Specialist Response Fast-track Approvals Act 2024

1. Application Summary

Project Name	Mahinerangi Wind Farm
Applicant	Mercury Energy / Tararua Wind Power Limited
Site Address	Near Eldorado Track (connecting to Mahinerangi Road), 50 kilometers west of Dunedin and 5 kilometers north of Lake Mahinerangi.
Fast-track	https://www.fasttrack.govt.nz/projects/mahinerangi-wind-farm/substantive-application FTA 120
Council reference number	RM25.091 - Mercury Energy Limited
Description of Proposal	• The installation of up to 44 turbines • The construction of an electricity substation/switchyard compound and permanent operations/maintenance facility within the project site (including battery storage system) • The installation of new underground 33kV electrical and fiber optic cable network between the turbines • The establishment of an internal access road network and earthworks, including the widening of existing local roads approaching the site from the State Highway • The construction of an 8km 110kV transmission line from the wind farm site to Transpower's Halfway Bush-Roxburgh 110kV line, including connection infrastructure.

2. Specialist Response Details

Author: Andrew Rossaak

Specialist Area: Ecology

Qualifications and relevant experience: I hold the qualification of: Masters of Science in Ecology and have 29 years of experience in preparing and reviewing environmental and ecological assessments. I have prepared expert evidence and technical assessments for resource consent applications, plan changes, notices of requirements, and have appeared as an expert witness before consent authorities on multiple occasions.

Date: 20 January 2026

Documents reviewed:

1. B.06 - SLR (2025) - Vegetation, Wetland and Terrestrial Invertebrate Assessment
2. B.07 - SLR Aquatic (2025) - Ecological Assessment - Aquatic Ecology

3. C.01 - Riley (2025) - Environmental Construction Management Plan (ECMP)
4. C.02 - Riley (2025) - Earthworks Management Plan
5. C.08 - SLR & Boffa Miskell (2025) - Ecological Monitoring and Management Plan
6. C.09 - SLR (2025) - Water Quality Monitoring Plan
7. C.10 - SLR (2025) - Rehabilitation Management Plan
8. C.11 - SLR (2025) - Wetland Monitoring and Management Plan
9. C.12 - SLR (2025) - Wetland and Aquatic Compensation Plan
10. C.13 - SLR (2025) - Native Fish Recovery Plan
11. E.03 Otago Regional Consent Conditions Final

Scope: Ecology

Overview.

The application for additional wind turbines is being made through the Fast Track Approvals Act (2024) process. I have previously been requested to review drafts of most of the above listed plans and reports from an ecological perspective for ORC in relation to this application prior to lodgment. I provided responses on where the plans were considered to require updating or additional information was required to allow an informed assessment. I note that in a review of the lodged plans and assessments, as well as, in a response tracking table provided that few amendments have been made/addressed. Therefore, some of the below comments repeat of those previously provided. I note that others (eg. DOC) have provided similar concerns and responses.

I attended a site visit on 15th January 2026, and additional comments are provided following this site visit.

3. Specialist Assessment

Vegetation, Wetland and Terrestrial Invertebrate Assessment

- The Vegetation, Wetland, and Terrestrial Invertebrate Assessment describes wetlands that have been avoided, those that have been affected, or are potentially affected. Two wetlands are further described that will have portions reclaimed for roading access.
- A total of 9 wetlands are assessed to be within 10m of proposed works for platforms, towers or roading
- The adverse effects of the loss of, non-wetland, native vegetation is not sufficiently detailed, and no effects management is provided to address the overall effects.
- The report states that natural wetland delineations were undertaken following the methods outlined in the Wetland Delineation Protocols (WDP; Ministry for the Environment. 2022. Wetland delineation protocols. Wellington: Ministry for the Environment). The wetlands do not, however, appear to be delineated using this methodology. Rather the WDP have been used, often with a single point, to determine the presence of a wetland. To delineate a wetland, a series assessments points, along transects, is required to indicate where the wetland edge is.

- The wetland assessment points should be shown on the detailed map view of the two wetlands due to be lost.
- Following my site visit, I suggest that wetland 43 may extend further south than depicted.
- The engineering report states that the realigned track will have no effect on wetland hydrology, however, based on my site observations and the extent of the peat wetland, that claim is not supported. Improved hydrological understanding is required and it is considered likely that any track across the wetland will be required to provide hydraulic connectivity.
- The loss of wetland *extent* has not been considered. Nor is it demonstrated how/if the loss of wetland extent is addressed through compensation. The National Policy Statement for Freshwater Management 2020 (amended October 24) (NPS:F) directs that both extent and value are considered in the effects management hierarchy and also under Policy 6 as well as cumulative effects.
- The potential values of impacted wetlands are not considered (as required under the NPS:F) in the effects management. This is for both the compensation sites as well as the impact sites.
- Wetlands have been deemed to be pasture wetlands (ie not *natural inland wetlands* under the NES:F definition); however, there is no evidence to support this classification, nor have they been assessed as wetlands under the RMA definition of a wetland. It is unclear if any of these wetlands will be reclaimed by the proposed windfarm development.

See further comments below in the wetland and aquatic compensation plan

Ecological Assessment - Aquatic Ecology

- Watercourses are described and mapped. The descriptions, mapping detail and assessments of the watercourses using the Rapid Habitat Assessment (RHA) are considered acceptable.
- Effects on watercourses are reported to be largely avoided in the proposed development. There is, however, mention of 96 culverts required with sizes of 300 mm and above, with lengths from 6 m to 43 m. There is little information on these 96 culverts, where they are to be located, the areas they drain or evidence the flows are ephemeral rather than intermittent. Some are reported to be required to maintain wetland hydrology (Civil Engineering Assessment, Part 1, page 17 & 21). Additional information is required to support them being classified as ephemeral streams.
- Potential adverse effects of the culverts relate mainly to sediment generation.
- The replacement of a culvert, which is described as unavoidable, with a 34 m of 2.5 m X 2.5m box culvert and associated inlet and outlet structures (replacing a smaller 600 mm diameter farm culvert).

- The culvert drawings and reporting is that the culvert will be installed in line with fish passage best principles, adopted from the New Zealand Fish Passage Guidelines Version 2.0 (Fish Passage Guidelines). The application lacks clarity on the achievement of the NES:F permitted activity conditions (70(2)) for how this will be achieved.
- There remains concern regarding the practicality of the proposed meanders within the box culvert and the ability to meet fish passage requirements (velocity and length). This concern explored further by others (Paul Morgan).
- Effects on native fish (Eldon's galaxias, which is classified as 'Threatened – Nationally Endangered') is proposed to be managed through the draft Fish Recovery Plan.
- The presence of Eldon's galaxids means the stream is considered significant under the Otago Regional Policy Statement 2021.
- A single eDNA sample is mentioned as being taken to assist in determining fish passage requirements. The eDNA result is, however, are not presented or how it has been used in the fish passage requirement determination.
- The Aquatic Ecology Report does not consider the effects management hierarchy in a systematic manner. Whilst avoidance is discussed, there is no mention of mitigation, restoration or minimisation and residual adverse effects have not been identified, quantified or assessed. Residual adverse effects are proposed to be addressed through offset/compensation, however these need to be addressed sequentially.
- The Aquatic Ecology Report provides a effects assessment and management is provided (page 52) and it is stated that "*Any reduction in habitat for fish in the stream, given the length of the new culvert compared to the shorter existing culvert, will be offset/compensated for by the proposed fencing and planting of a gully site and associated waterway in the catchment upstream of the culvert*." There appears to be an impression that offset is the same as compensation, which is not the case. Aquatic compensation means a conservation outcome resulting from actions that are intended to compensate for any more than minor residual adverse effects on a wetland or river after all appropriate avoidance, minimisation, remediation, and aquatic offset measures have been sequentially applied. There is no ecological accounting or assessment to indicate why offset has been offered, where no net loss, and preferably a net gain, in the extent and values of the wetland or river are demonstrated. In order to implement compensation, steps to avoid, minimise, remedy, and offset adverse effects are demonstrated to have been sequentially exhausted (NPS compensation Principle 1).
- Compensation is required to demonstrate that positive effects outweigh the adverse effects and that gains in extent or values above and beyond gains that would have occurred in the absence of the compensation.

Ecological Monitoring and Management Plan

- The Ecological Monitoring and Management Plan provides a framework for the individual management plans.

- Aspects of the different plans as they relate to regional consents, are discussed separately below.

Water Quality Monitoring Plan

- The Water Quality Plan proposed is for the monitoring of water quality at the culvert installation site on Lee stream and ensure the erosion and sediment management measures are effective.
- Monitoring is proposed to be undertaken in the stream, upstream and downstream of the culvert immediately prior to instream works as well as during and post works. The monitoring at two sites will allow the isolation of the effect of the works from baseline environmental conditions.
- Monitoring is proposed to be visual clarity (black disk) and turbidity (using a field meter) and suspended solids (lab analysis). A single pre works monitoring event is proposed, with an additional monitoring in the event there is a rainfall of more than 10 mm to 15 mm in 24 hrs. A single monitoring event is proposed during works and a single post works monitoring event.
- It is considered that for a 7 day works period that a single monitoring event may not provide a reasonable resolution as sediment discharges are usually pulsed events. Further, if the single monitoring event did identify a sediment discharge, any lab results are likely to be too long after the event to provide any corrective mechanism. I consider the installation of automated sampling from static turbidity meters (one upstream and one downstream of the works) with a reading at least every 15 minutes would be more appropriate. These meters should be connected to provide a real time reading of water quality.
- The proposed action should there be a non-compliance (a 30% change in visual clarity and/or turbidity) is a discussion with staff and management.
- The monitoring proposed and actions in the event of a non-compliance are not supported.
- The water quality management plan must be updated to provide practical measures to be implemented should water quality thresholds be met. These should include additional preventative measures and also effects management.
- There is no reason provided for the 30% difference between upstream and downstream as being the threshold. It is considered that a smaller difference would be more appropriate and this can be verified in initial baseline monitoring.
- Water quality monitoring should continue throughout the construction in the vicinity and catchment of Lee stream.

Rehabilitation Management Plan

This plan summarizes the various other restoration plans. Where these apply to regional consents, they are discussed separately below.

Wetland Monitoring and Management Plan

- The Wetland Monitoring and Management Plan describes the process and locations of fixed-point photographs of wetlands, timing of the photographs and the associated photo metadata (date, site, co-ordinates, camera type, bearing) for monitoring purposes.
- In addition to the standard metadata, the management plan provided requires notes on any changes to bed profile and hydrological regime, and any adverse effects on wetlands and whether these effects may be attributable to the construction works. Further, the plan proposes that the extent and magnitude of any changes are also noted
- The methods proposed for monitoring are subjective and limited to photographs and notes. There is no requirement proposed for any objective monitoring (such as the *WETMAK: A wetland monitoring and assessment kit* (2014) from *NZ Landcare Trust*, or from more detailed tools provided by *Manaaki Whenua – Landcare Research* such as the *Handbook for Monitoring Wetland Condition*.
- The plan is titled *a Monitoring and Management Plan*, however, there are no management actions or details provided in the plan for management of the wetlands on site and responses should monitoring indicate any decline in wetland condition or departure from baseline or controls.
- The: *Vegetation, Wetland, and Terrestrial Invertebrate Assessment. Mahinerangi Wind Farm Stage 2* included a statement that:
  "For the limited instances where avoidance of a wetland has not been practicable, compensation by way of wetland enhancement is proposed and management of wetlands (including those other wetlands within 100 m of works) will be addressed by the Wetland Monitoring and Management Plan" [my emphasis].

  The plan provided does not provide this. In particular, there are instances where works will occur close to wetlands (less than 10 m) and it is proposed in the assessment report that these will be managed under the Wetland Monitoring and Management Plan. This is not set out in the plan and it is considered unlikely that these wetlands will be monitored as part of this plan.
- It is recommended that wetland management actions are included in the plan. These should be linked to objective thresholds.

Wetland and Aquatic Compensation Plan

- Two sites were identified where physical disturbance of the natural wetlands cannot be practicably avoided: Wetland 43 south of turbine 20 and Wetland 20 south of turbine 9.
- It is noted that the areas of wetland proposed to be reclaimed are those directly within the footprint of the road crossing. The assessment of impact does not consider the alteration of the hydrology and potential adverse effect on additional wetland extent.
- The Wetland Compensation Plan has no detail on the approach to offsetting (or why offsetting cannot be achieved), which comes before compensation in the effects management hierarchy of the NPS:IB and NPS:FM. The only comment on offsetting is that [biodiversity offsetting] is *not proposed for wetlands, as it is not practicable to create like-for like wetlands to replace those lost due to the difficulty in creating peat bogs and a lack of available gully sites within the Wind Farm Site.* Whilst I acknowledge that achieving no net loss of extent may be difficult (but not impossible) to address, values could be addressed through offsetting actions.
- In this compensation plan, there is no modelling (or ecological accounting) to demonstrate that the compensation provided *has positive effects that outweigh the adverse effects; that gains in extent or values above and beyond gains that would have occurred in the absence of the compensation; will result in the best ecological outcome; as outlined in Appendix 7 of the NPS:FM* . This is compounded in that the impacts and compensation must be considered in terms of the potential of the wetlands (NPS-FM – clause 3.22 (3) (a) (i)), not the current state. It is therefore not clear as to what the proposed compensation achieves in terms of ecological value or the potential of the wetland.
- The compensation actions proposed are fencing, weed management and translocation of an unknown number of snow tussock plants from areas impacted by the proposed wind turbines. There remains a lack of clarity how much of this is additional to what may otherwise occur for the wetland to reach its potential.
- This uncertainty is compounded as no reason is given to why the compensation actions are focused on this wetland, when for example, other wetlands on the site are not being fenced for stock exclusion.
- Stream compensation is proposed to be a *minimum of 50 m of stream length at the downstream end of the tributary is required to be fenced as compensation for adverse effects on aquatic values.*
- As discussed above, there is a lack of detail and there is no ecological modelling or assessment to demonstrate to what extent the proposed compensation (or offset) will address the impact. This compensation plan does not carry any additional information to the assessment report as to how the compensation has been assessed. Further, the compensation is limited to fencing located 2 m from the stream, which would limit any riparian restoration ecological benefits and create high edge effects locking in the need for regular maintenance for the future.
- The limited fencing and restoration riparian strip of 2 m wide is not discussed in the plan. The narrow width provides high edge effects, resulting in a high maintenance cost. The narrow strip is considered to provide limited benefit.

- The wetland compensation areas is to be covenanted, however, the stream is not specifically mentioned (but could be included in Appendix B, #6).
- In summary, the compensation plan does not:
    - Provide any ecological modelling for the benefit from the proposed enhancement actions can be determined.
    - Assess wetland or stream potential values.
    - Address the previously noted review issues with the assessments of wetland or stream loss
- It is recommended that best practice and industry standard methods are used to assess the values and potential values of streams and wetlands. Any offset or compensation (being differentiated from each other in the effects management hierarchy) is addressed through robust ecological modelling such that both loss of value and extent are demonstrated to be accounted for.
- Based on the level of information in terms of effects assessment and implementation of the effects management hierarchy for wetland and stream impacts, there remains uncertainty that no net loss is achieved and as currently set out, I do not support the offset or compensation proposed.

Native Fish Recovery Plan

- The fish recovery plan details methods to ensure that no Eldon's galaxids are harmed during the installation of a culvert.
- The actual plan for fish recovery (section 4.2) is not specific on methods (i.e level of effort, net types, baiting, duration etc). As the site is known and has a designed culvert and draft construction plan, it is considered that the fish recovery plan will be able to be specific for this location and provide specifics on methods and levels of success.
- It is therefore recommended that an updated fish management plan is provided to ORC for certification prior to streamworks.

Earthworks Management Plan, CMP and Chemical treatment

The following documents have not previously been reviewed by myself and are assessed:

- *Civil Engineering Assessment Puke Kapo Hau Mahinerangi Wind Farm Stage 2 Otago,* report prepared by Riley, dated 15 October 2025.

- *Draft Environmental Construction Management Plan Puke Kapo Hau Mahinerangi Wind Farm Stage 2 Otago,* report prepared by Riley, dated 15 October 2026. [presumably 2025] – marked 'draft'

- *Draft Earthworks Management Plan (EMP) Puke Kapo Hau Mahinerangi Wind Farm Stage 2 Otago,* report prepared by Riley, dated 17 October 2025.

- *Draft Chemical Treatment Management Plan Mahinerangi Wind Farm Stage 2,* report prepared by EnviroCo, dated 12th June 2025

- *Puke Kapo Hau - Mahinerangi Wind Farm Stage 2 Proposed Conditions of Consents*

On balance, the aforementioned application material does demonstrate that the earthworks could be managed to address the sediment-discharges to an acceptable level. However, as currently written, the application material does not achieve this outcome. Matters of detail would need to be provided via management plans that are updated to reflect the technical points noted below. An amendment to the proposed condition that requires a finalised ESCP, prepared in accordance with GD05, and certified by Council prior to the commencement of works for each stage is required. The applicant provides for this in section 4.11, point B of the EMP:

Such planning is to be carried out for each stage/area of earthworks. Detailed Erosion and Sediment Control Plans shall be prepared and form part of the final EMP – to be approved by Council.

However, this is not adequately captured in the proposed conditions of consent.

Review comments – Civil Engineering Assessment:

- Section 8.5: The stream diversion methodology is light on detail. The diversion channel would need to be constructed and stabilised in advance of flows to the existing channel being blocked. Any pump used should; have a 3 mm fish exclusion screen attached.

- Section 8.6: mention of the term *where practicable* without defining. At no time should sediment-laden water be discharged offsite without treatment through a certified, GD05 compliant sediment control.

- Section 8.6.2 Earthworks proposed to be undertaken in a staged manner – but no area detail is provided on the stages. There isn't a need to specify a limit but rather to ensure stage is appropriately sized for management measures and there should be stage-by-stage ESCPs, certified by Council to confirm they are appropriate.

- Section 8.6.2 l) c), infers that silt fences would not be required on slopes less than 18 degrees – which is inappropriate and inconsistent with GD05.

- 8.6.31, surfaces covered by hydroseed will not be considered stabilised until the grass strike achieves 80% of a pastoral swad. V-drains, should have flat bottom to avoid flows concentrating and eroding at the nape of the 'V' – see Figure 19 of GD05 for a reference. This applies even where rock-lined as flows can seep below the rock.

- 8.6.3.10 statement regarding the dead/live storage is incorrect. Dead storage should comprise 30% (and no more or less) of the main pond storage volume.

- 8.6.3.12 Chemical treatment, via a rainfall activated system should be applied to all SRPs and DEBS – see further comments below on the ChTMP.
- Plan 240034-292. Not all flows are directed to the SRP and a small area would pond in the south-western corner.

EMP.

- Section 4.11, point B: *Such planning is to be carried out for each stage/area of earthworks. Detailed Erosion and Sediment Control Plans shall be prepared and form part of the final EMP – to be approved by Council.*

This is supported, but not adequately captured in the proposed conditions.

- Section 6.3: does not state what is to be monitored (TSS, pH), where (main pond, outlet, downstream)or by who; or when.

Review comments – ChTMP

- Section 4.1: design criteria for a 4-hour residency time. I have never seen this before and would like to know how that could be established and monitored and ensured.
- Section 4.2. Minimum DEB sizing should be 2% of the contributing catchment (as per GD05 and Civil Engineering Assessment).
- Section 7 – should add visual clarity limit of 100 mm; TSS cannot be measured in the field (rather it can only be inferred from clarity measures once a correlation has been established).

Chemical treatment, via a rainfall activated system should be applied to all SRPs and DEBs.

The comment about sediment settling out, within 24 hours in laboratory conditions is a nonsense and should be removed. This does not apply to SRPs and DEBS when in use (when activated there will be water movement in the pond).

Rain activated systems should be mandate over batch dosing(which requires someone to be physical present, to continually revising the dosing rate/volume during any storm event). Passive flow-based dosing (Floc socks/logs) should be avoided as it cannot be determined when they have runout of treatment chemical (the chemical can be displaced by sediment), the first sock in a train receives most of the sediment and so runs out of chemical faster than the rest.

Bench testing will be needed for each catchment. The methodology does not appear to align with best practice given the lack of detail provided.

Overall key points:

1. Offset and compensation has been grouped and offset needs to be implemented prior to compensation.
2. The determination of offset needs to be undertaken in a transparent manner and consider potential of impact and offset sites.
3. Impacts need to consider loss of extent (as well as values).
4. The offset offered needs to be able to demonstrate no net loss and net gain.
5. Wetland extent and ephemeral streams need to be verified.
6. Water quality monitoring lacks the resolution required and actions for threshold breach.
7. Wetland monitoring requires objective monitoring indices as well as actions and thresholds of change.
8. Construction management plan and earthworks plans need to be updated to include GD05 best practice standards.

4. Comment on Proposed Conditions

Specific comments on the ecology plans have been provided separately, however, the following general comments are made:

- Conditions are overly reliant of management plans, some of which lack the required detail. As a minimum it is proposed that the outcomes in terms of objective measures are contained within the consent conditions.
- Being accountable to a plan that is vague on methods or outcomes (eg. Water quality, Native Fish Recovery and others) is difficult to assess and provides room for mis interpretation by consent monitoring officers and implementation contractors.

For the earthworks and engineering, the following recommendations are made:

Conditions

Condition No.	**Comments**
General	
G12	Needs to be updated to refer to each stage and the technical points noted in this assessment.
G15	For certification
G16/G18	Should update performance metrics to reflect GD05 standards

Condition No.	Comments
General	
G19	Needs to be updated to refer to each stage, and to provide staging details.
G35	Remove ‘to the extent practicable’
G37	100 mm clarity should be achieved *prior to* discharge under GD05 standards (not in the receiving environment, and not after an undefined extent/period of reasonable mixing).
Landuse	
3	Remove ‘as far as practicable’, ‘where practicable’