

My name is Kieran Miller.

I'm a freshwater ecologist with Boffa Miskell Ltd and have undertaken the freshwater ecology assessment over the proposed Notice of Requirement designation on behalf of the applicant, New Zealand Transport Agency.

The Freshwater Ecology assessment (and associated report) was conducted to provide an indication on the condition and values of the habitats present and the potential habitat loss / modification associated with the proposed designation alignment (as well as to assist in the natural character assessment).

My report highlighted the general aquatic values present in the proposed NOR space, if there were any "show stoppers" (which there are not), and the kinds of effects related to linear roading projects which detailed design must be cognisant of.

There are eight catchments across the designation corridor (excluding Manawatū River) that were assessed and documented in the report. Each of the watercourses varies in morphology, riparian cover, function, macroinvertebrate assemblage and fish diversity and in ecology value (from negligible to high).

The Manawatū River, specifically the Gorge area where the designation corridor crosses over, is considered to have very high ecological value. This is due to the optimal instream habitat and hydrologic conditions, sinuous flow path, general high macroinvertebrate indices and high diversity of native fish species.

There are two catchments within the current NOR corridor (it changed through my assessment) which have not been assessed with waterways that may or may not be affected by the Project. The catchments include a sub-catchment within pastoral land near the proposed eastern rise which flows into watercourse 2 (which I did assess) and a catchment towards the north of the corridor where a stream crossing will likely be required as part of construction access. These catchments were not initially part of the NOR corridor at the time of my site investigations. Watercourses within these sub-catchments will need to be assessed as part of the regional consent application phase, however I consider it very unlikely that these catchments are substantively different in values to those I have assessed and their inclusion does not affect the conclusions of my freshwater ecology report.

The Project will involve the construction and operation of a road and associated infrastructure. Activities and effects associated with the construction and operation of the alignment are likely to include watercourse modification/diversion and potentially culverting, instream works within Manawatū River and stormwater and sediment related discharges to water. The type and magnitude of these effects (and level of ecological effects) are subject to change, depending on the final design of the Project and proposed construction methods.

Stream replacement and enhancement will likely be required as part of the Project to mitigate for the loss/modification of habitat. Regional resource consents will be required at a later date, and it is during this process that detailed values and adverse effects on those values and associated mitigation will be addressed.

The detailed design phase will almost certainly alter how much waterway length will be affected, where, and in what way and subsequently the extent of measures necessary to address those effects.

In determining the NOR and a designation within which to place the road, the values and potential effects I have provided are sufficient to establish if a road could be placed within that designation, where the aquatic ecological challenges will be and what the likely challenges in terms of potential adverse effects (at least their magnitude) are that must be considered by the detailed design.

A comprehensive freshwater ecological impact assessment, including how adverse effects from the project will be addressed, will need to be prepared for the application for regional consents.