BEFORE THE INDEPENDENT HEARINGS PANEL
OF HAMILTON CITY COUNCIL

UNDER	the Resource Management Act 1991 ("**RMA**")
AND	
IN THE MATTER	of Private Plan Change 17 to the Hamilton City Operative District Plan ("**PC17**")

STATEMENT OF EXPERT EVIDENCE OF GERARDUS HENRICUS ANTHONIUS KESSELS ON BEHALF OF FONTERRA LIMITED

ECOLOGY (BATS)

7 OCTOBER 2025

Russell McVeagh

D J Minhinnick / K L Gunnell
P +64 9 367 8000
F +64 9 367 8163
PO Box 8
DX CX10085
Auckland

1. EXECUTIVE SUMMARY

1.1 This evidence addresses pekapeka / long-tailed bat ecological values, effects and approach to effects management as it relates to PC17.

1.2 Several bat surveys have been undertaken within the "**Plan Change Area**" as part of my assessment (being approximately 91 hectares of land surrounding Fonterra Limited's ("**Fonterra**") Te Rapa Dairy Manufacturing site). No bats were detected within the Plan Change area during the surveys.

1.3 However, based on my desktop investigations and ecological surveys, the Plan Change Area potentially includes habitat for long-tailed bats. As this is a highly mobile, Nationally Threatened (Critically Endangered), indigenous fauna species, caution is warranted when planning land use change in their known home range.

1.4 Potential effects associated with the loss of these bat habitat types as a result of PC17 will be avoided, remedied or mitigated through implementation of a policy and rules framework and creation of a buffer along the margin of the Waikato River, which will provide targeted protection for bats and their habitat use.

1.5 I recommend minor amendments to the PC17 planning provisions to incorporate the updated Department of Conservation ("**DOC**") tree felling protocols for potential bat roost trees. Provided this amendment is adopted, I consider the potential adverse effects on ecological values of long-tailed bats, and their habitat use within and adjacent to the Plan Change Area, will be no more than minor.

2. INTRODUCTION

Qualifications and Experience

2.1 My name is Gerardus (Gerry) Henricus Anthonius Kessels. I am managing director of Kessels & Associates Limited (trading as "**Bluewattle Ecology**"), a specialist ecology assessment consultancy. I am also employed on a casual basis to SLR Consulting as Technical Director – Ecology.

2.2 I hold a Bachelor of Science degree majoring in zoology, completed in 1988 and a Master of Resource and Environmental Planning (first class honours,

specialising in wetland ecology) completed in 1999, both from Massey University.

2.3 I am an accredited Independent Hearings Commissioner certified by the Ministry for the Environment and Local Government New Zealand. I am a member of the Freshwater Sciences Society of New Zealand, the New Zealand Ecological Society, the Ornithological Society of New Zealand, the Waikato Botanical Society and an affiliate member of the New Zealand Planning Institute.

2.4 I am certified with "Bat Competency" by DOC as being suitably qualified to undertake and analyse data for bioacoustic surveys (using acoustic bat monitors ("**ABM**"), identify long-tailed bat roosts and capture, handle and radio track long-tailed bats.

2.5 I have over 34 years of experience in the fields of ecology and resource management planning. I have been assessing flora and fauna habitats since 1990, including: threatened species captive breeding management / research; assistance with offshore island pest eradication programmes; assistance with capture, translocation and tagging of a number of threatened bird species, such as kakapo and kokako; surveys for threatened fish, lizards and bats; ecological restoration and management plans; significant natural area assessments and policy development; as well as ecological impact assessments and RMA section 42A review reports for a wide variety of development proposals. I have undertaken this work for a number of organisations, including DOC, territorial authorities, numerous private landowners, non-profit conservation organisations and private companies.

2.6 I have appeared as an expert witness at hearings on numerous occasions, most recently including:

(a) Proposed Plan Change 14 ("**PC14**") to the Waipā District Plan – Rezoning part of C10 Growth Cell where I provided ecological advice and expert evidence, particularly in relation to bats and their habitat.

(b) Private Plan Change 20 to the Waipā District Plan - Airport Northern Precinct Extension where I provided ecological advice and expert evidence. As with PC14, this was particularly in relation to bats and their habitat.

(c) Plan Change 5 ("**PC5**") to the Hamilton City Operative District Plan ("**ODP**") – Peacocke Structure Plan where I was an expert witness on ecological matters.

(d) An application to construct and operate the Newcombe sand quarry in Cambridge where I provided expert evidence on bat ecological values and effects.

(e) Providing bat related inputs to the assessment of effects phase of a number of renewable energy, roading and mining proposals under the Fast-track legislation, including ecological peer review for the Cambridge to Piarere realignment of State Highway 1 for the Waikato Regional Council, Waipā District Council and Matamata-Piako District Council (current workstream).

Involvement in PC17

2.7 I am the co-author of the Bat Survey and Effects Assessment ("**Bat Report**") prepared by Bluewattle Ecology for PC17.

2.8 RMA Ecology Limited, on behalf of Fonterra engaged Bluewattle Ecology to undertake a bat survey and assessment on bats to inform and support PC17 which seeks to rezone the Plan Change Area.

2.9 I am familiar with the Plan Change Area having undertaken surveys and visual inspections within the Plan Change Area in 2017 and again in 2023.

Code of Conduct

2.10 I confirm that I have read the Expert Witness Code of Conduct set out in the Environment Court's Practice Note 2023. I have complied with the Code of Conduct in preparing this evidence and I agree to comply with it while giving oral evidence before the Hearings Commissioners. Except where I state that I am relying on the evidence of another person, this written evidence is 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 in this evidence.

3. PC17

3.1 The purpose of PC17 is to rezone the Plan Change Area to Te Rapa North Industrial Zone under the ODP. This is achieved by removing the Deferred Industrial Zone Area which currently overlays the Plan Change Area. This will allow the Plan Change Area, which is currently predominantly used for pastoral agriculture, to be developed for industrial activities.

3.2 The extent of the Plan Change Area is shown in Figure 1.

Figure 1. Plan Change Area

4. SCOPE OF EVIDENCE

4.1 This statement of evidence will:

(a) outline the habitat value of the Plan Change Area and the surrounding locality for long-tailed bats;

(b) summarise the key findings and recommendations from the Bat Report;

(c) respond to bat related ecological matters raised in the Hamilton City Council ("**Council**") Officer's Section 42A Report ("**Section 42A Report**");

(d) respond to bat related ecological matters raised in submissions; and

(e) provide an overall conclusion on Fonterra's application for PC17 from a bat related ecological perspective.

5. ECOLOGICAL BACKGROUND OF THE PLAN CHANGE AREA

5.1 Long-tailed bats (*Chalinolobus tuberculatus*) are listed as "Threatened - Nationally Critical" by DOC.[1] These bats have been consistently documented as using appropriate habitats along the Waikato River and the broader landscape surrounding the Plan Change Area, as supported by data from the DOC database and my personal observations.

5.2 Despite being classified as Nationally Threatened (Critically Endangered) by DOC, the presence of long-tailed bats within highly modified landscapes (particularly in the Waikato region and around Hamilton City), demonstrates over time they are able to adapt to major landscape change from indigenous vegetation to landscape dominated by almost 100% exotic vegetation. This is despite ongoing pressures from introduced animal competition and predation. It is thus plausible that they may utilise the native and exotic trees as well as the pasture habitat within the Plan Change Area for roosting and foraging purposes, in addition to relying on visual cues for commuting.

5.3 There are four records of individual bats between 1.3 – 1.8 km south-east of the Plan Change Area between 2018 and 2020. I also detected bats 4 km north-east of the Plan Change Area as part of studies for the State Highway 1C (Waikato Expressway) in 2015. Nevertheless, the previous 2017 and 2023 surveys in and adjacent to the Plan Change Area have not detected bats. Bat activity may be restricted because of the industrial activities adjacent to the Plan Change Area.

6. EFFECTS ON LONG-TAILED BAT HABITAT

6.1 The methodology for the desktop and field investigations undertaken to characterise the ecological values relating to bats within the Plan Change Area are described in the Bat Report accompanying the PC17 application.

6.2 On 17 October 2023 and 2 November 2023, visual inspections were undertaken to analyse the potential habitat features of the trees, other vegetation and biophysical features (such as waterbodies) at the Plan Change Area for long-tailed bats. These inspections involved assessing the trees and other vegetation for their suitability as key structural attributes for potential long-tailed bat habitat.

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[1] O'Donnell, C.F.J.; Borkin, K.M.; Christie, J.; Davidson-Watts, I.; Dennis, G.; Pryde, M.; Michel, P. 2023: Conservation status of bats in Aotearoa New Zealand, 2022. New Zealand Threat Classification Series 41. Department of Conservation, Wellington. 18 p.

6.3 Two bioacoustic surveys were undertaken specifically for PC17. I had also undertaken an ABM bioacoustic survey at the Plan Change Area in 2017 as part of a biodiversity inventory study for Fonterra. These surveys are the standard way to determine the presence and abundance of long-tailed bats in New Zealand. Two bioacoustic surveys were undertaken within the Fonterra-owned land at the Plan Change Area; between 17 October and 2 November 2023 and between 10 – 29 November 2023.

6.4 No bat calls were recorded by either of these 2023 surveys, nor during the 2017 survey event.

6.5 Nonetheless, bats could still utilise the Plan Change Area from time to time, as bats are a highly mobile species with very large and variable home ranges, with habitat usage changing throughout the year.

6.6 The eastern section of the Plan Change Area (known as the North Block and the South-East Block) is adjacent to (and slightly includes) High-Value Bat Habitat along the Waikato Awa margin, characterised by a number of trees with high roosting potential as shown in Figure 2. This specific habitat is particularly conducive to supporting bat populations due to the availability of potential roosting trees and physical characteristics to provide functional commuting and foraging habitat.

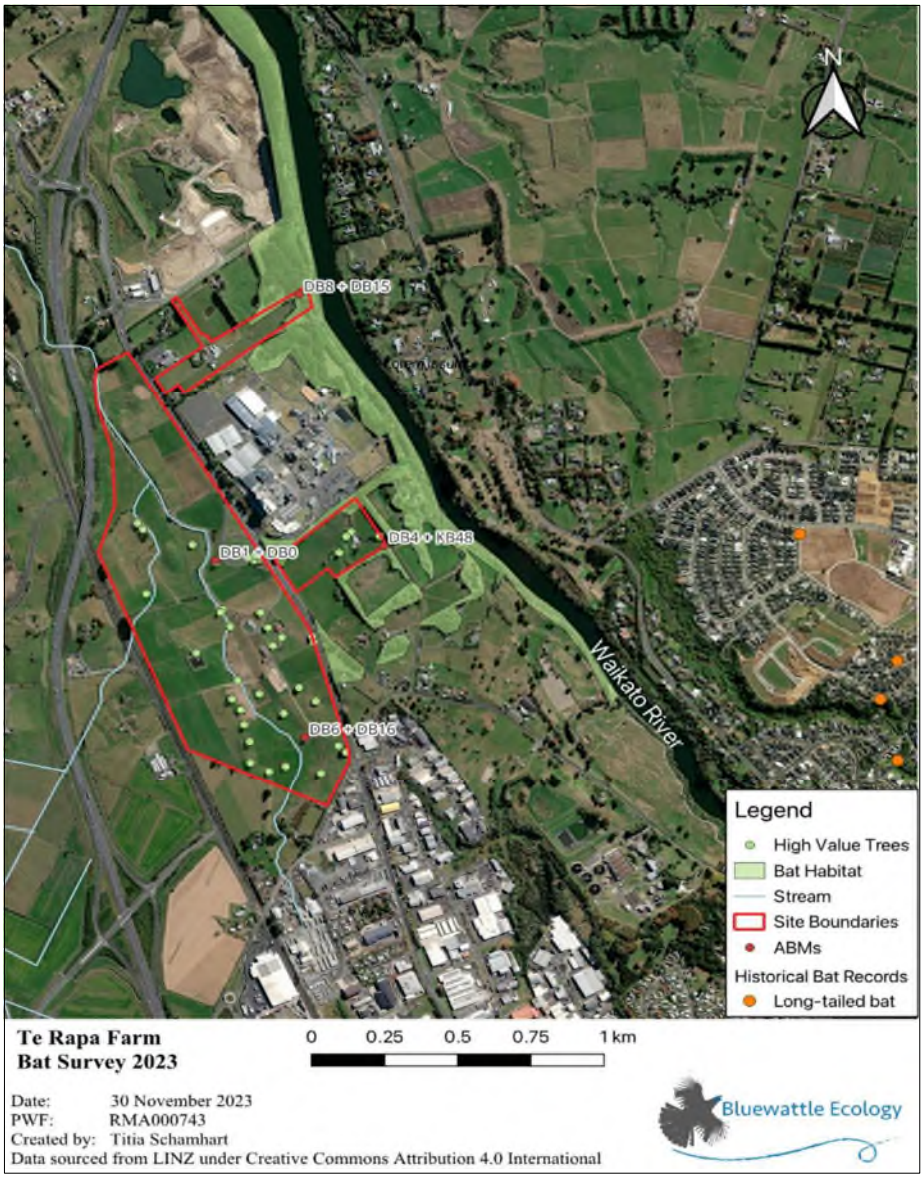

Figure 2. Locations of bat detectors and during the 17 October – 2 November and 10 – 29 November 2023 and identified High Value Bat Trees within the Fonterra-owned land at the Plan Change Area, Hamilton

6.7 Conversely, the western part of the Plan Change Area (known as the "**West Block**") features scattered roosting opportunities somewhat reduced in habitat value because the trees are largely in open pastureland, not generally favoured for roosting (being more exposed to inclement weather). The lower habitat value of the West Block for bats is supported by the absence of detected bats in this area from multiple surveys. The presence of a meandering stream (the Te Rapa Stream) in the West Block enhances the Plan Change Area's ecological value by providing potential commuting and foraging habitat for bats, however, overall I consider the West Block is of low habitat value for bats.

6.8 The lack of high-quality habitats within most of the Plan Change Area, plus a non-detection of bats over multiple surveys, suggest bat utilisation is low or absent here (especially compared to southern, semi-rural Hamilton). Thus, the risk of harming bats or causing significant loss of habitat associated with future land use changes that would be enabled by PC17 is considered to be low. However, the Waikato River, adjacent to the Plan Change Area is of high value habitat, and likely an important corridor for bats passing through the landscape. The Waikato River, therefore, is sensitive to land use change, especially removal of large trees, taller vegetation and increase in artificial lighting emissions.

6.9 At this point in time there is no evidence that occupied bat roosts would be impacted by PC17. However, bats utilise a large number of trees in a wide area as roosts throughout their home range. Furthermore, this can vary from year to year. There are a number of trees within the Plan Change Area which could be utilised as bat roost trees which would be removed, or indirectly impacted, by PC17 – these are termed as "**High Value Bat Trees**". Trees that fit this category are not currently known to be occupied by bats at this point in time, but they exhibit cavity bearing properties and may be used by bats for roosting.

6.10 In addition to loss of habitat and loss of potential roost trees, there may be a number of indirect and cumulative adverse effects of PC17 on bats in this locality. For example, if night-time artificial lighting is used on the Plan Change Area this has potential to impact bat behaviour. Other potential effects, include noise which in this case, I consider would be negligible.

6.11 These potential adverse effects require addressing as part of PC17's planning provisions to ensure that the overall effect of the PC17 is less than minor. To this end, I make a number of recommendations outlined in section 7 of my evidence below.

7. RECOMMENDATIONS

7.1 I recommend the following measures to be undertaken to mitigate any potential adverse effects on bats and their habitat associated with PC17, which have been incorporated into the PC17 provisions.

Structure plan

7.2 A Structure Plan has been developed for PC17 to guide the development of the future industrial area enabled under PC17. Objectives, policies, and

provisions are proposed to support the Structure Plan and achieve the objectives of PC17 and the RMA, including in relation to long-tailed bats and their potential habitat use.

Waikato River Buffer

7.3 Land use changes involving industrial activities granted as a consequence of PC17 should ideally not come any closer than 50 m from the edge of the Waikato River, effectively resulting in zero artificial light illumination within the buffer to the river. Guideline 3.9.2.7(h) of the Structure Plan provisions require protection and enhancement of the ecological values of the Waikato River Corridor, recognising its value as habitat for a range of indigenous flora and fauna, including the long-tailed bat. Furthermore, Objective 5 includes specific policies to maintain ecosystems connectivity, buildings setbacks and minimising harm to bats when removing potential bat roost trees. I support these provisions and note that alongside the proposed Open Space Zone shown on the Zoning Plan (Appendix 11), this fulfils my recommendation to provide for a 50 m buffer along the edge of the Waikato River where it abuts the Plan Change Area.

DOC Tree Felling Protocol

7.4 For the removal of all trees identified as High Value Bat Trees in Figure 2, and for any other trees with trunks greater than 15 cm diameter at a height of 1.4 m from the ground, DOC tree felling protocols should be included in the PC17 plan provisions.

7.5 These protocols are a requirement of Rule 25.2.5.4 of the PC17 provisions. However, I note that the DOC 'Protocols for Minimising the Risk of Felling Bat Roosts' (Version 2: October 2021) referenced have been superseded by an October 2024 version. I recommend that this reference be amended to read:

> The protocols must be consistent with the Department of Conservation 'Protocols for minimising the risk of felling bat roosts' (Version 4, October 2024) or updated versions.

Artificial Lighting

7.6 In principle, keeping the Waikato River and its immediate margins dark supports bat movement. However, I acknowledge that a requirement for a zone wide lighting control along the inland edge of the SNA may be unachievable given the established 24-hour baseline lighting environment from the Manufacturing Site is likely to exceed low-lux thresholds as it currently operates (where threshold to protect bat habitat for artificial light intensity is

generally set at less than 0.3 lux and colour temperature less than 3000 Kelvin). In addition, to date bat surveys have shown that this portion of the Waikato River does not have bat commuting movements. Furthermore, the top of the bank here is significantly elevated from the river, and shaded by relatively tall trees, thus I expect already lowering artificial light emissions to some degree along the river edge of the riparian margin where it passes alongside the Manufacturing Site. These considerations are expanded further in the planning evidence.[2] I therefore agree with Mr Grala in this particular instance that imposing a new lighting limit within TRNIZ to protect bat movement along the inland edge of the Open Space Zone is likely not achievable.

Residual effects Assessment

7.7 While the overall effects of PC17 on bat habitats are considered low, potential habitats may still be lost to bats, which will require assessment at the resource consent stage. This assessment should also consider whether there are any residual effects requiring management in accordance with the National Policy Statement for Indigenous Biodiversity.

7.8 In my view this assessment is best suited to occur as part of the resource consent stage once details of the future development proposal, staging and any replanting details are known (and can inform the assessment). Accordingly, I recommend that PC17 includes provisions for a requirement to assess whether there are any residual effects requiring management that have not been addressed by avoidance, remediation and mitigation measures at the resource consent stage.

7.9 As part of the assessment criteria for considering an application to develop in the Plan Change Area Rule 3.9.4.4(c)(ii) of the provisions require that:

> Mitigation works to ensure development does not result in long-term adverse effects on the ecological values of the site, particularly in relation to pekapeka (New Zealand Long-Tailed Bat) habitat and freshwater values.

7.10 In addition, the information requirements in Appendix 1, 7.2 and 1.2.2.29 require a bat management plan to be prepared including the implementation of tree felling protocols and an Ecological Management Plan that includes:

> All measures necessary to avoid, remedy, mitigate, offset or compensate for any more than minor adverse effects on habitats of indigenous fauna including birds and lizards.

[2] Statement of Evidence of Nicholas Grala dated 7 October 2025 at [10.34-10.35].

7.11 I consider these provisions provide adequate scope to allow for a compensation model to be used if residual effects on bats and their habitat have not been addressed by avoidance, remediation and mitigation measures at the resource consent stage.

8. SECTION 42A REPORT

8.1 I have read the Council's Section 42A Report, as well as the ecological review prepared by Dr Hazel Burridge.[3]

8.2 I agree with Dr Burridge's recommendations to:

(a) amending Rules 25.2.5.4a.ii.A.1 and 1.2.2.30a to refer to the latest version of the Department of Conservation 'Protocols for Minimising the Risk of Felling Bat Roosts';

(b) including an additional policy relating to avoiding, remedying, mitigating, offsetting or compensating for adverse effects on indigenous fauna and their habitats, including long-tailed bats.[4] I discuss this matter further in paragraphs 9.6-9.7 below;

(c) requiring an assessment of effects on bats by applying the mitigation hierarchy approach (in general accordance with Appendix 3 and 4 – principles for biodiversity offsetting and compensation - National Policy Statement for Indigenous Biodiversity); and

9. RESPONSE TO SUBMISSIONS

9.1 I have read the submissions received on PC17. The Waikato Regional Council ("**WRC**") is the only submitter that raises matters in relation to long-tailed bats and their habitat. I make the following comments on matters raised in WRC's submission relating to bats.

9.2 WRC notes that PC17's application identifies recommendations within the Bat Report relating to artificial lighting controls have not been incorporated into the PC17 planning provisions. WRC's submission does not alter my ecology recommendations. I have addressed artificial lighting controls in paragraph 7.6 above.

[3] The relevant sections of the Section 42A Report are at 5.10, 5.15-5.16, 6.37-6.38 and 7.14 -7.15.
[4] Section 42A Report at [5.10].

9.3 WRC notes the version of the DOC 'Protocols for Minimising the Risk of Felling Bat Roosts' referenced in the proposed rule is a previous version is not up to date and should be updated to the latest version. Consistent with my recommendation in paragraph 7.9 above, I support this relief sought by WRC.

9.4 In its submission points 34 and 38 WRC consider that Objective 12.2.5, Policies 12.2.5a-e and assessment criteria s1.3.3 are limited criteria against which to assess the Ecological Management Plan. WRC considers the policy should be made more specific and an additional assessment criterion be added to enable assessment of the extent to which the proposal avoids, remedies, mitigates, offsets or compensates for any more than minor adverse effects on indigenous fauna and their habitat.

9.5 As I note above, the proposed Information Requirement 1.2.2.29 for the Ecological Management Plan requires that this plan includes all measures necessary to avoid, remedy, mitigate, offset or compensate for any more than minor adverse effects on habitats of indigenous fauna. I consider this wording adequately covers WRC's concerns. WRC has not offered alternative wording in its submission.

10. CONCLUSION

10.1 There is no evidence that long-tailed bats use the Plan Change Area often, if at all. Nonetheless, this is a highly mobile, Nationally Threatened (Critically Endangered), indigenous fauna species, and thus caution is warranted when planning land use change in their known home range.

10.2 I am satisfied that PC17 provides adequate protection for this species' habitat. I recommend minor amendments to the PC17 provisions in terms of updating the DOC tree felling protocols for potential bat roost trees. Provided this amendment is adopted I consider the potential adverse effects on ecological values of long-tailed bats, and their habitat use within and adjacent to the Plan Change Area, will be no more than minor.

Gerardus Kessels
7 October 2025