**BEFORE THE WHANGĀREI DISTRICT COUNCIL INDEPENDENT HEARING PANEL**

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|---|---|
| **UNDER** | the Resource Management Act 1991 ("**RMA**") |
| **IN THE MATTER OF** | an application by Hurupaki Holdings Limited for resource consent to create and operate a 73 residential allotment and café at 131 and 189 Three Mile Bush Road, Kamo |

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# STATEMENT OF EVIDENCE OF MADARA VILDE ON BEHALF OF THE APPLICANT

## ECOLOGY

**27 APRIL 2022**

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## 1. SUMMARY OF EVIDENCE

1.1 My name is Madara Vilde and I am Senior Ecologist at Rural Design 1984 Ltd. Hurupaki Holdings Ltd engaged Rural Design 1984 Ltd to advise on ecological values and effects in relation to a subdivision and land use consent application at 131 and 189 Three Mile Bush Road, Kamo.

1.2 In my evidence, I:

(a) summarise the relevant ecological values of the Site and immediate surrounds;

(b) assess the potential ecological effects on terrestrial and freshwater habitats on site;

(c) address relevant matters raised by submitters;

(d) address the relevant matters raised within the s42A Report; and

(e) provide a summary of my key recommendations and conclusions.

1.3 I have reviewed and considered the Council's s42A Report produced by Mr Alister Hartstone, with input from Peter Kensington to the extent it relates to matters within my area of expertise. Mr Hartstone recommends that the Application is declined on the basis that neither of the gateway tests under s 104D is met as:[1]

(a) the adverse effects of the Proposal on rural landscape, character and amenity within that part of the site zoned Rural Production Zone will be more than minor (s 104D(1)(a)); and

(b) the objectives and policies of the Subdivision and Rural Production Zone do not provide for an urban form of development and therefore a 'net environmental benefit' is not achieved.

1.4 I disagree with the conclusion in the s42A Report that 'net environmental benefit' (as defined in the District Plan) cannot be achieved.[2] As discussed in Sections 6 and 7 of my evidence I consider that the Proposal has demonstrated that the benefits of environmental protection and ongoing management are greater than the potential adverse effects created by subdivision and land development, which can be avoided,

1 Section 42A Report, at [123].
2 Section 42A Report, at [85].

minimised or reduced with appropriate controls, and thus I consider that the development of the Site is consistent with the definition and requirements of a 'net environmental benefit' as defined under the Proposed District Plan (Appeals Version).

1.5 I consider that the Proposal achieves a 'net environmental benefit', improving the overall ecological structure, composition and function of the Site. It does this through strengthening ecological networks by protecting existing ecological feature on site, creating new habitats and buffer areas, and improving the services provided by ecosystems. In doing so the Proposal ensures the existing biodiversity values on the Site are not jeopardised.

1.6 In my opinion, any potential adverse effects associated with the Proposal on ecological values can be avoided, minimised or mitigated through best practice sediment and erosion control measures, comprehensive ecological and landscape design principles, as well as appropriate planning and development controls. Provided that they are implemented successfully during construction and operational phases of the development, adverse effects on the environment would be no more than minor, and the Proposal would, in fact, allow for the enhancement of functional and structural connectivity and functioning of the ecological values identified on Site and immediate surrounds.

1.7 I consider that the proposed conditions of consent offered by the Applicant *(Proposed Consent Conditions)*[3] which include the recommended conditions of consent outlined under Section 10.2 of my evidence sufficiently address the matters relating to ecological protection and enhancement on site.

1.8 Overall, I believe that the Proposal maximises the environmental benefits that can be achieved from the Site development works given that the entirety of the area outside of the immediate development footprint is to serve as ecological, landscape enhancement or open space areas. The Proposal presents an exemplary subdivision proposal in relation to ecological matters, striking a balance between protecting and enhancing areas of higher existing or potential ecological values, while concentrating the Site's development on areas with low existing ecological values or functionality.

## 2. INTRODUCTION

2.1 My full name is Madara Vilde.

[3] Refer to the evidence of M McGrath, Attachment 3 (*Proposed Consent Conditions*).

2.2 I am a Senior Ecologist at Rural Design 1984 Ltd ("**RDL**") and have been with the company since 2017. A statement of my qualifications and experience are included in **Attachment 1**.

2.3 This evidence is in respect of an application by Hurupaki Holdings Limited ("**the Applicant**") for subdivision and land use resource consent at 131 and 189 Three Mile Bush, Kamo ("**the Site**"), to:

(a) create 73 residential allotments, drainage and recreational reserves to vest and other associated works; and

(b) establish a food and beverage activity within proposed lot 22, for setback from boundary and coverage infringements (future residential units within Rural Production Zone) and to relocate dry stone walls;

(together "**the Proposal**")

2.4 No further amendments relating to ecological aspects of the Proposal have been made post-notification. The only minor amendment, from an ecological perspective, are 3 additional recommended conditions of consent outlined under Section 10.2 of my evidence. These have also been included in the Proposed Consent Conditions.

2.5 My evidence will focus on the Site's baseline ecological values, potential ecological effects associated with the Proposal, and proposed ecological enhancement to result as part of Site development works. My evidence should be read in conjunction with Ecological Assessment, dated September 2021.[4]

2.6 Specifically, my evidence will address:

(a) my involvement with the Proposal;

(b) a summary of Site's values in respect to terrestrial and freshwater ecology;

(c) assessment of potential effects of the Proposal on ecological values noted on Site;

(d) a summary of proposed ecological enhancement on Site;

(e) relevant matters raised by submitters;

[4] Refer to the Resource Consent Application for the Proposal, Appendix 11: Ecological Assessment.

(f) relevant matters raised within the s42A Report;

(g) proposed conditions of consent offered by the Applicant; and

(h) a summary of key conclusions and recommendations.

2.7 I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014. I have complied with the Code of Conduct in preparing this statement of evidence. Unless I state otherwise, this evidence is within my sphere of expertise, and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

## 3. INVOLVEMENT WITH THE PROPOSAL

3.1 I have been involved with the Proposal since April 2021. RDL was engaged by the Applicant to undertake an ecological assessment to identify and assess existing ecological values of the Site and outline opportunities, constraints and potential enhancement and mitigation strategies associated with the subdivision Proposal and associated site development works.

3.2 Since my appointment, I have visited the Site and surrounding area on several occasions during April, May and August 2021 to survey the freshwater and terrestrial habitats on the Site.

3.3 In producing this statement of evidence, I have reviewed the following evidence and materials:

(a) the original Whangārei District Council ("**WDC**" or "**the Council**") application documents, including the Assessment of Environmental Effects ("**AEE**"), associated technical reports, s 92 requests for further information and responses and WDC's s 95 notification decision;

(b) the application to the Northland Regional Council and associated technical reports, s 92 request for further information and responses and the decision;

(c) the s 42A hearing report ("**s42A Report**") prepared by Alister Hartstone, planning consultant on behalf of WDC, including the Specialist Review Advice – Assessment of Landscape Effects prepared by KPLC; and

(d) the expert evidence provided by the Applicant to support its case, including statements of evidence from:

(i) Mark Holland (Applicant);

(ii) Mike Farrow (Landscape);

(iii) Aaron Holland (Three Waters);

(iv) Dean Scanlen (Transport);

(v) Jonathan Carpenter (Archaeology); and

(vi) Melissa McGrath (Planning).

## 4. OVERVIEW OF PROPOSAL

4.1 A description of the Proposal is outlined in Section 4 of the AEE and the s42A Report.[5] The Site's locality and planning context has been accurately described in the evidence of Ms McGrath,[6] as has the landscape and visual amenity context in evidence of Mr Farrow.[7]

4.2 Modifications have been made to the Proposal post notification in response to submissions and matters raised by WDC staff and were submitted to WDC on 2 April 2022. These modifications have been described in more detail in Ms McGrath's and Mr Farrow's evidence. The only minor amendment, from an ecological perspective, are 3 additional recommended conditions of consent outlined under Section 10.2 of my evidence which have been incorporated into the Proposed Consent Conditions.

## 5. ECOLOGICAL SUMMARY

### Site description

5.1 The Site is located on the urban fringe boundary of Kamo and is predominately covered in exotic grazed pasture dominated by kikuyu (*Cenchrus clandestinus*). The Site is approximately 13.97ha in area and is comprised of two allotments Lots 2 and 3 DP 99045.

5.2 The Site, in particular the northern part, contains pockets of remnant indigenous vegetation, primarily encompassing the Waitaua Stream, which flows through the central aspect of the Site and acts as an 'ecological corridor' through the Site (Figure 1).

5 Section 42A Report, at [10]-[16].
6 Evidence of M McGrath sections 5 and 6.
7 Evidence of M Farrow, sections 4 and 7.

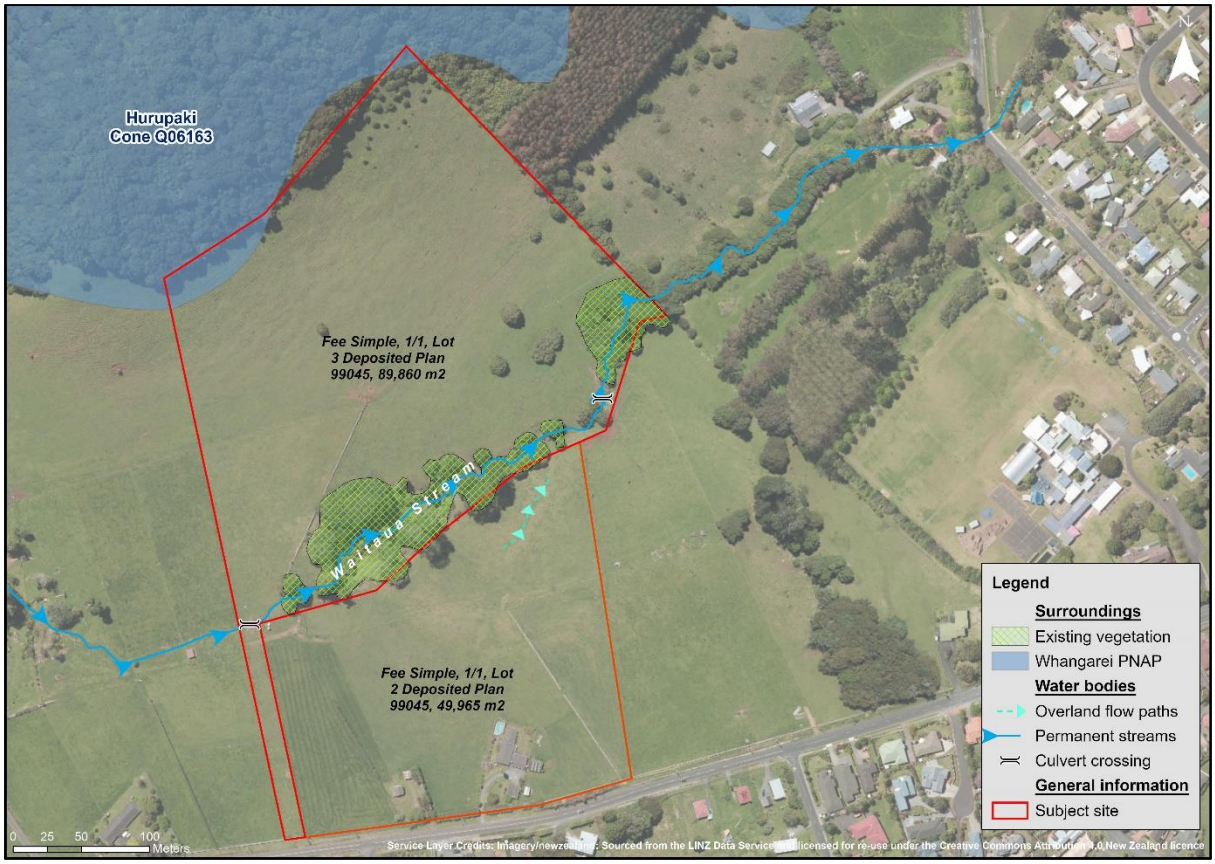


**Figure 1: Showing the general ecological features of the Site**

5.3 Analysis of aerial imagery (1960-present day) revealed that the Site has been subject to a long history of anthropogenic modification, primarily through land clearance and improvement for agricultural and horticultural activities. Grazing animal presence on Site was noted as early as 1960s and the Site and habitats contained within have since been subject to effects associated with unrestricted grazing pressures (i.e. erosion, accelerated sedimentation of streams, inputs of organic matter to freshwater environments via urine and dung).

5.4 In terms of Land Use Capability ("**LUC**") (Figure 2) the northern aspect of the Site encompassing the Hurupaki Cone is classed as 'Class 6' which is unsuitable for agricultural production, with low suitability for pastoral grazing and production forestry land. The Site's eastern aspect and the remainder of the Site has been identified as 'Class 3' with low arable cropping suitability, and moderate pastoral grazing suitability.

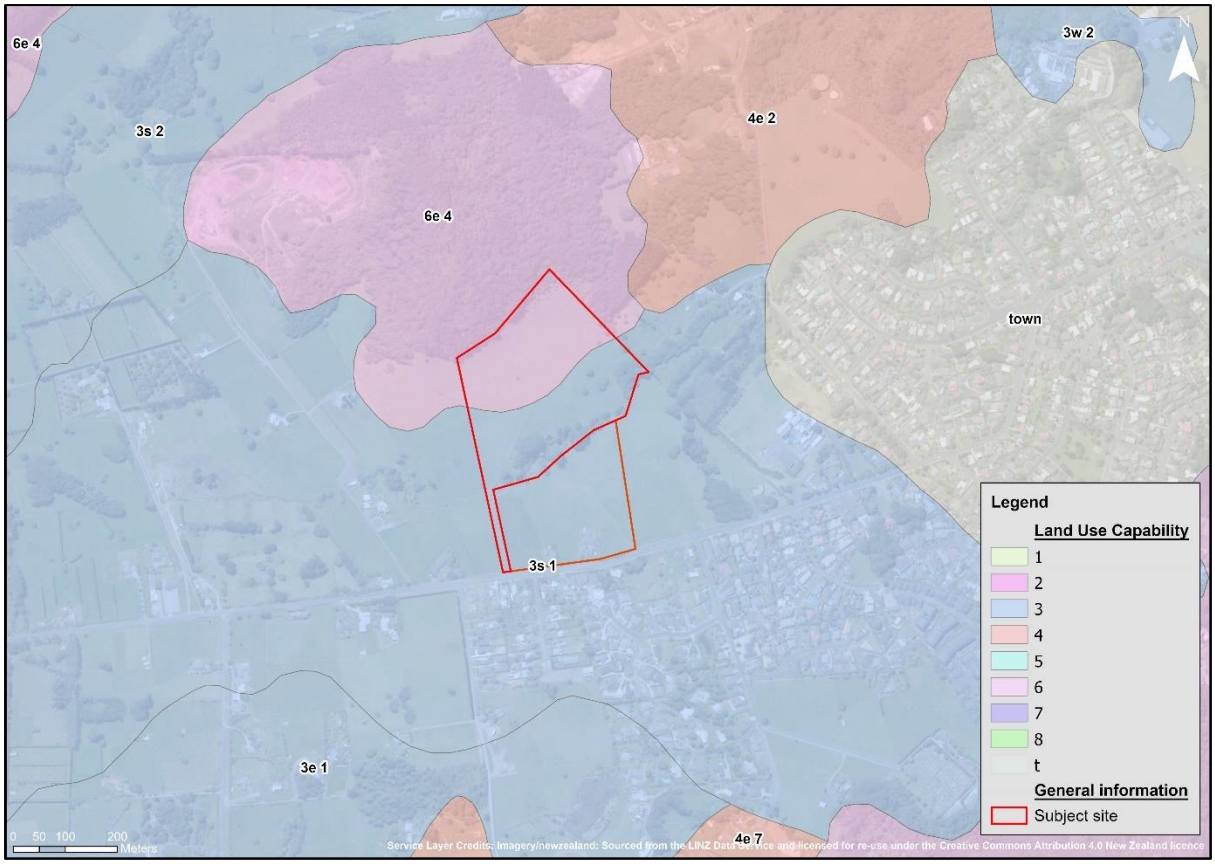


**Figure 2: Showing the LUC classification for the Site and immediate surrounds**

5.5 Under Land Environments of New Zealand ("**LENZ**") the majority of the Site and immediate surrounds is primarily within the 'Category 5', where there is >30% indigenous cover left, with >20% of it being protected, with a smaller portion of land on the southern boundary being identified as 'Category 2' with only 10-20% indigenous cover remaining. Indigenous biodiversity in these 'At Risk' environments are more at risk of loss and decline if little of the environment has formal protection for natural heritage purposes.

5.6 To the north, the Site adjoins Hurupaki Cone (Figure 3), which is noted for its geological, cultural, and ecological significance, with previous records indicating the presence of kereru (*Hemiphaga novaeseelandiae*) – 'Not Threatened' (Robertson *et al.* 2021) and Auckland green gecko (*Naultinus elegans*) – 'At Risk' (Hitchmough *et al.* 2021).

**Figure 3: Looking north from the Site towards Hurupaki Cone (Photo: Mike Farrow)**

5.7 The Site is located in vicinity (<1km) from Pukenui Forest which supports a range of avifauna and herpetofauna species such as North Island ("**NI**") brown kiwi (*Apteryx mantelli*) (moved from 'Threatened' to 'Not Threatened' as per Robertson *et al.* 2021)[8], red-crowned kakariki (*Cyanoramphus novaezelandiae)* – 'Relict' *(*Robertson *et al.* 2021)*,* NI kaka (*Nestor meridionalis septentrionalis*) – 'Recovering' *(*Robertson *et al.* 2021) and long-tailed bats (*Chalinolobus tuberculatus)* – 'Nationally Critical' (O'Donnell *et al.* 2017).[9]

**Ecological field survey results**

*Terrestrial ecological values*

5.8 To provide an assessment of the vegetation making up the relevant habitat types on site, the entire Site was investigated between April and August 2021. A rapid fauna survey was conducted to record the presence of avifauna and assess the potential habitat for ichthyofauna, herpetofauna and Chiroptera.

8 Robertson *et al.* (2021) – Conservation status of birds in Aotearoa New Zealand.
9 O'Donnell *et al.* (2017) – Conservation status of New Zealand bats.

5.9 The majority of the Site is predominantly in grazed pasture that is relatively uniform across the Site, primarily dominated by kikuyu (*Cenchrus clandestinus*). The pasture area was dominated by common exotic grass and forb species and supported the expected common mobile avifauna. The pasture areas did not contain or support any 'At-Risk' or 'Threatened' indigenous flora and fauna. The grazed pasture on Site is therefore deemed to be of low ecological value.

5.10 The indigenous vegetation on Site is largely contained to broadleaf forest remnants encompassing the Waitaua Stream (Figure 4), including a large stand of puriri (*Vite*x *lucens*) with scattered canopy trees such as karaka (*Corynocarpus laevigatus*), kohekohe (*Dysoxylum spectabile*), taraire (*Beilschmiedia taraire*), pohutukawa (*Metrosideros excelsa*) and a single rimu (*Dacrydium cupressinum*). Some small, isolated pockets of totara (*Podocarpus totara*) are dotted along the Site's northern boundary abounding Hurupaki Cone. None of the flora species noted on site are classified as 'At Risk' or 'Threatened' as described under de Lange *et al.* (2017).[10] Overall, in the context of the Site and surrounding peri-urban and rural land, the existing indigenous vegetation on Site is considered to be of moderate ecological value.

[10] De Lange *et al.* (2017) - Conservation status of New Zealand indigenous vascular plants.

**Figure 4: Showing the Waitaua Stream corridor encompassed by mature indigenous vegetation (note exotic pine trees now removed)**

5.11 The understory and shrub layer of the broadleaf forest remnants encompassing the Waitaua Stream were observed to be dominated by a wide array of exotic pest plant species including Mignonette vine (*Andrea cordifolia*), Elaeagnus (*Elaeagnus* x *reflexa*) and moth plant (*Araujia sericifera*). A thick shrub layer being formed by queen of the night (*Cestrum nocturnum*), purple cestrum (*Cestrum elegans*), lantana (*Lantana carnara*), woolly nightshade (*Solanum mauritianum*), Jerusalem cherry (*Solanum pseudocapsicum*) and Taiwan cherry (*Prunus campanulata*) was observed within the bush area. Weeds were also present in the ground tier including wild ginger (*Hedychium gardnerianum*), periwinkle (*Vinca major*) and wandering willie (*Tradescantia fluminensis*). A number of exotic mature tree species including radiata pine (*Pinus radiata*) (>40m in height) and Monterey cypress (*Cupressus macrocarpa*) were noted growing on site.

5.12 The large exotic pine trees and pest plant species have since been cleared as a part of the initial pest plant control works, in preparation for enhancement planting.

5.13 Avifauna survey found the bird species observed on site were representative of the modified and fragmented habitat types associated with urban and peri-urban areas. The

most commonly abundant bird species on site were house sparrow (*Passer domesticus*) and myna (*Acridotheres tristis*). No 'At Risk' or 'Threatened' bird species were observed on site during survey visits.

5.14 Given the lack of suitable habitat on the Site no quantitative lizard survey was undertaken although a diurnal habitat search inspecting areas likely to be utilized by native lizards for sheltering or foraging (e.g., beneath dense vegetation, logs, boulders, and manmade objects) was conducted. No indigenous herpetofauna was observed to be present on site, albeit several exotic rainbow skinks (*Lampropholis delicata*) were observed basking along the edge of the onsite bush area. The current ecological value for native herpetofauna on the Site itself is therefore considered to be low, this is associated with a long history of land disturbance, land clearance, predation, and habitat fragmentation.

5.15 A Chiroptera (bat) survey was undertaken, including both a visual assessment for potential roost sites and a preliminary presence/absence survey using an Automatic Bat Monitor ("**ABM**") during site visits in April and May 2021. No long-tailed bat activity was recorded during the survey period which indicates that it is unlikely that there are any potential bat roosts on site and the bush/riparian corridor is not currently utilized as a commuting route within the wider landscape.

5.16 While the Site is in proximity to areas that are known to support 'At Risk' and 'Threatened' flora and fauna, the Site itself is primarily used by common native and introduced fauna, with no indication of the Site being used as a commuting or roosting habitat by any 'Threatened' or 'At Risk' species such as long-tailed bats, NI brown kiwi (note change in Threat status from 'Threatened' to 'Not Threatened' in Robertson *et al.* 2021), or Auckland green gecko. It is likely that the on site stream system is habitat to several common ichthyofauna and aquatic invertebrates.

5.17 Therefore, based on ecological field surveys and desktop research carried out between April and September 2021, it is considered that the Site contains some remnant indigenous vegetation encompassing the Waitaua Stream, with its ecological values compromised by long history of anthropogenic land improvements for agricultural purposes, grazing pressures and the incursion weedy pest plan species.

*Freshwater ecological values*

5.18 In terms of freshwater habitats (Figure 5), the Site is bisected by the Waitaua Stream along its central aspect. Based on observations made during field survey visits, the

section of the Waitaua Stream while flowing through the Site is best described as an 'intermittent stream (identified as I1 in Figure 5 below).' A small overland flow path (identified as OFP1 in Figure 5 below) was observed within the northern aspect of the Site, generally falling towards the Waitaua Stream.

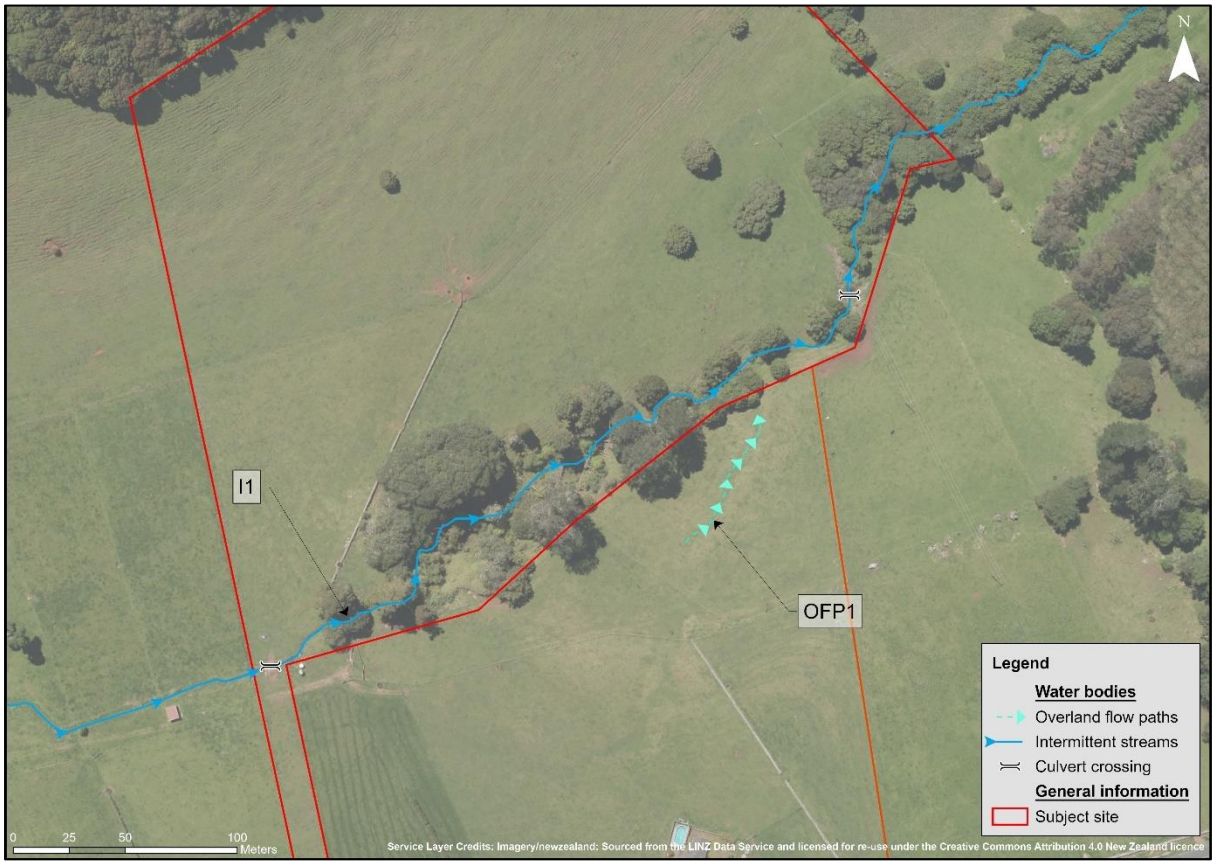


**Figure 5: Showing the general hydrological patterns of the Site**

5.19 Waitaua Stream flows through the central aspect of the Site, entering the Site at its western boundary flowing in an easterly direction through the Site's existing bush remnant for approx. 400m. From the western extent the stream falls in elevation steeply though the Site (approx. 29m drop in elevation between the Site's western and eastern boundaries). Flowing out of the Site the Waitaua Stream meanders through a combination of bush remnants, grazed pasture, residential and industrial areas for approximately 7km where it enters the Hatea River and eventually discharges into the Whangārei Harbour.

5.20 The western section of the Waitaua Stream channel was observed to be approximately 1m wide, moderately shallow (<0.3m), with bank height averaging approximately 0.3m-0.5m. During April 2021 the stream contained some low flows and it was apparent that the stream has been historically modified though straightening of the channel. This

western section of stream has an existing 400mm diameter concrete culvert crossing which services the existing dwelling. The stream also has been historically dammed to service a household hydro wheel. The section of stream is interesting in the fact that on its course approximately 50m from the western boundary the water seeps into soil before falling steeply away (approximately >10-15m drop) (Figure 6). No apparent free flowing water was observed in the remainder of the course of the stream while flowing through the Site in April 2021, this is partly associated with the stream's location at the upper sections of the wider catchment and underlying freely draining soils.

**Figure 6: Showing the existing crossing over Waitaua Stream and where the stream seeps into soil and drops for about 10-15m (yellow arrow)**

5.21 The stream re-emerges following the drop in height within the indigenous bush area within the central aspect of the Site. The streambed consists of a scoria gravel substrate with occasional large rocks, and no free-flowing surface water was observed at the time of survey visit in April 2021, but there was evidence of debris and streambank erosion to suggest heavy flows in rain events (as observed during a repeat site visit in August 2021).

5.22 The eastern extent of the Waitaua Stream while flowing through the Site consisted of a basalt stream bed. The stream channel is approx. 1.5m - 3m in width with a series of small waterfall and associated pools (>0.4m) with bank height averaging approximately >5m.

5.23 A small overland flow path ("**OFP1**") was observed within the northern aspect of the Site, generally falling towards the Waitaua Stream. OFP1 follows a small natural depression in the land and was completely dry at the time of the site visits in April and August 2021 (Figure 7). It is anticipated that in high rainfall events some minor overland surface water flows may occur. Currently the flow path is part of the open pastoral area dominated by kikuyu with sparse buttercup (*Ranunculus repens*) and has been more recently planted with poplar (*Populus* sp.).

**Figure 7: Showing the overland flow path (OFP1) observed on site**

5.24 Ichthyofauna survey was not conducted due to insufficient water levels in Waitaua Stream during the survey period. A quantitative search of the New Zealand Freshwater Fish Database ("**NZFFD**", accessed April 2021) revealed records of five native fish and one native invertebrate species being present within the wider Waitaua Stream

catchment. Some suitable habitat for native ichthyofauna is present on site, albeit the streams' freely draining soils would limit the species presence to periods of heavy winter flows, which could potentially be suitable for more adaptable species such as banded kokopu (*Galaxias fasciatus*).

## 6. EFFECTS ASSESSMENT

6.1 There are a range of potential ecological effects on terrestrial and freshwater systems that may be associated with the Proposal and increased human presence on the Site. These are described in detail within Section 4 of the Ecological Assessment (dated September 2021)[11] prepared for the Site, and briefly summarised below.

6.2 Generally, the potential adverse effects can be divided into effects resulting from:

(a) direct effects resulting from physical development of the Site (including initial land clearance, vegetation clearance; earthworks, construction, stormwater);

(b) secondary effects resulting from increased activities and habitat modifications within the Site during the operational phase of the development; and

(c) cumulative effects resulting from future development that might occur, and additional to the effects that can be expected to have already occurred as a result of development of the wider area which may also increase in the future.

6.3 During the construction phase of the Proposal, potential ecological effects could primarily arise from physical habitat changes during the site development process including but not limited to earthworks and establishment of associated infrastructure (i.e. roading network, stormwater) and water quality and quantity changes related to discharges from impervious surfaces. The addition of fine sediment to aquatic environments has the potential to alter water chemistry, result in sediment build-up, increase turbidity and decrease light penetration that affects primary production and feeding for some aquatic species. I consider these effects to be acute, short term effects that require sufficient controls to be put into place to ensure that any associated environmental effects can be appropriately managed.

6.4 During the operational phase of the Proposal, adverse effects are likely to comprise potential increased levels of overall disturbance through increased levels of lighting,

[11] Refer to the Resource Consent Application for the Proposal, Appendix 11: Ecological Assessment, section 4.

noise and human and pet animal presence on site on site. Increased fire risk, and potential increase in invasion of pest plant and animal species should also be considered. These effects primarily relate to chronic low-level disturbance of indigenous habitats and fauna that is likely to be present on site or nearby areas.

6.5 When considering cumulative effects, there are a few practical and policy barriers to be considered. It is difficult to predict and assess cumulative effects with a high degree of certainty, due to complex ecological interactions, the lack of environmental baseline data, and varying policies relating to ecological protection and enhancement between differing land use zones. However, consideration of existing and reasonably foreseeable activities must be given to ensure that standalone effects of the Proposal will not result in 'tipping the balance' in the wider ecological context. From a purely ecological context, I consider that the cumulative effects of this Proposal are positive (habitat and biodiversity protection, restoration and extension) or no more than minor (relating to increased disturbance of the Site during construction or operational phases of the Proposal) and can be appropriately avoided, minimised or mitigated. I consider that the Proposal, as it stands, sets a positive example utilising a wide range of ecological, spatial and planning design principles in the site development works, and should future development occur in the area utilising a similar level of protection and enhancement of indigenous habitats, the potential cumulative ecological effects are also expected to be no more than minor.

6.6 The Applicant seeks to manage these potential direct, secondary and cumulative effects through a range of mechanisms, including by:

(a) avoiding or minimising physical disturbance of indigenous freshwater and terrestrial habitats on site (apart from management of exotic trees and weedy pest plant species for ecological restoration purposes) in accordance with provisions described under Condition 51(h) of the Proposed Consent Conditions offered by the Applicant;[12]

(b) connecting the Site to existing public wastewater reticulation servicing to ensure there will be no adverse effects from the Site's wastewater management on freshwater ecology as described in the Three Waters Design Report;[13]

12 Proposed Consent Conditions, Condition 51(h).

13 Refer to the Resource Consent Application for the Proposal, Attachment 8: Three Waters Design Report (August and September versions).

(c) managing water quality and quantity effects by using best practice erosion and sediment controls, and stormwater management approaches as described in the Three Waters Design Report[14] and under Proposed Consent Conditions;[15]

(d) ensuring unimpeded fish passage is provided throughout the Site as per best practice described under New Zealand Fish Passage Guidelines (NIWA 2018)[16] and as shown under Stream Crossing Plan[17] and Proposed Consent Conditions;[18]

(e) enhancing and creating vegetated buffers around terrestrial and riparian habitats as described under Section 5 of the Ecological Assessment (dated September 2021);[19]

(f) creating a comprehensive green habitat network integrating both ecological and landscape features, thus facilitating species movement within the Site and immediate surrounds as described under Section 5 of the Ecological Assessment (dated September 2021)[20], Assessment of Landscape and Neighbourhood Amenity Effects (dated September 2021)[21] and under Condition 51(h);[22]

(g) restoring and enhancing areas of ecological significance (discussed in Section 7 below);

(h) containing active site development to areas deemed of 'low' existing or potential ecological significance (i.e. the Proposal concentrates subdivision on the flatter sections of the Site which are dominated by exotic pasture); and

(i) managing risks associated with increased human presence on site through sustainable design principles and use of educational materials as described under

14 Refer to the Resource Consent Application for the Proposal, Attachment 8: Three Waters Design Report (August and September versions); Proposed Consent Conditions, Condition 4.
15 Proposed Consent Conditions, Condition 4.
16 NIWA *New Zealand Fish Passage Guidelines (*April 2018).
17 Stream Crossing Plan 4 prepared for the development proposal by Land Development & Engineering Ltd, reference 18733-C01 revision 1 (dated 26 October 2021).
18 Proposed Consent Conditions, Condition 44.
19 Refer to the Resource Consent Application for the Proposal, Appendix 11: Ecological Assessment, section 5.
20 Refer to the Resource Consent Application for the Proposal, Appendix 11: Ecological Assessment, section 5.
21 Refer to the Resource Consent Application for the Proposal, Attachment 10: Assessment of Landscape and Neighbourhood Amenity Effects.
22 Proposed Consent Conditions, Condition 51(h).

Section 4 of the Ecological Assessment (dated September 2021)[23] and reflected within Proposed Consent Conditions.[24]

6.7 The current terrestrial and aquatic ecological values of the Site reflect the highly modified nature of the environment. Through the measures outlined above, the Proposal provides the opportunity to restore, protect and enhance the ecological values of the Site. Overall, with the proposed measures in place, even prior to any ecological enhancement I would consider that no more than minor adverse ecological effects would be associated with the Proposal.

## 7. ECOLOGICAL ENHANCEMENT

7.1 As a part of the Proposal, it is proposed to protect and enhance two areas identified for ecological enhancement, being the Waitaua Stream Corridor Enhancement Area and Hurupaki Cone Enhancement Area (together the "**enhancement areas**") as shown on **Attachment 2.**

7.2 The Waitaua Stream Corridor Enhancement Area will extend over approximately 1.13ha and is intended to be utilised as a multipurpose reserve, promoting both ecological enhancement, and accessibility, with several interconnected pedestrian access tracks proposed through this area. The Waitaua Stream Corridor Enhancement Area contains existing mature indigenous vegetation, which will be protected in perpetuity and enhanced through permanent stock exclusion, appropriate indigenous revegetation planting, as well as ongoing pest animal and plant control.

7.3 The Hurupaki Cone Enhancement Area will extend southwards from Hurupaki Cone and extend over approximately 3.85ha. This area will be enhanced through permanent stock exclusion, revegetation planting and ongoing pest animal and plant control. The Hurupaki Cone Enhancement Area will connect the Hurupaki Cone with the wider pedestrian access tracks among landscape and ecological enhancement planting.

7.4 Collectively both of the proposed enhancement areas will form a large, interconnected habitat network between Hurupaki Cone and Waitaua Stream corridor on site, to establish ecological linkages and pathways throughout the Site and immediate surrounds to facilitate species movement and dispersal within the landscape. In

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23 Refer to the Resource Consent Application for the Proposal, Appendix 11: Ecological Assessment, section 4.

24 Proposed Consent Conditions, Conditions 52(b) and 52(c).

addition, both of enhancement areas will be closely integrated with the landscape planting and amenity areas creating interconnected functional and structural habitat linkages throughout the Site. These linkages are shown under **Attachment 2**.

7.5 The proposed enhancement areas will be revegetated with a mix of native species suited to the Site based on the ecosystem types noted in the immediate vicinity. In the short term (1-3 years following revegetation), the revegetation plantings will assist in sediment filtering of overland run-off, act as a natural erosion control agent, and extend habitat for some more common mobile avifauna species. In the medium term (3-5 years), the enhancement areas will provide/extend physical habitat for a wider range terrestrial and aquatic fauna, and also provide water quality benefits through shading and by filtering overland run-off. In the longer term (>5 years), this enhancement will result in a net gain in ecological function for the existing terrestrial and aquatic habitats noted on site and surrounds and will allow for natural self-sustaining processes to begin including natural regeneration, shading out of any weedy species and increasing habitat complexity.

7.6 The benefits of the enhancement areas include the following:

(a) protecting and enhancing approximately 4.98ha of indigenous vegetation (including existing mature trees and revegetation planting) will, over time, significantly increase the overall ecological functionality and integrity of the Site extending and buffering habitats of ecological significance (notably Hurupaki Cone and Waitaua Stream corridor) and provide ecosystem regulating services such as carbon capture and storage, erosion controls, nutrient cycling, climate regulation, and improvements of water quality within the stream catchment, among others;

(b) providing for an attractive place to visit for recreation and conservation – the proposed enhancement areas will provide for cultural ecosystem services, through establishing and connecting an area in which people may pursue improved health and wellbeing, learn about the biodiversity values of the area, and allow for interactions with nature;

(c) providing an enhanced habitat for wildlife including a source of food for indigenous fauna – provision of revegetation planting is to increase the proposition of seed and fruit bearing species on site and thus enhance species movement and dispersal on site and surrounds, with a particular focus on indigenous avifauna;

(d) retiring these areas from stock access in perpetuity – removing stock from the Site will result in benefits to both aquatic and terrestrial habitats noted on site and

further downstream. Removal of stock from the Site will reduce physical damage to beds and banks of streams, reduce erosion risk and associated sediment inputs from the steep erosion prone slopes leading up to Hurupaki Cone, as well as reduce faecal contaminant input into freshwater environments;

(e) enhancing the riparian corridor of an upper catchment area of the Waitaua Stream – protection and management of the riparian zones along the Waitaua Stream corridor will ensure ongoing ecological benefit by providing shading, buffering and inputs of essential components for stream function (i.e. inputs of leaf litter, and woody debris);

(f) providing a vegetated buffer area between the Proposal footprint and the adjacent Hurupaki Cone – this will ensure that a significant vegetated buffer area is provided between the development and the core Hurupaki Cone bush area and thus reduce any potential secondary effects associated with the operational phase of the proposed development (i.e. increased human presence) on any susceptible species present within the Hurupaki Cone;

(g) reducing 'edge effects' – the proposed enhancement plantings will minimize abrupt artificial change along the boundaries of the core indigenous habitats noted on site and surrounds (notably Hurupaki Cone and Waitaua Stream), as this is the place of greatest stress on the natural system through climatic exposure, pressure from animal browse, and pest encroachment. The revegetation plantings will allow to reduce edge effects and allow for a more structurally complex core area to develop with lower exposure to both biotic and abiotic elements;

(h) enhancing these areas in perpetuity through comprehensive and ongoing pest plant and animal control and planting of suitable indigenous species extending, connecting and restoring the ecological values contained within the two enhancement areas; and

(i) offering full protection and ongoing cohesive management at a functioning ecosystem level ensuring that the proposed enhancement areas are able to become self-sustaining functional areas following the initial ecological management efforts.

7.7 Both ecological enhancement areas described under Section 7.1 will closely integrate with the proposed landscape and amenity planting areas, creating green corridor habitat

linkages throughout the Site, facilitating species movement within the boundaries of the Site and immediate surrounds as described in the Landscape Assessment.[25]

7.8 The proposed enhancement areas will strengthen ecological values within the local area which is vitally important to provide further functional and structural ecological connectivity for flora and fauna already present on the Site and immediate surrounds. The Proposal has been designed to protect, extend and connect core areas of ecological significance (being Waitaua Stream and Hurupaki Cone) thus improving the overall ecological structure, composition and functions of the Site through strengthening ecological networks by creating new habitats and buffer areas, and improving the services provided by ecosystems, without jeopardising existing biodiversity values.

7.9 I believe that the Proposal maximises the environmental benefits that can be achieved from the Site development works given that the entirety of the area outside of the immediate development footprint is to serve as ecological, landscape enhancement or open space areas.

7.10 I consider the Proposal presents a design-led approach to development that integrates the infrastructure of the Proposal with engineering, landscape and ecology, and demonstrates a strong commitment to sustainable development principles. In my opinion the overall design of the Proposal is focused on extensive landscape and ecological integration with necessary infrastructure that, instead of serving a single function (i.e. stormwater retention), is designed to integrate with the wider landscape and ecological values and serve multiple purposes, including increasing amenity values, habitat creation and provision of public access into much needed open space. I believe the Proposal illustrates how growth can be balanced with ecological restoration, the creation of new public open space and the development of a strong sense of place through highlighting and complementing the existing ecological values of the Site and wider area.

## 8. COMMENTS ON SUBMISSIONS

8.1 A total of 20 submissions on the application have been noted in Council's summary of submissions as being formally received by Council. I have reviewed the submissions received.

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25 Refer to the Resource Consent Application for the Proposal, Attachment 10: Assessment of Landscape and Neighbourhood Amenity Effects.

8.2 A single submitter (Mr Hewitt) identified concerns related to ecological matters which I address below.

**Effects of increased human presence on site**

8.3 The submission raises a general concern relating to increased human presence on site and immediate surrounds.

8.4 In the context of potential ecological effects, human disturbance on site will presumably increase in proportion to the baseline conditions through disturbance of habitats noted on site and adjacent, and thus having a potential effect on feeding, breeding and nesting fauna unless appropriate management measures and controls are put in place.

8.5 The Proposal aims to enhance public access and connectivity within the Site and immediate surrounds, with an extensive network of pedestrian walkways proposed throughout the Site and leading up to the Hurupaki Cone. Increased human disturbance to the Hurupaki Cone area and the proposed Waitaua Stream enhancement area is therefore inevitable, however will be somewhat limited by the steep topography of these areas.

8.6 While the Site itself is not thought to provide significant breeding or nesting habitat for any threatened avifauna due to significant anthropogenic modification and disturbance by current land use activities, the Hurupaki Cone is known to support Kereru. Kereru are tree nesting species (as opposed to ground nesting) therefore the chick survival would be less affected by increased presence of humans.

8.7 Since no 'Threatened' or 'At Risk' fauna were recorded on site or immediate surrounds, with the majority of fauna recorded being common and mobile species, they are likely to either escape human attention or move elsewhere if they are disturbed. The provision of education (e.g. signboards) outlining the ecological values of the indigenous species on site and surrounds will be beneficial in raising the profile of the species present and contributing to public support for achieving effective protection.[26]

8.8 I consider that human disturbance on ecological values will be limited through the provision of defined paths within the areas, as well as revegetation planting, which will form a natural barrier for human movement within the wider core landscape, and, therefore concentrate their impact to small, localised areas. The potential effects can be further minimised through the provision of educational material on site (e.g. signboards).

26 Proposed Consent Conditions, Condition 52(b)-(d).

I consider the overall effect associated with increased human disturbance on site is to be no more than minor.

**Effects of residential pets**

8.9 Cats and dogs kept as residential pets are predators of native wildlife. Cats are known predators of indigenous lizards and birds; while dogs, particularly unrestrained dogs, pose more of a threat to avifauna.

8.10 Given the Site's locality on the urban fringes of Kamo, the existing baseline setting is one already inhabited by a wide range of domestic pets. I am not aware of any nearby developments that have been designed to be 'pet free,' and therefore the area (including the Hurupaki Cone area) is already subject to visitation by domestic pets outside of the Site.

8.11 No ground nesting or susceptible avifauna or herpetofauna was noted as being present on site or the immediate surrounds (including Hurupaki Cone) during the site survey visits, with the majority of observed species noted on site were common and mobile fauna, which are likely to move when/if disturbed by pet animals.

8.12 I consider that the impacts of the likely increase of domestic pets resulting from the Proposal can be effectively managed through appropriate controls, such as informative signage and controls on dogs (e.g. keeping dogs on lead) within the proposed ecological/landscape enhancement areas.[27]

8.13 The Proposal will also allow for integrated pest animal management to be carried out over the Site as outlined under Condition 51(i)(vi),[28] which is to positively benefit all indigenous fauna present on site and immediate surrounds.

8.14 Overall, I consider that the effects associated with increased pet animal presence on site can be appropriately managed through appropriate controls and educational material, with the resulting residual effects being no more than minor.

**Loss of open pasture/farmland foraging habitat**

8.15 In particular, the submission refers to the loss of open pasture/farmland for kiwi and bats.

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27 Proposed Consent Conditions, Condition 52(c).
28 Proposed Consent Conditions, Condition 51(i)(vi).

8.16 While North Island brown kiwi are known to forage in open pasture habitats their preference is for indigenous forested habitats. Therefore, the loss of exotic pasture habitats on site is of a negligible concern in regard to the potential loss to kiwi foraging habitat.

8.17 I note that while population of North Island brown kiwi is known to be present within 1km radius from the Site in Pukenui Forest, there are no known habitat linkages between the Site and the Pukenui Forest. Therefore, it is unlikely that kiwi would be present or utilising the Site for commuting within the wider area.

8.18 Additionally, the Proposal involves enhancement and revegetation of the northern aspect (adjacent to Hurupaki Cone) and central aspect (encompassing Waitaua Stream margins) which is likely to expand 'potential' future kiwi habitat.

8.19 Regarding loss of pasture areas as potential bat foraging or commuting habitat, in particular long-tailed bat habitat, open pasture represents challenging and unhospitable environment to bats, with riparian corridors, native shrublands and indigenous forested areas being their preferred habitat types for roosting, commuting and foraging.

8.20 While no long-tailed bat activity or roosts were noted on site during site survey visits, long tailed bats are known to be present within 1km radius of the Site, notably within Pukenui Forest. As a part of the Proposal, habitat enhancement through integrated pest animal control and indigenous revegetation is to take place on site, which will significantly enhance habitat availability for roosting, commuting and feeding.

8.21 Bats are known to also favour open water with vegetated fringes as a preferred foraging habitat, with the proposed stormwater ponds to be established as part of the development Proposal over time providing excellent opportunity to enhance bat foraging habitat in the area.

8.22 The revegetation planting and pest weed and animal control in the proposed enhancement areas is likely to positively support this area as a potential bat commuting habitat within the wider landscape.

8.23 Therefore, I conclude that the loss of low ecological value open pasture habitat would have a negligible effect on kiwi and bat foraging habitat, and the proposed development of the Site would in fact actively enhance and extend potential habitat linkages and provisioning services for these species.

**Effects on water quality and quantity**

8.24 In the context of ecology there are a range of potential effects on freshwater systems that may be associated with development of previously undeveloped greenfield land. These effects primarily arise from physical habitat changes during the development and water quality and quantity changes related to discharges from impervious surfaces.

8.25 According to the Three Waters Design Report, wastewater servicing for the development will be an extension to the existing public reticulation.[29] As such, if the system is installed as per the recommendations outlined in the associated Three Waters Design Report prepared for the Site, and any associated technical guidance notes, no adverse effects on freshwater or terrestrial ecology relating to the wastewater management are anticipated.

8.26 In regard to stormwater management, having reviewed the Three Waters Design Report, I consider that an integrated and comprehensive stormwater management system is proposed to be utilised within the Site to manage any potential negative environmental effects (both source and cumulative).

8.27 The proposed stormwater ponds will limit peak flows to predevelopment level for the 2, 10 and 100 year storm events, with a 20% allowance for climate change, further reducing any potential negative environmental effects on the existing identified ecological values on site and further downstream.

8.28 Any works near Waitaua Stream or its margins will have to abide by strict sediment controls as outlined within the Three Waters Design Report and Proposed Consent Conditions[30]; to ensure that the release of fine sediment into the stream during construction phase is minimised.

8.29 When compared to the baseline environment, with stock being able to freely access and graze within this upper catchment area of Waitaua Stream, I consider that the Proposal will in fact improve water quality within the catchment to a minor degree through stock exclusion in perpetuity.

8.30 Additional hydraulic inputs from the stormwater infrastructure being diverted into the Waitaua Stream are likely to result in a greater volume of water entering the freshwater

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29 Refer to the Resource Consent Application for the Proposal, Appendix 8: Three Waters Design Report, section 3.

30 Proposed Consent Conditions, Condition 4.

environment which will likely positively support the growth of hydrophytic vegetation along the riparian margins and therefore support habitat provision for instream fauna such as fish and invertebrates.

8.31 I consider that the Proposal will not adversely affect the freshwater quantity and quality both on site and within the wider Waitaua Stream catchment if recommendations relating to best practice integrated design, erosion and sediment control guidelines provided in the associated reporting prepared for the Proposal are followed.

## 9. COMMENTS ON THE COUNCIL'S SECTION 42A REPORT

9.1 Council's s42A Report was prepared by consultant planner, Mr Alister Hartstone, with input from Peter Kensington. I have reviewed and considered the s42A Report to the extent it relates to matters within my area of expertise.

**Net environmental benefit**

9.2 I disagree with the s42A Report and Mr Kensington's conclusion that a net environmental benefit cannot be achieved.

9.3 I consider the benefits of environmental protection and ongoing management of over 4.98ha (approx.) of existing indigenous vegetation along with proposed revegetation plantings greatly exceed the extent of planting that might be required simply to mitigate the potential adverse effects associated with the Proposal, as demonstrated both within the original Ecological Assessment and further expanded on in my evidence. I also note that these 'ecological enhancement areas' will closely integrate with indigenous revegetation plantings proposed to be carried out as a part of the wider landscape plantings within the Site as described within the Assessment of Landscape and Neighbourhood Amenity Effects and further evidence provided by Mr Farrow.

9.4 As I understand it, Mr Hartstone accepts that there will be positive ecological effects arising from the Proposal,[31] however he does not consider this constitutes a 'net environmental benefit' as defined in the Proposed District Plan (Appeals Version) ("**PDP"**)**.** While Mr Hartstone does not specifically outline any concerns relating to ecological matters associated with meeting the 'net environmental benefit' provisions, in the following sections below I briefly outline why I consider that the Proposal does in fact meet the relevant ecological considerations as per the 'net environmental benefit'

[31] Section 42A Report, at [76].

definition of PDP and the ecological matters as described under Policy RPROZ-P9 'Net Environmental Benefit' of the PDP.

9.5 The definition of 'net environmental benefit' in the PDP is as follows:

> ….means an activity where it is demonstrated that the benefits of environmental protection and ongoing management are greater than the adverse effects created by subdivision and associated land development. The benefits achieved through environmental protection and on-going management do not include:
>
> a) with respect to the area to be protected:
>
> (i) requirements of a condition of a prior consent, unless the prior consent has not been implemented and will be surrendered on the grant of a subdivision that proposes environmental protection and on-going management of an environmental protection area.
>
> (ii) requirements of existing legal mechanism such as a covenant, easement, designation or private agreement / contract.
>
> (iil) the level of protection provided under regional or district plan rules.
>
> b) methods required to avoid, remedy or mitigate adverse effects of the allotments being created (such as planting to integrate allotments into their surroundings, and control of cats and dogs).

9.6 Policy 'RPROZ-P9 – Net Environmental Benefit', in the Rural Production Zone, prescribes matters to be addressed when seeking to enable subdivision on the basis that the protection of biodiversity, landscapes and ecology is achieved:

> To protect and enhance biodiversity, landscapes, historic heritage and significant ecology whilst protecting productive rural land resources, rural character and amenity by providing for subdivision where all of the following are achieved:
>
> (1) A Net Environmental Benefit is created by the legal protection in perpetuity and on-going management (maintenance and enhancement of the values and attributes, characteristics and qualities) for one or more of the following:
>
> (a) Appropriate area(s) of indigenous vegetation, or habitat of indigenous fauna, assessed as significant in accordance with policy 4.4.1 and appendix 5 of the Northland Regional Policy Statement 2016; or
>
> (b) Appropriate area(s) of Outstanding Natural Landscapes, Outstanding Natural Features, Outstanding Natural Character, High Natural Character; or

(c) Heritage Buildings or Sites of Significance to Māori; or

(d) Appropriate area(s) of Highly Erodible Land, or land within a riparian margin of a stream, river, estuary or the coast located within Acutely or Chronically threatened land environment associated with Land Environments of New Zealand Level 4, will be retired and rehabilitated.

(2) The effects of the number, size and location of allotments, building platforms and access, are managed by:

(a) Avoiding:

(i) Adverse effects on the areas(s) protected under clause (1) of this policy.

(ii) Adverse cumulative effects.

(iii) Reverse sensitivity.

(iv) Development on highly versatile soils.

(v) An urban form, by encouraging small clusters of allotments.

(b) Minimising fragmentation of rural land.

(c) Protecting the productive potential of the site.

(d) Retaining natural character, landscape qualities and characteristics, rural character and amenity.

(e) Determining whether fewer than the maximum number of allotments should be created.

(f) Assessing the proposal against the Coastal Environment objectives and policies where the site is located in the Coastal Environment.

*Permitted activities and net environmental benefit*

9.7 Before stepping through the policy, for the purposes of determining the potential for the Proposal to deliver a 'net environmental benefit' as defined under the PDP, I consider that it is important to understand the activities that are or could be carried out on Site as a 'permitted activity'. This provides the opportunity to compare and consider the overall effects associated with activities that can be conducted as of right, and potential effects associated with the Proposal. This is also briefly considered within the s42A Report.[32]

32 Section 42A Report at [37]-[44].

9.8 As outlined in the Ecological Assessment,[33] the highest ecological values on the Site itself were assigned to the Waitaua Stream corridor encompassed by significant stands of puriri trees along other mature indigenous tree species. As the s42A Report correctly states,[34] the removal of these trees could be undertaken as a 'permitted activity' under the PDP and Operative Regional Plan for Northland, unless rules are triggered regarding removal of vegetation along the riparian zones. Should these trees/vegetation be removed, it would result in disproportionate adverse effects on the wider ecological integrity of the Site and immediate surrounds. I consider that the vegetation along the Waitaua Stream corridor forms a strategically important ecological corridor within the landscape, facilitating species movements within what is considered an increasingly hostile urban and agricultural land matrix. This is recognised and provided for in the Proposal which will protect and enhance the existing indigenous vegetation on site in perpetuity, and thus maintain and improve the overall ecological functionality of the Waitaua Stream corridor. Were this vegetation be lost/removed, I consider the effects on overall ecosystem services, including habitat provisioning and regulating services currently provided by these habitats, would have a much greater magnitude of effect than any adverse effects of the Proposal.

9.9 The protection and enhancement of these terrestrial and aquatic habitats forming part of the Waitaua Stream ecological corridor is also in accordance with the draft National Policy Statement for Indigenous Biodiversity which aims to maintain biodiversity, improve integrated management of indigenous biodiversity, restore indigenous biodiversity and enhance the ecological integrity of ecosystems, as well as recognise the role of land owners, communities and tangata whenua as stewards and kaitiaki of indigenous biodiversity. These core intentions are reflected in the Proposal. The Proposal recognises the interconnectedness of indigenous biodiversity and communities, and places a focus on enhancing and connecting the local biodiversity as well as recognising the importance of habitat protection for our community health and wellbeing now and in the future.

9.10 In addition, the Site is currently actively grazed as a permitted activity, including Waitaua Stream margins and the steep slopes leading up to Hurupaki Cone. Livestock present on the Site is considered one of the most significant threats to native biodiversity, and especially to the Waitaua Stream corridor. The area encompassing the Waitaua Stream contains some permanently unfenced sections along its northern extent which have

33 Refer to the Resource Consent Application for the Proposal, Appendix 11: Ecological Assessment, section 4.

34 Section 42A Report at [38].

been subject to historic unrestricted stock access. This has resulted in damage to riparian vegetation, soils, stream banks, and consequently water quality and the aquatic ecosystem as a whole. Grazing on the steep flanks leading up to Hurupaki Cone has resulted in soil compaction, erosion, accelerated sediment runoff and delaying of natural regeneration (which is likely to have occurred if stock were not present on site). Given the steep topography of these areas and their high susceptibility to erosion, sedimentation and nutrient inputs from the grazing activity, I consider this an unsustainable land use for this particular site. Instead, the Proposal aims to enhance ecosystem functions through revegetation planting and permanent legal protection of existing indigenous habitats on Site.

9.11 I also consider that the overall effects of continued grazing of the Site are at direct odds with the aims and objectives of the National Policy Statement for Freshwater Management (2020) ("**NPSFM**") which places a statutory responsibility on territorial and consenting authorities to give effect to Te Mana o te Wai by prioritizing the health and wellbeing of our waterways. With respect to Te Mana o te Wai, the hierarchy of obligations for consenting authorities are; first, to prioritise the health and well-being of water bodies and freshwater ecosystems; second, the health needs of people (such as drinking water); and third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future. I consider that the Proposal, which is aimed at working with the natural patterns of the land and halting the degradation of the Waitaua Stream on Site, meets the policy objectives of the NPSFM and will result in a much higher protection of the upper reaches of the Waitaua Stream catchment than if the current land use is continued.

9.12 I consider that when comparing the permitted activities associated with the current land use/zoning to the Proposal (which has been designed to work with natural patterns in the land; avoid or minimize adverse ecological and environmental effects; and offer significant rehabilitation of ecological and biodiversity values through stock exclusion in perpetuity, revegetation planting, pest weed and animal control along with offering legal ongoing protection), it is clear that the Proposal would result in a much higher level of ecological protection and enhancement.

9.13 In my professional opinion, the Proposal has demonstrated that the benefits of environmental protection and ongoing management are greater than the potential adverse effects created by subdivision and land development which can be avoided, minimised or mitigated with appropriate controls, and thus I consider that the

development of the Site is consistent with the definition and requirements of a 'net environmental benefit' as defined under the PDP**.**

*Policy RPROZ-P9 – Net Environmental Benefit*

9.14 I consider that the proposed protection and enhancement of the Waitaua Stream and Hurupaki Cone to result as a part of the Proposal meets clauses 1(b) and 1(d) of the RPROZ-09 provisions. In particular, Waitaua Stream Enhancement area meets clause 1(d) based on the protection of riparian margin located within a 'Threatened Land Environment' which will be retired, rehabilitated and protected in perpetuity, while Hurupaki Cone Enhancement Area meets both clause 1(b) and 1(d), respectively through the protection and enhancement of an Outstanding Natural Landscape and Outstanding Natural Feature, and retirement and rehabilitation of an area considered as Highly Erodible Land. Collectively, both of the enhancement areas are to be retired from grazing in perpetuity, and appropriately enhanced through revegetation planting and ongoing pest plant and animal management.

9.15 When considering clause 2 (which prescribes the scope of development rights that may be obtained as a result of the 'net environmental benefit'), from an ecological perspective, I consider that the Proposal is compliant with the provisions relating to my areas of expertise (respectively clause 2(a)(i), and partly clause 2(a)(ii)) through:

(a) Clause 2(a)(i) – Avoiding effects on areas(s) protected under clause 1. As discussed within the Ecological Assessment prepared for the Proposal and further discussed under Section 6 of my evidence, I consider that the Proposal has demonstrated that the potential adverse effects on areas proposed to be protected under clause 1 can be avoided through integrated engineering, ecological and landscape measures, appropriate development controls and conditions of consent.

(b) Clause 2(a)(ii) – Avoiding adverse cumulative effects. In respect to ecological matters, as noted under Section 6.5 of my evidence, it is difficult to predict and assess cumulative effects with a high degree of certainty, due to complex ecological interactions, the lack of environmental baseline data, and varying policies relating to ecological protection and enhancement between differing land use zones. From a purely ecological context, I consider that the cumulative effects of this Proposal are positive (habitat and biodiversity protection, restoration and extension) or no more than minor (relating to increased disturbance of the Site

during construction or operational phases of the Proposal) and can be appropriately avoided, minimised or mitigated. I consider that the Proposal, as it stands, sets a positive example utilising a wide range of ecological, spatial and planning design principles in the site development works, and should future development occur in the area utilising a similar level of protection and enhancement of indigenous habitats, the potential cumulative ecological effects are also expected to be no more than minor.

9.16 According to the s42A Report, the only clauses that cannot be fully met are clause 2(a)(v), which indicates that urban form is to be avoided, and clause 2(d) which recommends that natural character, landscape qualities and characteristics, rural character, and amenity are retained. In my professional opinion, the proposed protection of existing indigenous habitats on site alongside proposed revegetation planting not only retains the natural character of the Site and the immediate wider area, but enhances and extends on it.

9.17 In Paragraph 82 of the s42A Report Mr Hartstone is of the opinion that:[35]

> … the extent of effects associated with the proposed residential development in the Rural Production Zone is considered to be difficult to quantify. The application proposes a net environment benefit, balancing ecological benefits against adverse landscape, rural character, and amenity effects. There is no exact science to be applied to place values or weighting on these components. It is a matter of professional assessment and judgement as to what the relative weighting should be and ultimately what is an appropriate level of effects.

9.18 As outlined within the original Ecological Assessment and further expanded on in my evidence alongside Mr Farrow's evidence, I consider that this balance is achieved, if not exceeded. I believe that this Application has been assessed based on both the potential adverse effects generated and the overall positive social, economic and environmental outcomes that could be achieved, and is in general accordance with the relevant policies and objectives under PDP. Irrespective of the current underlying zoning, the development has been designed in a wholly integrated manner taking into the account the natural characteristics of the land and the wider area, and providing a high level of overall environmental benefit, which in itself sets an exemplar standard for residential subdivisions within Whangārei District.

35 Section 42A Report at [82].

9.19 In my opinion, specifically relevant to my evidence, environmental benefits will include a range of enhancement and protection proposals of existing terrestrial and aquatic biodiversity values alongside with significant enhancement of these values through revegetation planting and ongoing management.

**Conclusion**

9.20 In Paragraph 85 of the s42A Report Mr Hartstone concludes:[36]

> Based on the advice from KPLCL, it is considered that a net environmental benefit as defined in the WDP above cannot be achieved. The adverse rural landscape, character and amenity effects resulting from a residential scale development within the Rural Production Zone in this location will result in more than minor adverse effects. The proposed benefits identified in the application are not sufficient to achieve any net environmental benefit.

9.21 I disagree with Mr Hartstone's conclusion and, as discussed within my evidence, I consider that the Proposal has demonstrated that the benefits of environmental protection and ongoing management are greater than the potential adverse effects created by subdivision and land development which can be avoided, minimised or reduced with appropriate controls, and thus I consider that the development of the Site is consistent with the definition and requirements of a 'net environmental benefit' as defined under the PDP.

9.22 I consider that the Proposal is consistent with the ecological matters under Policy RPROZ-P9 – Net Environmental Benefit as discussed within my evidence. The s42A Report outlines that clause 2(a)(v), which indicates that that urban form is to be avoided, and clause 2(d) which recommends that natural character, landscape qualities and characteristics, rural character, and amenity are retained, cannot be met. While these are addressed in detail in Ms McGrath's[37] and Mr Farrow's[38] evidence, in my professional opinion, the proposed protection of existing indigenous habitats on site alongside proposed revegetation planting not only retains the natural character of the Site and the immediate wider area but enhances and extends on it.

36 Section 42A Report at [85].
37 Evidence of M McGrath, at [8.35] – [8.68] and [11.4] – [11.12].
38 Evidence of M Farrow, sections 4 and 7.

9.23 I consider that the Proposal maximises the environmental benefits that can be achieved from the Site development works given that the entirety of the area outside of the immediate development footprint is to serve as ecological, landscape enhancement or open space areas.

9.24 I consider the Proposal presents a design-led approach to development that integrates the infrastructure of the Proposal with engineering, landscape and ecology, and demonstrates a strong commitment to sustainable development principles. In my opinion, the overall design of the Proposal is focused on extensive landscape and ecological integration with necessary infrastructure, that instead of serving a single function (i.e. stormwater retention) is designed to integrate with the wider landscape and ecological values and serve multiple purposes, including increasing amenity values, habitat creation and provision of public access into much needed open space. I believe the Proposal illustrates how growth can be balanced with ecological restoration, the creation of new public open space and the development of a strong sense of place through highlighting and complementing the existing ecological values of the Site and wider area.

9.25 Based on my professional judgment and expertise I consider that an overall 'net environmental benefit' as defined under the PDP will be achieved. I consider that the Application has demonstrated the array of positive ecological and environmental outcomes that will be achieved as part of the Proposal and has shown that any adverse environmental effects can be appropriately avoided, reduced or minimised through comprehensive design and planning principles.

## 10. PROPOSED CONSENT CONDITIONS

10.1 The majority of the recommendations outlined under Section 8.0 of the Ecological Assessment[39] have been included within the Proposed Consent Conditions.[40]

10.2 For completeness sake, I have also recommended that the following conditions were to be included in the Proposed Consent Conditions where they relate to ecological aspects:

(a) That any works requiring stream crossings over the Waitaua Stream are to be in accordance with Whangārei District Council and Northland Regional Council

[39] Refer to the Resource Consent Application for the Proposal, Appendix 11: Ecological Assessment, section 8.

[40] Proposed Consent Conditions, Condition 51(h).

Environmental Engineering Standards and the New Zealand Fish Passage Guidelines[41] to ensure that fish passage on site is maintained. ensuring unimpeded fish passage is provided throughout the Site as per best practice described under New Zealand Fish Passage Guidelines (NIWA 2018)[42] and as shown under Stream Crossing Plan.[43]

(b) That appropriate signage is erected at the public walkway entrance points into the proposed Ecological Enhancement Areas to inform users that all dogs must be on leads at all times when entering these areas. This will ensure that susceptible fauna present on site is not negatively impacted by the increased presence of pet animals using this area.

(c) That appropriate educational signage is installed along the public walkways/tracks to be established within the Ecological Enhancement Areas. The signage should describe the existing ecological baseline conditions of the area (including susceptible species presence), the significance of the restoration works carried out on site, overall goals of the habitat enhancement programme and any other information that is deemed of importance to preserve the biodiversity values on site and immediate surrounds.

10.3 I have reviewed the Proposed Consent Conditions and these recommendations have now been fully incorporated in Condition 44, 52(b) and 52(c).[44]

10.4 Overall, I consider that any adverse ecological effects of the Proposal can be sufficiently avoided, reduced or mitigated if the Proposed Consent Conditions and additional recommendations are adopted, and an overall 'net environmental benefit' can be achieved.

## 11. CONCLUSION

11.1 The Proposal has been designed to incorporate and promote ecological protection and enhancement of the Site. The development and associated infrastructure have been designed in a manner that recognises the existing ecological and environmental values and constraints of the Site and immediate surrounds, and aims to strengthen the

41 (Franklin *et al.* 2018).
42 NIWA *New Zealand Fish Passage Guidelines* (2018).
43 Stream Crossing Plan prepared for the development proposal by Land Development & Engineering Ltd, reference 18733-C01 revision 1 (dated 26 October 2021).
44 Proposed Consent Conditions, Conditions 44, 52(b), 52(c).

ecological values of these features through stock exclusion in perpetuity, appropriate revegetation enhancement planting and ongoing pest weed and pest animal control.

11.2 In my opinion, the Proposal presents an exemplary subdivision in relation to ecological matters, striking a balance between protecting and enhancing areas of higher existing ecological values, while concentrating the Site's development on areas with low existing ecological values or functionality.

11.3 I consider that the potential adverse effects of the Proposal can be secured through best practice sediment and erosion control measures, comprehensive ecological and landscape design principles, as well as appropriate planning and development controls. Provided that they are implemented successfully during construction and operational phases of the development, adverse effects on the environment would be no more than minor, and would, in fact, allow for the enhancement of ecological values identified on site and immediate surrounds resulting in an overall 'net environmental benefit.'

**Madara Vilde**

27 April 2022

**ATTACHMENT 1**

## Madara Vilde
## Senior Ecologist
## BSc (1st Class Hons) Environmental Protection

Madara is an experienced ecologist with demonstrated history of working in the environmental services industry for over 5 years. Having graduated from University of Edinburgh with a 1st Class Honours degree in Environmental Science Madara has since worked in conservation and academia, and environmental consultancy setting both in the UK and New Zealand. Maddy brings years of fieldwork and ecological surveying experience to Rural Design, and she is a skilled surveyor of flora, avifauna, herpetofauna, bats and aquatic organisms. Madara is also our lead in spatial analysis and mapping, and she has a comprehensive understanding of ArcGIS and QGIS programmes.

Madara is an excellent communicator ensuring that all stakeholders are engaged in the process, ensuring that projects meet deliverable outcomes and benefits as specified in the tender process. Prior and during her studies in Environmental Science, Madara also worked in Hospitality and Administration Management for over 6 years, and her background in management gives her the experience to create a seamless process to meet time targets, involve all of the right people at the right time and make best use of resources in our organisation.

### Specialisations:

- Preliminary Opportunities and Constraints Mapping (Feasibility Studies/Due Diligence)
- Environmental Impact Assessments (EIA)
- Ecological Design, Restoration and Management Plans
- Geographical Information Systems (GIS)
- Ecosystem Delineation and Mapping
- Ecological Surveys (flora, avifauna, herpetofauna, bats and aquatic organisms)
- Ecological Restoration
- Resource Consenting
- Wetland and Stream Delineation (NESFM and NPSFM)
- Stream and Water Quality Assessments
- Planting and Pest Management Plans

## Key Project Experience:

Madara has over 5 years' experience in leading and co-ordinating large-scale cross-discipline ecological assessments and restoration projects across Auckland and Northland Regions including:

- **Peer Review – Ecology | Kaipara District Council (2022 – ongoing)**
  Peer review of ecological reports, pest plant and animal management plans, planting completion reports prepared for land development proposals.

- **Redcliffs Road, Kerikeri | EIA and Ecological Restoration Design (2021 – ongoing)**
  Ecological survey and reporting services provided to accompany a Resource Consent application. Works involved comprehensive ecological survey work, mapping, preparation of an Environmental Impact Assessment, formulating mitigation and enhancement proposals for the development.

- **Waimā Waitai Waiora Freshwater Project (2020 - ongoing)**
  Ecologist/project co-ordinator responsible for communication with NRC, Te Uri o Hau and landowners. Work involved the co-ordination, delivery and planting of 65,000 plants across 6 key sites in the Northern Wairoa catchment. Site mapping, co-ordination of deliveries, preparation of SSSP's for each of the sites, preparation of a Maintenance Plan for each site.

- **Ryan Road, Te Arai | Ecological Survey, Reporting and Enhancement Work (2020)**
  Ecological survey, reporting and restoration work lead to accompany a Resource Consent application. The project involved a comprehensive ecological survey, delineation of terrestrial, stream and wetland habitats and preparation of an ecological restoration plan for a large rural property.

- **Tara Road, Mangawhai | Wetland Delineation and Restoration (2019)**
  Ecology lead on a large wetland restoration project. Works involve wetland delineation, comprehensive ecological survey work and mapping, preparation and design of ecological planting, pest weed and pest animal control programme, and preparation of a long-term monitoring plan.

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**ATTACHMENT 2 – ECOLOGICAL ENHANCEMENT & LINKAGES PREPARED BY LITTORALIS LANDSCAPE ARCHITECTURE (REVISED 20/04/2022)**