Before Kaipara District Council

In the Matter	of the Resource Management Act 1991 (**RMA**)
And	
In the Matter	of an application for Private Plan Change 84 (**PC84**) by **MANGAWHAI HILLS LIMITED** to rezone 218.3 ha of land between Tara Road, Cove Road, Moir Road and Old Waipu Road, Mangawhai from Rural Zone to the Mangawhai Hills Development Area.

Evidence of Mark Pierre Delaney on behalf of Mangawhai Hills Limited

(Ecology)

Dated 29 April 2024

Jeremy Brabant

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Foundry Chambers

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Introduction

1. My full name is Mark Pierre Delaney. I am a Director and Lead Ecologist at the firm Viridis Limited, a role which I have held since December 2022. Prior to that I was a Senior Ecologist at Bioresearches, a subsidiary of Babbage Consultants Limited.

2. I hold a Master of Science degree in conservation biology from Massey University and a Bachelor of Science degree in geography and biology from the University of Auckland.

3. I am a member of the New Zealand Freshwater Sciences Society, the New Zealand Ecological Society and the Environment Institute of Australia and New Zealand ('**EIANZ**'). I am also a Technical Advisor relating to ecological matters for the New Zealand Greenstar Building Council.

4. I have more than 15 years' experience in ecology. I specialise and have expertise in terrestrial ecology, freshwater ecology, stream classifications, wetland classifications and delineations, ecological impact assessments and ecological monitoring.

5. I have appeared as an expert witness before council hearings in relation to plan change and consent applications for terrestrial and freshwater environments. Of particular relevance to this application are the following projects that I have been involved with:

    a. PC 5 - Whenuapai. I undertook ecological investigations, prepared an ecological assessment report and appeared as an expert witness for a submitter.

    b. PC 25 (Private): Warkworth North. I was the lead ecologist for the plan change, preparing the assessment of freshwater ecological effects and providing evidence at the council hearing.

    c. PC 35 (Private) - Foster Crescent, Snells Beach. I undertook ecological investigations that informed the initial design phase of the plan change.

d. PC 40 (Private) Warkworth - Clayden Road. I undertook the early ecological investigations that informed initial design phase of the plan change.

e. PC 65 (Private) - Kaukapakapa – Alpine Road. I was the lead ecologist for the plan change, preparing the assessment of ecological effects.

f. PC 70 (Private) - 751 & 787 Kaipara Coast Highway, Kaukapakapa. I was the lead ecologist for the plan change, preparing the assessment of ecological effects.

g. PC 76 (Private) – Kohe. I was the lead ecologist for the plan change, preparing the assessment of freshwater ecological effects and providing evidence at the council hearing.

h. PC 78 (Private) - Estuary Estates/Mangawhai Central. I reviewed the applicant's material relating to ecological matters and appeared as an expert witness for Kaipara District Council.

i. PC 88 (Private) - Beachlands South. I provided an expert peer review of wetland and stream ecological matters in relation to the Beachlands South development and prepared expert evidence.

j. PC 92 (Private) – Wellsford North. I was the lead ecologist for the plan change, preparing the assessment of ecological effects.

k. PC 98 (Private) - 47 Golding Road & 50 Pukekohe East Road, Pukekohe. I was the lead ecologist for the plan change ecological assessment.

6. I was instructed by Mangawhai Hills Limited in June 2022 to undertake ecological assessments and ecological reporting associated with the Mangawhai Hills Project ('**the Project**') located on 218.3 ha of land between Tara Road, Cove Road, Moir Road and Old Waipu Road, Mangawhai ('**the Site**'). I am familiar with the area to which the application for the private plan change relates. I have visited the areas within the Site, owned by Mangawhai Hills Limited, on at least four occasions, most recently on 7

February 2024. I was one of the reviewers of the ecological impact assessment (EcIA)[1] included in the PC84 application.

7. Although this is not a hearing before the Environment Court, I record that I have read and agree to and abide by the Environment Court's Code of Conduct for Expert Witnesses as specified in the Environment Court's Practice Note 2023. This evidence is within my area of expertise, except where I state that I rely upon the evidence of other expert witnesses as presented to this hearing. I have not omitted to consider any material facts known to me that might alter or detract from the opinions expressed.

Scope of Evidence

8. My evidence will cover the following:

    a. A summary of the existing ecological values of the Site;

    b. A summary of the proposed ecological outcomes of PC84;

    c. A summary of the potential effects of PC84 on the ecological values of the Site;

    d. Relevant policy documents;

    e. Relevant matters raised within the s 42A report;

    f. Relevant matters raised by submitters; and

    g. A summary of key conclusions.

Existing Ecological Values

9. Site assessments were undertaken within the northern two thirds of the Site. Due to access restrictions, only those ecological features within the western portion of the Site were ground-truthed. The ecological features within the eastern block have been conservatively mapped using aerial imagery. The

[1] PC84 application, Appendix 11.

southern third was assessed using aerial imagery and knowledge of the wider environment.

10. The Site has a long history of farming use and currently consists of extensive areas of exotic pasture grasses, along with watercourses and seepage wetlands, areas of native and mixed native and exotic bush, and garden areas associated with lifestyle dwellings.

Terrestrial Ecology

11. Vegetation within the Site was classified under three broad classifications based on the dominance of either native or exotic vegetation: native vegetation, native-exotic vegetation and exotic vegetation.

12. The largest area of contiguous native vegetation within the Site is a 14.7 ha area of regenerating kānuka-mānuka scrub, known as the Old Waipu Road Remnant.

13. The ecological value of the Old Waipu Road Remnant has been considered as high, due to the representativeness of the remnant coastal forest present, the at-risk nature of the land environment and Level 1 significance classification under the Rodney Protected Natural Areas Program (PNAP), significance of the bush to provide a stepping-stone between the mainland and offshore islands, and the suitability of the area to provide habitat and resources for indigenous fauna.

14. Other small areas (<1 ha) of native vegetation are present on the Site. These were not fenced and were heavily grazed, therefore the understorey was minimal. Similar to the Old Waipu Road Remnant, these small bush fragments had predominantly kānuka-mānuka canopies, aside from one area that was tōtara-dominant. The ecological value of these smaller bush areas was considered low, due to their small size, degraded nature and minimal understorey.

15. Two main areas of native-exotic vegetation are present within the Site. The larger area (approximately 6.5 ha) of this vegetation type is located in close proximity to the north of the Old Waipu Road Remnant, separated only by

a ridgeline. This area was ungrazed and low-growing, and was more native dominant (kānuka-mānuka scrub) towards the west, and exotic dominant towards the east. The exotic species present within this area were largely pest plant species.

16. The area of native-exotic vegetation within the southern third of the Site has not been ground-truthed, and therefore has been mapped based on aerial imagery. A large part of this vegetation is contiguous with a wetland and is potentially comprised of common natives such as kānuka, mānuka, cabbage tree, and exotic/pest trees.

17. Due to the higher abundance of exotic pest plant species, the native-exotic areas had a lower botanical value. However, the suitability of the areas to provide habitat and resources for at-risk indigenous fauna increases the ecological values to moderate.

18. The exotic dominant vegetation within the Site is largely limited to shelterbelts, and a planted stand of exotic trees in the southern third of the Site.

19. The exotic vegetation within the Site had low botanical values and may provide low-valued habitat for common indigenous avifauna. The exotic vegetation is unlikely to provide suitable habitat for herpetofauna. The ecological value of the exotic vegetation areas has been assessed as low.

20. No formal herpetofauna surveys were undertaken. However, a review of historic lizard records from within 10 km of the project area indicated that four indigenous lizard species and one indigenous frog species have been recorded within the wider landscape.

21. The two largest bush fragments on the Site are considered to contain high quality herpetofauna habitat. However, the lack of direct connectivity to other terrestrial habitats decreases the likelihood of stable populations of native herpetofauna to persist.

22. Due to their small size and lack of understorey vegetation, it is considered unlikely that the other areas of vegetation support native herpetofauna.

23. Bird surveys were not undertaken during the site assessments; however, a previous bird survey was undertaken during 2019[2] within Frecklington Farm. Seven common, non-threatened native species were recorded.

24. The EcIA considered the native and native-exotic vegetation to have a moderate avifauna habitat value, while the rest of the Site had a low avifauna habitat value.

25. The EcIA also considered that it is unlikely that 'At Risk' or 'Threatened' avifauna species are present within the Site, even on an intermittent basis. However, on reflection and following the review of the EcIA by Wildlands Consultants Limited ('Wildlands)[3], 'At Risk' or 'Threatened' avifauna species such as fernbird and the Australasian bittern may utilise the wetland habitat within the Site given its proximity to higher value coastal wetlands.

26. No bat surveys were undertaken within the Site. Minimal bat habitat was considered to be present within the Site, with the majority of the larger trees within the Site consisting of kānuka and mānuka, which do not typically provide suitable bat roosting habitat.

27. The EcIA also considered that neither long-tailed or short-tailed bats are expected to utilise the Site as habitat. However, on reflection and following the review of the EcIA by Wildlands, long-tailed bats may utilise the large trees within the Site on an intermittent basis.

28. It is also acknowledged that long tailed bats are classified as 'Threatened – Nationally Critical' not 'Nationally Vulnerable' as incorrectly stated in the EcIA.

Freshwater Ecology

29. Two main streams are present within Frecklington Farm, separated by a ridgeline. These watercourses form a confluence before flowing into the southern third of the Site and ultimately into the Mangawhai Estuary. A

[2] Ecology New Zealand Limited. (2019). Tara Rd Farm - Herpetofauna and Bird surveys. Dated 15 March 2019.

[3] Appendix 7 of the s 42A report.

third tributary of the Mangawhai Estuary is also located within the southern third of the Site.

30. Stream Ecological Valuations undertaken within the streams indicated that the streams are of a low current ecological value and are degraded due to the agricultural land use.

31. The Site contains a large number of palustrine, seepage wetlands that are spring-fed from the surrounding slopes. The seepage wetlands were within pasture and had been heavily impacted by stock access, grazing and high nutrient loading over time. These factors have allowed for the invasion of common exotic species into the wetlands.

32. The current ecological value of these seepage wetlands has been considered as typically low overall, due to the dominance of exotic species, stock-damage and lack of buffer vegetation. However, it is acknowledged that some of these wetlands may have higher ecological values than others based on their size, their level of degradation, the plant species assemblages present, and the potential for utilisation by indigenous fauna.

33. An indigenous wetland is also present in the southeastern corner of the Site. This wetland has not been visually inspected, however appears to be a contiguous area of more than 1 ha and dominated by raupō and transitions into mangrove scrub.

34. The indigenous wetland is considered to be of a high ecological value due to the raupō-reedland ecosystem type having an 'endangered' threat status, its connection with the coastal/estuarine environment, and the potential habitat it may provide for 'At-Risk' and/or 'Threatened' indigenous avifauna.

35. Multiple drains and ponds were present within the Site. These features have been constructed for farm drainage or stock watering purposes. These features were considered to be of negligible ecological value due to their artificial nature, lack of connectivity, low hydrologic heterogeneity and lack of riparian vegetation.

Proposed Ecological Outcomes

36. The ecological assessment identified the key ecological features of the Site, those being the existing streams, wetlands and native vegetation.

37. PC84 contains a number of provisions that seek to protect, maintain and enhance the existing terrestrial and freshwater ecology values within the Site.

38. PC84 seeks to incorporate all of the identified native vegetation (approximately 17 ha) on the Site within public ecological areas, providing long-term protection of the native vegetation under the Mangawhai Hills Development Area.

39. Additionally, PC84 requires extensive revegetation planting, approximately 84.5 ha across the Site, which will link the existing native vegetation.

40. Regarding freshwater ecology, where practicable, the new roads are proposed in locations that will utilise existing culverts/vehicle crossings within the Site, and upgrades will be provided where necessary.

41. Where crossings are proposed over wetlands, arched culverts or bridges will be utilised to avoid full or partial wetland drainage.

42. Outside of crossings, the 10 m wetland and stream margins are proposed to be protected and enhanced though revegetation planting.

43. A comprehensive Stormwater Management Plan (SMP) is proposed to ensure that stormwater is managed onsite in accordance with best practice.

44. Wastewater disposal will be provided by way of either connection to reticulated infrastructure where capacity is available, or onsite disposal to individual systems or a community treatment plant.

45. Appropriate building setbacks from key ecological features are also sought under PC84.

Potential Ecological Effects

46. Site-specific ecological assessments would be required at the time of any future applications for development within the PC84 area. Ecological effects would be required to be evaluated, and suitable management strategies implemented to ensure the development minimises adverse ecological effects and prevents significant loss of ecological value.

Terrestrial Ecology

47. No indigenous vegetation removal is required as a part of the PC84 proposal. Additionally, the proposed protection of the identified existing native vegetation, together with the proposed extensive native restoration planting, will greatly increase the quantity and diversity of native vegetation as well as result in a large increase in ecological connectivity and terrestrial habitat.

48. Any potential adverse effects on native terrestrial fauna (i.e. birds, bats and lizards), as a result of subsequent development works (e.g. exotic vegetation removal) would be assessed at the resource consenting phase and can be appropriately mitigated through the implementation of fauna management plans.

49. Overall, in my opinion there will be a large increase in the quantity and quality of terrestrial fauna habitat over time through the implementation of the proposed protection of the existing native vegetation and through the extensive native plantings proposed.

50. The rezoning of the Site is expected to increase the human population density within the area. An increase in human population density often brings an increase in rat, mice, and domestic cat abundance. However, the current site does not have pest control measures, and most pests are likely at carrying capacity.

51. Private pest control is likely to be implemented on the Site once the number of residents increases. Additionally, the proposed Ecological Planting and

Management Plan required for any subdivision consent application will likely require pest control.

52. Overall, it is considered that there may be a low increase in rat and mice abundance. Due to the surrounding residential properties, roaming domestic cats would currently likely already be present within the Site, as such no significant increase in impacts are expected from cats.

Freshwater Ecology

53. PC84 will not affect stream and wetland protection measures required under the Kaipara District Plan (**KDP**), the National Policy Statement for Freshwater Management 2020 (**NPS-FM**) and the Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (**NES-F**) objectives, policies and rules.

54. Multiple stream crossings are proposed to form primary and secondary roads within the PC84 area. Where practicable, the new roads are proposed in locations that will utilise existing culverts/vehicle crossings within the Site, and upgrades will be provided where necessary. Where crossings are proposed over wetlands, arched culverts or bridges will be utilised to avoid full or partial wetland drainage.

55. Upgrading of culverts and crossings will provide the opportunity to increase fish passage required under the NES-F provisions.

56. Any potential direct adverse effects on native freshwater fauna as a result of subsequent development works (e.g. streamworks) would be assessed at the resource consenting phase and can be appropriately mitigated through the implementation of fish management plans.

57. Sedimentation of freshwater habitat can have significant adverse impacts on fauna and their habitat if unmanaged. It is expected that appropriate sediment and erosion control measures will be required at resource consenting stage for earthworks activity. These would appropriately avoid and/or mitigate the adverse effects of excessive sediment entering the downstream receiving environment.

58. Additionally, the change from agricultural to residential land use, in conjunction with the proposed native restoration planting, will reduce the overall amount of sediment entering the waterways over time.

59. Overall, it is considered that over time there will be a large increase in the freshwater ecological values of the Site as a result of the proposed PC84, through the implementation of the proposed riparian and buffer planting of the streams and wetlands.

Stormwater

60. The main potential threats to freshwater values of the Site in relation to stormwater are the potential increase in impervious surfaces and the potential increase in pollutant runoff as a result of subsequent development.

61. A comprehensive SMP is proposed to ensure that stormwater is managed onsite in accordance with best practice so that adverse effects are mitigated to an appropriate level.

62. Chester Limited have provided an assessment of stormwater management and discharge considerations which is included in the PPC application[4]. The assessment concludes that the future development of the Site can be appropriately serviced and kept in line with the relevant stormwater objectives.

63. Any future subdivision will require an ecological assessment at the time of subdivision or land use consent application. This will allow further assessment of potential adverse effects of stormwater and implementation of site-specific stormwater management measures to ensure that future development does not result in more than minor adverse ecological effects or a net loss of ecological value.

[4] PC84 application, Appendix 9.

Wastewater

64. Wastewater disposal will be provided by way of either connection to reticulated infrastructure where capacity is available, or onsite disposal to individual systems or a community treatment plant.

65. Apex Water Limited have demonstrated[5] that onsite disposal of wastewater is achievable and potential adverse effects can be mitigated to an appropriate level.

Relevant Regulatory Documents

National Policy Statement for Freshwater Management 2020

66. The main objective of the NPS-FM is to ensure health and well-being of water bodies and freshwater ecosystems are prioritised. PC84 is in accordance with the NPS-FM as all freshwater ecosystems have been identified within the Site, no reclamation is proposed and any potential significant adverse effect can be appropriately avoided, minimised, remedied or offset. Furthermore, PC84 provides opportunities to protect and enhance the freshwater ecosystems.

National Environmental Standards for Freshwater 2020

67. The NES-F main purpose is to regulate activities that pose risks to the health of freshwater and freshwater ecosystems. The NES-F sets requirements for carrying out these activities. Anyone carrying out these activities will need to comply with the relevant standards.

68. In summary, as an urban environment, within the PC84 area the NES-F would control, as a restricted discretionary activity, the following activities where they occur within the specified setbacks from a stream or wetland: vegetation clearance, earthworks, taking, use, damming or diversion of water and the discharging of water.

[5] PC84 application, Appendix 13a & b

69. The PC84 Structure Plan demonstrates that roading alignments and areas allocating for residential housing avoid wetlands and adhere to the appropriate setbacks as far as possible.

70. Where wetland or stream features cannot be avoided, measures, such as bridging, are proposed to minimise adverse effects. Furthermore, at the resource consenting phase, detailed assessment would be required, and the effects management hierarchy applied to ensure the proposed activities meet the relevant NES-F standards and adverse effects on the health of freshwater and freshwater ecosystems are no more than minor.

71. In summary, I consider that there is a clear consenting pathway available under the NES-F to enable the Structure Plan to be successfully delivered.

National Policy Statement for Indigenous Biodiversity 2023

72. The main objective of the National Policy Statement for Indigenous Biodiversity (**NPS-IB**) is to maintain indigenous biodiversity across Aotearoa New Zealand so that there is at least no overall loss in indigenous biodiversity. The NPS-IB also provides further direction to protect, maintain and restore indigenous biodiversity.

73. All key indigenous vegetation and habitats have been identified within the Site.

74. Consistent with the objectives and policies of the NPS-IB, PC84 seeks to protect and enhance the existing native vegetation which would at least maintain indigenous biodiversity across the Site.

75. Furthermore, PC84 seeks to substantially restore and increase the indigenous biodiversity through the proposed extensive native restoration plantings.

Operative Kaipara District Plan 2022

76. Consistent with the relevant objectives within Chapter 3A of the KDP (Objectives 3A.4.4 & 3A4.6), the PC84 provides for public open ecological spaces and parks within the Mangawhai Structure Plan Area. All areas of

significant terrestrial and freshwater ecological value within the Site are proposed to be protected, and areas of degraded ecological quality are to be enhanced.

77. Consistent with the objectives and policies in Chapter 6 of the KDP, through the proposed terrestrial vegetation protection and enhancement, the PPC will provide ample opportunity to maintain and enhance the quality of the existing ecological features and their fauna habitat values and create ecological corridors within the Site through revegetation planting, while allowing for appropriate subdivision.

Response to s 42A Report

78. I have reviewed the s 42A report, prepared by Jonathan Clease on behalf of KDC, with specific reference to the sections on ecology.

79. Mr. Clease summarises the findings of the Ecology Review prepared by Dr. Steven Brown of Wildlands Consultants[3]. Mr Clease notes that whilst being in general agreement with the EcIA, Dr Brown identifies the following differences in his conclusion:

    a. He confirms the need to undertake a robust ground-truthing of the southern third of the Site in order to assess ecological values of this area;

    b. He considers that the Site may well provide habitat for fernbird (provisionally identified on the Site by Dr Brown) and Australasian bittern. Accordingly, he recommends that the PPC84 provisions include as a matter of discretion the ability to assess controls on domestic cats and dogs;

    c. He considers that the larger exotic trees and kanuka may provide a habitat for bats, and as such a bat survey should be undertaken prior to development occurring;

    d. The proposed walking and cycle trails through the native bush area will need to be designed to minimise adverse ecological effects;

e. He identified several areas of potential wetland not identified in the Bioresearches report (shown in Figure 1 of Dr Brown's evidence). Given that these potential areas are relatively discrete, he is of the view that there would be benefit in such an assessment being undertaken prior to the hearing in order to inform whether any amendments to the Structure Plan are necessary; and

f. He considers that some wetlands may have low-moderate or moderate value depending on their size and habitat value i.e. wetland ecological significance is potentially more nuanced than that described in the Bioresearches report.

80. Mr Clease also raises his own concerns. I have summarised below Mr Cleases' concerns where they are additional to Dr. Brown's:

a. He does not consider earthworks within native vegetation, stream or riparian restoration areas to be appropriate as a permitted activity;

b. He does not consider the removal of indigenous vegetation from wetlands and riparian margins or the formation of 3 m wide walkways through the northeastern bush area which has high ecological values to be appropriate as a permitted activity;

c. He considers PC84 provision DEV1-REQ2 should include "*An assessment of effects on freshwater and ecological values from the design of road crossings over waterways and wetlands and the degree to which proposed alignments make use of existing culverts and/or incorporate bridges and arched culverts*" in order to minimise effects on these features; and

d. He notes the NES-F provisions set a high bar for approving applications that would adversely affect freshwater river and wetland environments and alludes to there being a level of uncertainty that the roading alignments are appropriate.

81. I respond to the above matters raised by Dr. Brown and Mr. Clease below.

Ground-truthing of the southern third of the site

82. I disagree with Dr. Brown in that in this instance there is a need to undertake a robust ground-truthing of the southern third of the Site for the private plan change application.

83. While the EcIA assessed the southern third of the Site via aerials and a desktop exercise, the assessment took a conservative approach. It is my view that this assessment has identified the key ecological features in the context of a plan change. Minor amendments to the extents or value rating of these features would not make a substantive difference to the PC84 assessment.

84. As stated by Dr. Brown and Mr. Clease, detailed ecological assessments within the southern third of the Site and the potential effects of any development would be addressed as part of future consenting processes. In my opinion that would be appropriate.

85. Furthermore, I consider that PC84 incorporates sufficient provisions to ensure the potential ecological effects are appropriately managed.

Domestic cats and dog provisions

86. While I consider imposing domestic cat and dog controls challenging and often ineffective due to already established populations of domestic cats, I am not opposed to including the requirement to assess the effects of domestic cats and dogs on ecological values as part of any subdivision consent application.

Bat habitat

87. I agree with Dr. Brown, in that any tree proposed to be removed that may provide bat roosting habitat should be surveyed.

88. It is expected that a bat habitat assessment should be undertaken as part of future consenting processes for any application proposing vegetation removal.

89. I do not consider that any changes to the PC84 provisions are required, as the current provisions are sufficient and will ensure the potential ecological effects are appropriately managed.

Works within native vegetation areas

90. I am in agreement with Dr. Brown and Mr. Clease in that all vegetation removal and earthworks should not be a permitted activity within native vegetation areas and that walking and cycle trails through native vegetation should be designed to minimise adverse ecological effects.

91. I support the updated PC84 DEV1-R7 provisions provided by Ms. Neal, which reflect the recommendations proposed by Mr. Clease.

92. These amendments would provide an appropriate mechanism to assess any potential adverse effects associated with earthworks within the native vegetation areas.

93. These amendments would provide a mechanism to assess adverse effects associated with the construction of any walkways or vegetation removal within the native vegetation areas, where earthworks are required.

94. Notwithstanding the above, I support the updated DEV1-R8(c)(ii) provision provided by Ms. Neal which adds: "…using manual methods that do not require the removal of any indigenous tree over 300 mm girth".

95. The above recommendation would help ensure walking and cycle tracks are designed to minimise adverse ecological effects.

Natural wetland identification and extents

96. As mentioned in the EcIA, due to access restrictions, only the ecological features within the Frecklington Farm area were ground-truthed. The ecological features, including wetlands, outside of this area (i.e. the southern third of the Site) have been conservatively mapped using aerial imagery analysis.

97. The potential wetland extents as shown within the EcIA were provided as indicative only and was intended to be used as a point of reference for any future consenting processes.

98. Notwithstanding the indicative nature of the mapping, I consider that the mapped extent of the wetland features provides an accurate representation of the main wetland extents within PC84 boundaries at the time of the Site assessments.

99. The accuracy of the indicative wetland mapping is supported by the 2019 Freshwater Ecological Assessment prepared by Freshwater Solutions[6]. The wetland mapping within the Freshwater Solutions report largely mirrors that of the Bioresearches wetland mapping.

100. With the exception of the one identified indigenous wetland, the wetlands identified with the EcIA were described as being dominated by exotic species where native species were present, these species typically consisted of species able to persist in degraded environments.

101. These types of wetlands are extremely common across agricultural land. They are a highly dynamic type of ecosystem, responsive to even slight changes in land use (e.g., mowing, grazing, fertilising, drainage, irrigation, etc.) and natural environmental variation (e.g. seasonal variation, droughts and prolonged wet periods).

102. It is expected that these wetland extents will change in the short and long term, contracting and expanding, in response to land use changes and natural variation.

103. As such, it is expected that, to ensure all wetland features within the Site are identified and accurately mapped as far as practicable, further detailed assessments, in accordance with relevant/current best practice methodology, will be required closer to the time of future consenting stages.

[6] Freshwater Solutions 2019. Frecklington Farms Freshwater Ecology Assessment of Effect. March 2019.

104. I consider that these provisions allow for adequate controls to ensure the sufficient protection of natural inland wetland areas during future phases of Site development.

105. However, I recommend that within the Structure Plan, all streams and wetlands should be identified/labelled as “indicative”.

Wetland ecological values

106. I agree with Dr. Brown that some wetlands within the Site may have varying levels of value based on their size, their level of degradation, the plant species assemblages present, and the potential for utilisation by indigenous fauna.

107. However, given that the assessment was required for a private plan change and not for a resource consent application, which would require more detailed assessments, the multitude of exotic seepage wetlands were assigned an overall low ecological value based on the dominance of exotic species, stock-damage and lack of buffer vegetation observed in all of the wetlands.

108. I consider that based on similar characteristics between the exotic wetlands, any variation of ecological value between wetlands would be minimal and inconsequential to the PC84 assessment, as PC84 seeks to protect and enhance all wetlands within the Site.

109. Furthermore, I consider that the NES-F affords appropriate levels of protection for all natural inland wetlands and does not distinguish between high or low value wetlands.

Amendments to DEV1-REQ2

110. I do not consider Mr Clease’s proposed amendments to provision DEV1-REQ2 to be necessary.

111. It is already expected that at the resource consenting phase, detailed assessment would be required, and the effects management hierarchy applied to ensure the proposed activities meet the relevant NES-F standards

and adverse effects on the health of freshwater and freshwater ecosystems are appropriate.

NES-F provisions and the roading alignment

112. As mentioned previously, wetlands are a dynamic ecosystem and as such it is considered required and appropriate that all wetland features within the Site are identified and mapped again, in accordance with relevant/current best practice methodology, closer to the time of future consenting stages.

113. Notwithstanding the above, I consider that the mapped extent of the wetland features provides an accurate representation of the main wetland extents within PC84 boundaries at the time of the Site assessments.

114. The PC84 Structure Plan demonstrates that roading alignments avoid the identified wetlands and adhere to the appropriate setbacks as far as practicably possible.

115. Furthermore, at the resource consenting phase, detailed ecological assessments would be required, and the effects management hierarchy applied to ensure the proposed activities meet the relevant NES-F standards and adverse effects on the health of freshwater and freshwater ecosystems are appropriate.

116. I also consider there is a clear consenting pathway for the roading alignment available under the NES-F and that the NES-F affords the appropriate levels of protection for all wetlands.

Additional matter

117. Mr Clease has also recommended that the Structure Plan be updated to show two further indicative road access points onto Tara Road.

118. From an ecological perspective, I am opposed to this recommendation as this would increase the number of stream or wetland crossings.

119. One of the objectives of PC84 was to minimise the amount of stream or wetland crossings where practicable and where possible utilise existing crossings.

120. These proposed crossings do not appear to be in close proximity to any existing crossings and would require riparian vegetation removal and would disconnect the proposed ecological corridor which is formed along the main stream.

Response to Submitters

121. I have read the submissions that are relevant to my area of expertise and I briefly address the following key points raised in the submissions:

    a. Objective DEV1-05 should more clearly align with the NPS-FM;

    b. Requirement of a new comprehensive pest animal and plant plan;

    c. SNA classification of native vegetation;

    d. Potential presence of "threatened" avifauna species and their habitat protection;

    e. The inclusion of the NPS-IB within PC84;

    f. Pet animal controls;

    g. The development of the paper road;

    h. Acknowledgement of the key ecological features as indicative; and

    i. Certainty around the identification and extent of wetlands.

122. While the body of this evidence addresses some of the matters raised by submitters relating to ecology, I provide the following further comments:

    a. While the NPS-FM and its objectives are not explicitly stated in the PC84 objectives, the provisions provided in PC84 and its intended outcomes strongly align with the objectives and polices of the NPS-

FM. As such, I do not see the need for amendment to include Objective DEV1-05.

b. DEV1 REQ2 2 requires any subdivision consent application to be supported by an Ecological Planting and Management Plan which needs to address plant and animal pests.

c. Some of the native vegetation may be of SNA quality. However, all native vegetation within the identified areas in the Structure Plan are proposed to be protected and enhanced unless there is a requirement for some isolated vegetation removal as listed under DEV1-R8 e.g., maintenance, in accordance with a covenant etc. Further detailed ecological assessment would be required if vegetation removal is required.

d. I acknowledge that some "threatened" avifauna species may be present within the PC84 Site, such as the "Nationally Critical' Australasian bittern and the "At Risk" fernbird. However, in my opinion there will be a substantial increase in the quantity and quality of terrestrial fauna habitat, including for Australasian bittern and fernbird, through the implementation of the proposed protection of the existing native vegetation and through the extensive native plantings proposed.

e. While the NPS-IB and its objectives are not explicitly stated in the PC84 objectives, the provisions provided in PC84 and its intended outcomes strongly align with the objectives and policies of the NPS-IB.

f. As mentioned previously, while I consider imposing domestic cat and dog controls challenging and often ineffective due to already established populations of domestic cats, I am not opposed to including the requirement to assess the effects of domestic cats and dogs on ecological values as part of any subdivision consent application.

g. I do not consider that the development within the area of the plan change that contains the paper road[7] will have significant adverse impacts. Any potential direct adverse impacts on native fauna can be suitably addressed through fauna management plans as a part of the resource consenting process. Furthermore, any additional adverse effects arising from development within the parts of the plan change area that are currently a paper road would be outweighed by the significant ecological gains PC84 is designed to deliver. Again, any additional adverse effects should be assessed at the resource consenting phase.

h. I acknowledge that the streams and wetlands identified with the PC84 Structure Plan as well as the other ecological features in the southern third of the Site are indicative only and that these features would need to be confirmed as part of the resource consenting process. As such, I recommend that the ecological features within the Structure Plan are identified as "indicative".

i. Due to their dynamic nature, the wetlands and their extents, as identified in the Structure Plan, are intended to be indicative. However, I consider that the identified wetlands do provide an accurate representation of the main wetland extents at the time of the site assessments. It is expected that further detailed wetland assessments are undertaken to confirm wetland extents as part of the resource consenting process, to ensure adverse effects can be appropriately avoided, minimised, mitigated, offset or compensated for.

Conclusion

123. It is my opinion that PC84 has been designed in a manner that recognises and protects the existing key ecological features and values while providing

[7] A short length of disconnected and unformed paper road that runs along the eastern edge of the site/ rear of the residentially zoned properties accessed off Old Waipu Road, which some submitters seek should be retained as green space.

for future residential development within areas with minimal existing ecological values.

124. The PC84 Structure Plan and precinct provisions provide an appropriate framework that seeks to protect and enhance indigenous terrestrial and freshwater biodiversity values of the Site and provide for a net indigenous biodiversity gain.

125. I support PC84, given that the existing ecological values will be appropriately protected, enhanced, and managed while providing for residential development.

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Mark Pierre Delaney

Dated 29 April 2024