

DATE: 3 June 2026

TO: Sara Westcott | Team Leader Consents

FROM: Laura Hickey | Freshwater Scientist

SUBJECT: FOXTON SOLAR FARM FRESHWATER ASSESSMENT

Hi Sara,

A fast-track resource consent application has been made by Genesis Energy to construct a solar farm near Foxton (APP-2025205573.00). There are a number of waterways located onsite; this assessment considers the potential and actual effects of the proposal on these waterways.

Freshwater values

The project site is located on various land parcels between Wall Road and Motuiti Road near Foxton, within the Horowhenua District. There are numerous waterways located onsite, which are all highly modified in nature and exhibit many drain-like features. Nonetheless, they meet the RMA definition of a river due to the fact they are likely highly modified iterations of historic natural hydrological systems (wetlands)¹.

One Plan Values

The One Plan identifies area wide and site-specific freshwater values for waterways across the region. The waterways onsite are located within the Coastal Manawatū Surface Water Management Area and Sub-Area (Mana_13a).

The Schedule 2 Surface Water Management Values applying to the Coastal Manawatū sub-area are:

- Life Supporting Capacity – Lowland Mixed;
- Aesthetics;
- Contact Recreation;
- Mauri;
- Industrial Abstraction;
- Irrigation;
- Stock Water;
- Existing Infrastructure; and
- Capacity to Assimilate Pollution.

¹ Hickey, L. (2026). Foxton Solar Farm Waterway Classification Assessment [Memorandum]. Horizons Regional Council.

One of the waterways onsite has a One Plan site specific Flood Control and Drainage value. I do not comment on this value as this is outside of my area of expertise.

Stream Characteristics and Communities

The waterways almost exclusively exhibit artificially straight channels, with streambeds dominated by soft substrates. The size of the streams varies; three of the larger streams convey decent flow and support aquatic obligate macrophytes such as watercress. The smaller streams do not convey much flow and tend to have wetland type vegetation rooted in the bed. The streams are all unshaded with pasture dominant riparian margins. The typical characteristics of the waterways onsite are visible in Figure 1 below.

The applicant undertook eDNA monitoring in two of the larger streams. A small number of freshwater fish species were detected, namely: shortfin eel (*Anguilla australis*); common bully (*Gobiomorphus cotidianus*); gambusia (*Gambusia affinis*); and goldfish (*Carassius auratus*). This data indicates that the streams onsite are supporting freshwater fish although, only a very small assemblage of Not Threatened native species and exotic species. This is a reflection of the low habitat diversity and quality of these modified streams. However, it does indicate that these streams are supporting freshwater ecosystems and aquatic biota that must be considered when assessing potential effects on these waterways.





Figure 1. A representation of the highly modified waterways present with the Solar Farm Project Area

In terms of freshwater values, the applicant has assessed the waterways onsite as having low ecological value. I agree with this assessment, noting that these systems are all highly modified, provide low habitat diversity and quality, and only support common and tolerant freshwater fauna.

Nonetheless, potential adverse effects must be considered to ensure that the values of the streams are maintained, and appropriate measures are in place to avoid, minimise or mitigate actual adverse effects on the receiving environment(s).

Potential and actual adverse effects

Instream work and disturbance

There are a number of existing stream crossings that will be utilised for this project therefore, no installation or modification of instream structures is proposed. The avoidance of instream works and disturbance will avoid adverse impacts on fish passage and instream habitats². Furthermore, the avoidance of direct disturbance of the streams is beneficial as this creates the greatest risk of uncontrolled sediment input and release into the water column.

² Excluding the potential risk that the existing crossings are disrupting passage, which is outside the scope of this assessment.

Some vehicle or machine tracking may be required through the waterways. This has the potential to disturb the streambed and banks at the crossing point, and release sediment into the water column. The applicant has proposed to mitigate these effects by avoiding unnecessary machine tracking and vehicular movement in the streams by making use of existing crossings. This is appropriate and will avoid major impacts arising from frequent vehicle crossings.

Sediment discharge

The greatest potential for adverse freshwater effects to occur throughout this project is sediment discharge during the construction period. Sediment input into waterways can have detrimental impacts on fish and other freshwater fauna through degrading water quality and streambed habitat; filling interstitial spaces; reducing primary productivity, disrupting the aquatic food chain; reducing visual clarity; reducing habitat diversity; and blocking the gills of fish and macroinvertebrates. This in turn can limit macroinvertebrate and fish abundance and alter aquatic community composition.

The applicant has proposed to mitigate the risk of sediment discharge through an Erosion and Sediment Control Plan (ESCP) that aligns with Greater Wellington's Erosion and Sediment Control guide for Land Disturbing Activities in the Wellington region. Measures such as silt fences and stabilisation will be used to control sediment during the construction phase, with decanting earth bunds and sediment retention ponds also mentioned as possible control measures. The specific measures to be used will be finalised in the ESCPs and will be certified in advance of any land disturbance taking place.

I understand that this application is being reviewed by an HRC Erosion and Sediment Control Expert; I defer to the expertise of this expert regarding the adequacy of the proposed measures. To better understand the risk of sediment discharge to the waterways, I have liaised with this expert, who advised that the construction of the solar farm does not present any erosion or sediment risks that cannot be effectively mitigated through the implementation of appropriate management measures. Considering this, I expect that any sediment discharge to the waterways will be limited in magnitude, such that any resulting adverse effects will be less than minor.

Positive effects

The applicant intends to undertake riparian planting along a number of the waterways onsite. This will have a positive effect on these aquatic ecosystems by increasing channel shading and providing a source of instream woody debris and leaf litter. Furthermore, the conversion of the site from dairying to solar and sheep is expected to have a positive effect on water quality by decreasing nutrient input. Therefore, these aspects of the project will positively benefit the waterways onsite and enhance their freshwater values.

Conclusions

I have reviewed a fast-track resource consent application made by Genesis Energy to construct a solar farm near Foxton, considering the potential and actual adverse effects on freshwater. There are no instream works proposed, avoiding adverse impacts on fish passage and instream habitats. The greatest potential for adverse freshwater effects to occur throughout this project is sediment discharge during

the construction period. The implementation of appropriate erosion and sediment control measures is expected to effectively mitigate this risk so that any sediment discharge to the waterways and resulting adverse effects will be less than minor.

If you have any questions, please do not hesitate to contact me.

Regards,

Laura Hickey | Freshwater Scientist