Milldale Fast-Track

29/07/2025 – Auckland Council Response

Annexure 14:

Freshwater Ecology & Terrestrial Ecology

Technical Specialist Memo – Freshwater & Terrestrial Ecology

To:	Dylan Pope – Lead Planner & Carly Hinde - PPL
From:	Antoinette Bootsma (Senior Freshwater Specialist, Earth, Streams & Trees Team, Planning & Resource Consents Department) and Rue Stratham (Senior Ecologist, Ecological Advice Team, Environmental Services Department)
Date:	16/07/2025

1.0 APPLICATION DESCRIPTION

Application and property details

Fast-Track project name:	Milldale
Fast-Track application number:	BUN60446761 & FTAA-2503-1038
Site address:	Wainui Road, Milldale, Upper Orewa

2.0 Executive Summary / Principal Issues

We highlight several matters

- Regarding terrestrial ecology, the applicant has, generally, identified the potential and actual adverse effects on fauna. They have not provided a management plan but have proposed a condition of consent. I, Rue Stratham, requested additional information, by way of a more prescriptive management plan, but the applicant declined that request. I, Rue Stratham, consider that, with a prescriptive and enforceable management plan as indicated in this memo, the effects on terrestrial ecological values should be managed effectively.
- Regarding aquatic ecology, I, Antoinette Bootsma, am unable to support the application based on the lodged documents. My assessment finds that the application does not demonstrate adherence to Appendix 6 of the NPS-FM, Principles for Aquatic Offsetting and therefore the effects management hierarchy is not adhered to. This is a requirement of NES-F rule 45C(6)(c). I conclude that the application is not aligned with Principle 6 of the NPS-FM.
- My reasons are as follows:

- The wetland delineation is based on two disjunct sets of data that cannot be correlated and therefore does not follow the requirements for wetland delineations as specified in the MfE Wetland Delineation Protocols. Furthermore, the hydrology data contains significant inconsistencies.
- The assessment presenting the proposed offset of a new wetland to account for the permanent loss of wetlands resulting from this application, does not provide supporting hydrological data from which to confirm that a new wetland will be able to be achieved in perpetuity. There is no discussion on the size of the supporting catchment or water availability to support a proposed new 2.81 ha of wetland.
- Based on the above, I, Antoinette Bootsma, am unable to confirm that the Principles for Aquatic Offsetting, Appendix 6 of the NPS-FM are met, and that a residual adverse effect may not result from this application.
- Furthermore, I, Antoinette Bootsma, am uncertain that bunds created to trap surface water on steep slopes will support new wetland habitat in the long-term, such as is required to ensure that proposed offset targets are met.
- Therefore, should the panel grant consent for this application, I, Antoinette Bootsma, recommend that monitoring for the establishment of the new proposed offset wetland be extended beyond the standard 5 year period which serves to confirm that vegetation has established. I suggest monitoring for 10 years to confirm that the bunds do not erode away on the steep slopes, giving sufficient time for amendments to the new wetland layout as required.

3.0 Documents Reviewed

- "*Volume 1: Milldale Evaluation & Overview Report*" prepared by Wood & Partners Ltd and Barker & Associates Ltd, dated 28 March, 2025
- "*Volume 2: Milldale Stages 10 – 13*" prepared by Wood & Partners Ltd and Barker & Associates Ltd, dated 28 March, 2025
- "*Volume 4: Milldale Wastewater Treatment Plant*" prepared by Wood & Partners Ltd and Barker & Associates Ltd, dated 28 March, 2025
- "*Volume 6: Milldale Stages 10 – 13, 4C and WWTP Proposed Conditions of Consent*" prepared by Wood & Partners Ltd and Barker & Associates Ltd, dated 28 March, 2025
- "*Appendix 2C: Ecology Report*" prepared by Viridis Limited, dated 26 February 2025
- "*Appendix 2E: Hydrology Report*" prepared by WWLA, dated 25 February 2025
- "*Appendix 2P: Offset Planting Plans*" prepared by Beca Limited, dated 26/02/2025
- "*Appendix 2V: Wetland Offsetting Memo*" prepared by WWLA, dated 25 February 2025
- "Appendix 2W: AUP(OP) Activities and Standards, prepared by Wood & Partners Ltd and Barker & Associates Ltd
- "Appendix 4E: Ecology Report" prepared by Viridis Limited, dated 26 February, 2025
- "Appendix 4Q: AUP(OP) Activities and Standards. Prepared by Wood & Partners Ltd and Barker & Associates Ltd

4.0 Additional Reasons for Consent Not included in AEE

- Consent as a Discretionary activity is required under rule E3.4.1(A33) for culverts or fords more than 30m in length when measured parallel to the direction of water flow. Specifically:
    - Permitted Activity Standard E3.6.1.14(1)(a) requires that the total length of any extended structure must not exceed 30m measured parallel to the direction of water flow. This includes the length of any existing structure and the proposed extension but excludes erosion or scour management works. In the case of 8 proposed culverts, the length of wing walls are calculated as being part of the erosion and scour protection and not part of the culvert structure, resulting in the 30m length being exceeded.
    - Permitted Activity Standard E3.6.1.14(1)(c) requires that a new structure must not be erected or placed in individual lengths of 30m or less where this would progressively encase or otherwise modify the bed of a river or stream. When applying this standard on a site basis, progressive encasement is relevant and must be considered in the assessment of stream extent and value.

5.0 Specialist Assessment

Terrestrial Ecology

I, Rue Stratham, consider that the applicant has, generally, identified the potential and actual adverse effects on fauna. They have not provided a management plan but have proposed a condition of consent. I requested additional information, by way of a more prescriptive management plan, but the applicant declined that request.

However the condition is not prescriptive and subjective. As such it is likely unenforceable. However, with appropriate conditions the effects on terrestrial ecological values should be managed effectively. I recommend amendments and additional conditions in Section 8.0 this memo.

Aquatic Ecology

Delineation and classification of aquatic habitats

I, Antoinette Bootsma, am in agreement with the classification and extent of streams presented in the application. I am further in agreement with the value assigned to streams on the site.

The Ecological Assessment prepared by Viridis noted a complex and modified landscape where specialist soil and hydrology investigations, as they related to potential wetland habitat, particularly seasonal, or ephemeral wetlands, were required to confirm if areas with marginal vegetation wetland indicators could be confirmed or excluded as natural inland wetlands.

WWLA provided a report with 149 samples of hydric soils and hydrology. However, as discussed with the applicant's team in meetings on the 27th and 6th of July, I consider that the following required further clarification before the wetland delineation could be accepted:

- The WWLA assessment did not correspond with the marginal wetland areas identified in the Viridis assessment. This means that only easily identifiable wetlands were captured but areas of potential ephemeral/seasonal wetland were omitted.
- The WWLA assessment could not be correlated with vegetation data and therefore, where marginal or uncertain soil or hydrology data was reported, this could not be interpreted against the MfE Wetland Delineation Protocols.
- Significant inconsistencies occur within the WWLA dataset, including:
- Munsell soil colours appeared to be inconsistently assigned,
- photos of soil profiles could not be verified against the Munsell soil chart since the chart was not shown in the photo,
- Soil colours and profile characteristics reported appeared to not follow the classification in the hydric soils guide as presented in Fraser *et al*, (2018)[1].

I agreed with the applicant's specialists in our meeting on the 6th of July, that the complexities of the site resulted in challenges to accurate wetland delineation and considered that, on balance of the data provided during lodgment and additional supporting data that was to be provided by the ecologist, that an overall positive effect could be achieved. However, no further information has been presented and I therefore must rely on the lodged documents for my assessment. I conclude that the lodged documents do not provide sufficient information from which to confirm that all potential wetlands, particularly seasonal or ephemeral wetlands have been identified. I consider that the assessment presents an underestimation of natural inland wetlands that will be reclaimed.

Loss of stream extent and value

Approximately 1134m of intermittent stream is proposed and approximately 1028.5m of intermittent stream is proposed to be reclaimed. To compensate for the loss of 402.3 m² of intermittent stream extent, a total of 1,384.1 m^2 of stream extent and 2.7 ha of wetland will be restored or enhanced, and five culverts will be daylighted While I defer to the groundwater and geomorphology specialists for their assessment of baseflow and risk of stream erosion, I agree that proposed measures will ensure that a positive outcome will be achieved.

Loss of wetland extent and value

While I agreed during the meeting on the 6th of July that the proposed new wetland creation appeared to provide sufficient excess area to account for inclusion of low-value marginal wetland areas, pending additional supporting wetland delineation data, no hydrological assessment was provided to support establishment of the new offset wetland. The WWLA Wetland Offset Memo presents the proposal to create 2.81 ha of wetland in a current terrestrial habitat across terrain which includes very steep slopes. While a site visit to an adjacent offset wetland indicates that the proposed creation of bunds trap water

1 Fraser S., Singleton P., Clarkson B. 1018. Hydric soils – field identification guide. Contract Report: LC3233. 1Manaaki Whenua – Landcare Research and Natural Knowledge Ltd.

in rain events, no information on the size of the catchment, or volume of runoff was provided to support the assessment that the reshaped landscape could support 2.81 ha of new wetland. There therefore remains significant uncertainty that the proposed offset will be able to be achieved.

6.0 Section 67 Information Gap

I have identified the following Section 67 information gaps:

Information gap	Nature of deficiency	Decision-making impact	Risk / uncertainty created
Consolidated wetland delineation data which includes vegetation, soils and hydrology as specified by the Ministry for the Environment's Wetland Delineation Protocols [2]	Significant inconsistencies in the hydric soils and hydrology assessment provided by WWLA, together with an absence of plant species information for sample plots where hydric soils and hydrology were assessed alone result in deficient wetland delineation data. Since the soil affinity for hydrology on this site is known to be complex, inconsistent and incomplete data leads to statements regarding permanent loss of wetland areas and proposed offsetting that are not supported by objective assessment in accordance with published requirements.	The absence of objective and rigorous wetland delineation data precludes my assessment against Appendix 6 of the NPS-FM – Principles for Aquatic Offsetting	**High** I am unable to assess whether permanent loss of natural wetland will be adequately offset in accordance with the NPS-FM.
Hydrology assessment (particularly the size of the catchment and water volume) demonstrating the	No hydrology assessment is provided to support the proposal that a new offset wetland will be able to be created to form a stable, permanent aquatic habitat.	The lack of assessment precludes my assessment against Appendix 6 of the NPS-FM – Principles for Aquatic Offsetting	High No supporting evidence is provided that the proposed offset of permanent

[2] Ministry for the Environment. 2022. Wetland delineation protocols. Wellington: Ministry for the Environment.

proposed offset wetland can be supported by sufficient water so that wetland habitat will form as proposed by the applicant			wetland loss will be able to be achieved

7.0 Recommendation

I, Rue Stratham, consider that the applicant has, generally, identified the potential and actual adverse effects on fauna. I further consider that, with a prescriptive and enforceable management plan, the effects on terrestrial ecological values should be managed effectively. I recommend additional and amended wording to Condition 41 below.

I, Antoinette Bootsma highlight two significant matters: which preclude my support for this application

- The wetland delineation is based on two disjunct sets of data that cannot be correlated and therefore does not follow the requirements for wetland delineations as specified in the MfE Wetland Delineation Protocols, and
- The assessment presenting the proposed offset of a new wetland to account for the permanent loss of wetlands resulting from this application, does not provide supporting hydrological data from which to confirm that a new wetland will be able to be achieved in perpetuity as required in Principle 6 of Appendix 6 of the NPS-FM.

In light of the above, I, Antoinette Bootsma, am unable to confirm that the application is aligned with Appendix 6 of the NPS-FM where it relates to permanent loss of wetland extent and that the effects management hierarchy is not adhered to, a requirement of NES-F rule 45C(6)(c).

8.0 Proposed Conditions

I, Rue Stratham recommend the following amendments and additional conditions to the Stages 10-13 Land Use Conditions of Consent LUC 201 conditions below.

General Condition		Commentary
41	~~*Fauna Management Plan*~~ ~~Prior to the commencement of vegetation removal, an Indigenous Fauna Management Plan (FMP) must be submitted to the Council. The purpose of the FMP is to inform management options relating to birds, lizards and bats, during the development of the site. The FMP must be prepared by a suitably qualified and experienced Ecologist and include the following details:~~ ~~(a) Bird Management;~~	It is important that the condition must be prescriptive, subjective and enforceable in order for effects on terrestrial ecological values should be managed effectively.

	~~(b) Lizard Management; and~~ ~~(c) Bat Management.~~ *Bats* Long-tailed bat management must include the following: a. The identification of any tree(s) greater than or equal to 15 cm DBH to be removed, or to be pruned (removal of woody limbs with maximum diameter >30cm, or removal of >10% of the canopy cover) visually assessed for potential roost features by an approved person accredited with NZ Bat Recovery Group Competency 3.3. Should tree climbing be required, the tree climber must inspect all potential roost features using approved methods (endoscope, photography etc.) for evidence of bats (staining, cavities, guano), under the direct supervision of an approved person accredited with Competency 3.3. All footage must be reviewed by the approved person accredited with Competency 3.3 prior to felling and/or pruning. b. Any potential roost features (PRF's) present in a tree or group of high-risk trees, as identified in Condition 2, a Specialist Bat Ecologist with the level 3 competencies of the NZ Bat Recovery Group which are required for the task being undertaken must conduct surveys, in accordance with Table 1, immediately prior to felling and/or pruning using one or more of the following methods: • visual inspection of PRFs (Competency 3.3 required); • ABM deployment for at least two consecutive valid nights (Competency 3.1 required); • roost watches for at least two consecutive valid nights (Competency 3.2 required). Monitoring must be undertaken overnight (from one hour before dusk until dawn), for a	

minimum of two fine nights using an Automatic Bat Monitor (ABM; or multiple ABMs as required). A fine night is when the temperature is above 8° with no, to very little precipitation during the first four hours after sunset. Surveys must not commence if the dusk temperature is below8°

Table 1 Summary of timing restriction for bat monitoring and tree felling

Activity	Season when it can be undertaken
Roost Tree Assessment	All Year
Acoustic monitoring	1 October – 30 April, inclusive
Pre-felling inspections and felling of roost trees	1 October – 30 April, inclusive

Avifauna (Birds)

Avifauna management must include the following:

(a) Timing of any construction works must not have adverse effects on avifauna, including Threatened or At-Risk birds.

(b) Those construction works must be undertaken outside of the bird breeding season (September to February); and

(c) Adequate buffers of no less than 20m must be provided where nesting birds have been identified by a suitable qualified ecologist, no less than 5 working days prior to works commencing.

Native Lizards

Prior to the commencement of any vegetation removal works the consent holder must submit and have certified by Council, a Lizard Management Plan (LMP) prepared by a suitably qualified and experienced ecologist/herpetologist. The LMP Plan must be designed so as to achieve the following two objectives:

	i. The population of each species of native lizard present on the site at which vegetation clearance is to occur must be maintained or enhanced, either on the same site or at an appropriate alternative site; and ii. The habitat(s) that lizards are transferred to (either on site or at an alternative site, as the case may be) will support viable native lizard populations for all species present pre-development. The LMP must address the following (as appropriate): • Credentials and contact details of the ecologist/herpetologist who will implement the plan. • Timing of the implementation of the LMP. • A description of methodology for survey, trapping and relocation of lizards rescued including but not limited to: salvage protocols, relocation protocols (including method used to identify suitable relocation site(s)), nocturnal and diurnal capture protocols, supervised habitat clearance/transfer protocols, artificial cover object protocols, and opportunistic relocation protocols. • A description and map of the relocation site; including discussion of: • provision for additional refugia, if required e.g. depositing salvaged logs, wood or debris for newly released skinks that have been rescued; • any protection mechanisms (if required) to ensure the relocation site is maintained (e.g. covenants, consent notices etc); • any weed and pest animal management to ensure the relocation site is maintained as appropriate habitat.	

	• Monitoring methods, including but not limited to: baseline surveying within the site, baseline surveys outside the site to identify potential release sites for salvaged lizard populations and lizard monitoring sites, ongoing annual surveys to evaluate translocation success, pre and post – translocation surveys, and monitoring of effectiveness of pest control and/or any potential adverse effects on lizards associated with pest control. • A post-vegetation clearance search for remaining lizards. *Advice Note:* *Please note that it is recommended that the lizard rescue plan is undertaken in conjunction with the vegetation clearance operations (and contractor) for an integrated approach (on the same day), to enable the physical search for gecko's following felling of trees and shrubs, and to rescue any skinks from ground cover vegetation and terrestrial retreats.* **B.** A suitably qualified and experienced ecologist/herpetologist approved to oversee the implementation of the Lizard Management Plan (LMP) must certify that the lizard related works have been carried out according to the certified LMP within two weeks of completion of the vegetation clearance works. **C**. All works on site must comply with the certified Lizard Management Plan Within five days of completion of vegetation clearance, all findings resulting from the search and rescue during vegetation removal must be recorded by the supervising ecologist on an Amphibian/Reptile Distribution Scheme (ARDS) Card (or similar form that provides the same information) and sent to Council.	

I, Antoinette Bootsma, am in general agreement with the draft proposed conditions 59, 60, 61 and 63. I suggest the following amendments be considered to the Stages 10-13 Streamworks and Wetlands Conditions of Consent LUS 201, WAT 201 & WAT 2023 conditions below.

General Condition		Commentary
58	*Native Fish Capture and Relocation Plan*	It is important that management final plans must be submitted to Council for certification.

	Prior to the commencement of any works relating to stream reclamation, stream diversion, culvert removal, or construction of culverts, a Native Fish Capture and Relocation Plan must be submitted to the Council for certification. The purpose of the Native Fish Capture and Relocation Plan is to ensure fish will be appropriately removed prior to commencement of works from an area subject to the streamworks, to avoid fish mortality. The Native Fish Capture and Relocation Plan must be prepared by a suitably qualified and experienced Freshwater Ecologist and include the following details: a. Methodologies to capture fish within the impact *stream and/or wetland* habitat, or justification there is no habitat for native fish present at the time of construction; b. Fishing effort; c. Details of the relocation site; d. Storage and transport measures including prevention of predation and death during capture; e. Euthanasia methods for diseased or pest species; and f. Confirmation on the habitat availability of the relocation site to support fish at the time of streamworks. g. An accidental discovery protocol for aquatic fauna (including endangered species) which require specialised handling and relocation effort that is not otherwise covered in the standard methodologies (i.e. mudfish). This includes a protocol to implement the following actions: i. Immediately cease *streamworks* (including dewatering) upon accidental discovery of any unexpected aquatic fauna and notify the Council. ii. Ensure aquatic fauna are left in a suitable environment where	

	they will be unharmed while the NFCRP is updated. iii. Update the NFCRP to address handling and relocation of the unexpected aquatic fauna to be submitted to Council for re-certification. iv. Only re-commence the capture and relocation upon re-certification of the NFCRP.	
Wetland and Streams Conditions		Commentary
62	*Stream and Wetland Management Plan - Milldale North Offset and Compensation Site* Prior to the stream enhancement and riparian planting works, along with the creation of the new wetland and associated enhancement planting, a Stream and Wetland Management Plan (SWMP) must be submitted to Council for certification. The SWMP shall be prepared in consultation with Ngāti Manuhiri and Te Kawerau ā Maki. The SWMP must be prepared by a suitably qualified and experienced ecologist and give effect to the enhancement planting and wetland creation (totalling 2.81ha), culvert removals, and stream riparian planting detailed in the "Ecological Impact Assessment Milldale – Stages 10-13, Rev Final 1, prepared by Virdis Environmental Consultants, dated 26 February 2025" and "Milldale Wetland Offset Planting Plans, prepared by Beca, dated 26.02.25", both referenced in Condition 1. The SWMP must include, but not be limited to: a. How the implementation of stream and wetland enhancement works at the Offset Site will be staged proportional with the extent of wetland and stream reclamation at each stage of earthworks within Milldale Stages 10-13 [noting that the phases of compensation works will be completed within 24 months of reclamation]; b. Extent of compensation required at the Milldale Stages 10-13 site, and timing of	Given that no assessment of wetland hydrology has been provided to support the proposal for creation of 2.81 ha wetland on steep slopes where no wetland habitat currently exists, I consider that more stringent monitoring should be imposed on the new wetland to confirm that a sustainable, permanent wetland is in fact achievable. While I acknowledge that plants are indicators of wetland hydrology and within 5 years it should be evident that wetland plants persist or fail (and therefore wetland hydrology has established, or failed), I am concerned that the creation of berms to trap runoff to artificially create a new wetland may erode away over the long-term and consequently, wetland habitat may not persist along steep sections of the proposed new wetland area. I consider that, since this area is proposed to achieve an offset target, sufficient monitoring to confirm this outcome to be important.

	stream enhancement works and riparian planting in relation to subdivision stages [noting that a portion of the compensation works required for stream and wetland reclamation will be undertaken within proposed local purpose (drainage) reserves that will be vested with Council as the subdivision stages progress]; c. "Planting plan of stream and wetland and buffer planting detailing species diversity outcomes relative to historic site conditions, expected wetland ecosystem, and regional biodiversity targets. Planting plans shall be in general accordance with the Milldale Wetland Offset Planting Plans, drawing no. 4672100-AL-1000 and drawing no. 4672100-AL-1001 prepared by Beca, dated 26.02.25" referenced in Condition 1; d. Site preparation details and approaches to weed suppression; e. Implementation of planting, weed control and pest control; and f. Detailed monitoring timeframes and outcomes spanning planting and vegetation establishment, and to ensure the new ~~wetland's~~ streams' predicted ecological values are achieved or maintained, with specific 2-year and 5-year outcomes. g. Detailed monitoring timeframes and outcomes spanning planting, new hydrology creation and vegetation establishment, and to ensure that the new wetland is a stable, permanent aquatic habitat, with specific 2-year, 5-year and 10-year outcomes. h. Protocols for corrective action should monitoring indicate that wetland establishment is not achieved,	
63	*Implementation of the SWMP* The Consent Holder must complete the stream and wetland enhancement works (involving any disturbance, deposition, and / or associated diversion of water under this consent) in general accordance with the certified SWMP, to the stage of finalised re-	It is important that management final plans must be submitted to Council for certification.

	vegetation / and or stabilisation of the new wetlands within 24 months of the wetland reclamation being completed [noting that staging of stream and wetland reclamation may occur as the earthworks/subdivision progresses as detailed in the SWMP referred to above].	
64	*Wetland Monitoring* The Consent Holder must monitor the new wetland in general accordance with the Wetland Monitoring methodology detailed in the certified SWMP, and the monitoring results must be made available within five (5) working days following written request from the Council.	It is important that management final plans must be submitted to Council for certification
65	In general accordance with the implementation staging detailed in the certified SWMP, written confirmation must be provided to the Council, within 30 days of the stream and wetland enhancement works being completed, confirming that all compensation works have been completed in general accordance with the SWMP at the Milldale North wetland offset site.	
66	The areas of stream and wetland enhancement works (including planning, buffers and fencing) illustrated within "Milldale Wetland Offset Planting Plans, drawing no. 4672100-AL-1000 prepared by Beca, dated 26.02.25" referenced in Condition 1, or an amended area resulting from corrective action taken in response to monitoring in accordance with the certified SWMP, must be protected and maintained in perpetuity by way of a land covenant prepared under section 108(2)(d) of the RMA on the Record of Title of Part Allot 74 Parish of Waiwera and Pt Allot 74 Psh of Waiwera SO 1693B, Pt Allot 182 Psh of Waiwera SO 836 to the satisfaction of Council. The land covenant shall be registered within 6 months of the completion of the final extent of stream and wetland enhancement works at the Offset Site.	Since there is a substantial risk that the wetland offset may not be successful in the long-term, a mechanism must exist to ensure that an amended wetland area, as identified through a rigorous monitoring protocol, is protected in perpetuity in order to achieve offset for the permanent loss of wetlands resulting from this application