions, I remain satisfied that the key freshwater effects associated with the Project have been appropriately identified and characterised.

148 In my opinion, a particular strength of the Project is that the proposed freshwater management framework does not rely solely on the effects classifications assigned within the Freshwater Assessment. Rather, it provides a suite of measures directed toward managing stream habitat loss and modification, maintaining fish passage and aquatic connectivity, achieving appropriate stream realignment outcomes, addressing residual effects, and managing uncertainty where it exists. Importantly, the framework also recognises that freshwater effects should be assessed in the context of the Project as a whole and not solely at the scale of individual watercourses.

149 For these reasons, I am satisfied that NZTA's proposed mitigation package and consent conditions provide a robust and proportionate framework for managing the freshwater ecological effects of the Project. Accordingly, I conclude that the Project is capable of achieving appropriate freshwater ecological outcomes and that the proposed freshwater management framework is suitable for the purposes of avoiding, minimising, remedying, and where necessary offsetting or compensating for freshwater ecological effects.

Jeremy Garrett-Walker
28 October 2026

APPENDIX A – EXPERIENCE AND QUALIFICATIONS

My full name is Jeremy Garrett-Walker. I am a Principal Freshwater Ecologist at Boffa Miskell Ltd, based in Tauranga. I hold a Master of Science (Hons) in Biological Sciences (2014) and a Bachelor of Science in Environmental Planning (2012), both from the University of Waikato. I am a Certified Environmental Practitioner (Certification # 1870) under the Certified Environmental Practitioner Scheme of the Environmental Institute of Australia and New Zealand, and I am bound by the Institute's code of ethics. I am a member of the New Zealand Freshwater Sciences Society.

I have over 10 years of experience in ecological consulting, specialising in freshwater and wetland ecosystems, with additional experience in terrestrial fauna. My work spans a wide range of infrastructure and development projects across the North Island, including water and wastewater infrastructure, roading, and subdivisions. I have led ecological inputs from early planning and consenting through to implementation and monitoring, and regularly collaborate with engineers, designers, and contractors to integrate ecological values into project delivery.

My relevant project experience includes:

- **Tākitimu North Link – Stage 2 (2021–Present):** Lead freshwater ecologist contributing to the Fast-track consenting of the four-lane highway between Te Puna and Ōmokoroa. Co-author of the Ecological Effects Assessment, with responsibility for freshwater ecology, including ecological valuation, effects assessment, mitigation design, fish passage and consent conditions.

- **Te Ara Hauāuru Northwest Busyway (2026):** Lead freshwater ecologist brought on to the project following lodgement of the substantive application under the fast-track consenting legislation. This included initial peer review of the original ecology assessment (prepared by AECOM), and subsequent preparation of a standalone freshwater ecology assessment.

- **SH29 Tauriko West – Tupenga (2025-Present)**: Co-author of the Ecological Impact Assessment for the fast-track consenting of a major roading project in Tauranga. Responsible for the freshwater ecology assessment, including the evaluation of stream and aquatic fauna values, assessment of ecological effects, and development of effects management measures. Currently working through the Panel process.

- **Featherston Wastewater Treatment Plant Reconsenting (2020–Present):** Lead ecologist for the reconsenting of the plant, including ecological impact assessment, habitat and flow modelling, and development of a comprehensive ecological monitoring programme.

- **Silverstream Pipe Crossing, Wellington Water (2018–2022):** Sole ecologist in MCA process and contributor to Ecological Impact Assessment for a new pipe bridge over Te Awa Kairangi / Hutt River.

- **Transmission Gully Project (2016–2022):** Involved in a wide range of ecological management activities including fish and lizard relocation, bird surveys, and stream restoration assessments.