

Memorandum

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Attention: Jon Bright
 Company: Westpower/ Electronet Group
 Date: 12 February 2026
 From: James Bentley
 Message Ref: Response to RFI #5
 Project No: C12108

Waitaha Hydro: Response to Request for Further Information #5 (Question 1)

This memorandum is in response to the Waitaha Hydro's Fast Track Panel Request for Further Information #5.

1. Morgan Gorge – Landscape Effects of Reduced Flow

The Panel therefore requests that:

- a) *Mr Bentley provides an assessment of the impact of the reduced flow through Morgan Gorge on visual, landscape and natural character; and*
- b) *the vantage points from which Morgan Gorge can be viewed are confirmed.*

Response – Reduced flow through Morgan Gorge

Specifically, I refer to the panel to Appendix 27 of the application, and Section 4.3 of Appendix A of that document (Potential Effects of the Residual Flow – In River Effects) where a full natural character assessment has been undertaken of the effects of the reduced water flow within the entire abstraction reach. It is noted in the assessment that Morgan Gorge forms part of the abstraction reach.

For landscape and visual aspects, the restricted flow is covered within Section 4.2 (Broad scale natural character and landscape effects) of the substantive report of Appendix A (of Appendix 27 of the application). Pages 34 through to 38.

A description of the hydrological character of the Waitaha River is covered in Section 2.3.4 of Appendix A (of Appendix 27 of the application¹) and a description of Morgan Gorge is contained within Section 2.4 of Appendix A (of Appendix 27 of the application). This information sets out the context of the project and broader landscape in respect of the location of Morgan Gorge.

¹ [Appendix-27-landscape-report.pdf](#)

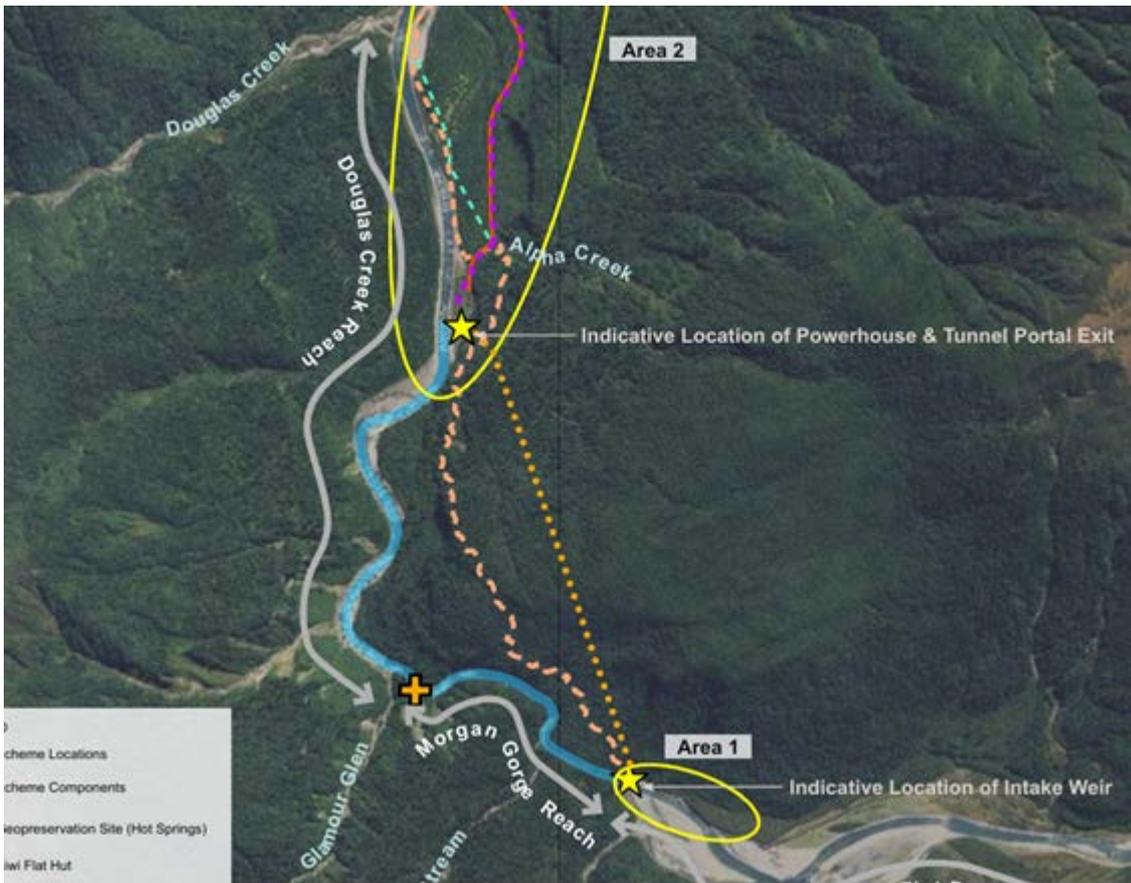


Figure 1: An excerpt of Figure 8A from Appendix 27.

I have re-read relevant sections of my substantive report (within Appendix A of Appendix 27) concerning effects of the reduced flow and I highlight relevant sections below. I note that whilst the overall 'effect' of the reduced flow' concerns the broader abstraction reach, the following excerpts highlight the assessment in relation to reduced flows through and on Morgan Gorge specifically²:

From broadscale landscape perspective (emphasis added):

*'while Morgan Gorge is smaller in scale than the Upper Waitaha Catchment, the Scheme will not affect the gorges' overall physical, associational and perceptual values to a significant degree and therefore not reduce its 'outstandingness' as a feature within the ONL. Essentially, the weir will appear close to the entrance of the gorge, along with the intake structure. **The river will maintain its course through the gorge despite reduced flows.** The associated cliffs and natural eroding of broader Morgan Gorge by fluvial processes will continue³.*

'the Scheme will not affect accessibility or the physical geomorphology of the Waitaha River Hot Springs⁴.

***'The currently occurring river processes, in particular flood flows with high sediment transportation capacity, will continue to sculpt the gorge reach.** This means that the physical processes that form and maintain the Waitaha River and its bed and banks, whilst modified to some degree, will continue to occur⁵.*

Potential Effects of the residual flow (abiotic and biotic natural character attributes):

'The area of main flow difference will be from the Headworks at the entrance of Morgan Gorge to the confluence with Glamour Glen, which will contribute to the residual flow occurring in the main stem.

² Rather than through the entire abstraction reach

³ Page 36 of Appendix 27.

⁴ Page 37, [Appendix-27-landscape-report.pdf](#).

⁵ Page 37, Appendix 27.

This is also the most difficult part of the river to view from its steep banks, due to its incised sides and boulder-strewn riverbed. Access here is very difficult, and as the Recreation Report indicates, **only experienced kayakers have ventured down this stretch of the Waitaha River**.⁶

The long-term effects on the natural character of the river in relation to changes in the riverbed, include both the active channel and exposed banks and beaches. The abstraction reach displays a range of morphological characteristics, from the steep sided gorge of Morgan Gorge immediately downstream of the weir, and the more open, rock and boulder laden single channel at the outfall. These morphological characteristics are an important aspect of the river's natural character. Flood flows and freshes are also important characteristics of the river, especially so for 'flushing' out the riverbed of sediments and some vegetation. Larger floods assist in rearranging the riverbed and river edges and banks. These larger freshes and floods will not be affected by the Scheme. While the duration and magnitude of the fresh flows through the abstraction reach will be slightly reduced, the

Sediment Report finds that with the Scheme operating the Waitaha River's geomorphic character:

'will continue to be dominated by the action of frequent natural floods and very high and variable sediment loads delivered from upstream. In particular, the bulk of the Waitaha River's sediment load will continue to be carried by un-diverted flood flows'.⁷

In terms of freshwater ecology: *The IFIM modelling predicts little change to habitat for native fish in the abstraction reach but does predict a reduction in suitable habitat for trout (which are blocked naturally by Morgan Gorge). **Ultimately the morphology of the river and the biotic community will continue to be dominated/primarily influenced by the high disturbance regime of the system, which will not be greatly affected by the Scheme.** Fish passage for kōaro (the only fish found up stream of Morgan Gorge) will be maintained'.⁸*

'Based on this, it is considered that the effects of the abiotic and biotic attributes of natural character on the natural elements, patterns and processes of the proposed reduced flow through the abstraction reach will be low'.⁹

Potential effects to the perceived visual change in flow (perceptual aspects of natural character):

*'While the Waitaha River is an important landscape feature within the Waitaha Catchment, **the visual connection to the river from public viewpoints is limited to varying degrees by the restricted surrounding access points obtainable close to the riverbed**'.¹⁰*

'People using the river, such as kayakers, will be the most directly affected'

*'Given the unpredictable nature of river flow, which mainly depends on precipitation in the Waitaha Catchment and snow accumulation, the perception of a flow encountered on an individual day will vary. Smaller freshes will be less frequent and the likelihood of encountering a low flow will significantly increase under the Scheme. River perception research has shown that differences in flow, in particular in the higher ranges, are very difficult to detect. Perception of rivers at low flows, in particular for instantaneous flows in relation to landscape aesthetics, are partially influenced by the residual flows. **It is important to note that the residual flow is unlikely to be continuous for more than a week, due to the Waitaha Catchment's high rainfall.** Seasonal changes in precipitation also influence the flow of the river.*

*Any difference in flows would be more apparent to those who use and/or are more familiar with the river and its current flow regime and abstractions. Kayakers who regularly access the riverbed and are familiar with the river's appearance at a variety of flows will detect flow changes more readily. When viewed at close distances, the subtle difference in flow such as velocity and depth, can be noticed more easily than from distant viewpoints. **Knowledgeable and frequent observers of the river will be aware of some differences in the river's flow, particularly over the longer periods of low flows (i.e. winter) compared to the natural flow patterns, however they may not necessarily consider any visual changes adverse.** People passing the Power Station and Headworks Site will understand that the river has modified river flows and sometimes this difference in flow will be more apparent. **Changes to the 'soundscape', i.e. the noise of the water through the gorge, would result in a slightly reduced audibility.***

⁶ Page 38, Appendix 27.

⁷ Page 40, Appendix 27.

⁸ Page 40, Appendix 27.

⁹ Page 40, Appendix 27.

¹⁰ Page 40, Appendix 27.

The Waitaha River Hot Springs, which are accessible during natural flows (i.e. typically under 20 cumecs) will remain accessible for longer periods during the residual flow period, with the Scheme not affecting its hot water supply’.

‘Based on this, while the section of the river with reduced flows (abstraction reach) will still have a natural appearance, the Scheme will change the perceptions of the Waitaha River as a natural wilderness river for those people who pass the Power Station or cross the swingbridge that are familiar with the River’s natural flows. These people will understand that the river flow is modified. Based on this, the perceptual aspects of natural character on the natural elements, patterns and processes on the reduced flow regime, is moderate’.

Based on this, my adverse effects rating remains as they are for the entire abstraction reach relating to the periods of reduced flow, with those levels of effect identified equally applicable to Morgan Gorge. Whilst there will be a reduced flow, due to the dynamic environment of the gorge (and the frequency of freshes and floods), the river will continue to influence the gorge, displaying a range of fluvial characteristics akin to present.

These effects are:

- Broad landscape, natural character and visual amenity effects on Morgan Gorge: **Moderate-Low**.
- Morgan Gorge reduced flow: abiotic and biotic (natural character) – **Low**.
- Morgan Gorge reduced flow: perceptual (natural character) – **Moderate**.
- Waitaha River Hot Springs: **Low**.

Specific further commentary is also contained Sections 4.4 and 4.5 and 4.7 of Appendix 1 (Appendix 27), including:

*‘For natural character, the natural elements, patterns and process will still continue. Long-term effects of the flow regime changes will include lower flows for longer periods of time, when compared to the natural river state. Natural freshes will continue to occur, although smaller freshes will be reduced to a greater degree. From a habitat perspective, modelling predicts little change to habitat for native fish in the abstraction reach but does predict a reduction in suitable habitat for trout (which are blocked naturally by Morgan Gorge). **The morphology of the river and the biotic community will continue to be dominated/primarily influenced by the high disturbance regime of the system, which will not be greatly affected by the Scheme’.**¹¹*

Response – Vantage Points from where Morgan Gorge is visible

In terms of the second part of the request, the principal vantage points where Morgan Gorge can be appreciated are from:

- By trampers at the swingbridge and on the track on the true left of the river at the entrance to the Gorge. Both of these vantage points are recognised by Visual Simulations (IN1 and IN2).
- By kayakers using the river (through the gorge).
- By helicopter (at distance) although somewhat difficult to view aurally (refer **Figure 2** below).
- At occasional points on the old track route above Morgan Gorge on the true left of the river, where access is gained to the hot pools.

The majority of Morgan Gorge is almost impossible to view (especially from the old track route on the true right), due to the nature of the terrain and mature vegetation blocking views. Refer to Paragraph 2.4 (Morgan Gorge and Scheme Location) of the substantive report of Appendix A (of Appendix 27¹² of the application). Pages 18-23. Refer also to Section 3.2.2.2:

‘Views from the true-right track into Morgan Gorge are virtually non-existent, unless a diversion is undertaken along one of the many slips. However, the audibility of the river remains throughout the journey into Kiwi Flat..... Views are also obtained into the precipitous canyon of Morgan Gorge from the swingbridge and from short departures from parts of the true left track. Dramatic and extremely memorable views within Morgan Gorge can be also obtained at the Waitaha River Hot Springs.’

¹¹ Page 60, [Appendix-27-landscape-report.pdf](#).

¹² [Appendix-27-landscape-report.pdf](#).



Figure 2: An image of part of Morgan Gorge from a helicopter.