

Manawa Energy – Kaimai HEPS - FTAA Application (FTAA-2502-1024)

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Manawa Energy – Kaimai HEPS - FTAA Application (FTAA-2502-1024)

Part One – Legal Submission

- 1 - Legal Submissions on behalf of Manawa Energy in Response to Comments Received, 4 February 2026 - Prepared by Counsel for Manawa Energy (Vanessa Hamm (Holland Beckett))

BEFORE THE EXPERT PANEL UNDER THE FAST-TRACK APPROVALS ACT 2024

IN THE MATTER OF an application for resource consents by Manawa Energy Limited (**Manawa Energy**) for activities associated with the listed Kaimai Hydroelectric Power Scheme (**Kaimai HEPS**) Re-Consenting Project

MEMORANDUM OF COUNSEL FOR THE APPLICANT IN RESPONSE TO COMMENTS

FTAA-2502-1025 – 12 FEBRUARY 2026

Introduction

1. These legal submissions and its attachments are provided on behalf of Manawa Energy in response to the comments provided under s 53 of the FTAA to its substantive application seeking replacement resource consents for the Kaimai HEPS (the **Application**).
2. Thirteen comments were received on the Application. All comments are supportive, with the main technical issue raised being the Department of Conservation's (**DOC's**) comments on native fish passage and the draft Native Fish Passage Management Plan (**NFPMP**). There are also some comments from the Bay of Plenty Regional Council (**BOPRC**), DOC, and the Kaimai Canoe Club, relating to the detail of conditions.
3. It is submitted that the nature and extent of the comments received under s 53 of the FTAA is reflective of the extensive engagement which Manawa Energy has undertaken with these parties, and the appropriateness of the consent conditions it has proposed through this process.

4. This Memorandum of Counsel addresses the following matters raised in the comments on the Application:
 - (a) The benefits of renewable electricity generation from the Kaimai HEPS;
 - (b) Native fish passage, the draft NFPMP, and proposed consent conditions relating to the NFPMP;
 - (c) Response to the matters raised in comments regarding conditions.

5. Manawa Energy's response to comments is structured as follows:
 - (a) Part One – Legal Submissions.
 - (b) Part Two – Statements of Evidence from the following witnesses:
 - (i) Todd Mead (Hydro Operations);
 - (ii) Selene Conn (Sedimentation);
 - (iii) Dr Greg Ryder (Aquatic Ecology); and
 - (iv) Richard Turner (Planning).
 - (c) Part Three – Response Tables. These tables provide an efficient reference point for the Expert Panel with regard to Manawa Energy's response to comments.
 - (d) Part Four – Draft Response Conditions.

Renewable electricity generation from the Kaimai HEPS

Comments from Ministers of the Crown

6. Manawa Energy acknowledges the positive comments received from Ministers of the Crown, particularly the Minister for Infrastructure, Minister for Energy,

Minister for Economic Growth, the Minister for Regional Development, and the Minister for Climate Change.

7. The Minister for Infrastructure comments that the “application is consistent with the objective and policies of the NPS-REG”, and that the Application “will ensure the Kaimai Power Scheme can continue generating renewable electricity and it supports the Government’s target to double renewable electricity generation by 2050”.¹
8. The Minister for Energy considers that the project has “significant regional benefits” as follows:²
 - *The hydro scheme is an existing generation facility with daily storage and has a maximum capacity of 42 MW, generating approximately 169 GWh annually – which is enough to power around 24,600 homes.*
 - *Maintaining the capacity of existing hydro generation – such as the Kaimai scheme – is critical to the ongoing operation of our electricity sector. Compared with the more variable generation such as wind and solar, hydro delivers more predictable output in suitable locations, with smooths overall energy supply and supports investment in other intermittent generation projects.*
 - *Renewable electricity generation supports other outcomes including:*
 - *Contribution to climate change targets, as renewable electricity generation can displace use of fossil fuels in both the electricity and wider energy systems (e.g. reducing the use of thermal fuels for electricity generation, and supporting increased demand for electricity for sectors such as transport).*

¹ Comments from the Minister for Infrastructure (undated), Appendix 1.

² Comments from Minister for Energy (undated).

- *Contribution to security of energy supply, through geographic diversity of energy generation, and reducing the energy system's exposure to weather or other localised risks.*
 - *Downward pressure on wholesale electricity prices, which supports more affordable energy for New Zealand firms and households. Affordable energy also has wider flow-on benefits to the wider economy – e.g. by reducing input costs for commercial and industrial energy users.*
9. These benefits are echoed by the comments from the Minister for Economic Growth, who notes that the primary benefit of the Kaimai HEPS is ensuring the availability of a reliable electricity supply and the continued provision of renewable energy.³ The Minister for Regional Development has commented that the continued operation of the Kaimai HEPS is expected to offer economic benefit to the Bay of Plenty region through ongoing employment, and through providing peak electricity demand requirements for Tauranga.⁴
10. All of these statements support the benefits of the Kaimai HEPS as advanced by Manawa Energy in the Application.
11. Comments from the Minister for Infrastructure note the expectation, under the heading “National Policy Statement for Renewable Electricity Generation 2011 – Amended December 2025 (NPS-REG)” that the Expert Panel will get other technical information on site-specific matters to support its decision on the project.⁵
12. In response to those comments, Mr Mead for Manawa Energy has provided further detail on the benefits of hydro-electricity generation from the Kaimai

³ Comments from Minister for Economic Growth dated 28 January 2026.

⁴ Comments from Minister for Regional Development dated 4 February 2026, Appendix One.

⁵ Comments from Minister for Infrastructure (undated), Appendix 1.

HEPS.⁶ Significantly, the Kaimai HEPS provides 32% of Tauranga’s electricity demand per annum and makes a substantial contribution to meeting peak demand and total output requirements for Tauranga (where demand for electricity is growing).⁷ Mr Mead explains that the Kaimai HEPS provides controllable, reliable and flexible generation and its ability to ‘peak’ (i.e. provide electricity when demand is highest) on a daily basis offsets the amount of electricity Transpower has to import into Tauranga during times of peak demand. This has meant the Kaimai HEPS location has offset investment in the National Grid by more than 10 years, helping to reduce the overall cost of electricity supply.⁸

13. Mr Turner has also provided updated planning analysis of the Application against the National Policy Statement for Renewable Electricity Generation (**NPSREG**), which was amended in December 2025 and came into force on 15 January 2026.⁹ Mr Turner confirms that the updated NPS REG does not alter any of his previous conclusions in the substantive application that the project is aligned with the objectives and policies of the relevant statutory planning documents, as well as relevant iwi and hapū management plans (when considered from a planning perspective).¹⁰

Comments from BOPRC and DOC

14. Manawa Energy also acknowledges the positive comments received from BOPRC and DOC with respect to how the Application integrates environmental considerations (specifically, residual flows), with consideration under the NPSREG. Both BOPRC and DOC note the NPSREG in the context of commenting that Manawa Energy’s proposed residual flows represent a “balanced” approach.

⁶ Statement of Evidence of Todd Mead, paragraphs 23-36.

⁷ Statement of Evidence of Todd Mead, paragraph 23.

⁸ Statement of Evidence of Todd Mead, paragraph 24.

⁹ Statement of Evidence of Richard Turner, paragraphs 21-47.

¹⁰ Statement of Evidence of Richard Turner, paragraph 41.

15. In particular, BOPRC states that:¹¹

BOPRC further acknowledges that the National Policy Statement for Renewable Electricity Generation (NPS-REG) seeks to enable the ongoing operation and future viability of renewable electricity infrastructure. In this context, the applicant's proposed residual flows represent a balanced and appropriate approach that supports environmental improvements while remaining consistent with NPS-REG direction, which limits options that would result in reductions to renewable energy generation.

16. DOC states:¹²

The proposal to provide existing residuals flows and new flows where there are currently none provides a balanced approach that takes into account both the environmental considerations under the National Policy Statement for Freshwater Management (NPS-FM) and renewable electricity delivery required under the National Policy Statement for Renewable Electricity Generation (NPS-REG).

17. These statements support the benefits of the Kaimai HEPS as advanced by Manawa Energy in the Application, and also demonstrate that Manawa Energy has appropriately integrated environmental considerations with the delivery of renewable electricity generation.

Native fish passage

18. DOC is supportive of the draft NFPMP, as is the BOPRC. However, DOC comments at paragraphs 3.9 to 3.15 about structures within the Kaimai HEPS,

¹¹ Comments from BOPRC dated 4 February 2026, paragraph 1.3.

¹² Comments from DOC dated 4 February 2026, paragraph 3.6.

and makes further comments with respect to conditions (paragraphs 4.5 to 4.10).

19. In considering the comments from DOC, attention is drawn to the Statement of Evidence of Dr Greg Ryder. Dr Ryder's evidence traverses each of the reaches and structures within the Kaimai HEPS, expresses his opinions as to the function those reaches and structures play with respect to native fish passage, and consequentially the recommendations he has made with respect to the existing and proposed residual flows. Dr Ryder has extensive experience in addressing native fish passage at hydro-electric power schemes throughout New Zealand, and has been involved with the Kaimai HEPS since 2021.¹³ It is his opinion that a management plan approach is appropriate for addressing fish passage, as it enables some agility, which is necessary as different methods are tried and tested.
20. These legal submissions address the following topics with respect to fish passage, arising from DOC's comments:
 - (a) Safety of large tuna during downstream passage;
 - (b) Integration of consent conditions with the NFPMP.

Safety of large tuna during downstream passage

21. DOC's comments question the safety of large tuna during downstream passage, particularly at the Omanawa Weir, Mangapapa Weir, and McLaren Falls Dam. The specific concern is that the absence of receiving pools downstream of these structures might cause injury to larger eels.¹⁴ DOC also raises the question in relation to the Opuiki and Ngatuhua Weirs.¹⁵

¹³ Statement of Evidence of Dr Greg Ryder, paragraphs 4-5 and Appendix A.

¹⁴ Comments from DOC, paragraph 3.8.

¹⁵ Comments from DOC, paragraph 3.11.

Monitoring and an action plan are suggested through the NFPMP to address this.¹⁶

22. Dr Ryder responds to this in his Statement of Evidence. On the basis of Dr Ryder's extensive experience in this topic and his four years of involvement in the Kaimai HEPS,¹⁷ the Expert Panel can comfortably rely on Dr Ryder's expertise.
23. Dr Ryder's evidence notes that DOC's comments are supported by a North American study. Dr Ryder relies instead on New Zealand authored studies, including a New Zealand field trial, and his experience with the Kaimai HEPS. Dr Ryder's view is that DOC has overstated with respect to effects on adult tuna moving downstream over weirs, including the Opuiaki weir, under spilling conditions.¹⁸ He further considers that in any event the draft NFPMP is sufficiently robust and flexible to respond to any monitoring information that indicates that modifications to passage at various structures are necessary and warranted in order to achieve the objectives of the plan, and that salvage operations for tuna entrained within the Scheme's structures is available where safe downstream passage is not provided for.¹⁹
24. On the basis of Dr Ryder's evidence, it is submitted that the proposed consent conditions, and draft NFPMP, appropriately address the safety of large tuna during downstream passage.

Integration of consent conditions with the NFPMP

25. The comments from DOC and BOPRC support the NFPMP, and do not raise any issue about the use of the management plan approach. DOC's comments are

¹⁶ Comments from DOC, paragraph 3.13, 4.7.

¹⁷ Statement of Evidence of Dr Greg Ryder, paragraphs 4-5 and Appendix A.

¹⁸ Statement of Evidence of Dr Greg Ryder, paragraphs 23-27.

¹⁹ Statement of Evidence of Dr Greg Ryder, paragraphs 28.

more specifically about the linkage between consent conditions and the NFPMP, as follows:

- (a) There should be a condition that requires the development and implementation of a long-term monitoring programme to determine the effectiveness of the management plan and a review to consider options for improvements to better meet the objectives;
 - (b) The NFPMP (and conditions) should provide for adaptive management to address matters that arise throughout the duration of the consent in relation to the proposed ongoing mitigation measures, operational and structural improvement options and monitoring for fish passage. It is also recommended that any actions for improvements or additional mitigation (as analysed as part of monitoring) are required through a condition of consent;
 - (c) The monitoring condition should require the preparation of a report, at regular times throughout the duration of the consent, that presents the results of monitoring, and makes conclusions and recommendations that address a number of matters (paragraph 4.7);
 - (d) Monitoring and review reports should be provided to DOC, and it should be consulted on the draft NFPMP; and
 - (e) An additional condition is included to require that the Consent Holder complies with the certified NFPMP at all times, and that if any variation is required, this requires a re-certification process with the Council.
26. Counsel submit that these matters are already covered by the proposed consent conditions. Mr Turner's evidence (in agreement with Dr Ryder) is that the concept of adaptive management is already inherently contained within the NFPMP, which supports a 'learn and adapt' approach to addressing

upstream and downstream fish passage.²⁰ Counsel submits that the proposed conditions sufficiently address DoC's comments regarding adaptive management in the NFPMP.

27. Mr Turner has recommended that the conditions include DoC's suggestion for a reporting condition²¹ and that DoC are provided with any opportunity to comment on the draft NFPMP that is submitted for certification.²² Finally, in respect to the comments about re-certification of the NFPMP, Mr Turner confirms this is provided for in conditions 1.5 and 1.6.²³

Conditions

28. The comments made on the Application with respect to conditions are largely supportive, with some comments being made on matters of detail.
29. DoC and BOPRC have made comments on the Sediment Monitoring Plan. BOPRC has sought that the conditions require Manawa Energy to assess the monitoring results and, where agreed indicators show emerging adverse trends, prepare and implement an appropriate management response. Similarly, DoC suggest that the consent conditions should be amended to focus on managing any adverse effects from sediment loads as a result of the monitoring undertaken.
30. Mr Turner has considered these proposed changes and, in reliance on Ms Conn's evidence, concludes that it is not appropriate or feasible at this stage to try to identify 'triggers' or definitions of 'adverse trends' in the Sediment Monitoring Plan (or conditions), as the 'natural' versus 'possible scheme induced' envelopes of change for either the Omanawa or the Wairoa Rivers have not yet been confirmed.²⁴ Mr Turner confirms that the conditions require

²⁰ Statement of Evidence of Richard Turner, paragraphs 62-63.

²¹ Statement of Evidence of Richard Turner, paragraph 64. Proposed condition 13.4.

²² Statement of Evidence of Richard Turner, paragraph 65. Proposed condition 13.3.

²³ Statement of Evidence of Richard Turner, paragraph 66.

²⁴ Statement of Evidence of Richard Turner, paragraph 52.

recommendations regarding the methodology for ongoing monitoring and for the *management* of sediment or erosion effects caused by the continued operation of the Kaimai HEPS.²⁵ Further, Mr Turner's opinion is that it is not appropriate for the conditions to direct a management response at this stage as the management response may require new infrastructure, variations to the consent or a new consent.²⁶ Counsel submits that there are sufficient and appropriate mechanisms within the conditions (and through review powers under s 128 of the RMA) to implement any sediment or erosion management response.²⁷

31. DoC has also made a comment seeking a condition for 'standard' fish salvage and relocation plan in the event that the Ruahihi Canal needs to be dewatered. Mr Turner has accepted this recommendation (with some refinements to the suggested wording by DoC) and has recommended conditions requiring fish salvage and relocation for both the Ruahihi Canal and the Lloyd Mandeno Canal.²⁸
32. Notably, Ngāti Hangarau and Ngamanawa Incorporation have filed comments with the Expert Panel which state that Manawa Energy's engagement has enabled those parties to reach a position of support for the version of the proposed conditions included as Appendix E to the Application. Manawa considers that the proposed further changes to the conditions do not affect any matters agreed between Manawa and Ngāti Hangarau and Ngamanawa Incorporation, and Manawa will continue to engage with Ngāti Hangarau and Ngamanawa Incorporation on proposed condition changes.
33. The Minister for Infrastructure comments that Manawa Energy's request for their permits to be issued for 35 years is consistent with the amended RMA, and will provide long-term certainty of renewable electricity generation from

²⁵ Statement of Evidence of Richard Turner, paragraph 53. Condition 12.2(c).

²⁶ Statement of Evidence of Richard Turner, paragraph 54.

²⁷ Statement of Evidence of Richard Turner, paragraph 55.

²⁸ Statement of Evidence of Richard Turner, paragraphs 56-60. Conditions 4.10, 10.4.

the Kaimai Power Scheme. That comment supports the Expert Panel granting resource consents for a 35 year term.

Conclusion

34. Manawa Energy recognises the effort that those who made comments have taken to provide comments within the statutory timeframe provided for by the FTAA. Those comments are largely supportive. Where matters of detail on the proposed consent conditions have been raised in comments, then those have been responded to Manawa Energy.

35. It is submitted that the nature and extent of the comments received is reflective of the extensive engagement which Manawa Energy has undertaken, and the appropriateness of the consent conditions it has proposed through this process. The applicant remains ready to assist the Expert Panel through the process.

DATED at Tauranga this 12th day of February 2026



Vanessa Hamm / Bridget Bailey
Counsel for Manawa Energy Limited

Manawa Energy – Kaimai HEPS - FTAA Application (FTAA-2502-1024)

Part Two –Statements of Evidence

2 – 1 - SOE – Todd Mead (Hydro Operations), Manawa Energy.

2 - 2 - SOE – Selene Conn (Sedimentation), Tokin + Taylor.

2 – 3 - SOE – Greg Ryder (Aquatic Ecology), Greg Ryder Consulting.

2 – 4 - SOE – Richard Turner (Planning), Mitchell Daysh.

BEFORE THE PANEL CONVENERS UNDER THE FAST-TRACK APPROVALS ACT 2024

IN THE MATTER OF

an application for resource consents under the Fast-track Approvals Act 2024 (FTAA) by Manawa Energy Ltd for activities associated with a listed project, being the Kaimai Hydro-Electric Power Scheme Re-Consenting

STATEMENT OF EVIDENCE OF TODD MEAD

HYDRO OPERATIONS



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Introduction

1. My name is Todd Mead and I am employed as the Head of Business Development – Hydro by Contact Energy Limited (**Contact**).
2. Prior to the acquisition of Manawa Energy Limited (**Manawa Energy**) by Contact in July 2025, I was the General Manager Generation. In this role I had responsibility for Manawa Energy’s operational performance, from strategic planning through to day-to-day operation of the generation assets and teams. Prior to this role, I held a number of generation and development roles at Trustpower/Manawa Energy from July 2015.
3. I have also worked in renewable electricity generation and power station roles for other companies in New Zealand and the United States of America since 2004. From 2009 to 2015 I was a Project Director at Alstom Power where I led a team responsible for large-scale power station retrofit projects across the United States of America. From 2004 to 2009 I was the Commercial Manager at Mainpower leading a small team responsible for developing and executing the local renewable generation strategy for the North Canterbury region, including gaining resource consents for the Mt Cass Wind Farm in the Hurunui District.
4. I hold a NZ Certificate in Mechanical Engineering, Central Institute of Technology (1987), a Bachelor of Mechanical Engineering, Auckland University (1989), a Master of Engineering, University of Colorado (1998), and completed the Advanced Management Program at Melbourne Business School (2008).

Response to Comments

5. The purpose of this statement is to respond to the matters raised in comments on the Kaimai Hydro-Electric Power Scheme (**Kaimai HEPS**) with respect to the regional and national benefits of hydro-electricity generation from the Kaimai HEPS.

6. A number of Ministers have provided supportive comments on the substantive application for replacement resource consents for the Kaimai HEPS pursuant to section 53 of the FTAA. This includes the Minister for Infrastructure, Minister for Energy, Minister for Economic Growth, and the Minister for Regional Development.
7. Comments from the Minister for Infrastructure note the expectation, under the heading “*National Policy Statement for Renewable Electricity Generation 2011 – Amended December 2025 (NPS-REG)*” that the Expert Panel will get other technical information on site-specific matters to support its decision on the project.¹
8. The Minister for Regional Development has also commented that based on the installed capacity of the Kaimai HEPS, it appears modest in comparison to other large hydro generation schemes across New Zealand.²
9. This statement of evidence responds to those comments by providing additional detail on the benefits of the hydro-electricity generation from the Kaimai HEPS. In summary, the benefits of the Kaimai HEPS go beyond simply its installed capacity of 42 MW. While Kaimai HEPS’ installed capacity is important in its own right, the Kaimai HEPS plays a critical role in meeting Tauranga’s electricity demand, as it is responsible for providing approximately 32% of Tauranga’s electricity demand per annum.

Manawa Energy Limited and Contact Energy Limited Acquisition

10. On 11 July 2025, Manawa Energy was acquired by Contact.
11. Manawa Energy is a stand-alone entity that generated approximately 1,900 GWh (gigawatt hours) of electricity in 2024. This equated to approximately 5%

¹ Comments from Minister for Infrastructure, Appendix 1.

² Comments from Minister for Regional Development, Appendix One.

of New Zealand's total electricity generation, with over 99% of the electricity generated by Manawa Energy coming from renewable sources.

12. Manawa Energy operates 25 small-medium hydroelectricity schemes across New Zealand with a total capacity of approximately 510 MW (megawatts). The Kaimai HEPS has a capacity of 42 MW and produces 169 GWh (although can exceed 200 GWh in some years), representing 8.2% of Manawa Energy's total capacity and 8.9% of its production respectively.
13. Contact is expected to generate 11,800 GWh across hydro, geothermal, solar and thermal plants in FY26 (July 2025 - June 2026), providing approximately a quarter of NZ's total electricity demand with greater than 95% being generated from renewable energy sources.
14. After the acquisition of Manawa Energy, Contact is New Zealand's second-largest generator, behind only Meridian Energy. The Clyde Dam, which is mentioned in the Minister for Regional Development's comments as having an installed capacity of 432MW, is owned and operated by Contact.
15. The acquisition of Manawa Energy by Contact:
 - (a) Creates New Zealand's most diversified renewable electricity generator by generation source;
 - (b) Adds 25 hydro schemes to Contact's portfolio, strengthening regional resilience and renewable energy portfolio; and
 - (c) Positions Contact to manage dry-year risk and accelerate New Zealand's energy transition.

Electricity Demand Growth in New Zealand

16. In 2024, New Zealand's total national electricity generation was approximately 43,900 GWh. Hydro-electricity power generation typically provides just under 60% of New Zealand's total electricity generation.³
17. Demand for electricity grew rapidly from 1974 to 2007. Net generation dropped for two years from its pre-GFC high of 42,423 GWh in 2007, recovered to 43,571 GWh in 2010 and has since fluctuated around an average of around 43,277 GWh in the years to 2024, however growth appears to be accelerating. Residential demand for electricity overtook industrial demand in 2023/2024, and demand is expected to rise even further through to 2030 as a result of population growth, transport electrification, and industrial process heating.⁴
18. Transpower forecasts Tauranga's annual *peak* electricity demand to rise from around 127 MW in 2025 to up to 180 MW by 2030 ("peak electricity demand" is the maximum load the grid must be able to supply at any one time).⁵ Transpower intends to increase the capacity of the grid supplying Tauranga but the upgrade will not be completed until 2032 and assumes the Kaimai HEPS will continue to operate to ensure Transpower can maintain a reliable electricity supply into Tauranga.
19. As a result of this demand growth, New Zealand will need to deliver more renewable energy. Additionally, while the country transitions to renewable energy, hydro-electricity generation also plays an important role in ensuring a reliable supply of renewable energy as the country transitions away from reliance on fossil fuels.

³[Ministry of Business Innovation & Employment - Energy in New Zealand 2025](#).

⁴ NZIER report, Appendix A (New Zealand electricity system). (Appendix D - Kaimai Economic Assessment - New Zealand Institute of Economic Research).

⁵*Transpower NZ Ltd, 2025 Transmission Planning Report* (2025), Figure 10-5 Kaitemako–Tauranga transmission capacity for low (14 MW), medium (33 MW), and high (40 MW) Kaimai generation levels, page 177.

[Transpower - Transmission Planning Report](#)

Relevance of Hydro-Electricity Power Generation to Security of Supply

20. Hydro-electricity power generation is a reliable source of renewable energy, because it provides baseload electricity supply, and firming and peaking capacity. In particular, hydro-electricity power generation:
 - (a) Provides electricity when it is needed, typically through 'peaking' or 'firming'. 'Firming' describes the ability of more stable power supply sources (such as hydro) to ensure a reliable and consistent power supply when other sources such as solar or wind are more variable and highly weather-dependent;
 - (b) Provides assistance with system inertia to provide a more reliable power delivery. System inertia is the ability of an electrical power system to oppose sudden changes in its operating frequency. Because hydro-electricity use heavy turbines and generators they possess significant kinetic energy that assists with resisting sudden changes in power system frequency, providing better grid stability; and
 - (c) Provides spinning reserve – the ability to quickly respond to system disturbances and/or load changes to assist the electricity system to maintain frequency.
21. These system advantages above are core requirements for a functioning electricity grid and are becoming increasingly important as more renewable energy from wind and solar technologies are added to the grid as those technologies do not provide these aspects.
22. The core hydro-electricity generation assets enable additional future wind and solar to be added to New Zealand's national grid.

Renewable Electricity Generation from the Kaimai HEPS

23. The Kaimai HEPS is embedded into the local distribution network, operated by Powerco and makes a substantial contribution to meeting peak demand and total output requirements for Tauranga (where demand for electricity is growing). Tauranga's total annual electricity demand is approximately 528 GWh per annum, and the Kaimai HEPS generates approximately 169 – 200 GWh annually (25 - 29,000 households).⁶ This is approximately 32% of Tauranga's electricity demand per annum.⁷
24. Generating electricity closer to major demand centres like Tauranga improves the efficiency of the system (less transmission losses). However, in parallel the Kaimai HEPS also provides controllable, flexible, and reliable generation that adjusts to Tauranga's daily (morning and evening) demand peaks. This ability to 'peak' or provide electricity when demand is highest, means Kaimai HEPS provides a valuable benefit in deferring expensive transmission upgrades into Tauranga.
25. Locally, this ability to 'peak' on a daily basis, offsets the amount of electricity Transpower has to import into Tauranga during times of peak demand. This has meant the Kaimai HEPS location has offset investment in the National Grid by more than 10 years, helping to reduce the overall cost of electricity supply.
26. The following graph, taken from a Transpower assessment, demonstrates how Tauranga's electricity demand has exceeded the transmission capacity since 2020 in a 'low generation' scenario, hence acknowledging how the Kaimai HEP's contribution fills Tauranga's demand gap and underpins Transpower's planning assumptions.⁸

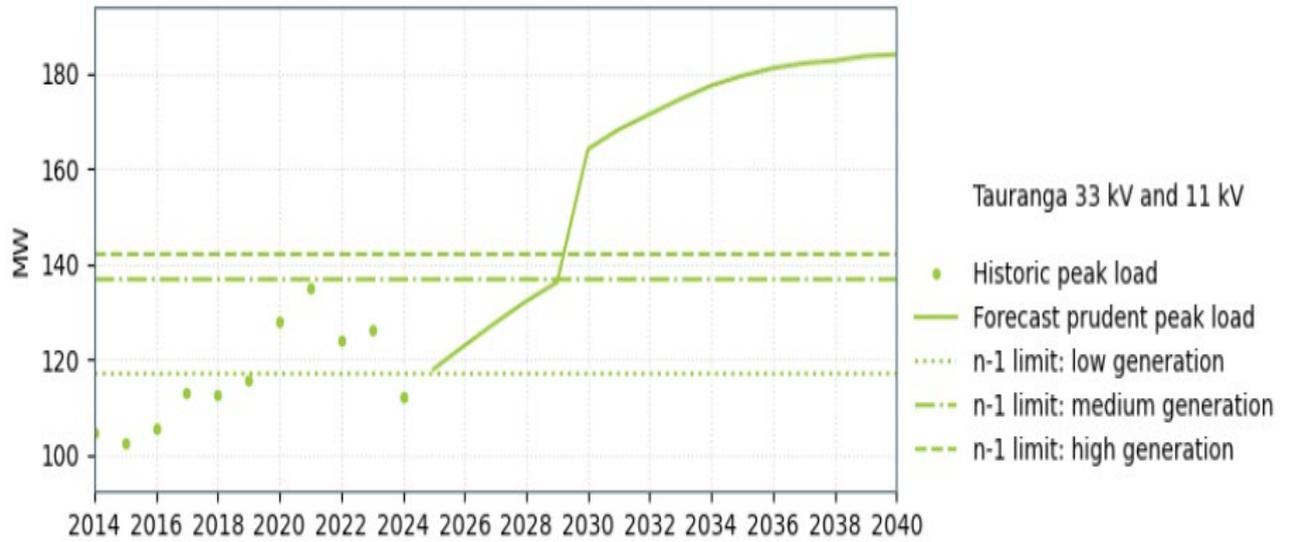
⁶ NZEIR Report, Appendix D, page i.

⁷ NZEIR Report, Appendix D, page 8.

⁸ *Transpower NZ Ltd, 2025 Transmission Planning Report (2025)*, p. 177.

[Transpower - Transmission Planning Report](#)

Figure 10-5: Kaitemako–Tauranga transmission capacity for low (14 MW), medium (33 MW), and high (40 MW) Kaimai generation levels



Note: Any difference in the supply capacity on the graph (in MW) and the asset rating (in MVA) is due to load power factor and impedance.

Todd Mead

12 February 2026

BEFORE THE EXPERT PANEL UNDER THE FAST-TRACK APPROVALS ACT 2024

IN THE MATTER OF an application for resource consents under the Fast-track Approvals Act 2024 (**FTAA**) by Manawa Energy Ltd for activities associated with a listed project, being the Kaimai Hydroelectric Power Scheme Re-Consenting.

STATEMENT OF EVIDENCE OF SELENE CONN

SEDIMENT AND EROSION EFFECTS



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Introduction

1. My name is Selene Conn.
2. I have the following expertise:
 - (a) I hold a Bachelor of Science (Hons) from the University of Auckland in Geography and Biology, and a Master of Science from the University of Auckland in Geography (specialising in Fluvial Geomorphology).
 - (b) I am a Technical Director of Fluvial Geomorphology at Tonkin & Taylor Limited, based in Tauranga. I have been employed in this role for approximately five years, and have been employed at Tonkin & Taylor for nine years.
 - (c) I hold a specialist certification in Fluvial Geomorphology from the Certified Environmental Practitioner (CEnvP) Scheme, sit on the Specialist Environmental Advisory Committee (SEAC) for the geomorphology specialist certification, and routinely participate in the interview and certification process for CEnvP Geomorphology applicants in Australia and New Zealand.
 - (d) I was the New Zealand Rivers Group Chairperson from 2021-2022.
 - (e) I was awarded the New Zealand Rivers Group Wāhine Toa award in 2023 which recognises my contributions to the River Industry in New Zealand.
3. I prepared the *Sediment and Erosion Effects Assessment* (**Assessment**) submitted with the application for replacement consents for the Kaimai Hydro-Electric Power Scheme (**Kaimai HEPS** or the **Scheme**) at Annexure I.

Code of Conduct for Expert Witnesses

4. I confirm that I have read the Environment Court's Code of Conduct for Expert Witnesses, as contained in section 9 of the Environment Court's Practice Note 2023, and referred to in the Fast-track Approvals Act 2024: Panel Conveners' Practice and Procedure Guidance 25 July 2025. I have complied with Environment Court's Code of Conduct for Expert Witnesses in preparing this response.

Response to Comments

5. Manawa Energy Limited received 13 comments pursuant to section 53 of the FTAA on its application for replacement resource consents for the Kaimai HEPS. The comments from the Bay of Plenty Regional Council (**BOPRC**) and the Department of Conservation (**DOC**) made comments relating to the draft Sediment Monitoring Plan filed with the Expert Panel on 23 January 2026.
6. Both the BOPRC and DOC support the draft Sediment Monitoring Plan. However, BOPRC recommends that conditions include a proportionate 'monitor-to manage' mechanism to require Manawa Energy to assess monitoring results and, where agreed indicators show emerging adverse trends, prepare and implement an appropriate management response.¹ DOC recommends that a condition of consent is included to ensure that the recommendations of the monitoring are carried out by Manawa Energy if monitoring results demonstrate it is required.²
7. This statement of evidence responds to those comments.

Sediment Assessment - Context

8. Given that the comments made on sediment are discrete and relate to the draft Sediment Monitoring Plan, I do not address the full Assessment in this statement of

¹ BOPRC comments at 3.4-3.5.

² DOC comments at 4.4.

evidence. However, the following conclusions from the Assessment are relevant to contextualise the monitoring approach I have recommended:³

- (a) The Kaimai HEPS is resulting in reduced sediment and flow into reaches downstream of structures. This has resulted in channel contraction in some of the larger rivers where no residual flow has been provided to date (but where spills are reasonably frequent), and changes to river processes (e.g. the colonisation of riverbeds with terrestrial vegetation). Most reaches of river below Kaimai HEPS structures are bedrock dominated which do not require mobile sediment to maintain form and function.
- (b) There are two exceptions to the above, the Wairoa River (WAI-3) below the Ruahihi Power Station, and the most downstream extent of the Omanawa River (OMW-4). Both of these reaches are alluvial rivers, which require mobile sediment to maintain their form and function, and are susceptible to bed and bank erosion arising from changes in sediment loads and/or discharge associated with the ongoing operation of the Kaimai HEPS.
- (c) Active bank erosion was observed in OMW-4, but is likely only partially attributable to the reduction in fine-grained sediment supply arising from the Omanawa Weir and Tunnel 2 diversion. A noticeable channel-narrowing trend has been observed in WAI-3 which is likely attributable to the 1981 Ruahihi Canal collapse. However, any potential channel responses (e.g. entrenchment and channel widening) to the on-going operation of the Kaimai HEPS is not currently evident, and may not manifest for some decades.
- (d) Overall, there is a lack of quantitative evidence of the ongoing effect of the Kaimai HEPS on sediment continuity to the alluvial sections of the Wairoa and Omanawa Rivers (WAI-3 and OMW-4). Therefore, I have recommended monitoring of the potential effects of the Kaimai HEPS on the Wairoa and

³ Assessment, Executive Summary, pp iv-v.

Omanawa Rivers. The purpose of the monitoring would be to confirm there are no ongoing channel instability issues, or future channel changes, in the alluvial sections of the Wairoa and Omanawa Rivers over time as a result of the operation of the Kaimai HEPS.

9. In summary, based on the geomorphic data available there is currently no clear signal of geomorphic effects arising as a result of the ongoing operation of the Kaimai HEPS, and less certainty regarding the role of the Kaimai HEPS versus the other non-scheme related geomorphic drivers in the ability to generate geomorphic change in the alluvial sections of the Wairoa and Omanawa Rivers.
10. As a result, I have recommended that sediment monitoring be undertaken in WAI-3 and OMW-4. This should include regular collection of geomorphic data at a frequency and scale which would enable the detection of geomorphic change in the context of the natural variability of the geomorphic drivers. I made recommendations as to what the monitoring should consist of, in the Assessment,⁴ and have since prepared the draft Sediment Monitoring Plan.

Monitoring

11. The focus of the monitoring proposed is on identifying trends in channel form in the alluvial river reaches in the Wairoa and Omanawa Rivers as a result of reduced sediment supply (and discharges from the Ruahihi Power Station) arising from the ongoing operation of the Kaimai HEPS, as opposed to geomorphic change arising from other non-scheme related drivers (such as large floods, pine harvesting etc).
12. I consider the recommended sediment monitoring is the appropriate action to ascertain if there is geomorphic change occurring in the alluvial sections of these rivers, and if the geomorphic change is likely attributable to the Kaimai HEPS or other

⁴ Assessment, sections 5.1 and 5.5.

non-scheme related geomorphic drivers, before mitigation or management measures should be considered.

13. As alluvial rivers typically respond slowly in response to natural variability and fluctuations in sediment and discharge regimes, as well as to human induced changes, geomorphic monitoring / data needs to span reasonably long time periods (decades) and be collected at intervals which are appropriate to each river's specific character and behaviour. As I have noted in the Assessment, channel change in WAI-3 as a result of the Kaimai HEPS may not be evident within the next 40 years, but will likely manifest as a downstream 'wave' of channel widening if it does occur.⁵

14. The methodology in the Sediment Monitoring Plan⁶ recommends monitoring intervals and timeframes that will separate short-term fluctuations from longer-term geomorphic trends, allowing event-driven changes (e.g. floods or landslides) to be distinguished from sustained geomorphic trends which may be manifesting from changes in the sediment regime as a result of the on-going operation of the Kaimai HEPS. To further support the differentiation between Scheme and non-Scheme related geomorphic change, the sediment monitoring methodology relies on a 'paired catchment' approach with selected similar reaches of an adjacent river, the Kopurererua River, which is not impacted by operations at the Kaimai HEPS.

15. Specifically in response to the comments from the BOPRC and DOC, in my view it is not appropriate at this stage to try to identify 'triggers' or definitions of 'adverse trends' in the Sediment Monitoring Plan (or conditions), as I have not yet been able to quantify the 'natural' versus 'possible scheme induced' envelopes of change for either the Omanawa or the Wairoa Rivers, largely due to limited historic geomorphic data. The monitoring proposed in the Sediment Monitoring Plan is to enable this differentiation of change to be identified and reported upon, in particular (d) and (e)⁸:

⁵ Assessment, p 92.

⁶ Draft Sediment Monitoring Plan, section 4.

d) *Commentary on any links between volumetric sediment changes, geomorphic change (including hotspots) and possible geomorphic drivers, including the potential impact of the Kaimai HEPS.*

e) *Identification or discussion of any emerging medium to long term geomorphic trends, particularly in WAI-3 as it recovers from the Ruahihi Canal collapse.*

16. However, I have included a section within the draft Sediment Monitoring Plan, which addresses effect management or mitigation if the sediment monitoring identifies adverse geomorphic change in OMW-4 and WAI-3 as a direct result of the on-going operation of the Kaimai HEPS.⁷ The reporting which I have recommended also goes beyond reporting of monitoring, and includes (g):⁸

Any geomorphically appropriate recommendations to manage sediment or erosion effects caused by the continued operation of the Kaimai Hydro-Electric Power Scheme. Recommendations must be tied to the geomorphic driver of change (e.g. reduction in sediment load), or the specific manifestation of a geomorphic process (e.g. bank erosion) (refer to Section 6 below).

Conclusion

17. While there is currently no clear signal of geomorphic effects arising as a result of the ongoing operation of the Kaimai HEPS, there is the potential for geomorphic change in the alluvial sections of the Wairoa and Omanawa Rivers as a result of the Kaimai HEPS, and therefore I consider that monitoring is appropriate in those sections given the limited quantitative data available.
18. The draft Sediment Monitoring Plan recommends a methodology to identify any adverse trends as a result of the Scheme's operation. In my opinion it would be premature to try to define 'adverse trends' and responses in the draft Sediment

⁷ Draft Sediment Monitoring Plan, section 6.

⁸ Draft Sediment Monitoring Plan, section 5.

Monitoring Plan (or conditions), however the Sediment Monitoring Plan does articulate mitigation and management measures, and recommend reporting on those.

Selene Conn

12 February 2026

BEFORE THE EXPERT PANEL UNDER THE FAST-TRACK APPROVALS ACT 2024

IN THE MATTER OF an application for resource consents under the Fast-track Approvals Act 2024 (**FTAA**) by Manawa Energy Ltd for activities associated with a listed project, being the Kaimai Hydroelectric Power Scheme Re-Consenting.

STATEMENT OF EVIDENCE OF DR GREG RYDER

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Introduction

1. My full name is Gregory Ian Ryder.
2. I hold the qualifications of BSc. (Hons, 1st class) (Zoology) and PhD., (Zoology), both from the University of Otago. Both my honours dissertation and PhD thesis examined aspects of river ecology.
3. I work as an independent Environmental Scientist and RMA commissioner, and have worked as a consultant for over 35 years undertaking investigations and studies throughout New Zealand. I have been a former Director and Environmental Scientist at Ryder Environmental, a consulting company I established in 1995 until sold in March 2022.
4. I have considerable experience with fish habitat and fish passage assessments at a range of existing and proposed infrastructures throughout New Zealand, particularly those associated with hydro-electric schemes and intakes for industrial, irrigation and potable water supply. I have detailed these in Appendix A.
5. I prepared the report *Aquatic Ecology and Water Quality Assessment* and the *Native Fish Passage Management Plan* (NFPMP) submitted with the applications for replacement resource consents for the Kaimai Hydro-electric Power Scheme (**Kaimai HEPS**) at Annexure J and Annexure N, respectively. I note that the NFPMP evolved out of advice and information gathered from a range of mana whenua and scientists with expertise in native fish habitat, migration patterns and fish passage requirements. Overall, I have been involved in the re consenting of the Kaimai HEPS since 2021.
6. In preparing this response to comments, I have reviewed the comments supplied by the Bay of Plenty Regional Council (BOPRC) and the Department of Conservation (DOC).

Code of Conduct for Expert Witnesses

7. I confirm that I have read the Environment Court's Code of Conduct for Expert Witnesses, as contained in section 9 of the Environment Court's Practice Note 2023,

and referred to in the Fast-track Approvals Act 2024: Panel Conveners' Practice and Procedure Guidance 25 July 2025. I have complied with Environment Court's Code of Conduct for Expert Witnesses in preparing this response.

Response to comments

8. In addressing the comments from the BOPRC and DOC, it is necessary for context to set out how the various reaches and structures operate and interact with each other. I therefore deal with the physical context for fish passage and the residual flows, and respond to the comments (particularly those from DOC) where relevant to particular reaches.

Physical setting: Context for fish passage and residual flows

9. The Kaimai HEPS (or the 'Scheme') comprises a network of weirs, tunnels, canals and dams that direct water through a progression of power stations. The Scheme utilises the ability of volcanic Ignimbrite geology and associated topography to store the rainwater and release it over a long period, which is important, as the reservoirs associated with the Scheme are relatively small and only provide daily storage¹.
10. The Scheme is set within the Wairoa River catchment (Figures 1 and 2). The topography of this catchment is heavily influenced by its volcanic origins and underlying geology, which is dominated by the Ignimbrite rock. The stream and river networks associated with the Scheme flow north/north-east, entrenched in steep to vertical gorges, before joining to form the Wairoa River that flows into Tauranga Harbour. Interfluves² with similar heights separate the tributaries. Streams and rivers have cut narrow gullies on these interfluves through the soft upper Mamaku Ignimbrite to its harder middle layer.
11. The geology has resulted in the formation of numerous bedrock waterfalls, bedrock chutes and extensive boulder fields, which are evident in all of the tributaries of the Wairoa River that lie within the Scheme, as well as upstream and immediately downstream of it. Some of the waterfalls are more or less vertical, and high, with

¹ Morgan, MD. 1986. *Geology of the northern Mamakau Plateau*. MSC thesis. University of Waikato.

² An interfluvium is a narrow, elongated and plateau-like or ridge-like landform between two valleys.

water cascading vertically into plunge pools below. I comment on some of these features further on in my evidence when I discuss individual tributaries and residual flow reaches. Below the Ruahihi Power Station tailrace, the Wairoa River is tidally influenced and has a very low gradient. The river channel in this section is characterised by alluvial benches and floodplains with the bed composed largely of fine-grained material³.

12. As well as having a steep gradient and frequent waterfalls, the upper tributaries of the Wairoa River are deeply incised, which means flowing water is always contained within narrow channels surrounded by steep banks of bedrock. As flows increase down these channels, water velocities increase sharply but increases in water depths and the wetted width are less notable. These changes to the physical nature of the watercourses as flows increase are not that favourable for enhancing habitat and abundance for fish and benthic macroinvertebrates that would typically be expected to inhabit rivers this close to the coast. Similarly, upstream fish passage is not greatly enhanced with increased flow as it does not greatly assist passage up waterfalls or through chutes carved within the bedrock. I elaborate on these assessments further below when I discuss individual tributaries and residual flow reaches, but note here that in my opinion these physical features, together with largely intact riparian vegetation that provides shading, have a significant influence on local aquatic flora and fauna.
13. Another feature of the tributaries of the Wairoa River below the Scheme's upper intake weirs and drop pipes⁴ is that they gain water progressively downstream, through springs and other groundwater inflows, and this is another feature of the local geology. This means that even where there are no residual flows currently required downstream of the intakes, surface flow manifests a relatively short distance downstream of these flow diversions.

³ Tonkin & Taylor. 2025. *Kaimai HEPS Consent Renewal: Sediment and Erosion Effects Assessment*. B.08 – Appendix I of the application.

⁴ e.g., the Opuaki, Ngatuhua, Mangapapa and Omanawa river intake weirs.

14. Water quality, instream habitat and riparian habitat are generally good throughout the river reaches associated with the Scheme. This is due to the physical features of the catchment described above, the extensive bush-lined riparian margins of almost all the watercourses associated with the scheme creating overhanging canopies, and the relative lack of development in the upper and surrounding catchments. These features have resulted in benthic communities in reaches downstream of intake structures and other Scheme structures being generally indicative of good to very good water quality and habitat conditions. The exceptions to this are some relatively short sections of river immediately downstream of flow diversion structures, dams and weirs.

Residual flow reaches

15. In this section of my evidence I provide a brief description of the physical environment at and below each of the upper catchment intakes associated with the Scheme and discuss how this and other factors have influenced my recommendations around the provision for a downstream residual flow. I begin my assessment with the upper catchment structures, moving from the most western side of the Scheme (Opuiaki River intake weir) and progressively move east (ending with the Omanawa River intake weir), then moving progressively downstream (Figure 2).

Opuiaki River intake weir

16. Downstream of the Opuiaki Weir there is a requirement, via the existing consent conditions, for a residual flow of 280 L/sec, which is provided for via a set of pipes located on the downstream face of the weir. In addition to the residual flow, the weir overtops on average 91 days per year (January 2016 to February 2023)⁵.
17. The river discharges into the head of Lake McLaren about 13 km further downstream. Between the weir and Lake McLaren, the Opuiaki River is joined by several significant tributaries including (from upstream to downstream) the Mangaroa Stream, Ngatuhoa

⁵ Tonkin & Taylor. 2025. *Kaimai HEPS Consent Renewal: Hydrology Report*. B.07 – Appendix H of the application (section 4.3.1).

Stream, Awakutoku Stream and Mangaonui Stream. Thus, the river gains additional flow by the time it reaches Lake McLaren.

18. I recommend that the current residual flow of 280 L/sec is maintained. Water quality in the residual reach is good (suitable dissolved oxygen levels and temperatures) and surveys have found the reach supports healthy benthic communities throughout its length, demonstrated by good to excellent community health indices (MCI, QMCI and ASPM), with the fauna dominated by sensitive species belonging to the mayfly, caddisfly and stonefly families (often referred to as EPT taxa). Tuna, rainbow trout and kōura are known to be present upstream and downstream of the intake weir. This information is expanded on in Sections 3.1.3 and 3.4.3 of the Aquatic Ecology and Water Quality Assessment I prepared (Appendix J to the application).
19. The river gradient downstream of the weir is relatively steep and dominated by very large boulders and bed rock surrounded by steep-sided banks with heavy vegetation. Waterfalls are common and some are large (see Figure 3 as an example). In my opinion, additional water by way of an increase to the residual flow would do little, if anything, to enhance water quality, benthic habitat and aquatic biodiversity, given the river's physical characteristics.
20. Due to the design of the Opuiki Weir, and the location of the pipe outlets that supply the downstream residual flow, there is little opportunity for climbing fish species to navigate upstream and over the weir unless it is spilling (which may provide wetted surfaces along the edges due to splash). In 2024, Manawa Energy installed a water pump to provide a continuous wetted surface on the concrete on the true left of the weir, with the purpose of providing a continuous wetted face for climbing native species (e.g., kōkopu and tuna species) to move upstream past the weir. It will take time (possibly several migration seasons) to assess the effectiveness of this mitigation measure for upstream fish passage as it may take years for elver to migrate this far up the catchment (following releases of elver into Lake McLaren or the lower section of the Opuiki River).

21. A comprehensive fisheries assessment of the Wairoa catchment by Mitchell *et al.* (1994⁶) concluded that the Opuiki River was probably the most productive tuna (and trout) fishery of rivers affected by the Kaimai hydro-electricity power scheme. It is also one of two rivers where tuna have been detected upstream of Scheme structures (see Table 16 of the Aquatic Ecology and Water Quality Assessment Report, Appendix J of the AEE). Downstream migrating adult tuna are likely to be entrained into the weir's intake and tunnel to Ngatuhua Stream or move down the Opuiki River channel during spill events at the weir (if they coincided with migration periods).
22. I have recommended that downstream passage of adult tuna is monitored to understand behaviour and seasonal patterns. These actions form a component of the proposed NFPMP. I do not recommend increasing the residual flow to assist in the downstream passage of adult migrating tuna as migration typically occurs in association with rain events, which means the river will most likely be spilling over the Opuiki Weir (and other weirs associated with the Scheme).
23. DOC has expressed concerns around injury and mortality to migrant tuna at weir and drop pipe structures where passage is provided only during high flows, including the Opuiki Weir. These structures are described and pictured in the freshwater ecology report of the substantive application (Appendix J). DOC's comments cite an overseas literature review⁷ that was heavily biased towards studies of salmonids in North America.
24. In New Zealand, a field trial conducted by Watene and Boubée (2005⁸) at the 82 m high Patea Dam revealed that more than 70% of tagged migrant shortfin eels (850 to 940 mm long) introduced under the opened spillway gates with a 70 mm opening and a head of around 9 m, survived with minimal injuries. They noted that some of the injuries observed on the released fish were likely a result of capture, storage, and

⁶ Mitchell, C.P., Kusabs, I.A., and Williamson, G. (1994). *Fishes of the Wairoa River – the fish community and fishing opportunities*. Prepared for the Eastern Region Fish and Game Council and the Department of Conservation.

⁷ Algera, DA., Rytwinski, T., Taylor, JJ. *et al.* 2020. *What are the relative risks of mortality and injury for fish during downstream passage at hydroelectric dams in temperate regions? A systematic review*. *Environ Evid* 9, 3. <https://doi.org/10.1186/s13750-020-0184-0>.

⁸ Watene, EM., Boubée, JAT. 2005. *Selective opening of hydroelectric dam spillway gates for downstream migrant eels in New Zealand*. *Fisheries Management and Ecology*, 12(1): 69-75.

handling, indicating that the actual survival rate would typically be higher than the 70% suggested by the trial.

25. Further, Beentjes *et al.* (2005⁹) concluded that, based on overseas and New Zealand studies, a spillway can be considered a safe way for fish to pass over a dam where it is less than 10 m high and fish are able to fall safely on the downstream side.
26. This information is relevant to passage of tuna over Kaimai HEPS structures as the weirs and drop structures in the upper section of the Kaimai Scheme (and the Mangakarengorengo weir in the lower catchment) have mostly vertical or near-vertical downstream faces of between approximately 0.6 and 4.3 m¹⁰ (i.e., much less than 10 m from the studies referenced) that spill during freshes. Adult tuna typically migrate downstream during freshes and so are moving with much greater flows over relatively short fall distances. In contrast, there are a number of much longer, natural, vertical or near-vertical features on these tributaries with protruding rock features along the way. While some have plunge pools at the base that may help cushion the landing of tuna, a number have been identified have relatively shallow water depth at their base, or have protruding hard surfaces on the way down (e.g., see Figure 4).
27. If tuna were abundant within these upper catchments prior to the construction of the Scheme, migrant adults must have been able to negotiate these natural drops which, in some cases, appear more challenging for safe downstream passage than the Scheme's weirs. Consequently, I consider that DOC's position is overstated with respect to effects on adult tuna moving downstream over weirs, including the Opuiaki Weir, under spilling conditions.
28. Notwithstanding my assessment above, I am of the view the draft NFPMP is sufficiently robust and flexible to:

⁹ Beentjes, MI., Boubée, JAT., Jellyman, DJ., and Graynoth, E. 2005. *Non-fishing mortality of freshwater eels (Anguilla spp.)*. New Zealand Fisheries Assessment Report 2005/34.

¹⁰ Omanawa weir height – 4.3 m, Mangapapa and Opuiaki weir heights – 3.65 m, Ngatuhua weir height – 1.52 m, Awakutoku weir height – 1.22 m, Ruakaka weir height – 0.9 m.

- Respond to any monitoring information that indicates that modifications to passage at various structures are necessary and warranted in order to achieve the objectives of the plan; and
- Salvage operations (i.e. capture and safely transfer downstream) for tuna entrained within the Scheme's structures is available where safe downstream passage is not provided for.

29. I note that the DOC comments (at paragraph 4.6) state that; "It is recommended that the NFPMP (and condition) should provide for adaptive management to address matters that arise throughout the duration of the consent...". I consider that the concept of adaptive management is inherently contained within the NFPMP, as identified in my comments in the previous paragraph. For example, proposed condition 14.2(d) provides for "*...alternative techniques that may be utilised to facilitate the upstream and downstream movement of native fish species, where monitoring and trialing demonstrates that some of the passive migration measures are ineffective or not practicable*". Proposed condition 14.2(i) requires the plan to identify "*...the process by which the effectiveness of the various measures that will be implemented will be reviewed and adjusted if necessary*".

Tauwharawhara Stream intake weir and drop pipe

30. Tauwharawhara Stream is a small tributary of the Ngatuhua Stream. The stream upstream of the weir has a small catchment area of 1.3 km². It joins the Ngatuhua Stream just over 1 km downstream of the intake.
31. All of the flow in the stream is abstracted except for high flow events when water may spill over the weir. Flow assessments by Manawa Energy hydrologists over recent years observed very minor increases up to 86 m downstream of the weir (Isobelle Barrett, Contact Energy, pers. comm.), and the stream channel remained dry on some monitoring occasions (Section 4.3.1.10(ii) of the Aquatic Ecology and Water Quality Assessment report, Appendix J of the substantive application). Flows and habitat further downstream have not been assessed due to difficult access associated with the steep gradient of the stream and tightly enclosed canopy of native vegetation.

However, based on observations from other tributaries, some seepage water is likely to be present in the stream's lower reaches.

32. The upstream catchment of the Tauwharawhara Stream is not large, and consequently, in my opinion, the effect of the abstraction of its flow is relatively insignificant with respect to fish passage and the amount of habitat for fish and other aquatic biota that this stream can provide. Fish are less likely to be attracted up into the Tauwharawhara Stream as its flow is (naturally) much smaller than that of the Ngatuhua Stream, and even smaller than the Opuiki River. For similar reasons, the effect of abstraction is relatively insignificant with respect to benthic invertebrate communities. There is nothing unique in the Tauwharawhara catchment or its watercourse that would influence differences in stream biodiversity. Consequently, I have not recommended a residual flow below this intake.

Ngatuhua Stream intake weir

33. The Ngatuhua Stream is a tributary of the Opuiki River and joins with the Tauwharawhara Stream just over 1 km downstream of the Ngatuhua Weir. Diverted water from Opuiki River and Tauwharawhara Stream is conveyed by a tunnel and discharges into the Ngatuhua Stream immediately upstream of the Ngatuhua intake weir.
34. The Ngatuhua Stream has a residual flow at the weir of 60 L/sec and starts to gain more flow approximately 60 m further downstream (see Section 4.3.1.10(iii) of Appendix J to the substantive application). The residual flow, along with spill events over the weir, provide good habitat immediately downstream of this weir. A survey of the lower Ngatuhua Stream in January 2024 found good habitat for fish and a diverse benthic macroinvertebrate community dominated by EPT taxa (see Section 3.4.3 of Appendix J to the application). Therefore, I have recommended that the current residual flow is maintained.
35. The residual reach of the Ngatuhua Stream carries sufficient flow to allow for upstream fish passage, however the Ngatuhua Falls (Tapiri Moko) is a potential barrier or partial barrier to upstream migration and increasing the residual flow will, in my opinion, be

of no meaningful ecological benefit because of this. When not spilling water, the Ngatuhua Weir itself provides little opportunity for climbing fish species to navigate upstream and over the weir. When spilling, there may be opportunity for climbing species to move upstream by utilising the extremities of the channel, where velocities are far less severe, and where only damp surfaces are present (e.g., due to splash).

36. Downstream passage over the weir is only achievable under high flow conditions. In other circumstances, the flow is drawn into the intake. Manawa have heard from local kaitiaki that they have seen tuna in the Ngatuhua Canal, and as part of their trap and transfer programme, they are planning to begin trapping in the canal (Abi Witney-Collins, Contact Energy, pers. comm.). The Ngatuhua spills water over the intake weir on a regular basis, and so downstream migrating tuna can access the lower Opuiaki River during spill events.
37. The Ngatuhua Canal is an approximately 700 m long slow flowing environment that conveys water from the Ngatuhua intake weir to Tunnel 5, which conveys the abstracted water to the Kaimai 5 Power Station, which in turn discharges into the Mangaonui Stream immediately upstream of Lake Mangaonui. The intake to Tunnel 5 is screened preventing adult tuna from entering. Consequently, there is no risk of adult tuna reaching the turbine of the Kaimai 5 Power Station.

Awakotuku Stream intake weir and drop pipe

38. The Awakotuku Stream is another small tributary of the Opuiaki River. The stream upstream of the weir has a small upstream catchment area of approximately 1.3 km². There is no residual low below the intake and I have not recommended that one be provided. The reach below the weir is just over 3 km long before it joins the Opuiaki River. While the intake can take all of the flow, the reach below gains some meaningful surface flow about 150 m downstream of the weir.
39. In January 2024, an inspection of the lower Awakotuku Stream 10 m upstream of the confluence with the Opuiaki River found the flow to be bank to bank (Figure 5). Diverse instream and riparian habitat were noted, and the macroinvertebrate community was dominated by EPT taxa (19 taxa were EPT, QMCI score of 8.5, or 'excellent'). The

catchment upstream of the Awakotuku Weir is not large, and so the effect of the abstraction of its flow is, in my opinion, relatively insignificant with respect to fish passage and the amount of habitat for fish and benthic biota that it can provide. Additionally, given the small size of the catchment upstream of the weir, in my opinion, it is unlikely to support significant habitat for tuna and other native species. I also note that no fish species have been recorded in the upper catchment, but kōura are present.

Mangaonui Stream below Lake Mangaonui

40. Lake Mangaonui has a concrete spillway that is approximately 140 m long and its bottom end joins the Mangaonui Stream channel. The Mangaonui Stream below the Lake Mangaonui spillway has no consented residual flow. Despite no residual flows from the dam, and only occasional overtopping events down the spillway, the stream immediately below the spillway maintains a continuous, shallow flow, likely from groundwater (Figure 6).
41. I have not recommended a residual flow to the Mangaonui Stream below Lake Mangaonui. The residual flow reach is heavily shaded and set within largely step-sided riparian margins. Drone footage indicates that by at a distance of approximately 1 km downstream of the weir, the Mangaonui Stream has an obvious continuous flow, and the flow is bank to bank by the time it nears the confluence with the Opuaki River (Figure 7). Monitoring showed that dissolved oxygen in the stream immediately downstream of the spillway was in band B for 1-day minimum DO and band C for 7-day minimum DO, and above the NPS-FM national bottom line for dissolved oxygen. While the benthic invertebrate community health is 'fair' to 'poor' (MCI and QMCI scores) immediately downstream of the spillway, I expect this to progressively improve with distance downstream.
42. With respect to fish passage, the first steps of the NFPMP is to understand the movement of migrating fish species once they are transferred upstream of the McLaren Falls Dam. This includes Mangaonui Stream. Mangaonui Stream already has a flow in its lower reaches (see Figure 7), and so has potential to attract upstream

migrating species, if they choose this tributary over other tributaries of the Opuia River. The NFPMP can respond to indications for significant upstream migration, should this be necessary.

43. Having said that, providing fish passage into Lake Mangaonui would provide limited habitat for migratory species as access further upstream via the tunnels is unlikely (e.g., the western diversion enters the lake via the K5 power station).

Mangapapa River intake weir

44. The Mangapapa River is a major tributary of Lake McLaren that has an intake weir in its upper catchment. The intake diverts water into a tunnel which conveys water into Lake Manganou. The weir has a similar design to the Opuia Weir, with a vertical height of approximately 3.65 m that overtops under high flow conditions.
45. Currently, there is no consented residual flow and the channel immediately below the weir has very little surface flow under most flow conditions. I note that, although there is no residual flow, the Mangapapa Weir does spill water on a regular basis (between June 2017 and March 2023, the weir spilled on average 49 days per year).
46. I recommended a residual flow of 100 L/sec be implemented at the Mangapapa Weir. I consider this continuous flow is of sufficient magnitude to improve the instream habitat quality and water quality in the reach immediately below the weir. In conjunction with spill events, these flows will benefit aquatic communities and in particular minimise restrictions on instream habitat immediately downstream of the intake weir. It will also provide the opportunity for upstream fish passage at the weir for native climbing species, should migratory fish species be able to gain access to this upper section of the catchment (I note that there is no known upstream passage past the Matariki Dam).
47. Ultimately, infrastructure to enable passage up and over the weir could be necessary, depending on how the residual flow is released at the weir. Prior to any commitments to providing fish passage at the weir, the short-term goal is to understand the recruitment pathway through multiple barriers downstream (i.e., Lake McLaren Dam,

Matariki Dam, boulders fields and waterfalls downstream of Mangapapa weir), and this forms part of the NFPMP.

48. I note that the proposed 100 L/sec residual flow will be supplemented by additional water in the form of small tributary flows, springs, and seeps from groundwater that already discharge to the Mangapapa River starting not far downstream of the weir. In particular, hydrologists undertook flow gaugings down the Mangapapa River below the intake weir in February 2022 following no rain in the preceding two weeks. They measured a flow of 29.6 L/sec 500 m downstream of the weir and 179 L/sec upstream of the Lloyd Mandeno Power Station (~4.5 km downstream). This current flow provides diverse and healthy instream and riparian habitats, and healthy benthic invertebrate communities, except for the section immediately downstream of the weir.
49. A summer survey of the river reach between the Mangapapa Weir and the Lloyd Mandeno Power Station (nearly 5 km long) by a team specialising in negotiating difficult terrain found the river's channel to be very steep with a series of large waterfalls that ranged between 5 and 15 m in height. Plunge pools and vertical sided bedrock walls were present and, in general, the river channel predominantly alternates between sections dominated by bedrock and sections with large boulder (car sized in the upper section) fields sitting atop bedrock, often with steep, near vertical banks of bedrock.
50. I noted above that the current lack of a residual flow downstream of the Mangapapa Weir causes some impacts to water quality and instream habitat immediately downstream of the weir. Dissolved oxygen levels are sufficiently low to have potential for moderate stress on some aquatic organisms, however, other water quality indices are sufficient to support healthy aquatic communities. I consider that the proposed residual flow will alleviate any issues with low dissolved oxygen.
51. No quantitative assessment of how instream habitat varies with flow has been undertaken as the physical nature of the river environment, as summarised above, meant that detailed survey methods would have been extremely difficult to undertake

safely, and the standard methods used to quantify instream habitat with changes in flow, would not be possible. As such, my recommendation for a residual flow of 100 L/sec is what I consider will be a sufficiently conservative flow to address water quality and instream habitat effects immediately below the weir. In my opinion, a higher residual flow will not provide significant benefit to downstream water quality, instream habitat or fish passage.

Ruakaka Stream intake weir

52. Ruakaka Stream is a small tributary of the upper Omanawa River. Stream flow at the Ruakaka intake weir is diverted into a tunnel via a drop pipe with a rectangular steel grilled intake. There is no residual flow requirement, but water can spill over the weir under high flow conditions. The catchment upstream of the Ruakaka Weir has an area of 3.3 km². No fish species have been recorded as being present upstream of the weir, but kōura have been detected through eDNA sampling.
53. Manawa Energy hydrologists have assessed flows 70 m and 380 m downstream of the weir. Flows 70 m downstream are less than 1 L/sec increasing to between 7 and 22.1 L/sec 380 m downstream. The ecology of this stream has not been assessed due to difficulties with physical access and the smallness of the stream, however, there is no reason to indicate it would any different from other small streams in this part of the catchment and it is likely to provide limited habitat for fish given its size. Fish diversity is likely to be very low and even absent due to the presence of the Omanawa Falls further down the catchment (Figure 8). No fish have been detected in the Ruakaka Stream upstream of the weir (using eDNA sampling).
54. The catchment upstream of the Ruakaka Weir is not large, and so the effect of the abstraction of its flow is, in my opinion, limited with respect to fish passage and the amount of habitat for fish and benthic biota that it can provide. Hence, I have not recommended a residual flow below this intake. There is nothing unique in the Ruakaka Stream catchment or its watercourse that would influence differences in stream biodiversity relative to other similar nearby catchments.

Omanawa River intake weir

55. The Omanawa River is a tributary of the Wairoa River, joining the Wairoa River approximately 2.6 km downstream of the Ruahihi Power Station. It is one of the larger tributaries associated with the Kaimai HEPS.
56. The Omanawa River intake weir is located on the Omanawa River at an elevation of approximately 293 m asl. In between this weir and the confluence with the Wairoa River is the Omanawa Falls, a significant geological feature, and the Omanawa Falls Power Station, a privately-owned hydro-electric power station that takes advantage of the head created by the Omanawa Falls.
57. The Omanawa intake weir has no residual flow requirement although the weir does spill water on average 38.5 days (partial or full days) per year. The river channel immediately downstream of the weir is usually devoid of water in the first 20 m downstream to the Otukehu waterfall, with a vertical drop to a plunge pool immediately below it. The river gains water relatively quickly downstream of the waterfall, and habitat improves with distance downstream, however the fish community in the mid and upper reaches is poor, most likely due to the Omanawa Falls restricting upstream passage, and habitat similar to that described for the Mangapapa River and other mid-upper sections of tributaries of the Wairoa River that have cut through the Mamaku Ignimbrite rock.
58. Monitoring results indicate that the macroinvertebrate community along the length of the Omanawa River is not notably affected by the diversion of flows at the Omanawa intake weir, as the river gains flows quickly along its length. This information is set out in Sections 3.4.3.3 and 4.2.2.5 of Appendix J to the application.
59. In my opinion, providing a residual flow past the Omanawa Weir would be beneficial primarily to the river reach immediately below the weir and would enable the Otukehu waterfall to function on a continuous basis, and mitigate the ecological effects of the Scheme intake on the Omanawa River immediately below the weir. A residual flow of 150 L/s is recommended to increase habitat for aquatic life as well as to reinstate the waterfall feature, and potentially provide passage for migrating fish (see below). The

exact benefit of a residual flow on upstream fish passage is uncertain in my opinion given the presence of the Omanawa Falls further downstream, which is a potential barrier to most climbing native fish species.

60. In summary, the Omanawa River has significant natural barriers to fish passage in the form of waterfalls and large boulder beds. I consider that providing a residual flow for fish passage is a low priority given that the number of climbing native fish species arriving at the Omanawa intake weir is likely to be very small, even prior to the construction of the Scheme.
61. No quantitative assessment of the relationship between instream habitat and flow was undertaken for the Omanawa River. The three key reasons are that, firstly, in my opinion, there is little to be gained ecologically by providing a bespoke residual or minimum flow that provides targeted habitat fish communities. As already noted, there are significant barriers to upstream fish migration downstream and the steep bedrock-dominated habitat provides limited habitat for fish. Secondly, for similar reasons, the physical habitat of the river is such that higher flows are likely to provide limited additional habitat for benthic communities. The section of river immediately downstream of the intake weir consists of flat bedrock followed by a vertical waterfall, both providing limited habitat for benthic invertebrates. Flow downstream of the Omanawa intake weir naturally gains quite rapidly such that by the time the river reaches the Omanawa Falls, there is sufficient flow to operate a hydro-electric power station. Thirdly, the physical characteristics of the Omanawa River and its surrounding riparian margins are such that it would be extremely difficult to survey and develop an accurate relationship between flow and instream habitat.
62. The proposed residual flow of 150 L/sec below the intake weir will enable the Otukehu waterfall to function on a continuous basis, provide surface water connectivity of the river between the sections upstream and downstream of the weir, improve water quality immediately downstream, and enable, if required, a pathway for migratory fish.

Mangakarengorengo River weir

63. The Mangakarengorengo River arises in the Kaimai Ranges to the west of the Scheme and flows through farmland in its lower reaches to the west of Lake McLaren before its confluence with the Mangapapa River immediately downstream (~300 m) of the McLaren Falls Dam. Most of the flow in the Mangakarengorengo River is diverted into Lake McLaren via two intakes, positioned side by side, just upstream of a concrete weir, approximately 1 km upstream of the confluence with the Mangapapa River below McLaren Falls Dam¹¹. There is a residual flow of 40 L/sec downstream of the intake. As well as the residual flow, the river also spills water below the intake weir, on average, 103 days per year, with spilling more likely to occur from June to September.
64. The current residual flow of 40 L/sec is considered sufficient to attract fish into this river, however investigations have determined that upstream passage through the weir under low flow conditions is a potential issue, due to the physical character of the concrete weir associated with the Scheme's intake (water velocity through the residual flow culvert may potentially restrict upstream passage) and downstream passage will be impaired for larger fish due to a grate at the upstream end of the residual flow culvert (Figure 9).
65. In consultation with other fish passage experts that have assessed this Scheme¹², my recommendation is for a passive elver pass over the Mangakarengorengo Weir to enable easier upstream passage into the upper catchment. I consider that downstream passage is achieved by ensuring the current residual flow and the spills over the weir that occur during freshes (which are likely to be the key triggers for downstream migration). These measures are reflected in the draft NFPMP.
66. The bed rock-dominated channel in the lower river below the weir is not conducive to providing significant habitat for fish. As such, in my opinion increasing the minimum

¹¹ Although it is not clear, it appears that the Mangapapa and Mangakarengorengo rivers join to become known as the Wairoa River.

¹² Wildlife Biologist Mr Cam Speedy (Wildlife Management Associates Ltd), an expert in tuna passage particularly around hydro-electric infrastructure, and Dr Jacques Boubée (Vaipuhi Freshwater Consulting), an internationally recognised expert in fish migration and tuna.

flow is unlikely to improve physical conditions, and I do not recommend increasing the residual flow.

67. BOPRC's comments discuss the proposed water temperature monitoring in the Mangakarengorengo River. Continuous temperature monitoring in the Mangakarengorengo River took place on the true left side opposite the downstream end of the booms across from the intake to Lake McLaren and, as such, reflected water temperatures immediately upstream of the intake. Temperatures reported in Section 4.1.2.5 of the Aquatic Ecology and Water Quality report (Appendix J), were not temperatures recorded in the river downstream of the intake to Lake McLaren, but rather in the immediate vicinity of the intake. There is no direct evidence that abstraction from the Mangakarengorengo River is adversely affecting downstream water temperature, as river temperatures were not monitored in the residual river downstream of the intake. However, it was recommended that temperature monitoring (including downstream) be instigated for a two year period (proposed Draft Response Condition 15) and a report be prepared that assesses the effects of the residual flow on downstream temperatures, and whether changes to the residual flow are recommended. I consider this approach to be a reasonable response to addressing the issue of water temperatures in this river, which can often be high upstream of the HEPS intake and, as such, are not an effect of the Scheme.

McLaren Falls Dam

68. The McLaren Falls Dam is an approximately 23 m high concrete arched dam constructed in 1925. It is situated approximately 4.2 km upstream of the Ruahihi Power Station and dams the Mangapapa River immediately upstream of the Mangakarengorengo River confluence. The McLaren Falls Dam is the most downstream barrier to fish passage in the Wairoa River catchment and effectively prevents all upstream passage for all migratory fish species (and the native shrimp *Paratya*) with climbing ability, and partially affects downstream passage for migratory fish. There is no requirement to provide a residual flow, however, the dam does spill water, on average, 24 days per year relatively evenly across all months. There is also

a requirement to release water for recreational purposes (of up to 26 six hour releases per year of up to 25 m³/s).

69. The lack of a residual flow not only limits the ability for upstream passage for migratory species, but also limits instream habitat immediately downstream. The latter is arguably not such a significant issue, in my opinion, given the downstream reach is dominated by bed rock and waterfall features, which do not provide ideal habitat for benthic invertebrate and fish communities, even under normal flow conditions.
70. There is no safe pathway for downstream migrating fish in Lake McLaren, particularly for large adult tuna, which can be in excess of 1 m long. The channel used for recreational flow releases has a steel grate that would prevent adult tuna from moving through. While recreational releases are typically over the summer-autumn months, which does not coincide with typical peak downstream migration season, any overlap or the presence of resident or migrating tuna outside of the typical season are likely to become impinged against the grate and be injured or die due to the force of the flow releases. The alternative route out of Lake McLaren for fish that want to move downstream is the Ruahihi Canal. It typically has the greatest flow and so attracts fish out of the lake and down the canal where they will eventually encounter the trash racks to the Ruahihi Power Station penstocks, as already discussed above. I have commented on the issues and mitigation surrounding downstream fish passage via the Ruahihi Canal further on in my evidence.
71. I have also noted that, based on recent observations of spill events at McLaren Falls Dam and the number of tuna arriving at Ruahihi Canal screen cleaner at the same time, there is a degree of confidence that majority of tuna are going over the dam under spill conditions.
72. I have recommended a residual flow of 150 L/sec below the McLaren Falls Dam primarily to provide safe upstream and downstream passage for fish, and consider this is likely to have additional benefits for water quality as well (e.g., keeping water in the river immediately downstream of the dam more oxygenated and cooler). The recommended residual flow of 150 L/sec is significantly greater than the

Mangakarengorengo residual flow and more than sufficient to encourage eiders to move towards the dam, rather than be attracted up the Mangakarengorengo River.

73. As noted above and further below, measures to mitigate the effects of McLaren Falls Dam and the Ruahihi Canal trash rack and power station penstocks on fish passage are being explored by Manawa Energy and mana whenua, and are included in the proposed NFPMP.

Fish passage

74. Passage for migratory native fish species has been the subject of considerable scrutiny in investigations, consultation and implementation of monitoring and mitigation initiatives leading up to the preparation of the application. I have touched on this issue in my previous assessments above relating to the provision of residual flows below scheme intakes. Manawa Energy, in consultation with local tangata whenua with in-depth knowledge of tuna and ecologists with extensive experience in 'western' science around tuna ecology including migration behaviour, has been assessing fish passage initiatives at what are considered to be key sites that are impeding fish passage. Some of the work undertaken to date, along with proposed future investigation and possible initiatives for fish passage enhancement, are set out in the proposed NFPMP (Appendix N of the application).
75. Given the number of structures, barriers and stream diversions associated with the Kaimai Scheme, I use this section to discuss some of the rationale behind fish passage initiatives and the screening of intakes.
76. In my experience, retrofitting screens to prevent fish from entering existing power station intakes to turbines and other related hydro scheme structures (e.g., canal intakes, weir intakes, reservoir outlets, etc) is fraught with technical challenges. I consider the key ones to be; (i) a big enough screen surface area to reduce the (approach) velocity of water passing through the screens sufficiently to prevent impingement of fish against the screen, (ii) being sufficiently robust in structure to withstand any magnitude flood event and associated debris accumulation, and to keep the screen free from clogging, and (iii) providing an alternative downstream

route that the migrating fish can access and navigate safely, and can be retrofitted into an existing structure. There are guidelines for achieving these requirements, however they can be extremely challenging to meet for infrastructure that has been designed for electricity generation with no prior, or limited consideration of ecological issues such as providing fish passage.

77. Two good examples at the Kaimai HEPS of these challenges are the Lake Matariki Dam and the Ruahihi Canal intake to the Ruahihi Power Station penstocks. I discuss these examples in paragraphs 79-83 below.

Kaimai 5 Power Station (K5)

78. Diverted water from the Opuiaki River, Tauwharawhara Stream and Ngatuhua Stream passes into the Ngatuhua Canal and from there into a tunnel (Tunnel 5) that leads to the Kaimai 5 Power Station. The trash screen spacings on the Opuiaki River, Tauwharawhara Stream and Ngatuhua Stream intakes are wide enough to allow adult tuna to safely pass through them and end up in the Ngatuhua Canal. If adult tuna reached the Kaimai 5 Power Station, they would face significant injury or mortality. Consequently, the intake to Tunnel 5 has been screened to prevent adult tuna from entering it. Trap and transfer of tuna heke in Ngatuhua Canal has been undertaken and I have recommended that this continue, as provided for in the draft NFPMP.

Lower Mangapapa Power Station

79. The Lower Mangapapa Power Station is located a short distance downstream (approximately 0.6 km) of Matariki Dam. Generation discharge from the Lower Mangapapa Power Station (up to 23 m³/sec) and any spill from Lake Matariki re-joins the Mangapapa River above its confluence with the Opuiaki River (the confluence is at the top end of Lake McLaren). Discharge from the Lloyd Mandeno Power Station forms the dominant inflow to Lake Matariki and Lake Matariki water is diverted into an intake at the bottom of the lake through to the Lower Mangapapa Power Station.
80. There is no safe passage downstream from Lake Matariki (either over the dam, or through Lower Mangapapa Power Station). The intake to the Lower Mangapapa

Power Station is not screened and any fish present in Lake Matariki most likely encounter the power station turbines. If they were able to pass through them without injury or mortality (an unlikely scenario for larger fish), they would end up in Lake McLaren and face further downstream passage restrictions described below. If fish were to move with spill water over Matariki Dam, they would have to survive the approximately 30 m vertical fall down to the bouldery river bed below.

81. Potential options for downstream tuna passage include to bypass the lake altogether with assisted downstream passage (i.e., trap and transfer), being either to trap fish in Lake Matariki before they attempt to move downstream, or trap further up the catchment. While eDNA testing indicates that tuna are present in Lake Matariki, the population status is unknown, therefore, further monitoring needs to occur to understand the nature of that population before considering appropriate fish passage solutions. I have recommended that this process should form part of the NFPMP.¹³

Ruahihi Canal

82. The intake to the penstocks at the end of the Ruahihi Canal is the ultimate destination for most of the water that has been conveyed as part of the Scheme. This intake is located approximately 2.27 km from the canal offtake at Lake McLaren (Figure 2). The intake to the Ruahihi Power Station penstocks has an automatic mechanical screen cleaner that prevents debris from entering the penstocks and power station turbines. Historically, the screen cleaner has caused injury and mortality to adult tuna that are on their downstream migration (monitoring data supplied by Abi Witney-Collins, Contact Energy). Improvements to the screen cleaner to mitigate the risk of injury and mortality have been made in recent years, with considerable success, and further mitigation measures are being implemented and evaluated by Manawa in association with tangata whenua and tuna experts engaged by Manawa. These processes have been incorporated into the NFPMP and include:

¹³ Native Fish Passage Management Plan, Appendix One, line 10.1 provides for Lake Matariki: "*Downstream Short Term: Monitor to understand. Conduct boat/netting survey to understand presence of tuna in Lake Matariki*". Refer Appendix B.13, Substantive Application.

- Monitor the efficiency of lights at the entrance of the Ruahihi Canal from Lake McLaren to deter tuna from entering the canal;
- Large fyke nets placed along either side of the penstock intake to capture tuna searching for a downstream pathway;
- Transfer of migrating tuna caught in nets to the river below the McLaren Dam; and
- A proposed residual flow at the McLaren Dam (150 L/sec) which, in association with existing spill events, will provide a safe pathway to the lower Wairoa River for migrant tuna and other migrant species.

83. In my opinion, total exclusion of tuna reaching the screen cleaner and penstock intake structures at the end of the Ruahihi Canal is almost impossible to achieve due to:

- The large volume of water being drawn into the canal which strongly attracts migrants to move in that direction (it is the only downstream flow when McLaren Falls Dam is not spilling water). Their natural instinct is to move in the direction where the downstream flow is greatest.
- That large volume of flowing water (i.e., the Ruahihi Power Station has a maximum generation capacity of 28 m³/sec, so, potentially, up to 28 m³/sec can be moving down the canal) creates a very strong force and to construct a screen that would be suitable to withstand the current and associated debris, especially during high flow events, as well as exclude tuna and not cause them to become impinged on the screen due to high water velocities, would require an extremely large cross sectional area of screen.
- Any screen would be subject to continual build-up of debris creating issues with maintaining the physical integrity of the screen structure and its ability to operate in a manner that screened fish effectively and did not affect the ability of the power station to generate efficiently.

- Depending on the location of a fish screen, there would still be a need to capture and relocate migrants to the lower river if no alternative downstream pathway is available.
84. The NFPMP refers to providing fish passage ‘where practicable’. As I have set out in earlier paragraphs of my evidence, some of the structures associated with this Scheme are located in relatively remote or not easily accessible parts of the catchment, have design features that are challenging to provide passive fish passage over, or are on relatively minor tributaries that are likely to provide limited habitat upstream for the targeted climbing fish species. These attributes, when considered in relation to the Scheme as a whole, and when assessed as most likely to provide significant habitat upstream, lend themselves to emphasis being placed on practicalities that acknowledges these real-world considerations. In my opinion, when considering the need for providing fish passage, it is also necessary to take into account the natural distribution of fish and the natural barriers or partial barriers that exist within the catchment, namely waterfalls and high velocity water created by steep gradient narrow water channels. These physical features mean that native fish would have had limited distribution prior to the construction of the Scheme and, in some sections, there would have been limited habitat suitability.
85. Further, I consider that the development of fish passage options should be an iterative process involving implementation, monitoring, and review of measures if necessary. There are plenty of examples of failed or relatively unsuccessful fish passes around New Zealand, many due to a lack of understanding of local conditions, including the behaviour of local fish populations¹⁴. The NFPMP has been developed to take into account a learning approach to understanding fish movement and population structures within the Scheme’s catchments, and I consider it necessary to retain the wording ‘where practicable’ to acknowledge these variables.
86. There are records for bullies (redfin, common and giant), some climbing juvenile galaxiid species (e.g. banded and shortjaw kōkopu) and kōura or shrimp in the

¹⁴ For example, early elver passes at Matahina Dam, Roxburgh Dam and Monowai weir fish pass and Monowai Dam elver pass.

lower Wairoa River catchment. The fish passage designs for elver are also suitable for these other species, and juvenile bullies, juvenile galaxiids and kōuraura have been caught in the Ruahihi Power Station elver trap. In my experience these species are often caught in these types of traps and do not require any particular adaptations to suit their climbing ability. Having said that, common and giant bullies are not particularly strong climbers, and their penetration into the mid and upper reaches of the Wairoa River catchment would have been impeded prior to the construction of the Scheme by the presence of natural barriers in the form of waterfalls.

87. Another consideration for passage for native climbing species other than elvers is the timing of when their migration periods peak, and whether trap and transfer pass operations need to be extended to accommodate these other species. Ultimately, understandings about migration periods will evolve as work associated with the NFPMP develops and forms part of the feedback loop I referred to earlier.
88. To summarise, I consider that the fish passage options that have been developed, and will continue to be developed as part of the NFPMP, will be sufficient to provide upstream fish passage for other native species that may have naturally colonised parts of the catchment affected by the Kaimai HEPS. I have not recommended monitoring of fish populations outside of fish pass structures and fish trapping locations (e.g., at the Ruahihi Canal trash screen). In my opinion, the appropriate consideration with respect to mitigating the effects of the Kaimai HEPS on fish populations is not whether fish populations are present in the catchments upstream of Scheme barriers, but rather whether the measures implemented at barriers to migration are deemed to be effective. Habitat upstream of upper catchment Scheme structures is not influenced by the Scheme, aside from relatively small areas of ponded river water created by the weirs, and therefore their ability to support and sustain fish populations is not an effect of the Scheme. I do, however, consider it appropriate that the effectiveness of fish passage at barriers to migration caused by the Scheme should be assessed, and this is captured in the NFPMP.
89. In my opinion, the key measure to define success associated with the NFPMP is to determine that the fish passage options implemented and monitored at targeted

Scheme barriers have enabled safe passage of target species over these barriers. The monitoring programme associated with fish passage will require a holistic assessment of fish movement within the catchment as, as noted earlier in my evidence, passage can be provided at Scheme structures, but whether fish take this opportunity to migrate upstream is something beyond the Scheme operator's influence, unless they employ methods to achieve this (e.g., trap and transfer fish beyond Scheme barriers).

90. The Ruahihi Power Station is the Kaimai Scheme's most downstream structure that affects flow patterns in the Wairoa River catchment. Although the Ruahihi Power Station has a maximum generation capacity of 28 m³/sec, the current maximum generation discharge at this power station is approximately 26.5 m³/s, and this dominates the flow in the approximately 13 km reach of the lower Wairoa River to its outlet into Tauranga Harbour. These generation flows typically occur on a daily basis, although not necessarily at the maximum consented generation discharge.
91. Typically, significant flow variation in a river downstream of a hydro generation station would necessitate a quantitative assessment of the effects of that flow variation on the river's ecology. However, the Ruahihi Power Station's discharge to the Wairoa River is near the river's upper tidal limit and so the river is already subjected to, and adapted to, regular (i.e. daily or inter-daily) changes in water levels, velocities and wetted width.
92. Monitoring of the Ruahihi Power Station fish trap informs us that migratory fish and shrimp species are moving upstream, despite the artificial flow regime caused by the power station, and there are numerous examples throughout the country of strong upstream fish and shrimp migration in rivers downstream of hydro-electric power stations¹⁵. As such, I do not consider that the fluctuations in downstream flows caused by the Ruahihi Power Station's generation regime significantly affect upstream migration or instream habitat in any meaningful way.

¹⁵ Earth Sciences New Zealand. 2025. *Recruitment of freshwater eels. Summary report: Numbers of freshwater eels captured at hydro schemes in Aotearoa for 2024–25*. Prepared by NIWA under contract to Fisheries New Zealand.

Greg Ryder

12 February 2026

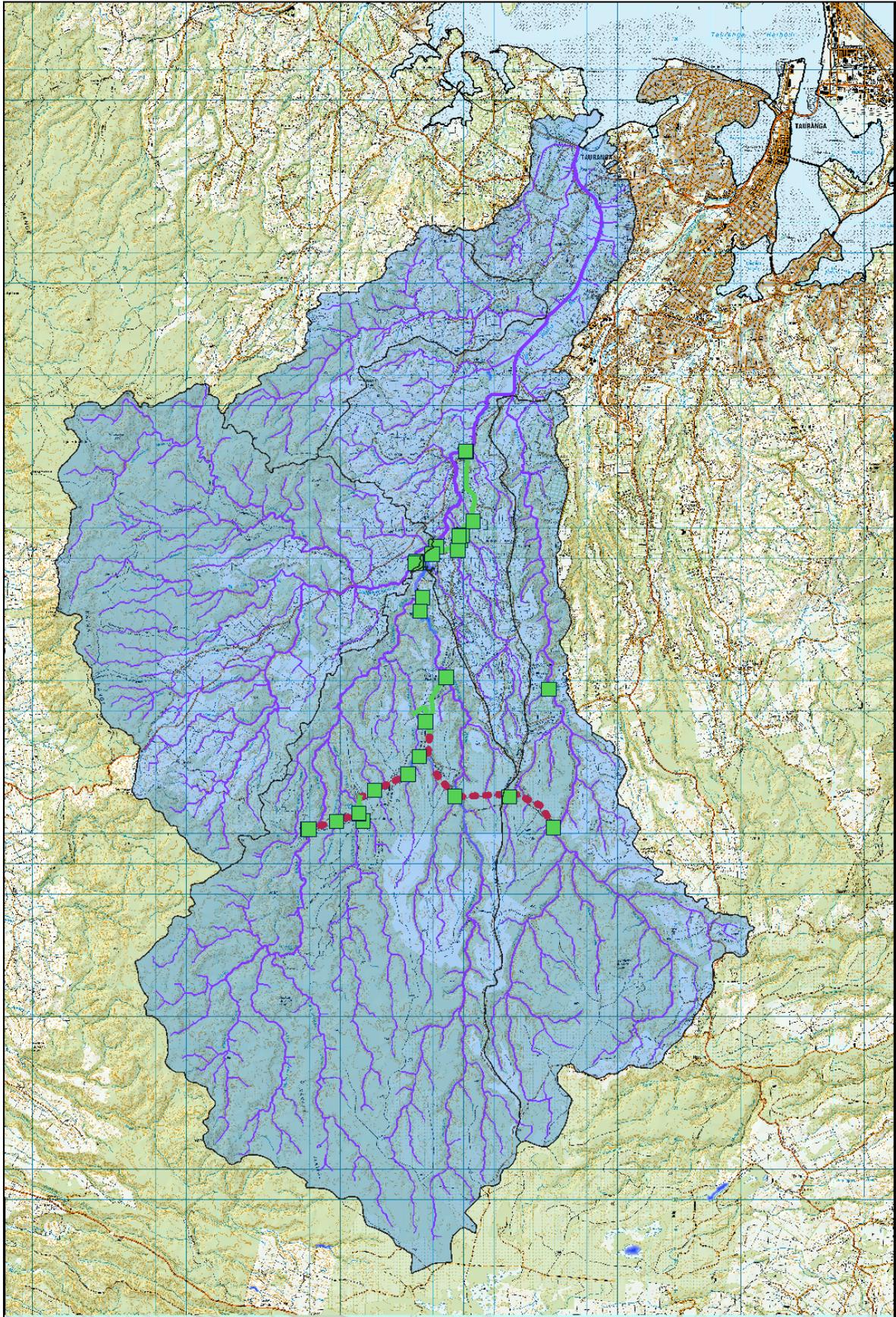


Figure 1. Wairoa River catchment showing location of the Kaimai HEPS main structures.

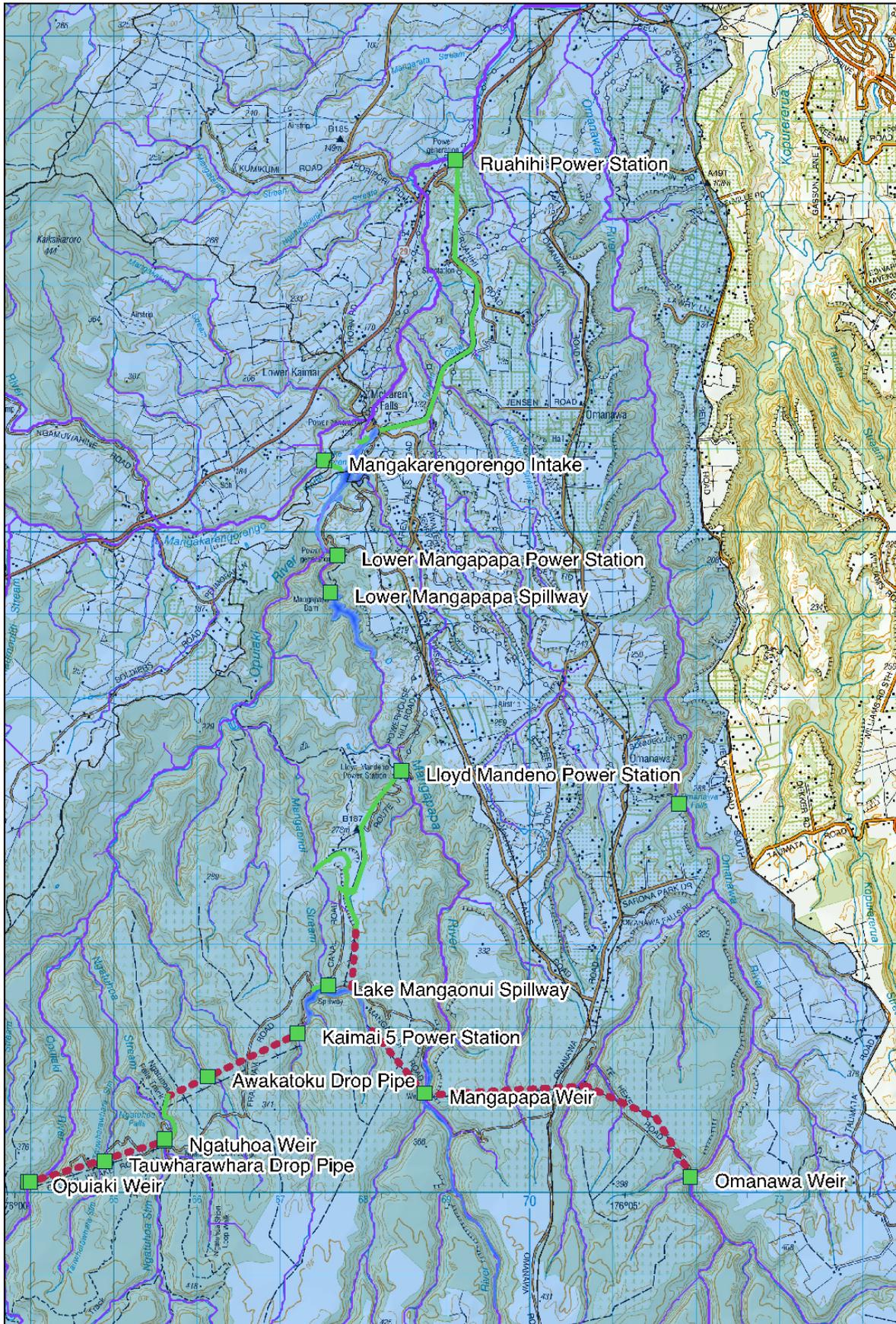


Figure 2. Kaimai HEPS main structures showing location of main intake structures.



Figure 3. A large waterfall located approximately 2.2 km downstream of the Opuiki Weir. For scale, note the Rescue3 crew member standing on the top true left side of the waterfall. (photo credit: Rescue3 and Steve Pratt)

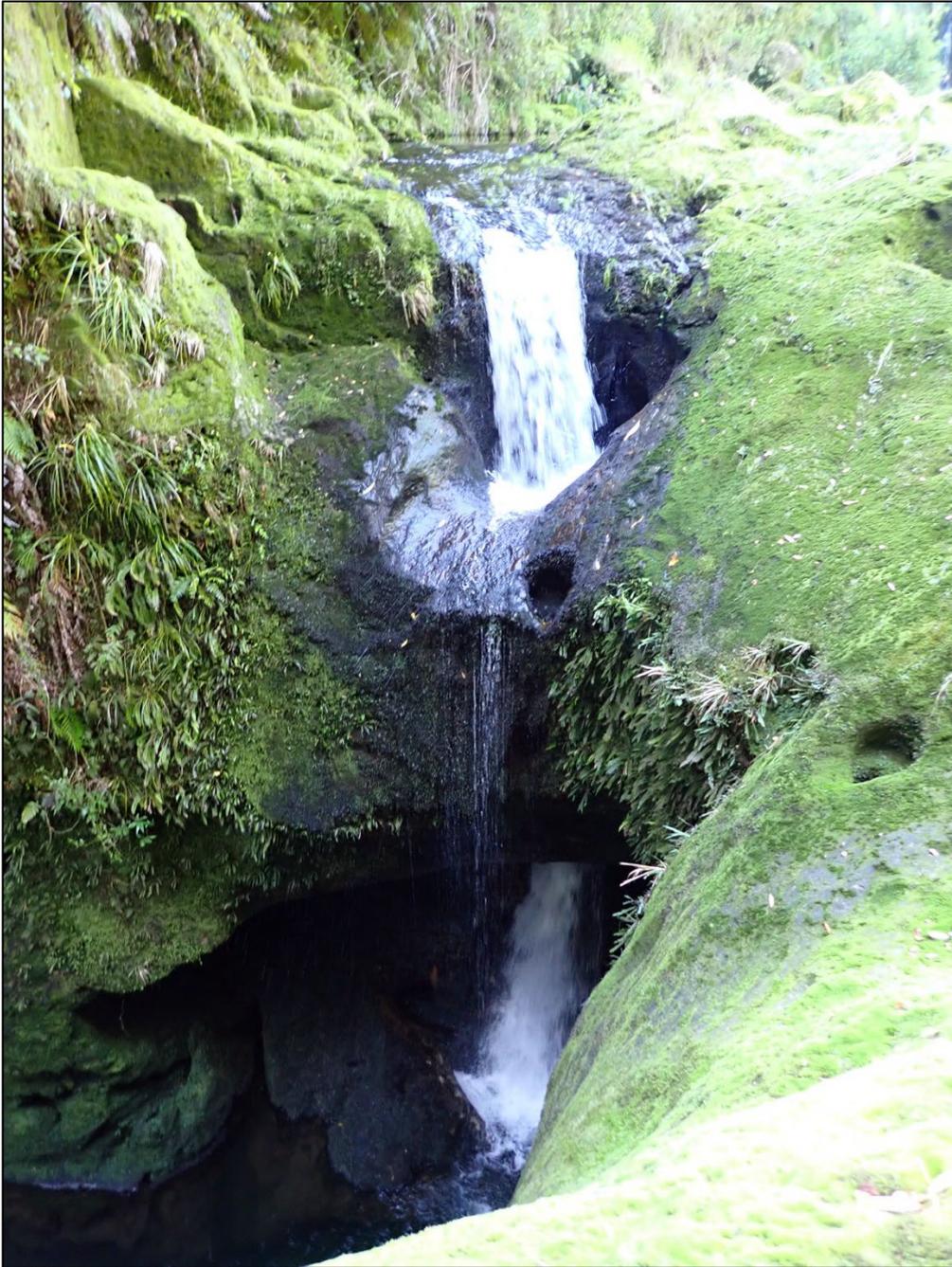


Figure 4. Waterfall along the Mangapapa River residual reach.



Figure 5. Lower Awakotuku Stream residual reach, January 2024. (photo: Steve Pratt, Tonkin & Taylor)



Figure 6. Lower Mangaonui Stream 300-350 m downstream of Lake Mangaonui (photo: Steve Pratt, Tonkin & Taylor)

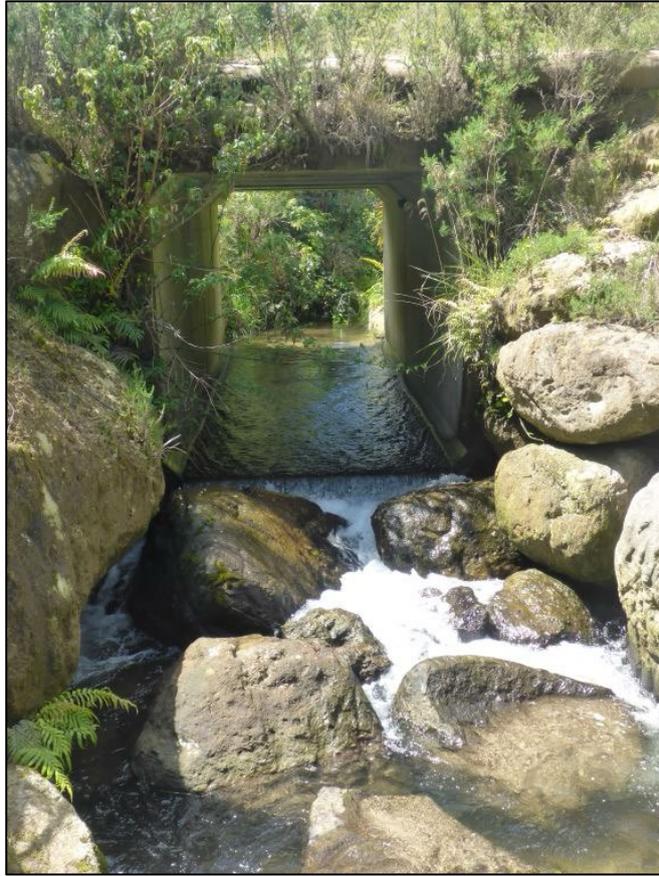


Figure 7. Lower Mangaonui Stream just upstream of the confluence with the Opuiki River
(photo: Steve Pratt, Tonkin & Taylor)



Figure 8. Omanawa Falls. (source: Bay of Plenty Times)



Figure 9. Residual flow culvert beneath the Mangakarengorengo ford, with steel grate covering the upstream entrance.

Appendix A

I have experience on fish passage at the following hydro-electricity and irrigation schemes throughout New Zealand:

Hydro-electric Power Schemes	Region	Role in consenting process
Monowai	Southland	Technical advisor
Mataura Falls (former paper mill)	Southland	Technical advisor
Clutha (Roxburgh, Clyde, Hāwea)	Otago	Technical advisor
Waipori	Otago	Technical advisor
Deep Stream	Otago	Technical advisor
Paerau/Patearoa	Otago	Technical advisor
Coleridge	Canterbury	Technical advisor
Highbank	Canterbury	Technical advisor
Waitaki (North Bank Tunnel – not built)	Canterbury	Hearing's Commissioner
Wahapo	West Coast	Technical advisor
Kaniere Forks/McKays Creek	West Coast	Technical advisor
Arnold	West Coast	Technical advisor
Dillmans	West Coast	Technical advisor (internal peer review)
Mokihinui Dam (not built)	West Coast	Hearing's Commissioner
Cobb	Tasman	Technical advisor (internal peer review)
Branch	Marlborough	Technical advisor
Waihopai	Marlborough	Technical advisor
Wairau (consented – not built)	Marlborough	Technical advisor
Motukawa	Taranaki	Technical advisor
Mangorei	Taranaki	Technical advisor
Pātea	Taranaki	Technical advisor
Wairere	King Country	Technical advisor (internal peer review)
Mokauiti	King Country	Technical advisor (internal peer review)
Mokau (not built)	King Country	Technical advisor
Waikato River	Waikato	Technical advisor to DOC
Mangahao	Manawatū	Technical advisor (internal peer review)
Kaimai	Bay of Plenty	Technical advisor
Wheao	Bay of Plenty	Technical advisor
Matahina	Bay of Plenty	Technical advisor
Abstraction for Irrigation Schemes	Region	Role
Opuha Water Ltd	Canterbury	Technical advisor
Central Plains Water	Canterbury	Technical advisor
Amuri Irrigation Company	Canterbury	Technical advisor
Rangitata Diversion Race (RDR)	Canterbury	Technical advisor
Haldon Station	Canterbury	Technical advisor
Lindis Irrigators/ORC	Otago	Technical advisor
Earnsclough Irrigation	Otago	Technical advisor
Emu Plains Irrigation Scheme	Canterbury	Technical advisor
Hakataramea Valley Irrigation	Canterbury	Technical advisor
Hunter Downs Irrigation (no built)	Canterbury	Hearing's Commissioner
Bendrose Station	Canterbury	Technical advisor
Simons Pass Station	Canterbury	Technical advisor
Otaio Water Users Group	Canterbury	Technical advisor
Orari Water Society	Canterbury	Technical advisor
Ohau Downs	Canterbury	Technical advisor
Manuherikia Water Users	Otago	Technical advisor

North Otago Irrigation Company	Otago	Technical advisor
Strath Taieri Irrigation Users	Otago	Technical advisor
Tarras Water Ltd	Otago	Technical advisor
Te Akatarawa Station	Canterbury	Technical advisor
Waihao Downs Irrigation	Canterbury	Technical advisor

A number of these have involved investigations specifically in relation to the assessment of native fish habitat, migration and passage, particularly for tuna. For example:

- 2006. TrustPower. Branch Hydro-electric Power Scheme (Marlborough): Design of a trap and transfer system for eelers. May 2006.
- 2006. Pioneer Generation. Monowai Hydro-electric Power Scheme (Southland). A review of monitoring data associated with adult eel migration in the Monowai River.
- 2008. Contact Energy. Clutha Hydro-electric Power Scheme (Otago). Lower Clutha River Native Fish Management Programme: Assessment of requirements & recommendations for establishing a draft plan.
- 2010. TrustPower. Patea Hydro-electric Power Scheme. Development of native fish trap and transfer protocols.
- 2010 – 2018. Contact Energy. Clutha Hydro-electric Power Scheme (Otago). Options to facilitate eel and lamprey passage upstream and downstream past the Roxburgh, Clyde and Hāwea Dams.
- 2013. Central Plains Water. Rakaia River irrigation intake. Provision of advice on screen design to ensure upstream and downstream migrant fish (in particular salmon and eels) did not enter the irrigation intake.
- 2015. Rangitata Diversion Race Management Limited. Review of bio-acoustic fish fence effectiveness (Rangitata River and RDR intake).
- 2018. Contact Energy. Clutha Hydro-electric Power Scheme (Otago). Eel and lamprey passage at the Roxburgh, Clyde and Hawea Dams: Recommendations for 2018-2022.

- 2017 - 2018. Rangitata Diversion Race Management Limited (RDRML). Investigations into fish screen options for the RDR intake on the Rangitata River.
- 2020. Rangitata Diversion Race Fish Screen Facility: Fish Screen Verification Management Plan – Draft for stakeholder review and comment.
- 2025. Contact Energy. Matahina Hydro-electric Power Scheme. Upstream and Downstream Fish Passage: Resource Consent 65750 - Conditions 52 & 56 – Draft Report.

BEFORE THE EXPERT PANEL UNDER THE FAST-TRACK APPROVALS ACT 2024

IN THE MATTER OF An application for resource consents under the Fast-track Approvals Act 2024 (**FTAA**) by Manawa Energy Ltd for activities associated with a listed project, being the Kaimai Hydroelectric Power Scheme Re-Consenting.

STATEMENT OF EVIDENCE OF RICHARD TURNER

PLANNING



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Introduction

1. My name is Richard Jonathon Turner.
2. I hold a Bachelor of Planning (Hons) from the University of Auckland, which I obtained in 2000. I am a full member of the New Zealand Planning Institute.
3. I am a planning consultant with, and chief executive of, Mitchell Daysh Limited - an environmental consulting practice with eight offices around New Zealand. Mitchell Daysh was formed through the merger of Mitchell Partnerships Limited and Environmental Management Services Limited in 2016.
4. I have practiced as a planner and resource management professional for the last 25 years. My experience includes a mix of in-house and consultancy resource management work, and has involved the preparation of resource consent applications for a range of water infrastructure and electricity generation projects around New Zealand. This includes the re consenting of the Mangorei, Motukawa and Wheao Hydro-Electric Power Schemes in Taranaki and Bay of Plenty Regions respectively, and the consenting of the Waipipi and Kaiwaikawe Wind Farms in South Taranaki and Kaipara Districts respectively.
5. I led the preparation of the substantive application document entitled "*Kaimai Hydro-Electric Power Scheme - Fast-Track Approvals Act Application for Resource Consent (September 2025)*" which was submitted with the application for replacement resource consents for the Kaimai Hydro-Electric Power Scheme (**Kaimai HEPS**).
6. I have visited the Kaimai HEPS over twenty times in my career, including in a variety of flow and weather conditions.
7. In preparing this evidence, I have reviewed all of the comments received from the parties that were invited to comment by the Panel in accordance with section 53 of

the Fast-track Approval Act 2024 (**FTAA**). I have also reviewed the evidence of Dr Ryder, Ms Conn and Mr Mead on behalf of Manawa Energy Limited (**Manawa**).

Code of Conduct for Expert Witnesses

8. I confirm that I have read the Environment Court's Code of Conduct for Expert Witnesses, as contained in section 9 of the Environment Court's Practice Note 2023, and referred to in the Fast-track Approvals Act 2024: Panel Conveners' Practice and Procedure Guidance 25 July 2025. I have complied with Environment Court's Code of Conduct for Expert Witnesses in preparing this response.

Response to Comments

9. In this evidence I address the comments received from the following parties:
- a. Minister for Infrastructure;
 - b. Minister for Energy;
 - c. Minister for Regional Development;
 - d. Minister for Climate Change;
 - e. Bay of Plenty Regional Council;
 - f. Department of Conservation;
 - g. Kaimai Canoe Club; and
 - h. New Zealand Transport Agency.

Background

10. The existing resource consents which authorised the Tauranga Electric Power Board and Tauranga City Council to operate the Kaimai HEPS were granted in April 1976 under the Water and Soil Conservation Act 1967. The consents expire on 1 October 2026.

11. The resource consents for the Kaimai HEPS were then transferred in 1991 from the Bay of Plenty Catchment Commission (in its capacity as Regional Water Board) to the Bay of Plenty Regional Council to operate as Kaimai Hydro Power, and again in 1997 to operate as Trustpower.
12. In June 2023, Manawa Energy, formerly Trustpower, lodged resource consent applications for the continued operation of the Kaimai HEPS with the Bay of Plenty Regional Council. That was the first application seeking resource consents for the continued operation of the Kaimai HEPS under the Resource Management Act 1991 (**RMA**). This application was subsequently withdrawn on 17 October 2025 pursuant to section 94 of the FTAA following the notification by the EPA to Manawa that its substantive application (this application) had been found complete and to be assessed under section 47 of the Act.
13. Manawa undertook consultation with a wide range of parties in preparing its application for resource consents under the RMA, and then as part of its application under the FTAA. A summary of this consultation is provided in section 8 of the substantive application, and included consultation with mana whenua, Bay of Plenty Regional Council, Department of Conservation, Fish and Game, and recreational groups over a number of years. This consultation has also continued post the lodgement of the application with the EPA, and in my opinion, the number and nature of the comments received on the application as part of this current process is reflective of the extensive consultation that has been undertaken by Manawa for the continued operation of the Kaimai HEPS.
14. As set out in the *Kaimai Hydro Scheme - Economic Assessment for Fast-track Approval Act 2024* submitted with the substantive application, and discussed further in the evidence of Mr Mead, the Kaimai HEPS generates an average of 169 GWh per year (although is up to 200 GWh in some years) – which is equivalent of the electricity needs of approximately 24,600 average households. The Scheme contributes approximately 32% to Tauranga’s electricity demand per annum.

15. The continued operation of the Kaimai HEPS also contributes to greenhouse gas emission reductions in line with New Zealand's emission reduction target, the emissions reduction plan under the Climate Change Response Act 2002, and international agreements by avoiding an increase in emissions of about 26,693 tonnes of CO² per year. This is also detailed in *Kaimai Hydro Scheme - Economic Assessment for Fast-track Approval Act 2024* by NZIER, and is reflective of the comments received by the Minister for Energy. The Minister for Climate Change also acknowledges the significant national and regional benefits of the project for climate mitigation.

Activity Status

16. As detailed in the substantive application, it is my assessment that the replacement resource consents for the damming, taking, diverting, use and discharge of water associated with the continued operation of the Kaimai HEPS are a **controlled activity** in accordance with Rule WQ R20 (47C) of the Bay of Plenty Regional Natural Resources Regional Plan.
17. Rule WQ R20 (47C) applies specifically to the Kaimai HEPS and other lawfully established hydro schemes in the Bay of Plenty Region (such as the Matahina and Wheao HEPS in the Eastern Bay of Plenty). In my opinion, the rule provides a pragmatic framework for the consideration of resource consent applications for lawfully established hydro schemes – with the matters of control specified in the rule primarily focussed on the future operational parameters associated with the damming, taking, diverting, use and discharge of water (i.e. water levels, residual flows and measures to manage erosion), rather than inviting consideration as to whether these activities should continue to occur or not (which would be the case if the applications were classified as a discretionary or non-complying activity).
18. I observe at this point that the comments received from the New Zealand Transport Agency noted, in expressing neutrality towards the application, that matters related to existing traffic volumes have not been addressed in the substantive application. It is correct that matters relating to traffic movements associated with the Kaimai HEPS

are not addressed in the substantive application. This is because such considerations are not a matter of control under Rule WQ R20 (47C), and is not a function of the Bay of Plenty Regional Council under section 30 of the RMA. In addition, it is my assessment that the continued operation of the Kaimai HEPS is a permitted activity from a land use perspective under the Western Bay of Plenty District Plan.¹

19. It is also my assessment that the application for the continued operation of the Kaimai HEPS does not trigger any other rules or resource consent requirements in any other statutory instrument – including the Resource Management (National Environmental Standards for Freshwater) Regulations 2020. In this regard, and as detailed in section 5 of the substantive application:

- (a) No direct discharges are proposed to a natural wetland (Regulation 55(3)(a));
- (b) No debris and sediment is proposed to discharge to a natural wetland (Regulation 55(3)(e)); and
- (c) The taking, use, damming, diversion or discharge of water that is proposed is not for the purpose of increasing the size of the Kaimai HEPS (Regulation 46(4)(b)).

20. I understand that my conclusion regarding the overall activity status of the applications, and which rules / statutory instruments are triggered, is also accepted by the Bay of Plenty Regional Council.²

¹ Rule 10.3(l) of the Western Bay of Plenty District Plan.

² Comment of the Bay of Plenty Regional Council, Introduction, 4 February 2026.

National Policy Statement for Renewable Electricity Generation 2011

21. The comments received from the Bay of Plenty Regional Council³ and the Minister for Infrastructure⁴ note that the application is consistent with the direction of the National Policy Statement for Renewable Electricity Generation (**NPSREG**). The Department of Conservation also notes that the proposal to provide existing residual flows and new flows where there are currently none provides a balanced approach that takes into account both the environmental considerations under the National Policy Statement for Freshwater Management and renewable electricity delivery required under the NPSREG.
22. I acknowledge that the substantive application included an assessment of the applications against the NPSREG as it existed in September 2025. However, the policy statement was amended in December 2025 by the Government to provide greater national direction regarding the consideration and management of applications for existing or new renewable electricity generation activities. These amendments came into force on 15 January 2026 and are analysed further in the paragraphs below.

Objective

23. The sole objective of the NPSREG (as amended in 2025) has been amended with a focus on to “ensure” and to “enable” key outcomes, rather than the previous and less directive wording of the statement to “recognise”. The objective is to:
- a. *Ensure the national, regional and local benefits of REG are provided for;*
 - b. *Enable REG capacity and output to significantly increase;*
 - c. *Enable REG to support the social, economic and cultural wellbeing of people and communities, and for their health and safety;*
 - d. *Enable REG to provide greater security of electricity supply and resilience to supply disruptions to all people and communities;*
 - e. *Enable REG to support achieving New Zealand’s emission reduction target and implementation of the emissions reduction plan under the Climate Change Response Act 2002; and*
 - f. *Ensure REG is developed and operated in a safe, efficient and effective manner while managing the adverse effects from or on REG activities.*

³ Comment of the Bay of Plenty Regional Council, Page 4, 4 February 2026.

⁴ Comment of the Minister for Infrastructure, Appendix 1.

24. The ongoing operation of the Kaimai HEPS directly supports this objective to firstly “ensure” the provision of national, regional and local benefits (both social and economic) through enabling controllable, secure and reliable electricity supply from renewable electricity generation activities, and through working towards New Zealand’s emission reduction target and emissions reduction plan under the Climate Change Response Act 2002. As noted by NZIER, the Scheme does this by supporting the maintenance of New Zealand’s electricity generation capacity without resulting in the emission of greenhouse gases or reliance on finite resources or imported fuels.
25. Secondly, the continued operation of the Kaimai HEPS includes a range of measures to “ensure” that the Scheme is operating safely, efficiently and effectively while managing adverse effects which may arise from the scheme. These measures include (but are not limited to):
- (a) The safe passage of flood waters are enabled by the various existing weirs and spillway structures, including via their design, levels and capacity to accommodate flood events;
 - (b) Regular inspections and maintenance of structures is undertaken in accordance with the New Zealand Society on Large Dams Guidelines, such that they are fit for purpose to withstand natural hazard events;
 - (c) The provision of residual flows (both existing and new) across key waterbodies within the Wairoa River Catchment to support improvements in fish passage, connectivity, habitat and water quality - while still preserving the overall efficiency and effectiveness of the Scheme in providing renewable electricity to Tauranga;
 - (d) The implementation of a Sediment Monitoring Plan to confirm over time whether there are channel instability issues, or future channel changes, in the

alluvial sections of the Wairoa and Omanawa Rivers as a result of the operation of the Kaimai HEPS; and

- (e) The implementation of a Native Fish Passage Management Plan (**NFPMP**) to appropriately provide for the passive passage, where practicable, of native fish species upstream and downstream of the structures associated with the Kaimai HEPS.

Policy A

- 26. Policy A is more directive than the previous version – changing the wording from *“decision-makers shall recognise”* to *“decision-makers must recognise”*.
- 27. Policy A(1) has been amended to add *“national significance”* as a benefit to be recognised. As set out in the *Kaimai Economic Assessment* by NZIER submitted with the substantive application, the Kaimai HEPS can be considered a project of national significance as its continued operation will support the achievement of New Zealand’s emission reduction target and the emissions reduction plan under the Climate Change Response Act 2002.
- 28. Policy A(2)(b) has been amended to replace *“maintaining and increasing”* the security of the electricity supply to *“contributing to the security, resilience and independence of the electricity supply”*. The continued operation of the Kaimai HEPS directly aligns with this policy by providing a controllable, secure and reliable electricity supply which does not rely on imported and domestic fossil fuels.
- 29. Policy A(2)(c) is new and requires decision-makers to provide for the social, economic and cultural well-being of people and communities, and for their health and safety. The continued operation of the Kaimai HEPS will enable water resources available in the Wairoa River Catchment to be utilised in a manner that will provide for the health, and social and economic wellbeing, of people and communities within the Bay of Plenty Region.

Policy B

30. Policy B(1)(b) is a directive policy that, rather than having regard to, specifically requires decision-makers to *recognise and provide* for the importance of avoiding, where practicable, any overall or cumulative losses of renewable electricity generation capacity and output from a region or district, or existing renewable electricity generation assets and activities.
31. The imposition of residual flows to the Omanawa River, Mangapapa River and Wairoa River (below McLaren Falls Dam) will have an impact on the generation output of the Kaimai HEPS – as water that would otherwise be available for electricity generation will now be utilised to improve the environmental conditions of the wider river catchment. No other new restrictions are proposed by Manawa as to how the Scheme operates on a daily or intra-daily basis.

Policy C

32. Policy C is a new policy amendment. Policy C(1) and (2) state that decision-makers must recognise and provide for renewable electricity generation assets and activities that have an operational need or functional need in that location or environment.
33. Hydro-electricity generation requires the placement of structures in the bed of rivers where there is sufficient fall or energy to enable electricity to be generated, and the associated take, use, damming, diversion and discharge of water in order to operate. The Kaimai HEPS has a functional and operational need demonstrated by the fact that the Scheme has generated electricity in its current location for at least 50 years and that must be recognised and provided for by decision-makers.
34. Policy C(3) states that an assessment of alternative site/s is not required to demonstrate that an operational or functional need exists. Regardless, alternative sites have not been considered for the operation of the Kaimai HEPS given it has been operating in its current location for at least 50 years and it is not feasible for the Scheme to be located elsewhere.

Policy E

35. Policy E is a new policy amendment that directs decision-makers to recognise and provide for Māori interests for renewable electricity generation activities and assets by:
- (a) *taking into account the outcome of any engagement with tangata whenua on a relevant resource consent, notice of requirement or private plan change;*
 - (b) *recognising the opportunities tangata whenua may have in developing and operating their own REG activities at any scale or in partnership; and*
 - (c) *local authorities:*
 - (i) *providing opportunities for tangata whenua involvement where REG assets and activities may affect a site of significance or issue of cultural significance to Māori; and*
 - (ii) *operating in a way that is consistent with any relevant iwi participation legislation or Mana Whakahono ā Rohe.*
36. Manawa has engaged with tangata whenua representatives throughout the preparation of the application under the RMA, and the preparation of the substantive application under the FTAA. The outcome of this engagement is recorded in section 8 of the substantive application and in the comments received on the application – and the proposed consent conditions and agreements reached with the likes of Ngāti Hangarau / Ngamanawa Incorporation are seeking to respond, as far as practicable, to the matters raised during the engagement process.
37. I am not aware of any Mana Whakahono ā Rohe that applies to the footprint of the Kaimai HEPS at this time.
38. The only iwi participation legislation in force that relates to the Scheme is the Raukawa Claims Settlement Act 2014 as Tunnel 4, and likely part of the Ngatuhua Canal, are located the statutory acknowledgement area for the Kaimai-Mamaku Conservation Park under this Act. However, consent is not being sought for Tunnel 4 or the Ngatuhua Canal as it is existing infrastructure and therefore I have not considered the

provisions of the Raukawa Claims Settlement Act 2014 in detail. I also note that Raukawa were invited to comment on the application, but did not make any comments. The applicable treaty settlement legislation has been considered in section 9 and Appendix Q of the substantive application.

Policy F

39. Policy F directs the following:
- (1) *Decision-makers must enable REG assets and activities in all locations and environments.*
 - (2) *Where REG assets and activities are proposed to locate in or are likely to have adverse effects on environments and values provided for in section 6 of the Act, the provisions of this policy must be read alongside other relevant national direction, regional policy statements and regional and district plans.*
 - (3) *Where (2) does not apply, the adverse effects of REG assets and activities must be, where practicable, avoided, remedied or mitigated.*
 - (4) *Decision-makers must have particular regard to the use of adaptive management measures.*
 - (5) *When considering any residual adverse effects of REG assets and activities that cannot be avoided, remedied or mitigated, decision-makers shall have regard to offsetting measures or environmental compensation, including measures or compensation that benefit the local environment and community affected.*
40. Policy F(1) may be interpreted to relate to new renewable electricity generation activities only, while Policy G(1) relates to existing renewable electricity generation activities. Regardless of the interpretation, both Policy F(1) and G(1) direct that the Kaimai HEPS must be enabled in its current location by decision-makers. This is also reflected by the controlled activity that applies to the consenting of the Scheme under the Bay of Plenty Natural Resources Regional Plan.
41. With respect to the environments and values provided for in section 6 of the RMA, and the need for the provisions of the NPSREG to be read alongside other statutory

planning instruments, an assessment of the Kaimai HEPS against section 6 of the RMA is provided in section 10 of the substantive application and an assessment of all relevant instruments is also provided (particularly the National Policy Statement on Freshwater Management, Bay of Plenty Regional Policy Statement, and the Bay of Plenty Regional Natural Resources Plan). As per the conclusion in the substantive application, I consider the project is aligned with the objectives and policies of the relevant statutory planning documents, as well as relevant iwi and hapū management plans (when considered from a planning perspective). I do not consider that the requirement to read these instruments alongside the updated version of the NPSREG alters any of my previous conclusions.

42. With respect to Policy F(5), section 6 of the substantive application details a range of measures that are proposed to appropriately avoid, remedy or mitigate potential adverse effects from the operation of the Kaimai HEPS on the environment (in accordance with the direction set out in the matters of control under of Rule WQ R20 (47C) of the Regional Natural Resource Plan). Policy F(5) does not require any offsetting measures or environmental compensation, and no additional compensatory or offsetting measures are proposed by Manawa in the proposed consent conditions in addition to the mitigation measures already set out.

Policy G

43. Policy G(1) directs that decision-makers must enable the efficient operation and maintenance of existing renewable electricity generation assets and activities in all locations and environments. Therefore, the continued efficient operation and maintenance of the Kaimai HEPS must be enabled in its existing location and environment by decisions-makers, noting that the existing Kaimai HEPS assets and activities have been in place or have been occurring for at least 50 years.

Policy H

44. New Policy H states that:

(1) *For consenting, upgrading and repowering of existing REG assets and activities, decision-makers must:*

- (a) *recognise that existing REG assets form part of the existing environment;*
- (b) *take into account the extent to which the effects of the proposed REG assets and activities are different in scale, intensity, duration and frequency from the effects of existing REG assets and activities;*
- (c) *have particular regard to the efficiencies and environmental benefits of increasing REG capacity and output within the same REG site; and*
- (d) *provide flexibility for changes in consent conditions to enable the upgrading of existing REG assets and activities, including adapting to new technologies.*

45. In accordance with Policy H(1)(a), the assets associated with the Kaimai HEPS are to be considered as part of the existing environment. Given the long-term operation (more than 50 years) of the Kaimai HEPS, the effects have been assessed on the basis that the assets form part of the existing environment.

46. As concluded in the section 6 of the substantive application, the effects of the continued operation and maintenance of the Kaimai HEPS will not increase in scale intensity, duration or frequency from what is existing. The Scheme will result in improvements to the environment as a result of:

- (a) The introduction of a permanent residual flow in the Omanawa River, Mangapapa River and Wairoa River;
- (b) The provision of upstream and downstream tuna passage within the key waterbodies associated with the Kaimai HEPS;
- (c) The implementation of a Sediment Monitoring Plan to confirm any changes in the alluvial sections of the Wairoa and Omanawa Rivers as a result of the operation of the Kaimai HEPS; and

- (d) The inclusion of Mana Whenua Kaitiaki Rōpū conditions to provide mana whenua an opportunity to exercise their kaitiaki role over the Kaimai HEPS.
47. The environmental and spatial constraints of the Scheme do not easily allow for increase of the renewable electricity generation capacity and output within the same site or upgrading of existing assets and activities.

Other National Policy Statements / Statutory Planning Documents

48. None of the comments received have raised any matters with respect to the other national policy statements or statutory planning documents that apply to the consideration of the applications for the Kaimai HEPS. As such, I continue to rely on my analysis of the relevant statutory planning documents provided in section 10 of the substantive application – and none of the comments received on the application alter the conclusions I have reached.

Sediment Monitoring Plan - Conditions

49. The comments from the Bay of Plenty Regional Council suggest that in order to ensure ‘alignment’ with the matters of control under Rule WQ R20 (47C) of the Natural Resources Regional Plan (i.e. *measures to avoid, remedy or mitigate adverse effects of the operation on downstream sediment transport processes*) the consent conditions should include a proportionate ‘monitor-to-manage’ mechanism. In particular, they seek that the consent conditions require Manawa to assess monitoring results and, where agreed indicators show emerging adverse trends, prepare and implement an appropriate management response. The Bay of Plenty Regional Council consider this would strengthen the framework for managing sediment effects without increasing the scope of monitoring or creating unreasonable operational constraints.

50. Similarly, the comments from the Department of Conservation suggest that the consent conditions should be amended to focus on managing any adverse effects from sediment loads as a result of the monitoring undertaken.
51. The evidence of Ms Conn provides further context for the basis of her recommendations for monitoring in the Wairoa and Omanawa Rivers. In summary, she concludes there is currently no clear signal of geomorphic effects arising as a result of the ongoing operation of the Kaimai HEPS, and less certainty regarding the role of the Kaimai HEPS versus the other non-scheme related geomorphic drivers in the ability to generate geomorphic change in the alluvial sections of the Wairoa and Omanawa Rivers. As a result, Ms Conn recommends that sediment monitoring be undertaken in a section of the Wairoa River (WAI-3) and a section of the Omanawa River (OMW-4) in order to identify long-term trends in channel form in the alluvial river reaches in the Wairoa and Omanawa Rivers.
52. In Ms Conn's opinion, which I agree with, it is not appropriate or feasible at this stage to try to identify 'triggers' or definitions of 'adverse trends' in the Sediment Monitoring Plan (or conditions), as the 'natural' versus 'possible scheme induced' envelopes of change for either the Omanawa or the Wairoa Rivers have not yet been confirmed. I note also that the Bay of Plenty Regional Council have not given any indication as to what the 'agreed indicators' for adverse trends should be based on given the information that is available.
53. I also note that the reporting that is required under the proposed consent conditions requires the monitoring results from each survey to be presented, an assessment of any geomorphic changes due to the ongoing operation of the Kaimai HEPS, and importantly, recommendations regarding the methodology for ongoing monitoring and for the *management* of sediment or erosion effects caused by the continued operation of the Kaimai HEPS.
54. I do not consider it appropriate for the consent conditions to direct, at this stage, that the operation of the Kaimai HEPS should be managed in accordance with any

recommendations arising from the monitoring. As discussed in the sediment assessment for the substantive application, there is not in-built infrastructure throughout the Scheme to enable the unhindered transport of sediment through the catchment – such that there is no certainty as to what an appropriate management response may be (if required) in the future.

55. Furthermore, the recommendations arising from the monitoring may warrant a variation to the consent conditions, new resource consents (i.e. for the discharge of sediment) or a review of consent conditions in order to be implemented. As such, I do not agree with the comments of the Bay of Plenty Regional Council and the Department of Conservation that the proposed conditions ‘risk being informational only’ and must provide a framework for management at this juncture. I do, however, consider it appropriate that the consent conditions provide a pathway for the Bay of Plenty Regional Council to review the monitoring and then determine whether there is a need to serve notice on Manawa of its intention to review the conditions of this resource consent in accordance with sections 128 to 131 of the RMA in order to implement changes to the management of sediment or erosion effects caused by the continued operation of the Kaimai Hydro-Electric Power Scheme (*if warranted by the monitoring results*).

Ruahihi Canal Maintenance - Conditions

56. The comments from the Department of Conservation recommend that consent conditions be amended to include a requirement for a ‘standard’ fish salvage and relocation plan in the event that the Ruahihi Canal does need to be dewatered.
57. I agree that the requirement to prepare a fish salvage and relocation plan for any dewatering of the Ruahihi Canal is more appropriate than the approach set out in the consent conditions lodged with the substantive application – which was based on current practice at the Kaimai HEPS. As such, I have updated the proposed consent conditions to include a requirement for Manawa Energy to prepare a fish salvage and relocation plan.

58. I appreciate the constructive drafting of a recommended consent condition from the Department of Conservation. In consultation with the environmental staff at Manawa, I have proposed further revisions to the requirements of the fish salvage and relocation plan in the updated consent conditions. In this regard, the proposed objective of the plan is to identify the practices and procedures to be adopted to minimise the loss of native fish and trout during any dewatering activity within the Ruahihi Canal. Full avoidance of the loss of native fish or trout during dewatering is not considered realistic in practice – particularly given the potential length and size of canal being dewatered.
59. I have also recommended refining the listed matters that are to be included in the fish salvage and relocation plan. For example, the recommended matters from the Department of Conservation referred to the *transportation methodology* and *storage and transport measures* as separate line items – I have recommended that these be rationalised. Similarly, I have recommended the refining the matters relating to *the identification of appropriate habitat for fish relocation release sites* and *details of the relocation site* into one line item in the consent conditions, and have deleted the requirement for the plan to detail the number of fish relocated prior to and during dewatering (and introduced a requirement for recording and reporting fish relocations). In this regard, the plan that goes to the Bay of Plenty Regional Council to be certified cannot presuppose the number of fish that are to be relocated.
60. In addition, I have amended the proposed consent conditions to require the preparation of a fish salvage and relocation plan in the event that the Lloyd Mandeno Canal also needs to be dewatered. The requirements of this plan in the proposed consent conditions are the same that I have recommended for the Ruahihi Canal.

Native Fish Passage Management Plan - Conditions

61. The comments by the Department of Conservation on the NFPMP suggest that the plan should provide for adaptive management to address matters that arise

throughout the duration of the consent, that there be a requirement for a monitoring report on a regular basis that presents the results of monitoring and makes recommendations that address a range of matters, and that the Department be provided with the opportunity to comment on the draft plan.

62. With respect the provision of adaptive management in the consent conditions relating to the NFPMP, I agree with Dr Ryder that the concept of adaptive management is inherently contained within the plan. Condition 13.2(d) provides for “...*alternative techniques that may be utilised to facilitate the upstream and downstream movement of native fish species, where monitoring and trialling demonstrates that some of the passive migration measures are ineffective or not practicable*” and Condition 13.2(i) requires the plan to identify “...*the process by which the effectiveness of the various measures that will be implemented will be reviewed and adjusted if necessary*”.
63. In my opinion, these proposed requirements of the NFPMP inherently support a ‘learn and adapt’ approach to addressing upstream and downstream fish passage in, and around, the Kaimai HEPS. As such, I do not consider that further drafting amendments are required to incorporate the concept of adaptive management.
64. I have also amended the proposed consent conditions to require Manawa to prepare an annual report, in conjunction with the Mana Whenua Kaitiaki Rōpū, to the Bay of Plenty Regional Council that presents the results of the monitoring / recording of passive passage of native fish and the salvage of any entrained tuna, and provides commentary on the efficacy of the passive migration measures and trap and transfer programme that has been implemented, and any proposed improvement measures for the forthcoming year (and migration period). The proposed consent conditions also make provision for a copy of this monitoring report to be provided to the Department of Conservation.
65. I have proposed that the consent conditions provide an opportunity for the Department of Conservation to provide comment on a draft version of the NFPMP. That said, I have *not* incorporated their request that Manawa be required to document

how or why not the comments from the Department of Conservation have been incorporated into the NFPMP that is submitted for certification.

66. The certification of management plans required by consent conditions should not place a requirement on the Bay of Plenty Regional Council to consider the various merits of different parties' views on the content of a draft plan. In this regard, it is my understanding that to avoid the potential delegation of decision-making to officers that the certification process should be focused upon whether the respective management plan meets the objective(s) set out in the relevant conditions - as well as the information requirements of the relevant condition. This requirement is captured in Condition 1.6 and is important point of clarification so as to avoid any potential debate or regulatory uncertainty about the validity of comments from third parties.

Recreational Releases – Conditions

67. The comments from the Kaimai Canoe Club state that the club would support clarifying that the recreational releases are to be provided for a *minimum* of six hours, rather than a *maximum* of six hours, within the 10am to 4pm window. They state that this clarification would better reflect the long-standing practice of providing a full day of usable flows and would ensure certainty for event organisers, visiting paddlers, commercial operators, and the wider community who plan their activities around these scheduled releases.
68. Upon reflection of the comments from the Kaimai Canoe Club, I am recommending that Condition 9.6 be amended to refer to the recreational release being made available by the consent holder for 6 hours, between 10 am and 4 p m, for up to a maximum of 26 days per annum (i.e. the deletion of reference to a maximum number of hours). This will clarify that the release is for 6 hours.
69. I understand that this proposed amendment has been discussed and agreed between Manawa and the Kaimai Canoe Club. However, for completeness I do not support amending the condition to include reference to a minimum of six hours. Given that

the window in which the release can occur is limited to between 10am and 4pm – a release longer than six hours would run counter to the hours of the day in which a release can occur. Deleting any reference to a minimum or maximum is, in my opinion, the more appropriate drafting change to Condition 9.6.

Richard Turner

12 February 2026

Manawa Energy – Kaimai HEPS - FTAA Application (FTAA-2502-1024)

Part Three – Response Tables

3 - 1 - Comments Received from Local Authorities.

3 - 2 - Comments Received from Iwi Authorities, Hapū and Treaty Settlement Entities.

3 - 3 - Comments Received from Department of Conservation (Administering Agency).

3 - 4 - Comments Received from Recreationalists (Other Stakeholders).

3 - 5 - Comments Received from the Minister for the Environment and other relevant portfolio Ministers.

3 - 6 - Comments in Support/Neutral.

3-1 – Comments from Local Authorities

Comment Number	Comment Summary	Technical Input / Responder	Response Location in Application Documents / Response Evidence / Conditions	Response
12. Bay of Plenty Regional Council – Also refer to 3.8 Comments in Support/Neutral				
12.1	<p><i>Pg. 5, Table Para 1.11</i></p> <p>There is a discrepancy with the Mangakarengorengo River intake aperture between 90mm (as noted in B.09 Appendix J, Section 4.3.1.5) and 150mm (as noted in the draft consent condition 8.3) is an error, and the aperture will remain at 90 mm.</p>	Consent conditions	<p>4 – Draft Response Conditions (12 February 2026)</p> <p><i>Condition 8.3</i></p>	Draft Response Condition 8.3 has been updated so the aperture size now states 90mm.
12.2	<p><i>Pg 7, Table Para 1.1</i></p> <p>BOPRC considers that, as drafted, the conditions place responsibility on BOPRC to determine whether changes to residual flows are required. Consistent with the above comments in relation to sediment monitoring and management, BOPRC considers that this responsibility should sit with the consent holder, who should assess the monitoring results and, where agreed indicators show that temperature objectives are not being met, propose an appropriate response for Council certification.</p>	N/A	<p>N/A</p> <p><i>Condition 14.2</i></p>	<p>No changes proposed.</p> <p>Draft Response Condition 14.2 requires a monitoring report which must summarise and analyse the monitoring results and provide recommendations on the effectiveness of the residual flows and if changes are required, or whether additional monitoring is required.</p> <p>Draft Response Condition 14.3 requires Bay of Plenty Regional Council as the regulatory authority, to review the report and determine whether these changes are suitable to protect aquatic communities against elevated water temperature.</p>
12.3	<p><i>Pg 8, Table Para 2.1 -2.5</i></p> <p>Sediment Monitoring Plan prepared by Tonkin and Taylor (dated January 2026)</p>	Sedimentation / Planning	<p>2 – 3 – Appendix C – SOE – Selene Conn (Sedimentation), Tokin + Taylor</p>	No changes to Draft Response Condition 12.1 are considered necessary.

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	<p>remains monitoring-focused and does not specify the next step should monitoring indicate adverse geomorphic trends attributable to the scheme.</p> <p>To ensure alignment with RNRP Rule WQ 20, BOPRC recommends that conditions include a proportionate ‘monitor-to-manage’ mechanism. This should require the consent holder to assess monitoring results and, where agreed indicators show emerging adverse trends, prepare and implement an appropriate management response. This would strengthen the framework for managing sediment effects without increasing the scope of monitoring or creating unreasonable operational constraints.</p> <p>BOPRC considers that, in the absence of a subsequent ‘management trigger’, the applicant’s monitoring condition risks being informational only and may not be sufficiently outcomes-focused or enforceable.</p>		<p><i>Pg. 6-7, para 15-18</i></p> <p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 16, para 52</i></p> <p>Draft Sediment Monitoring Plan January 2026</p> <p><i>Condition 12</i></p>	<p>It is not appropriate at this stage to try to identify ‘triggers’ or definitions of ‘adverse trends’ in the Sediment Monitoring Plan (or conditions), largely due to limited historic geomorphic data.</p> <p>The monitoring proposed in the draft Sediment Monitoring Plan is to enable this differentiation of change to be identified and reported upon.</p> <p>The draft Sediment Monitoring Plan addresses effects management or mitigation if the sediment monitoring identifies adverse geomorphic change in OMW-4 and WAI-3 as a direct result of the on-going operation of the Kaimai HEPS.</p>
5. Western Bay of Plenty District Council				
5.1	No comment made	N/A	N/A	N/A

3-2 - Comments from Iwi Authorities, Hapū, and Treaty Settlement Entities

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1. Ngāti Hangarau Hapū and Ngamanawa Incorporation – Refer to 3.8 Comments in Support/Neutral				

3-3 – Comments from the Department of Conservation

Comment Number	Comment Summary	Technical Input / Responder	Response Location in Application Documents / Response Evidence / Conditions	Response
11. The Department of Conservation - Refer to 3.8 Comments in Support/Neutral				
11.1	<p><i>Pg. 6, Para 3.8</i></p> <p>The provision of additional flow at Omanawa weir, Mangapapa weir and McLaren Falls Dam may require trap and transfer programmes to ensure upstream passage and safe downstream passage for large tuna is received. There is a concern that absence of receiving pools downstream might cause injury.</p>	Aquatic Ecology	<p>2 – 4 – Appendix D – SOE – Greg Ryder (Aquatic Ecology), Greg Ryder Consulting</p> <p><i>Pg. 8-9, para 26-28</i></p> <p><i>Condition 13.2</i></p>	<p>Manawa proposes tuna traps, and trap and transfer programs as part of the Native Fish Passage Management Plan (see Draft Response Condition 13.2(e) to (i)).</p> <p>With regard to the absence of receiving pools downstream causing injury to large tuna, Dr Ryder states in his evidence that if tuna were abundant within these upper catchments prior to the construction of the Scheme, migrant adults must have been able to negotiate these natural drops which, in some cases, appear more challenging for safe downstream passage than the Scheme’s weirs. He therefore considers DOC’s position overstated with respect to effects on adult tuna moving downstream over weirs.</p> <p>Notwithstanding this, Dr Ryder is of the view that the draft NFPMP is sufficiently robust and flexible to:</p>

Comment Number	Comment Summary	Technical Input / Responder	Response Location in Application Documents / Response Evidence / Conditions	Response
				<ul style="list-style-type: none"> Respond to any monitoring information that indicates that modifications to passage at various structures are necessary and warranted in order to achieve the objectives of the plan; and Salvage operations (i.e., capture and safely transfer downstream) for tuna entrained within the Scheme's structures is available where safe downstream passage is not provided for.
11.2	<p><i>Page 6, Para 3.10</i></p> <p>The efficacy of proposed management responses addressing issues of downstream fish passage will need to be demonstrated with robust data.</p>	<p>Aquatic Ecology / Planning / Consent Conditions</p>	<p>2 – 4 – Appendix D – SOE – Greg Ryder (Aquatic Ecology), Greg Ryder Consulting <i>Pg. 9, para 29</i></p> <p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh <i>Pg. 19, para 64</i></p> <p>4 – Draft Response Conditions (12 February 2026) <i>Condition 13.2 and Condition 13.4</i></p>	<p>Draft Response Condition 13.2(i) whereby <i>“the process by which the effectiveness of the various measures that will be implemented will be reviewed and adjusted if necessary”</i>.</p> <p>Additionally, Manawa proposes new Draft Response Condition 13.4 requiring an annual report that presents the results of the monitoring / recording of passive passage of native fish and the salvage of tuna entrained and makes conclusions and / or recommendations that address the efficacy of the passive migration measures, the trap and transfer programme and any options for improving the programme and timing of improvements.</p> <p>This enables a mechanism in the Native Fish Passage Management Plan for the efficacy of the proposed management</p>

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				responses for issues with downstream fish passage to be reviewed.
11.3	<p><i>Page 6-7, Para 3.11-3.13</i></p> <p>There are some concerns around injury and mortality at structures where passage is only provided at high flows. The applicant acknowledges that there will be no fish passage provision at some structures and that fish may be able to migrate downstream when they overflow. This is a concern for the large dams and weirs featuring sharp crests (Opuiaki, Mangapapa, Omanawa and Ngatuhua weirs). Relying on high flows and overflows for downstream passage of migrant eels can potentially have several negative consequences and there is little benefit transferring them upstream if they are doomed to be injured or die during spawning migration.</p> <p>The Department of Conservation do suggest spillways as the safest way over dams less than 10 m height, with downstream monitoring of the large weirs of the scheme spilling over concrete aprons or bedrock with no receiving pools recommended. Opening of the sluice gates at Opuiaki weir could potentially provide safer passage for large tuna. This should be addressed in the fish management plan and an action plan should be triggered if injury or mortality is found with recommendations to address the issue (catch pools or alternative methods).</p>	Aquatic Ecology	<p>2 – 4 – Appendix D – SOE – Greg Ryder (Aquatic Ecology), Greg Ryder Consulting</p> <p><i>Pg. 7-9, para 23-28</i></p>	<p>With regard to a concern around injury and mortality at structures where passage is only provided at high flows, Dr Ryder states in his evidence that DOC relies on an overseas literature review that was heavily biased towards studies of salmonids in North America. Rather, Dr Ryder cites NZ examples which note that a spillway can be considered a safe way for fish to pass over a dam.</p> <p>Dr Ryder states in his evidence that if tuna were abundant within these upper catchments prior to the construction of the Scheme, migrant adults must have been able to negotiate these natural drops which, in some cases, appear more challenging for safe downstream passage than the Scheme’s weirs. He therefore considers DOC’s position overstated with respect to effects on adult tuna moving downstream over weirs (including the the Opuiaki weir under spilling conditions).</p> <p>Notwithstanding this, Dr Ryder is of the view that the draft NFPMP is sufficiently robust and flexible to:</p> <ul style="list-style-type: none"> Respond to any monitoring information that indicates that modifications to passage at various structures are necessary and

Comment Number	Comment Summary	Technical Input / Responder	Response Location in Application Documents / Response Evidence / Conditions	Response
				<p>warranted in order to achieve the objectives of the plan; and</p> <ul style="list-style-type: none"> Salvage operations (i.e., capture and safely transfer downstream) for tuna entrained within the Scheme's structures is available where safe downstream passage is not provided for.
11.4	<p><i>Pg. 7, Para 3.14</i></p> <p>The draft management plan states that two of the management responses to address upstream elver passage at Kaimai HEPS structures are considered complete. The Opuiake weir bypass project is not set and will need to be shown to work during operation.</p>	Aquatic Ecology	<p>2 – 4 – Appendix D – SOE – Greg Ryder (Aquatic Ecology), Greg Ryder Consulting</p> <p><i>Pg. 6-7, para 20-22</i></p> <p><i>Condition 13</i></p>	<p>Dr Ryder notes in his evidence that Manawa Energy installed a water pump to provide a continuous wetted surface on the concrete on the true left of the weir, with the purpose of providing a continuous wetted face for climbing native species to move upstream past the weir.</p> <p>Dr Ryder agrees it will take time (possibly several migration seasons) to assess the effectiveness of this mitigation measure for upstream fish passage as it may take years for elver to migrate this far up the catchment (following releases of elver into Lake McLaren or the lower section of the Opuiake River).</p> <p>Dr Ryder recommends downstream passage of tuna are monitored which forms part of the NFPMP.</p>
11.5	<p><i>Pg. 7, Para 3.15</i></p> <p>The Department of Conservation suggest a separate condition to require monitoring and reporting of the Native Fish Passage</p>	Aquatic Ecology / Planning /	<p>2 – 4 – Appendix D – SOE – Greg Ryder (Aquatic Ecology), Greg Ryder Consulting</p> <p><i>Pg. 9, para 29</i></p>	<p>Manawa proposes new Draft Response Condition 13.4 requiring an annual report prepared in conjunction with the Mana Whenua Kaitiaki Rōpū to provide to the Bay of Plenty Regional Council that presents the results of the monitoring / recording of</p>

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	Management Plan to Council and that adaptive management ensures effectiveness and safety.	Consent Conditions	<p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 19, para 64</i></p> <p>4 – Draft Response Conditions (12 February 2026)</p> <p><i>Condition 13.2 and Condition 13.4</i></p>	<p>passive passage of native fish and the salvage of tuna entrained and makes conclusions and / or recommendations that address the efficacy of the passive migration measures, the trap and transfer programme and any options for improving the programme and timing of improvements.</p> <p>Dr Ryder states in his evidence that the concept of adaptive management is inherently contained within the NFPMP and proposed conditions (e.g. proposed condition 13.2(d) provides for “...<i>alternative techniques that may be utilised to facilitate the upstream and downstream movement of native fish species, where monitoring and trialing demonstrates that some of the passive migration measures are ineffective or not practicable</i>”; and proposed condition 13.2(i) requires the plan to identify “...<i>the process by which the effectiveness of the various measures that will be implemented will be reviewed and adjusted if necessary</i>”)</p>
11.6	<p><i>Pg 8. Para 3.16</i></p> <p>The Draft Sediment Monitoring Plan needs to capture effects management and mitigation actions with respect to monitoring of geomorphic changes in OMW-4 and WAI-3 in the conditions of consent more clearly. This will ensure adverse effects relating to sediment</p>	Sedimentation	<p>2 – 3 – Appendix C – SOE – Selene Conn (Sedimentation), Tokin + Taylor</p> <p><i>Pg. 5-7, para 11-18</i></p> <p>Draft Sediment Monitoring Plan January 2026</p>	<p>Ms Conn’s evidence outlines that while there is currently no clear signal of geomorphic effects arising as a result of the ongoing operation of the Kaimai HEPS, there is the potential for geomorphic change in the alluvial sections of the Wairoa and Omanawa Rivers because of the Kaimai HEPS, and therefore monitoring is considered appropriate in those sections</p>

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	loads identified through monitoring are managed for the duration of the consent.			<p>given the limited quantitative data available.</p> <p>The draft Sediment Monitoring Plan recommends a methodology to identify any adverse trends as a result of the Scheme's operation.</p> <p>It would be premature to try to define 'adverse trends' and responses in the draft Sediment Monitoring Plan (or conditions), however, the Sediment Monitoring Plan does articulate mitigation and management measures for any adverse effects and recommends reporting on those.</p>
11.7	<p><i>Pg. 8, Para 4.3</i></p> <p>Recommend implementation of a standard fish salvage and relocation condition for complete/partial dewatering of the Ruahihi Canal during maintenance to ensure effects on freshwater fish are appropriately managed with a clear obligation on the Consent Holder to prepare and implement the process (over Fish and Game or hapū).</p>	Planning / Consent Conditions	<p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 18, para 59-60</i></p> <p>4 – Draft Response Conditions (12 February 2026)</p> <p><i>Condition 10.4, Condition 11.4 (replaced) and Condition 4.10</i></p>	<p>Manawa proposes to delete existing Draft Response Condition 11.4 inviting only Fish and Game New Zealand to provide recommendations and/or take action to ensure aquatic life is salvaged.</p> <p>Manawa proposes new Draft Response Condition 10.4, as recommended by DOC, requiring a Freshwater Fish Salvage and Relocation Plan during dewatering below 0.2m of the Ruahihi Canal.</p> <p>Consequently, Manawa proposes new Draft Response Condition 4.10 requiring a Freshwater Fish Salvage and Relocation Plan during dewatering below 0.2m of the Lloyd Mandeno Canal, which also on occasion requires dewatering.</p>

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11.8	<p><i>Pg. 9, Para 4.4</i></p> <p>Condition 12 requires a Sediment Monitoring Plan but there are no conditions requiring management actions if monitoring demonstrates adverse sediment or erosion effects. It is recommended that a condition is included to ensure recommendations of the monitoring plan are carried out by the Consent Holder, if monitoring demonstrates it is required.</p>	Planning	<p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 16, para 53</i></p> <p>4 – Draft Response Conditions (12 February 2026)</p> <p><i>Condition 12.2(c) and 12.3 (amended)</i></p>	<p>Draft Response Condition 12.2(c) requires a Sediment Monitoring Report to be produced every five years (amended as per the Draft Sediment Monitoring Plan) which provides recommendations regarding the methodology for the ongoing monitoring surveys and to manage sediment or erosion effects caused by the continued operation of Scheme.</p> <p>Draft Response Condition 12.3 requires the Bay of Plenty Regional Council to review the Sediment Monitoring Report and determine whether changes are required by the consent holder and determine whether review of the consent conditions is required.</p>
11.9	<p><i>Page 9-10, Para 4.5-4.6</i></p> <p>It is recommended that there is a condition that requires the development and implementation of a long-term monitoring programme to determine the effectiveness of the Native Fish Passage Management Plan and a review to consider options for improvements to better meet the objectives. This Plan and condition should provide for adaptive management to address matters that arise throughout the duration of the consent in relation to the proposed ongoing mitigation measures, operational and structural improvement options and monitoring for fish passage. It is also recommended that any actions for improvements or additional mitigation (as</p>	Aquatic Ecology / Planning	<p>2 – 4 – Appendix D – SOE – Greg Ryder (Aquatic Ecology), Greg Ryder Consulting</p> <p><i>Pg. 9, para 29</i></p> <p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 19, para 62</i></p> <p><i>Condition 13.2</i></p>	<p>Dr Ryder states in his evidence that the concept of adaptive management is inherently contained within the NFPMP and proposed conditions (e.g. proposed condition 13.2(d) provides for “...<i>alternative techniques that may be utilised to facilitate the upstream and downstream movement of native fish species, where monitoring and trialing demonstrates that some of the passive migration measures are ineffective or not practicable</i>”; and proposed condition 13.2(i) requires the plan to identify “...<i>the process by which the effectiveness of the various measures that will be implemented will be reviewed and adjusted if necessary</i>”)</p>

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	analysed as part of monitoring) are required through a condition of consent.			This provides for long-term monitoring, review and adjustments/improvements of the process if/as required.
11.10	<p><i>Pg. 10, Para 4.7</i></p> <p>The Department of Conservation request the monitoring condition require a report (to be provided to DOC and hapū / Mana Whenua Kaitiaki Rōpū) at regular intervals throughout the consent term, presenting monitoring results and makes conclusions and recommendations around adherence to National Fish Passage Guidelines, methods for determining and demonstrating efficacy of trap and transfer, specific monitoring of large tuna downstream at large weirs and dams, monitoring and recording of fish transferred as a result of trap and transfer, results of any investigations to facilitate upstream and downstream passage of native species, review of any options for improving the programme and timing for improvements based on the recommendations and the reporting frequency to council.</p>	Planning / Consent Conditions	<p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 19, para 64</i></p> <p>– Draft Response Conditions (12 February 2026)</p> <p><i>Condition 13.4</i></p>	Manawa proposes new Draft Response Condition 13.4 requiring an annual report prepared in conjunction with the Mana Whenua Kaitiaki Rōpū to provide to the Bay of Plenty Regional Council that presents the results of the monitoring / recording of passive passage of native fish and the salvage of tuna entrained and makes conclusions and / or recommendations that address the efficacy of the passive migration measures, the trap and transfer programme and any options for improving the programme and timing of improvements.
11.11	<p><i>Pg. 10, Para 4.9</i></p> <p>Department of Conservation suggest a condition providing the ability for them to provide comments on the draft Native Fish Passage Management Plan prior to submission to Council for certification to provide technical assistance.</p>	Planning	<p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 19-20, para 65-66</i></p> <p>4 – Draft Response Conditions (12 February 2026)</p> <p><i>Condition 13.3</i></p>	<p>Manawa proposes new Draft Response Condition 13.3 so that the draft Native Fish Passage Management Plan is provided to the Department of Conservation for comment.</p> <p>However, in his evidence, Mr Turner does not recommend that Manawa be required to document how or why the comments from the Department of Conservation have been incorporated into the NFPMP that is</p>

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				submitted for certification as responsibility should not be placed on the Bay of Plenty Regional Council to consider the various merits of different parties' views on the content of a draft plan.
11.12	<p><i>Pg. 10, Para 4.10</i></p> <p>Additional condition proposed to ensure Consent Holder provides Council with the certified Native Fish Passage Management Plan at all times and if any variation is required, the re-certification is required to go through Council.</p>	Planning / Consent Conditions	<p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 20, para 66</i></p> <p>4 – Draft Response Conditions (12 February 2026)</p> <p><i>Condition 1.5 and 1.6 (amended)</i></p>	<p>Certification Draft Response Conditions 1.5 and 1.6 require management and / or monitoring plans are certified by Bay of Plenty Regional Council.</p> <p>These conditions have been amended to include requirement for re-certification if any amendments are made to management and / or monitoring plans.</p>

3-4 – Comments from Recreationalists

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9. Kaituna Rafting LTD (Trading as Kaituna Cascades) – Refer to 3.8 Comments in Support/Neutral				
10. Kaimai Canoe Club – Also refer to 3.8 Comments in Support/Neutral				
10.1	The Kaimai Canoe Club would also support clarifying that the recreational releases are to be provided for a minimum of six hours, rather than a maximum of six hours, within the 10am to 4pm window. This clarification would better reflect the long-standing practice of providing a full day of usable flows and would ensure certainty for event organisers, visiting paddlers, commercial operators, and the wider community who plan their activities around these scheduled releases.	Planning / Consent Conditions	<p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 20, para 67-69</i></p> <p>4 – Draft Response Conditions (12 February 2026)</p> <p><i>Condition 9.6</i></p>	<p>Manawa proposes to a change to Draft Response Condition 9.6 to remove the word “maximum” so that the condition now states:</p> <p><i>“The recreational release must be made available by the consent holder for a maximum of 6 hours, between 10 am and 4 pm, for up to a maximum of 26 days per annum.”</i></p> <p>In his evidence, Mr Turner explains that he does not support amending the condition to include reference to a minimum of six hours. Given that the window in which the release can occur is limited to between 10am and 4pm – a release longer than six hours would run counter to the hours of the day in which a release can occur. Deleting any reference to a minimum or maximum is the more appropriate drafting change.</p>

3.5 - Minister for the Environment and other relevant portfolio Ministers

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2. Minister of Arts, Culture and Heritage				
2.1	No comment made	N/A	N/A	N/A
3. Minister of Economic Growth – Refer to 3.8 Comments in Support/Neutral				
4. Minister for Climate Change – Refer to 3.8 Comments in Support/Neutral				
6. Minister for Energy – Refer to 3.8 Comments in Support/Neutral				
7. Minister for Infrastructure – Refer to 3.8 Comments in Support/Neutral				
13. Minister for Regional Development - Refer to 3.8 Comments in Support/Neutral				
13.1	<p><i>Pg. 2, Para 6</i></p> <p>Comment on the significance of the Kaimai HEPS on the national energy system should be addressed through the Energy portfolio. Indicatively, however, officials advise that Kaimai HEPS' output, because it is run-of-the-river (which limits the capacity in comparison to dam hydro schemes), appears modest in comparison to other large hydro generation schemes across New Zealand. For example, the Clyde Dam has an installed capacity of 432 MW, compared with Kaimai HEPS' 42 MW installed capacity.</p>	Hydro Operations Manawa	<p>2 – 2 – Appendix B – SOE – Todd Mead (Operational), Manawa Energy</p> <p><i>Pg 5 and 7, para 18, 23-26.</i></p>	<p>Mr Mead states in his evidence that the benefits of the Kaimai HEPS go beyond the installed capacity of 42 MW which currently services 32% of Tauranga's electricity demand per annum.</p> <p>Kaimai HEPS is embedded in the local distribution network as a substantial contributor to meeting peak demand and total output requirements for Tauranga. The flexible and reliability of being able to provide electricity when demand is high means Kaimai provides valuable benefit in deferring expensive transmission upgrades and offsets the amount of power Transpower has to import into the district.</p> <p>Electricity demand in Tauranga has outstripped transmission capacity in a 'low generation' scenario meaning Kaimai HEPS contributes to filling this demand gap and is an ongoing integral tenet of reliable electricity supply as increased grid capacity</p>

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				will not be commissioned and operational until 2032.

3-6 – Comments in Support/Neutral

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12. Bay of Plenty Regional Council				
12.6	<i>Pg. 3, Para 4</i> Overall, BOPRC considers the proposal acceptable in principle subject to conditions of consent that secure outcomes for fish passage, residual flows, and sedimentation.	Planning	2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh <i>Pg. 15, para 48</i>	Mr Turner’s evidence sets out the condition framework which is considered to provide positive outcomes with regard to fish passage and sedimentation.
12.7	<i>Pg. 4, Table Para 1.4</i> BOPRC supports the proposed additional residual flows and the continued maintenance of the existing residual flow regime, and conditions that secure their implementation.	N/A	N/A	The conditions secure the implementation of the additional residual flows and the continued maintenance of existing residual flows.
12.8	<i>Pg. 5, Table Para 1.7</i> The applicant has suggested conditions for a Native Fish Management Plan (FMP) to be developed and implemented in conjunction with mana whenua, iwi and hapū to provide for additional fish passage options, including the salvage of tuna entrained in the Ruahihi Canal. BOPRC supports this approach.	Planning	2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh <i>Pg. 18-20, para 61-66</i>	Manawa Energy acknowledges the support of Bay of Plenty Regional Council in this approach further set out in the condition framework in Mr Turner’s evidence.

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12.9	<p><i>Pg. 5, Table Para 1.8</i></p> <p>BOPRC agrees with the proposed condition 13.1 (updated proposed conditions dated 14 January 2026) which make clear that the consent holder's obligations to prepare, implement and maintain the NFPMP are not contingent on participation by mana whenua, iwi or hapū. If participation pauses or ceases, the consent holder must still implement the NFPMP covering barrier identification and prioritisation, fish-passage improvements, and Ruahihi Canal tuna-salvage protocols, to agreed timeframes, while continuing to offer partnership and opportunities for re-engagement.</p>	Planning	<p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 18-20, para 61-66</i></p>	Manawa Energy acknowledges the support of Bay of Plenty Regional Council in this approach further set out in the condition framework in Mr Turner's evidence.
12.10	<p><i>Pg. 6, Table Para 1.15</i></p> <p>BOPRC agrees with the approach of conditions to ensure all intake structures retain their existing aperture sizing. BOPRC also acknowledges that maintaining the current intake velocities is consistent with the NPS-REG, which seeks to avoid unreasonable constraints on renewable electricity generation output.</p>	Planning	<p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 7-15 para 21-47</i></p>	Manawa Energy acknowledges the support of Bay of Plenty Regional Council in this approach further set out in Mr Turner's regarding alignment with the NPSREG.
12.11	<p><i>Pg. 6, Table Para 2.3</i></p> <p>BOPRC acknowledge that water quality outcomes are closely linked to the residual flow regime, and that the applicant's proposed increases in residual flows are expected to support improved thermal and habitat conditions, which aligns with the National Policy Statement for Freshwater Management 2020 (amended 2025) (NPS-FM) direction.</p>	Planning	<p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 8, para 25</i></p>	As set out in Mr Turner's evidence, residual flows are critical for maintaining appropriate water temperatures downstream of the Scheme's structures and for increasing the availability and quality of habitat. This aligns with the NPS-FM emphasis on the importance of managing freshwater resources to improve health and wellbeing of waterbodies and

Comment Number	Comment Summary	Technical Input / Responder	Response Location in Application Documents / Response Evidence / Conditions	Response
				ecosystems and avoiding the loss of river extents and improving ecological health.
12.12	<p><i>Pg.6 and 7, Table Para 2.4, 2.5 and 1.2</i></p> <p>The Aquatic Ecology and Water Quality Assessment (Appendix J, Section 4.2.2.3) recommended upstream and downstream temperature monitoring in the Mangakarengorengo River. The applicant has proposed such monitoring in the draft conditions (dated 14 January 2026), and BOPRC supports this framework as an appropriate means of confirming whether the residual flow required by Condition 8.1 is effective.</p> <p>Furthermore, BOPRC note the Bay of Plenty Regional Natural Resources Plan (RNRP) Schedule 9 reiterates that any activity in waterbody must not increase temperature more than 3 degrees to protect habitat values.</p> <p>Overall, BOPRC supports the applicant's proposed approach to water quality management through consent conditions, subject to minor amendments so that responsibility for evaluating monitoring outcomes and initiating any necessary response rests with the consent holder</p>	N/A	N/A	Manawa Energy acknowledges the support of Bay of Plenty Regional Council in this approach.
12.13	<p><i>Pg. 7, Table Para 2.1</i></p> <p>BOPRC considers the draft Sediment Monitoring Plan (SMP) prepared by Tonkin and Taylor (dated January 2026) to be appropriate and robust in terms of monitoring. The proposed five-yearly surveys, geomorphic change detection, and hotspot assessments provide a sound basis for understanding long term sediment continuity and</p>	Planning	<p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 15-17, para 49-55</i></p>	Manawa Energy acknowledges the support of Bay of Plenty Regional Council for the SMP, and its associated conditions further set out in the condition framework in Mr Turner's evidence.

Comment Number	Comment Summary	Technical Input / Responder	Response Location in Application Documents / Response Evidence / Conditions	Response
	channel response. Therefore, BOPRC agrees with the applicant's proposed condition to provide a finalised version of this plan.			
12.14	<p><i>Pg. 7, Table Para 3.1 and 3.2</i></p> <p>BOPRC agrees that the planning instruments, statutory assessment, and iwi and hapū management plans identified in the application are relevant.</p> <p>Since the time of lodgement, several new and amended National Policy Statements have come into effect. BOPRC have considered all those relevant, and is satisfied that the application is not contrary to the national direction they set.</p>	Planning	<p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 7-15, para 21-48</i></p>	Mr Turner's evidence provides an assessment of new and amended National Policy Statements of relevance and concludes that application aligns with and supports the national direction they set.
12.15	<p><i>Pg 8, Para 3</i></p> <p>Please note that when drafting conditions, BOPRC's system (Accela) does not allow tables to be included within the consent documents. As such, if the Panel wishes to include tables within consent conditions, we respectfully request that these are attached as an appendix and referred to in the conditions (e.g. BOPRC Consent Appendix RM25-0606). Our convention is to refer to plans as BOPRC Consent Plan RM25-0606/XX and other material, such as reports or monitoring plans as BOPRC Consent Appendix RM25-0606/XX. These naming conventions are set up so that any cross-referencing between the condition sets and associated documentation is clear.</p>	N/A	N/A	The Draft Response Conditions follow these protocols.
1. Ngāti Hangarau Hapū and Ngamanawa Incorporation				

Comment Number	Comment Summary	Technical Input / Responder	Response Location in Application Documents / Response Evidence / Conditions	Response
1.1	<p><i>Pg. 1, Para 3</i></p> <p>Engagement with Manawa Energy has enabled Ngāti Hangarau and Ngamanawa to reach a position of support for the version of the proposed conditions included as Appendix E to the Application lodged with the EPA (Agreed Conditions). It is acknowledged by Ngāti Hangarau and Ngamanawa that these might change during the Application process and that the final determination of the Application by the Panel may result in conditions which are different to the Agreed Conditions.</p>	N/A	N/A	Manawa Energy acknowledges Ngāti Hangarau and Ngamanawa's agreement with the proposed conditions lodged with the Application.
1.2	<p><i>Pg. 1, Para 4</i></p> <p>The impacts of the Application proposal on Ngāti Hangarau and Ngamanawa which are not capable of being addressed through the Agreed Conditions have been addressed by a confidential agreement between Manawa, Ngāti Hangarau and Ngamanawa (Side Agreement). The Side Agreement contains a process for Ngāti Hangarau and Ngamanawa to engage further with Manawa to seek to agree on any amendments to the Agreed Conditions proposed by Manawa during the Application process.</p>	N/A	N/A	Manawa Energy acknowledges the Side Agreement which provides Ngāti Hangarau and Ngamanawa an opportunity to engage further with Manawa on the proposed conditions.
1.3	<p><i>Pg. 2, Para 2</i></p> <p>Ngāti Hangarau and Ngamanawa expressly reserve their right to provide comments on any changes to the Agreed Conditions which affect their interests and / or to appeal against the decision of the Expert Panel if the Agreed Conditions are amended in a manner which affects their interests to the</p>	N/A	N/A	Manawa Energy notes the right for Ngāti Hangarau and Ngamanawa to provide comment on any further changes to the proposed conditions or to appeal against the decision of the Panel.

Comment Number	Comment Summary	Technical Input / Responder	Response Location in Application Documents / Response Evidence / Conditions	Response
	extent that opportunity is provided for under the Act and in a manner consistent with the Side Agreement.			
3. Minister of Economic Growth				
3.1	<p><i>Pg. 1, Para 3-4</i></p> <p>The project will maintain local employment and generate \$2.4 million in annual operating expenditure and \$2 million in annual capital costs with renewal consents avoiding a \$205.5 million investment in replacement infrastructure. While the proposal may not generate additional economic impacts, its primary benefit is ensuring the availability of a reliable electricity supply and the continued provision of renewable energy. This has substantial benefits in continually supporting businesses in the region, which is essential in a growing economy.</p>	Hydro Operations Manawa	<p>2 – 2 – Appendix B – SOE – Todd Mead (Operational), Manawa Energy</p> <p><i>Pg. 7, para. 23-25.</i></p>	<p>The Ministers comments are supported by the project’s demonstrable benefits to local employment, contribution through operating expenditure, capital costs and avoiding costly replacement infrastructure.</p> <p>Mr Mead’s evidence states that while new additional benefits may not be generated, the scheme generates 32% of Tauranga’s electricity demand annually and supports local employment through this role as well as providing jobs related to operation and maintenance of the scheme.</p> <p>The Kaimai HEPS provides controllable, flexible and reliable electricity generation ensuring consistent supply during peak demand periods. This supports local businesses and is critical for Tauranga’s growing economy.</p> <p>By siting electricity generation activities close to demand centres, the Kaimai HEPS reduces transmission losses, offsets the need for additional infrastructure investment such as upgrades to the national grid lowering the overall cost of electricity to consumers.</p>
4. Minister for Climate Change				

Comment Number	Comment Summary	Technical Input / Responder	Response Location in Application Documents / Response Evidence / Conditions	Response
4.1	<p><i>Pg.1, Para 1</i></p> <p>There are likely to be significant national and regional benefits of this project in terms of climate mitigation, but not in terms of climate adaptation.</p>	Hydro Operations Manawa	<p>2 – 2 – Appendix B – SOE – Todd Mead (Operational), Manawa Energy</p> <p><i>Pg. 5 and 7, para 17-18 and 23-25.</i></p>	<p>Mr Mead’s evidence states that the scheme ensures a reliable source of renewable electricity meeting growing energy demand in the Bay of Plenty (forecast to exceed 180 MW by 2030) and supports decarbonizing of the economy as set out in the NPSREG. Accordingly, this proposal allows wind and solar technologies to be enabled to supply the national grid.</p> <p>Kaimai HEPS will support the adaptation of New Zealand’s changing electricity generation due to residential demand and population growth, industrial process heat, electrification. The localised generation of electricity defers costly transmission upgrades which can be critical as climate change impacts infrastructure and locating it near major demand centres increases system efficiency.</p>
6. Minister for Energy				
6.1	<p><i>Pg. 1, Para 3-4</i></p> <p>The project has significant regional benefits as an existing generation facility to maintain the capacity of hydro generation which also support other outcomes such as climate change targets, contribution to security and energy supply and downward pressure on wholesale electricity prices.</p>	Hydro Operations Manawa	<p>2 – 2 – Appendix B – SOE – Todd Mead (Operational), Manawa Energy</p> <p><i>Pg.6-7, para 20 and 23-25.</i></p>	<p>The support of the Minister for the project and its positive outcomes for New Zealand in terms of hydro generation capacity, security of supply and achieving climate change targets is acknowledged.</p> <p>Mr Mead’s evidence states that the Kaimai HEPS is an integral component of the local distribution network power between 25,000-29,000 households annually. Hydroelectricity enables additional future wind and solar generation capacity to the national grid through firming and peaking,</p>

Comment Number	Comment Summary	Technical Input / Responder	Response Location in Application Documents / Response Evidence / Conditions	Response
				<p>reliable power delivery and grid stability and spinning reserve potential supporting a decarbonisation of the energy generation sector.</p> <p>The efficiency of the system through reduced transmission losses controllable generation that is adjustable to daily demand peaks will continue to provide security in supply and force downward pressure on wholesale electricity prices. This will be achieved continued electricity supply of a major demand centre into Tauranga and deferring expensive transmission infrastructure upgrades.</p>
7. Minister for Infrastructure				
7.1	<p><i>Pg. 1, Para 3</i></p> <p>Expresses broad support for projects delivering positive outcomes for New Zealand, including the Kaimai Hydroelectric Scheme noting the government's economic growth and infrastructure priorities.</p>	<p>Hydro Operations Manawa</p>	<p>2 – 2 – Appendix B – SOE – Todd Mead (Operational), Manawa Energy</p> <p><i>Pg. 5-6, para 18-20, 24-25.</i></p>	<p>The Ministers recognition of the listed project aligning with New Zealand's economic growth and infrastructure priorities is noted.</p> <p>Mr Mead's evidence states that the Kaimai HEPS supports positive outcomes for New Zealand under the forecasted increase in Tauranga's annual peak electricity demand to 180 MW by 2030.</p> <p>Kaimai HEPS is assumed to continue to operate to maintain a reliable electricity supply as a contributor to baseload electricity supply (supporting transition to renewable energy generation) with firming and peaking capabilities and</p>

Comment Number	Comment Summary	Technical Input / Responder	Response Location in Application Documents / Response Evidence / Conditions	Response
				<p>responsiveness to system disturbances and/or load changes.</p> <p>As an existing infrastructure component of the National Grid, the Kaimai HEPS scheme has ultimately saved the cost of expensive transmission upgrades and offset the cost of importing electricity during peak demand from alternative sources into Tauranga.</p>
7.2	<p><i>Pg. 2, Para 1</i></p> <p>The Kaimai Power Scheme is consistent with the objectives and policies of the NPS-REG – supporting government targets of doubling renewable electricity generation by 2050.</p>	Planning	<p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 7-15 para 21-48</i></p>	Mr Turner’s evidence provides an assessment of NPSREG (as amended in December 2025 and in force from 15 January 2026) and concludes that the application remains aligned with and supports the national direction it sets.
7.3	<p><i>Pg. 2 Para 3</i></p> <p>The Resource Management (Consenting and Other System Chances) Amendment Act 2025 requires councils to issue natural resource permits for renewable energy projects with 35-year durations. Manawa’s request for their permits to be issued for 35 years is consistent with the RMA and will provide long term certainty.</p>	N/A	N/A	The recent legislative changes will ensure the long-term operation and maintenance of a vital renewable asset recognising the Scheme’s regional and national significance and the need for infrastructure planning.
8. New Zealand Transport Agency				
8.1	<p><i>Pg.1 Para 2.2</i></p> <p>NZTA is neutral to the proposed application.</p>	N/A	N/A	The neutral position of NZTA is acknowledged.
8.2	<p><i>Pg. 2 Para 2.7</i></p> <p>NZTA supports [the inclusion of Condition 12 within Part B.04 Appendix E] frequent monitoring and reporting of the Wairoa River (Sediment</p>	Planning	<p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 15-17, para 48-55</i></p>	Manawa Energy acknowledges the support of NZTA for condition 12 as further set out in the condition framework in Mr Turner’s evidence.

Comment Number	Comment Summary	Technical Input / Responder	Response Location in Application Documents / Response Evidence / Conditions	Response
	Monitoring Plan) to identify and appropriately mitigate any subsequent geomorphic changes to the Wairoa River given the proximity of state highway infrastructure to the waterbody.			
8.3	Existing traffic volumes associated with the proposal have not been addressed within the Application documentation. However, NZTA understand that traffic volumes associated with the proposal at the SH29 and Ruahihi Road intersection, and the SH29 and McLaren Falls Road intersection, are not expected to change from its current volumes.	Planning	2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh <i>Pg. 6, para 18</i>	In his evidence, Mr Turner confirms that that matters relating to traffic movements associated with the Kaimai HEPS are not addressed in the substantive application. This is because such considerations are not a matter of control under Rule WQ R20 (47C), and is not a function of the Bay of Plenty Regional Council under section 30 of the RMA. In addition, the continued operation of the Kaimai HEPS is a permitted activity from a land use perspective under the Western Bay of Plenty District Plan (Rule 10.3(1)).
9. Kaituna Rafting LTD (Trading as Kaituna Cascades)				
9.1	<i>Pg. 2 Para 1</i> Kaituna Cascades strongly supports the retention of clauses 9.6 and 9.7 in the proposed consent conditions. We respectfully request that the Expert Panel ensure these provisions remain in place to safeguard the future of recreation on the Wairoa River.	Planning / Consent Conditions	2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh <i>Pg. 20-21, para 67-69</i> 4 – Draft Response Conditions (12 February 2026) <i>Condition 9.6</i>	Manawa proposes a minor change to remove the word “maximum” from Condition 9.6 as requested by Kaimai Canoe Club so that the condition now states: <i>“The recreational release must be made available by the consent holder for a maximum of 6 hours, between 10 am and 4 pm, for up to a maximum of 26 days per annum.”</i>
10. Kaimai Canoe Club				

Comment Number	Comment Summary	Technical Input / Responder	Response Location in Application Documents / Response Evidence / Conditions	Response
10.1	<p><i>Pg. 2 Para 3</i></p> <p>The Kaimai Canoe Club strongly supports the retention of clauses 9.6 and 9.7 in the proposed consent conditions. We respectfully request that the Expert Panel ensure these provisions remain in place to safeguard the future of recreation on the Wairoa River.</p>	<p>Planning / Consent Conditions</p>	<p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 20-21, para 67-69</i></p> <p>4 – Draft Response Conditions (12 February 2026)</p> <p><i>Condition 9.6</i></p>	<p>Manawa proposes a minor change to remove the word “maximum” from Condition 9.6 as requested by Kaimai Canoe Club so that the condition now states:</p> <p><i>“The recreational release must be made available by the consent holder for a maximum of 6 hours, between 10 am and 4 pm, for up to a maximum of 26 days per annum.”</i></p>
11. Department of Conservation				
11.14	<p><i>Pg. 4, Para 2.2</i></p> <p>The Department recognises the project’s significant national and regional benefits as identified within the application and economic assessment. The Department of Conservation support in principle, the continued operation of the scheme as a contributor to the social and economic wellbeing of Bay of Plenty and New Zealand.</p>	<p>Hydro Operations Manawa</p>	<p>2 – 2 – Appendix B – SOE – Todd Mead (Operational), Manawa Energy</p> <p><i>Pg. 5-7, para 19-25.</i></p>	<p>Mr Mead’s evidence states that the Kaimai HEPS Scheme provides electricity when needed, is not intermittent or weather dependant, provides assistance through system inertia providing grid stability, and is responsive to system disturbances in maintaining system frequency.</p> <p>This underpins the core requirements for a functioning electricity grid. The scheme is embedded in the local distribution network contributing to peak demand and total output requirements (which is forecast to continue growing) equivalent to producing 32% of Tauranga’s electricity demand per annum. The siting of the scheme near Tauranga improves system efficiency and provides controllable, flexible and reliable generation that can adjust to peak demands.</p>

Comment Number	Comment Summary	Technical Input / Responder	Response Location in Application Documents / Response Evidence / Conditions	Response
				His evidence further notes that the Kaimai provides valuable benefit in deferring expensive transmission upgrades and offsets the amount of electricity Transpower has to import. This has deferred investment in the National Grid by 10 years reducing the overall cost of electricity supply and fills Tauranga's demand gap.
11.15	<p><i>Pg. 6, Para 3.6</i></p> <p>The proposal to provide existing residual flows and new residual flows where there are currently none provides a balanced approach under the National Policy Statement for Freshwater Management and renewable electricity delivery required under the National Policy Statement for Renewable Energy Generation. The Department agrees with the effects of residual flows on freshwater ecosystems provided management plans feature effective and workable measures and are incorporated into consent conditions.</p>	Planning	<p>2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh</p> <p><i>Pg. 7-15 para 21-48</i></p>	Manawa acknowledges DOC's comments on the balanced approach of providing additional residual flows, alignment with the NPS-FM and the NPSREG, and agreement on management plans and conditions to manage effects as further set out in the condition framework and assessment of National Policy Statements in Mr Turner's evidence.
11.16	<p><i>Pg. 6 Para 3.9</i></p> <p>The Department of Conservation supports the inclusion of a Draft Native Fish Passage Management Plan as it sets out objectives that are supported to address issues of downstream passage and identifies barriers and potential measures to improve upstream and downstream fish passage.</p>	Aquatic Ecology /	<p>2 – 4 – Appendix D – SOE – Greg Ryder (Aquatic Ecology), Greg Ryder Consulting</p> <p><i>Pg. 26, para 88</i></p>	Manawa acknowledges DOC's support for the NFPMP and its objectives as set out in Dr Ryder's evidence.
11.17	<p><i>Pg. 8, Para 4.2</i></p> <p>The proposed draft conditions that specify the existing and proposed new residual flows, take and</p>	N/A	N/A	Manawa acknowledges DOC's support for these proposed conditions.

Comment Number	Comment Summary	Technical Input / Responder	Response Location in Application Documents / Response Evidence / Conditions	Response
	diversion of water and intake screens to be maintained throughout the Scheme are supported.			
11.18	<i>Pg. 11, Para 4.11</i> The Department of Conservation support involvement of hapū in the development and implementation of the Native Fish Passage Management Plan.	Planning	2 – 5 – Appendix E – SOE – Richard Turner (Planning), Mitchell Daysh <i>Pg. 18-20, para 61-66</i>	Manawa acknowledges DOC’s support for involvement of hapū in the development and implementation of the NFPMP as set out in the condition framework in Mr Turner’s evidence.
13. Minister for Regional Development				
13.2	<i>Pg. 2, Para 5</i> Based on the analysis provided, the continued operation of the Kaimai HEPS is expected to offer economic benefit to the Bay of Plenty region through ongoing employment, and through providing peak electricity demand requirements for Tauranga	Hydro Operations Manawa	2 – 2 – Appendix B – SOE – Todd Mead (Operational), Manawa Energy <i>Pg. 7, para. 23-24.</i>	The Ministers comments are acknowledged and concurred with in Mr Mead’s evidence - Kaimai HEPS makes a substantial contribution to peak demand and total output requirements for the Bay of Plenty. The ability to generate electricity close to major demand centres (Tauranga) that can adjust to daily demand peaks provides valuable benefit and reduces the amount of electricity sourced through importing.

Manawa Energy – Kaimai HEPS - FTAA Application (FTAA-2502-1024)

Part Four – Draft Response Conditions

4 - Draft Response Conditions (12 February 2026).

KAIMAI HYDRO-ELECTRIC POWER SCHEME

RESPONSE CONDITIONS IN RESPONSE TO COMMENTS -12 FEBRUARY 2026

The following resource consents are required for the continued operation, use and maintenance of the Kaimai Hydro-Electric Power Scheme:

Under section 13(1)(a), 14(3)(a) and 15(1)(a) of the Resource Management Act 1991 and Rule WQ 20 of the Bay of Plenty Regional Natural Resources Plan to undertake the following activities as controlled activities in the Omanawa River, Ruakaka Stream, Mangapapa River, Opuiki River, Tuawharawhara Stream, Ngatuhua Stream, Ngatuhua Canal, Awakotuku Stream, Lake Mangaonui, Scott's Dry Gully, Lloyd Mandeno Canal, Mangapapa River, Lake Matariki, Mangakarengorengo River, Lake McLaren, Ruahihi Canal and the Wairoa River:

- A. The damming of water in:
- i. Omanawa River (via the Omanawa Weir);
 - ii. Ruakaka Stream (via the Ruakaka Drop Pipe Structure);
 - iii. Mangapapa River (via the Mangapapa Weir);
 - iv. Opuiki River (via the Opuiki Weir);
 - v. Tuawharawhara Stream (via the Tuawharawhara Drop Pipe Structure);
 - vi. Ngatuhua Stream (via the Ngatuhua Canal);
 - vii. Awakotuku Stream (via the Awakotuku Drop Pipe Structure);
 - viii. Mangaonui River (via the Mangaonui Dam);
 - ix. Scott's Dry Gully (via the Scotts' Dry Gully Dam);
 - x. Mangapapa River (via the Matariki Dam);
 - xi. Mangakarengorengo River (via the Mangakarengorengo Weir);
 - xii. Mangapapa River / Wairoa River (via the McLaren Falls Dam); and
 - xiii. Ruahihi Tributaries 1A, 1, 2 and 3 (via the Ruahihi Canal).
- B. The use and maintenance of existing structures in the bed of:
- i. Omanawa River (via the Omanawa Weir);



- ii. Ruakaka Stream (via the Ruakaka Drop Pipe Structure);
 - iii. Mangapapa River (via the Mangapapa Weir);
 - iv. Opuiaki River (via the Opuiaki Weir);
 - v. Tuawharawhara Stream (via the Tuawharawhara Drop Pipe Structure);
 - vi. Ngatuhoa Stream (via the Ngatuhoa Canal);
 - vii. Awakotuku Stream (via the Awakotuku Drop Pipe Structure);
 - viii. Mangaonui River (via the Mangaonui Dam);
 - ix. Scott's Dry Gully (via the Scotts' Dry Gully Dam);
 - x. Mangapapa River (via the Matariki Dam);
 - xi. Mangakarengorengo River (via the Mangakarengorengo Weir);
 - xii. Mangapapa River / Wairoa River (via the McLaren Falls Dam); and
 - xiii. Ruahihi Tributaries 1A, 1, 2 and 3 (via the Ruahihi Canal).
- C. The take, use and diversion of water for hydro-electricity purposes from:
- i. Omanawa River to Tunnel 1;
 - ii. Ruakaka Stream to Tunnel 2;
 - iii. Mangapapa River to Tunnel 3;
 - iv. Opuiaki River to Tunnel 4;
 - v. Tuawharawhara Stream to Tunnel 4;
 - vi. Ngatuhoa Stream to the Ngatuhoa Canal;
 - vii. Ngatuhoa Canal to Tunnel 5;
 - viii. Awakotuku Stream to Tunnel 5;
 - ix. Lake Mangaonui to Tunnel 6;
 - x. Lloyd Mandeno Canal to the Lloyd Mandeno Power Station;
 - xi. Lake Matariki to the Lower Mangapapa Power Station;
 - xii. Mangakarengorengo River to Lake McLaren;
 - xiii. Lake McLaren to the Ruahihi Canal; and
 - xiv. Ruahihi Canal to the Ruahihi Power Station.
- D. The discharge of water and contaminants to:
- i. Omanawa River (via the Omanawa Weir);

- ii. Ruakaka Stream (via the Ruakaka Drop Pipe Structure);
- iii. Mangapapa River (via the Mangapapa Weir);
- iv. Opuiaiki River (via the Opuiaiki Weir);
- v. Tuawharawhara Stream (via the Tuawharawhara Drop Pipe Structure);
- vi. Ngatuhoa Stream (via the Ngatuhoa Weir);
- vii. Awakotuku Stream (via the Awakotuku Drop Pipe Structure);
- viii. Mangaonui River (via the Mangaonui Dam);
- ix. Scott's Dry Gully (via the Scotts' Dry Gully Dam);
- x. Mangapapa River (via the Lloyd Mandeno Power Station, Lower Mangapapa Power Station and Matariki Dam);
- xi. Mangakarengorengo River (via the Mangakarengorengo Weir);
- xii. Lake McLaren (via the Mangakarengorengo Intake Tunnel);
- xiii. Mangapapa River / Wairoa River (via the McLaren Falls Dam); and
- xiii. Ruahihi Tributary 1 (via the Ruahihi Canal); and
- xiv. Wairoa River (via the Ruahihi Power Station).

1. GENERAL CONDITIONS

General

- 1.1 The activities authorised by this resource consent are located as shown on BOPRC Consent Plan [RM25-0606XX-XXXX/01](#) (attached as **Appendix A**).
- 1.2 The activities authorised by these resource consents must be undertaken in general accordance with the information provided in "*Kaimai Hydro-Electric Power Scheme, Fast-track Approvals Act Application for Resource Consent*" by Mitchell Daysh (September 2025), and any subsequent amendments and further information provided to the Environmental Protection Authority. In the event of any conflict or discrepancy between the information in these documents and the conditions of this resource consent, the conditions shall be determinative.
- 1.3 The consent holder must ensure that any persons engaged in activities authorised by these resource consents are made aware of the conditions of this resource consent (including any [certified](#) management and / or monitoring plans [and the obligations they impose on the consent holder](#)), and the necessary measures required for compliance with the conditions.

- 1.4 A copy of these resource consents, and all certified management and / or monitoring plans, must be available and produced without unreasonable delay upon request from a servant or agent of the Bay of Plenty Regional Council.

Certification

- 1.5 Where any condition of these resource consents requires the consent holder to submit a management and / or monitoring plan for certification [to the Bay of Plenty Regional Council, or in the event that the consent holder seeks to update or amend an existing management and / or monitoring plan for re-certification, to the Bay of Plenty Regional Council](#), the consent holder must submit the [proposed new or updated](#) management and / or monitoring plan within the timeframe set out in the relevant condition below [\(where specified\)](#) and may not implement the management / monitoring measures associated with the [proposed or updated](#) plan until receiving written confirmation from the Bay of Plenty Regional Council that the plan has been certified [or re-certified](#).
- 1.6 The certification [or re-certification](#) of any management and / or monitoring plan required by the conditions of these resource consents by the Bay of Plenty Regional Council must be based upon whether the respective management and / or monitoring plan meets the objective(s) set out in the relevant conditions as well as the information requirements of the relevant condition.

Flow Monitoring

- 1.7 The consent holder must measure and monitor the take, diversion and discharge of water from the Kaimai Hydro-Electric Power Scheme in accordance with the water measurement sites / systems set out in **Appendix B** to this resource consent. Each of the water measurement sites / systems must be installed and operated to the satisfaction of the Bay of Plenty Regional Council, and must:
- (a) Be installed and maintained in accordance with the manufacturer's specifications (where applicable);
 - (b) Be installed at a location that will ensure the entire take, diversion or discharge is able to be measured;
 - (c) Be sealed and tamper-proof (where applicable);
 - (d) Be suited to the qualities of the water it is measuring (such as temperature, algae content and sediment content);
 - (e) Installed at an appropriate location for the variable being measured to maximize data quality; and
 - (f) Be maintained to an accuracy of $\pm 10\%$.

- 1.8 The consent holder must take all practicable measures to ensure that the water measurement sites / systems set out in **Appendix B** are fully functional at all times. Any failure of any of the water measurement sites / systems shall be reported to the Bay of Plenty Regional Council within 72 hours.
- 1.9 The consent holder must repair any defective water measurement sites / systems, as soon as practicable, to ensure they are fully functional.
- 1.10 After any failure of any of the water measurement sites / systems set out in **Appendix B**, confirmation that the system is fully functional must be provided to the Bay of Plenty Regional Council within 72 hours of repairs and the water measurement site / system must be verified within two months of the repairs or replacement being completed.
- 1.11 Any water data recorded by, and submitted from, any recording devices as part of the water measurement sites / systems set out in **Appendix B** must meet the following requirements:
- (a) Data shall be submitted to the Bay of Plenty Regional Council on a daily basis;
 - (b) Data shall be submitted with a maximum interval between readings of 15 minutes, or in accordance with the National Environmental Monitoring Standard (NEMS) requirements, whichever is the more stringent;
 - (c) Data shall be supplied in an automated file transfer format approved by the Bay of Plenty Regional Council;
 - (d) Data shall be submitted to a destination defined by the Bay of Plenty Regional Council; and
 - (e) Data shall be recorded and transferred using a 'machine to machine' electronic format meeting Bay of Plenty Regional Council requirements.
- 1.12 The water measurement sites / systems set out in **Appendix B** may only be altered or updated where the consent holder has proposed an amendment and the Bay of Plenty Regional Council has confirmed in writing that it is satisfied with the proposed amendments.

Review of Consent Conditions

- 1.13 The Bay of Plenty Regional Council may, in [enter month / year] and then once every five years thereafter within three months of the anniversary of this consent, serve notice on the consent holder under section 128(1)(a)(i), (ii) or (iii), or (1)(b), or (1)(ba) of the Resource Management Act 1991 of its intention to review the conditions of this consent for any of the following purpose:
- (a) To deal with any adverse effect on the environment which may arise from the exercise of this resource consent and which is appropriate to deal with at a later stage; and / or

- (b) To enable any levels, flows, rates, or standards set in a relevant National Environmental Standard, National Planning Standard or Operative Regional Plan to be met; and / or
- (c) To require the adoption of the best practicable option for any discharge permit to remove or reduce any adverse effects on the environment.

The consent holder must pay the Bay of Plenty Regional Council the fair and reasonable costs associated with a review.

2 EASTERN DIVERSIONS

Residual Flows

- 2.1 Within one year of the commencement of this resource consent, the consent holder must maintain a residual flow in the Omanawa River, immediately downstream of the Omanawa Weir, of not less than 150 litres per second.
- 2.2 Within one year of the commencement of this resource consent, the consent holder must maintain a residual flow in the Mangapapa River immediately downstream of the Mangapapa Weir, of not less than 100 litres per second.

Take and Diversion of Water

- 2.3 Subject to compliance with Condition 2.1 above, the consent holder may take and divert water at a rate of up to 7.79 cubic metres per second from the Omanawa River into Tunnel 1 for hydro-electricity generation purposes.
- 2.4 The consent holder may take and divert water at a rate of up to 283 litres per second from the Ruakaka Stream into Tunnel 2 for hydro-electricity generation purposes.
- 2.5 Subject to compliance with Condition 2.2 above, the consent holder may take and divert water at a rate of up to 14.2 cubic metres per second from the Mangapapa River into Tunnel 3 for hydro-electricity generation purposes.

Intake Screens

- 2.6 The consent holder must maintain a screen across the intake to Tunnel 1 in the Omanawa River with an aperture not exceeding 150 mm.
- 2.7 The consent holder must maintain a screen across the intake to Tunnel 2 in the Ruakaka Stream with an aperture not exceeding 100 mm.
- 2.8 The consent holder must maintain a screen across the intake to Tunnel 3 in the Mangapapa River with an aperture not exceeding 150 mm.

3 WESTERN DIVERSIONS

Residual Flows

- 3.1 The consent holder must maintain a residual flow in the Opuiki River, immediately downstream of the Opuiki Weir, of not less than 280 litres per second.
- 3.2 The consent holder must maintain a residual flow in the Ngatuhua Stream, immediately downstream of the Ngatuhua Weir, of not than 60 litres per second.

Take and Diversion Limits

- 3.3 Subject to compliance with condition 3.1 above, the consent holder may take and divert water at a rate of up to 8.5 cubic metres per second from the Opuiki River into Tunnel 4 for hydro-electricity generation purposes.
- 3.4 The consent holder may take and divert water at a rate of up to 283 litres per second from the Tauwharawhara Stream into Tunnel 4 for hydro-electricity generation purposes.
- 3.5 Subject to compliance with condition 3.2 above, the consent holder may take and divert water at a rate of up to 14.2 cubic metres per second from the Ngatuhua Stream into the Ngatuhua Canal for hydro-electricity generation purposes.
- 3.6 The consent holder may take and divert water at a rate of up to 14.2 cubic metres per second from the Ngatuhua Canal into Tunnel 5 for hydro-electricity generation purposes.
- 3.7 The consent holder may take and divert water at a rate of up to 425 litres per second from the Awakōtuku Stream into Tunnel 5 for hydro-electricity generation purposes.

Intake Screens

- 3.8 The consent holder must maintain a screen across the intake to Tunnel 4 in the Opuiki River with an aperture not exceeding 150 mm.
- 3.9 The consent holder must maintain a screen across the intake to Tunnel 4 in the Tauwharawhara Stream with an aperture not exceeding 100 mm.
- 3.10 The consent holder must maintain a screen across the intake to the Ngatuhua Canal in the Ngatuhua Stream with an aperture not exceeding 100 mm.
- 3.11 The consent holder must maintain a screen at the intake to Tunnel 5 at the end of the Ngatuhua Canal with an aperture not exceeding 150 mm.
- 3.12 The consent holder must maintain an intake screen with an aperture not exceeding 30 mm upstream of the drop from the Ngatuhua Canal to Tunnel 5.
- 3.13 The consent holder must maintain a screen across the intake to Tunnel 5 in the Awakotuku Stream with an aperture not exceeding 100 mm.

4 KAIMAI 5 POWER STATION AND LAKE MANGAONUUI

4.1 The consent holder may discharge water at a rate of up to 14.2 cubic metres per second from the Kaimai 5 Power Station (at the outlet of Tunnel 5) to Lake Mangaonui.

4.2 The consent holder must ensure that the water level of Lake Mangaonui is maintained between RL 277.8 m and RL 281.3 m (Moturiki Datum), except during:

- (a) Weekends – between 6 am Saturday and midnight Sunday;
- (b) Public holidays (as defined in the Holidays Act 2003) – between 6am and midnight; and
- (c) [All of](#) December, January and February;

when the minimum water level [of Lake Mangaonui must not drop below](#) RL 278.5 m (Moturiki Datum).

4.3 Notwithstanding condition 4.2, the consent holder may lower the minimum water level of Lake Mangaonui to RL 277 m (Moturiki Datum) during tunnel inspections and maintenance activities.

4.4 The consent holder must manage the rate of water level change in Lake Mangaonui so that it does not exceed 500 mm per hour.

Take and Diversion Limits

4.5 The consent holder may take and divert water at a rate of up to 14.2 cubic metres per second from Lake Mangaonui into the Lloyd Mandeno Canal for hydro-electricity generation purposes.

Discharge Rates

4.6 The consent holder must manage the rate of change of discharge from the Lake Mangaonui spillway to the Mangaonui Stream to not exceed 1 cubic metre per second per minute.

4.7 The consent holder may discharge water at a rate of up to 17 cubic metres per second from the Scott's Dry Gully spillway to the Mangaonui Stream.

Intake Screens

4.8 The consent holder must maintain a screen across the intake to the Lloyd Mandeno Canal with an aperture not exceeding 30 mm.

[Maintenance of Lloyd Mandeno Canal](#)

[4.9 In the event that there is a need to lower the water level of the Lloyd Mandeno Canal for any purpose, except as provided for by condition 4.10, the consent holder must maintain a minimum water depth of 0.2 m in the canal and monitor canal water quality for temperature](#)

and dissolved oxygen for the purposes of the preservation of aquatic life during dewatering activities.

4.10 In circumstances when there is a need to completely dewater the Lloyd Mandeno Canal, or sections of the canal, such that a minimum water depth of 0.2 m cannot be maintained, the consent holder must submit a Freshwater Fish Salvage and Relocation Plan to the Bay of Plenty Regional Council for certification at least 20 working days prior to the dewatering activity.

The Freshwater Fish Salvage and Relocation Plan must be prepared by a suitably qualified and experienced freshwater ecologist, and shall be prepared in consultation with Department of Conservation, Fish and Game New Zealand, and the Mana Whenua Kaitiaki Rōpū (or Ngāti Ranganui Iwi Society Incorporated, Ngāti Hangarau, Ngāti Kahu, Ngāti Pango, Ngāti Rangi, Ngāti Tamarāwaho, Ngāti Hinerangi, Ngāti Raukawa and Pirirākau in the event that the none of the groups take up the invitation to form the Mana Whenua Kaitiaki Rōpū in accordance with Condition 15.1).

The objective of the Freshwater Fish Salvage and Relocation Plan is to identify the practices and procedures to be adopted to minimise the loss of native fish and trout during any dewatering activity within the Lloyd Mandeno Canal (where a minimum water depth of 0.2 m cannot be maintained).

The Freshwater Fish Salvage and Relocation Plan must include, as a minimum:

- (a) The timing and duration of fish capture;
- (b) The methodologies to capture fish;
- (c) The methodologies to ensure effects on fish from any dewatering are minimised;
- (d) The identification of proposed relocation sites for native fish and trout respectively;
- (e) The recording of fish relocations for the purpose of providing information to the New Zealand Freshwater Fish Database;
- (f) Storage and transport measures, including measures to prevent predation and harm during relocation;
- (g) Euthanasia methods for any diseased or pest species; and
- (h) Copies of all relevant permits and permissions.

5 LLOYD MANDENO POWER STATION

- 5.1 The consent holder may discharge water at a rate of up to 14.2 cubic metres per second from the Lloyd Mandeno Power Station into the Mangapapa River.
- 5.2 The consent holder must manage the rate of change of discharge from the Lloyd Mandeno Power Station into the Mangapapa River to not exceed 2 cubic meter per second per minute, except during emergency conditions

Advice Note:

For the purpose of Condition 5.2, emergency conditions exist when:

- a. *The operation of the Kaimai Hydro-Electric Power Scheme has been compromised as a result of maintenance or a fault on any generator, associated control, or communications equipment or the transmission network; or*
- b. *An event outside the control of the consent holder occurs, such as a flood, earthquake, volcanic eruption, tsunami, forest fire, cyber-attack, or deliberate vandalism or sabotage to the Kaimai Hydro-Electric Power Scheme.*

6 LAKE MATARIKI

- 6.1 The consent holder must ensure that the water level of Lake Matariki is maintained between RL 120 m and RL 123.5 m (Moturiki Datum), except in emergency conditions where ~~the~~ water level ~~of the lake must not drop belows will be no less than~~ RL 115.5 m (Moturiki Datum).

Advice Note:

For the purpose of Condition 6.1, emergency conditions exist when:

- a. *The operation of the Kaimai Hydro-Electric Power Scheme has been compromised as a result of maintenance or a fault on any generator, associated control, or communications equipment or the transmission network; or*
- b. *An event outside the control of the consent holder occurs, such as a flood, earthquake, volcanic eruption, tsunami, forest fire, cyber-attack, or deliberate vandalism or sabotage to the Kaimai Hydro-Electric Power Scheme.*

- 6.2 The consent holder must advise the Bay of Plenty Regional Council within 48 hours of any events where the level of Lake Matariki falls below ~~minimum~~ RL 120 m (Moturiki Datum), including the reason for the low lake level and the ~~expected~~ duration of the low levels.

Take and Diversion Limits

- 6.3 The consent holder may take and divert water at a rate up to 23 cubic metres per second from Lake Matariki to the Lower Mangapapa Power Station for hydro-electricity generation purposes.

Warnings and Signage

- 6.4 Floating booms must be installed across the full width of Lake Matariki, just upstream of the Matariki Dam, to safeguard persons using the lake for recreation.
- 6.5 The consent holder must maintain signage at suitable locations around Lake Matariki to clearly warn the public of potential variations in lake levels as a result of hydro-electricity operations.

Intake Screens

- 6.6 The consent holder must maintain a screen across the intake to the Lower Mangapapa Power Station with an aperture not exceeding 100 mm.

7 LOWER MANGAPAPA POWER STATION

- 7.1 The consent holder may discharge water at a rate of up to 23 cubic metres per second from the Lower Mangapapa Power Station to the Mangapapa River.
- 7.2 The consent holder must manage the rate of change of discharge to not exceed 15 cubic metres per second per minute from the Lower Mangapapa Power Station to the Mangapapa River, except during emergency conditions.

Advice Note:

For the purpose of Condition 7.2, emergency conditions exist when:

- a. The operation of the Kaimai Hydro-Electric Power Scheme has been compromised as a result of maintenance or a fault on any generator, associated control, or communications equipment or the transmission network; or*
- b. An event outside the control of the consent holder occurs, such as a flood, earthquake, volcanic eruption, tsunami, forest fire, cyber-attack, or deliberate vandalism or sabotage to the Kaimai Hydro-Electric Power Scheme.*

8 MANGAKARENGORENGO RIVER

Residual Flow

- 8.1 The consent holder must maintain a residual flow in the Mangakarengorengo River, immediately downstream of the Mangakarengorengo Weir, of not less than 40 litres per second.

Take and Diversion Limits

- 8.2 Subject to compliance with condition 8.1 above, the consent holder may take and divert up to 7 cubic metres of water per second from the Mangakarengorengo River for hydro-electricity generation purposes.

Intake Screens

- 8.3 The consent holder must maintain a screen across the intake in the Mangakarengorengo River with an aperture not exceeding ~~90~~50 mm.

9 LAKE MCLAREN

- 9.1 The consent holder must ensure that the water level of Lake McLaren is maintained between RL 87.45 m and RL 88.65 m (Moturiki Datum) in normal operating conditions.

For the avoidance of doubt, the recreational water releases required in accordance with condition 9.6 are considered to be normal operating conditions.

Residual Flow

- 9.2 Within one year of the commencement of this resource consent, the consent holder must maintain a residual flow in the Wairoa River, immediately downstream of the McLaren Falls Dam, of not less than 150 litres per second.

Take and Diversion Limits

- 9.3 Subject to compliance with condition 9.2 above, the consent holder may take and divert water at a rate of up to 31.2 cubic metres per second from Lake McLaren to the Ruahihi Canal for hydro-electricity generation.

Discharge Rates

- 9.4 The consent holder must manage the rate of change of any discharge from the McLaren Falls Gated Channel Spillway to the Wairoa River to not exceed 2 cubic metres per second per minute, except during emergency conditions.

Advice Note:

For the purpose of Condition 9.45, emergency conditions exist when:

- a. The operation of the Kaimai Hydro-Electric Power Scheme has been compromised as a result of maintenance or a fault on any generator, associated control, or communications equipment or the transmission network; or
- b. An event outside the control of the consent holder occurs, such as a flood, earthquake, volcanic eruption, tsunami, forest fire, cyber-attack, or deliberate vandalism or sabotage to the Kaimai Hydro-Electric Power Scheme.

Intake Screens

- 9.5 The consent holder must maintain a screen across the intake to the Lloyd Mandeno Canal with an aperture not exceeding 30 mm.

Recreational Releases

- 9.6 Upon application by the Kaimai Canoe Club, the consent holder must maintain a recreational release discharge of up to 25 cubic metres per second from the McLaren Falls Gated Channel Spillway so as to ensure that there is a minimum flow of 14 cubic metres per second in the Wairoa River immediately downstream of the McLaren Falls Bridge.

The recreational release must be made available by the consent holder for a maximum of 6 hours, between 10 am and 4 p.m, for up to a maximum of 26 days per annum.

- 9.7 The consent holder must make available lake level data for Lake McLaren and river flow data for the Wairoa River downstream of the McLaren Falls Bridge on its website to enable recreational users of Lake McLaren and the Wairoa River to understand lake levels and river flows before potentially commencing any recreational activities.

Warnings and Signage

- 9.8 Floating booms must be maintained across the intake to the McLaren Falls Power Station Gated Channel Spillway and across the full width of the Lake McLaren spillway to safeguard persons using the lake for recreation.
- 9.9 The consent holder must maintain signage at suitable locations in the reach of the Wairoa River between McLaren Falls Dam and the Ruahihi Power Station to clearly warn the public of the extent and frequency of potential variations in river flows due to recreational releases and hydro-electricity operations.
- 9.10 Prior to any discharge from the McLaren Falls Gated Channel Spillway, the consent holder must operate a sound warning system that is audible from the McLaren Falls Bridge.

10 RUAHIHI CANAL

Take and Diversion Limits

- 10.1 The consent holder may take and divert the full flow of water from Ruahihi Tributaries 1, 1A, 2 and 3 into the Ruahihi Canal for hydro-electricity generation purposes.

Discharge

- 10.2 The consent holder must manage any discharge from the Ruahihi Canal Spillway to Ruahihi Tributary 1 to not exceed 52.8 cubic metres per second.

Maintenance

- 10.3 In the event that there is a need to lower the water level of the Ruahihi Canal for any purpose, and except as provided for by condition 10.43, the consent holder must maintain a minimum water depth of 0.2 m in the canal and monitor canal water quality for temperature and dissolved oxygen for the purposes of the preservation of aquatic life during dewatering activities.

10.4 In circumstances when there is a need to completely dewater the Ruahihi Canal, or sections of the canal, such that a minimum water depth of 0.2 m cannot be maintained, the consent holder must submit a Freshwater Fish Salvage and Relocation Plan to the Bay of Plenty Regional Council for certification at least 20 working days prior to the dewatering activity.

The Freshwater Fish Salvage and Relocation Plan must be prepared by a suitably qualified and experienced freshwater ecologist, and shall be prepared in consultation with Department of Conservation, Fish and Game New Zealand, and the Mana Whenua Kaitiaki Rōpū (or Ngāti Ranganuiwha Society Incorporated, Ngāti Hangarau, Ngāti Kahu, Ngāti Pango, Ngāti Rangī, Ngāti Tamarāwha, Ngāti Hinerangi, Ngāti Raukawa and Pirirākau in the event that none of the groups take up the invitation to form the Mana Whenua Kaitiaki Rōpū in accordance with Condition 15.1).

The objective of the Freshwater Fish Salvage and Relocation Plan is to identify the practices and procedures to be adopted to minimise the loss of native fish and trout during any dewatering activity within the Ruahihi Canal (where a minimum water depth of 0.2 m cannot be maintained).

The Freshwater Fish Salvage and Relocation Plan must include, as a minimum:

- (b) The timing and duration of fish capture;
- (b) The methodologies to capture fish;
- (c) The methodologies to ensure effects on fish from any dewatering are minimised;
- (d) The identification of proposed relocation sites for native fish and trout respectively;

(e) [The recording of fish relocations for the purpose of providing information to the New Zealand Freshwater Fish Database;](#)

(f) [Storage and transport measures, including measures to prevent predation and harm during relocation;](#)

(g) [Euthanasia methods for any diseased or pest species; and](#)

(h) [Copies of all relevant permits and permissions.](#)

~~10.4 In circumstances when there is a need to completely dewater the Ruahihi Canal, or sections of the canal, such that a minimum water depth of 0.2 m cannot be maintained, the consent holder must invite Fish and Game New Zealand, [INSERT HAPŪ] to provide recommendations and / or take action to ensure that tuna, trout and any other forms of aquatic life are salvaged and transferred to other nearby natural waters where possible.~~

Intake Screens

10.5 The consent holder must maintain a screen across the intake to the Ruahihi Power Station in the Ruahihi Canal with an aperture not exceeding 30 mm.

10.6 A floating boom must be installed across the full width of the Ruahihi Canal just upstream of the intake to the Ruahihi Power Station to safeguard persons using the canal for recreation.

11 RUAHIHI POWER STATION

11.1 The consent holder may discharge water at a rate of up to 28 cubic metres per second from the Ruahihi Power Station to the Wairoa River.

11.2 The consent holder must manage the discharge of water from the Ruahihi Power Station to the Wairoa River so that the rate of discharge does not increase or decrease by more than 5 cubic metres per second per minute, except during emergency conditions.

Advice Note:

For the purpose of Condition ~~11~~7.2, emergency conditions exist when:

- a. *The operation of the Kaimai Hydro-Electric Power Scheme has been compromised as a result of maintenance or a fault on any generator, associated control, or communications equipment or the transmission network; or*
- b. *An event outside the control of the consent holder occurs, such as a flood, earthquake, volcanic eruption, tsunami, forest fire, cyber-attack, or deliberate vandalism or sabotage to the Kaimai Hydro-Electric Power Scheme.*

Warning Signage

- 11.3 The consent holder must maintain signage at suitable locations downstream of the Ruahihi Power Station to clearly warn the public of potential variations in river levels and flows as a result of operations at the power station.

12 SEDIMENT MONITORING

- 12.1 Within six months of the grant of this resource consent, the consent holder must submit a Sediment Monitoring Plan prepared by a suitable qualified and experienced geomorphologist to the Bay of Plenty Regional Council for certification. The Sediment Monitoring Plan must be prepared with input from a suitably qualified and experienced geomorphologist, and the objective of the plan shall be to:

- (a) Monitor any long-term changes in sediment continuity in the Wairoa River Catchment that may be a result of the continued operation of the Kaimai Hydro Electric Power Scheme.

- 12.2 In order to achieve the objective established in Condition 12.1 above, the Sediment Monitoring Plan must, as a minimum, address the following matters:

- (a) A summary of the baseline geomorphic conditions in the Wairoa River (WAI-3) and Omanawa River (OMW-4);

- (b) The monitoring methodology for:
- i. Baseline bathymetric and topographical surveys of the Wairoa River (WAI-3) and Omanawa River (OMW-4);
 - ii. Five-yearly bathymetric and topographical surveys of the Wairoa River (WAI-3) and Omanawa River (OMW-4);
 - iii. The detection of geomorphic change on the beds and the banks of the Wairoa River (WAI-3) and Omanawa River (OMW-4); and
 - iv. Targeted site assessments for any 'hot spots' of geomorphic change of the Wairoa River (WAI-3) and Omanawa River (OMW-4).

- (c) [The requirement to prepare a Sediment Monitoring Report every five years to](#) the Bay of Plenty Regional Council, which must:

- i. Presents, summarises and analyses the monitoring results from each survey;
- ii. Assesses any geomorphic changes in the Wairoa River due to the ongoing operation of the Kaimai HEPS, major flood events, or longer-term trends as survey data becomes available over five-yearly intervals; and
- iii. Provides recommendations regarding the methodology for the ongoing monitoring surveys (including the frequency of surveys over the life of this consent), and recommendation to manage sediment or erosion effects

caused by the continued operation of the Kaimai Hydro-Electric Power Scheme.

- 12.3 The Bay of Plenty Regional Council shall review the [Sediment Monitoring Reports provided on a five yearly basis](#) and determine whether any changes to the monitoring methodology and frequency of monitoring is required.

The Bay of Plenty Regional Council shall also determine whether there is a need to serve notice on the consent holder of its intention to review the conditions of this resource consent in accordance with Sections 128 to 131 of the Resource Management Act 1991 in order to implement changes to the management of sediment or erosion effects caused by the continued operation of the Kaimai Hydro-Electric Power Scheme.

13 NATIVE FISH PASSAGE MANAGEMENT PLAN

- 13.1 Within two years of the commencement of these resource consents, the consent holder must submit a Native Fish Passage Management Plan to the Bay of Plenty Regional Council for certification. The Native Fish Passage Management Plan must be prepared with input from a suitably qualified and experienced freshwater ecologist, and the objectives of the plan shall be to:

- (a) Ensure that the Kaimai Hydro-Electric Power Scheme provides for the passive passage, where practicable, of native fish species upstream and downstream of the structures associated with the Kaimai Hydro-Electric Power Scheme;
- (b) Provide for the salvage of tuna entrained within the Ruahihi Canal and other areas identified through the Native Fish Passage Management Plan;
- (c) Establish a framework for the monitoring of the success of any passage or salvage measures that are implemented; and
- (d) Establish the respective roles of the consent holder [and the Mana Whenua Kaitiaki Rōpū \(or Ngāti Ranginui Iwi Society Incorporated, Ngāti Hangarau, Ngāti Kahu, Ngāti Pango, Ngāti Rangī, Ngāti Tamarāwaho, Ngāti Hinerangi, Ngāti Raukawa and Pirirākau in the event that the none of the groups take up the invitation to form the Mana Whenua Kaitiaki Rōpū in accordance with Condition 15.1\)](#)~~[INSERT HAPŪ ENTITIES]~~ in the implementation of the Native Fish Passage Management Plan.

- 13.2 In order to achieve the objectives established in Condition 13.1 above, the Native Fish Passage Management Plan must, as a minimum, address the following matters:

- (a) Detail the native fish species that will or are likely to interact with the structures associated with the Kaimai Hydro-Electric Power Scheme, and the timing of their upstream and downstream movement through the seasons;

- (b) The nature of the existing impediment to upstream and downstream passage presented by the structures associated with the Kaimai Hydro-Electric Power Scheme;
- (c) The passive migration measures that will be implemented in order to facilitate the upstream and downstream movement of native fish species past the structures associated with the Kaimai Hydro-Electric Power Scheme;
- (d) The alternative techniques that may be utilised to facilitate the upstream and downstream movement of native fish species, where monitoring and trialing demonstrates that some of the passive migration measures are ineffective or not practicable;
- (e) The detailed design and location of tuna traps;
- (f) The period in each year over which the trap and transfer programme will be operated;
- (g) The methodology to be used in the transfer of tuna, including identifying suitable locations for the transfer of species to suitable areas;
- (h) The measures to be undertaken to enhance tuna survival during the transfer and post release periods;
- (i) The process by which the effectiveness of the various measures that will be implemented will be reviewed and adjusted if necessary;
- (j) The opportunities to incorporate [Matauranga Māori](#) into the design and monitoring of the Native Fish Passage Management Plan; and
- (k) The respective roles of the consent holder [and the Mana Whenua Kaitiaki Rōpū \(or Ngāti Ranganui Iwi Society Incorporated, Ngāti Hangarau, Ngāti Kahu, Ngāti Pango, Ngāti Rangī, Ngāti Tamārūwaho, Ngāti Hinerangi, Ngāti Raukawa and Pirirākau in the event that the none of the groups take up the invitation to form the Mana Whenua Kaitiaki Rōpū in accordance with Condition 15.1\)](#) in ensuring that the structures associated with the Kaimai Hydro-Electric Power Scheme provide for the passage of native fish species upstream and downstream.

[13.3 A draft copy of the Native Fish Passage Management Plan must be provided to the Department of Conservation for review and comment. The draft plan must be provided to the Department of Conservation at least 30 working days before the consent holder intends to submit the Native Fish Passage Management Plan to the Bay of Plenty Regional Council for certification \(in order to allow suitable time for the Department to review the draft plan\).](#)

[13.4 The consent holder must prepare an annual report to the Bay of Plenty Regional Council no later than 30 September each year with input from a suitably qualified and experienced freshwater ecologist, and in collaboration with the Mana Whenua Kaitiaki Rōpū, \(or Ngāti Ranganui Iwi Society Incorporated, Ngāti Hangarau, Ngāti Kahu, Ngāti Pango, Ngāti Rangī,](#)

[Ngāti Tamarāwaho, Ngāti Hinerangi, Ngāti Raukawa and Pirirākau in the event that the none of the groups take up the invitation to form the Mana Whenua Kaitiaki Rōpū in accordance with Condition 15.1\).](#)

[The report shall present the results of any monitoring / recording of passive passage of native fish and the salvage of tuna entrained in the Kaimai Hydro-Electric Power Scheme, and provide comment on:](#)

[\(a\) The efficacy of the passive migration measures implemented;](#)

[\(b\) The efficacy of the trap and transfer programme; and](#)

[\(c\) The proposed measures intended to be implemented over the following 12 months with respect to passive migration measures and the refinement of the trap and transfer programme.](#)

[A copy of the monitoring report must also be provided to the Department of Conservation at the same time it is provided to the Bay of Plenty Regional Council.](#)

14 WATER TEMPERATURE MONITORING

14.1 Within six months of the commencement of these resource consents, the consent holder must implement comparative monitoring of water temperature in the Mangakarengorengo River upstream and downstream of the Mangakarengorengo Weir.

The purpose of the monitoring is to confirm that the residual flow required in accordance with Condition 8.1 is suitable to protect aquatic communities (both invertebrates and native fish) against elevated water temperatures. Temperature should be recorded at 15-minute intervals using submerged loggers, positioned as follows:

(a) One just upstream of the intake gates to Lake McLaren; and

(b) One approximately 300 m downstream of the intake gates in a pool that is located on a sharp bend in the channel of the Mangakarengorengo River.

Water temperature monitoring should occur continually in the Mangakarengorengo River between 1 November and 31 March for two years.

14.2 At the completion of two years of water temperature monitoring, the consent holder must commission a monitoring report by a suitably qualified and experienced freshwater ecologist that:

(a) Presents, summarises and analyses the monitoring results from the two years of water temperature monitoring in the Mangakarengorengo River; and

- (b) Assesses how the residual flow affects water temperatures in the Mangakarengorengo River relative to water temperatures occurring in the section of the river upstream of the Mangakarengorengo Weir; and
 - (c) Provides recommendations regarding the effectiveness of the residual flow, and whether changes to the residual flow are recommended, or whether additional monitoring is recommended if the monitoring results are inconclusive
- 14.3 The Bay of Plenty Regional Council shall review the monitoring report and determine whether any changes to the residual flow required in accordance with Condition 8.1 is suitable to protect aquatic communities (both invertebrates and fish) against elevated water temperatures.

The Bay of Plenty Regional Council shall also determine whether there is a need to serve notice on the consent holder of its intention to review the conditions of this resource consent in accordance with Sections 128 to 131 of the Resource Management Act 1991 in order to implement changes to the management of sediment or erosion effects caused by the continued operation of the Kaimai Hydro-Electric Power Scheme.

15 MANA WHENUA KAITIAKI RŌPŪ

- 15.1 Within 90 working days following the commencement of these resource consents, the consent holder must invite mandated representatives of [Ngāti Ranganui Iwi Society Incorporated](#), [Ngāti Hangarau](#), [Ngāti Kahu](#), [Ngāti Pango](#), [Ngāti Rangī](#), [Ngāti Tamarāwaho](#), [Ngāti Hinerangi](#), [Ngāti Raukawa](#) and [Pirirākau](#) ~~[INSERT HAPŪ ENTITIES]~~ (with a maximum of 2 per entity) to participate in a Mana Whenua Kaitiaki Rōpū for the Kaimai Hydro-Electric Power Scheme.
- 15.2 The Mana Whenua Kaitiaki Rōpū must operate throughout the exercise of the resource consents or until such time as the mandated representatives of [Ngāti Ranganui Iwi Society Incorporated](#), [Ngāti Hangarau](#), [Ngāti Kahu](#), [Ngāti Pango](#), [Ngāti Rangī](#), [Ngāti Tamarāwaho](#), [Ngāti Hinerangi](#), [Ngāti Raukawa](#) and [Pirirākau](#) ~~[INSERT HAPŪ ENTITIES]~~ determine it is no longer required. At any time, any mandated representatives may choose to withdraw its entity from participation in the Mana Whenua Kaitiaki Rōpū by providing written confirmation to the consent holder and the Bay of Plenty Regional Council.
- 15.3 The purpose of the Mana Whenua Kaitiaki Rōpū is to facilitate engagement between the consent holder and [Ngāti Ranganui Iwi Society Incorporated](#), [Ngāti Hangarau](#), [Ngāti Kahu](#), [Ngāti Pango](#), [Ngāti Rangī](#), [Ngāti Tamarāwaho](#), [Ngāti Hinerangi](#), [Ngāti Raukawa](#) and [Pirirākau](#) ~~[INSERT HAPŪ ENTITIES]~~ in respect of the activities authorised by these resource consents, and in relation to enabling mana whenua to:
- (a) Maintain their relationship with the Wairoa River Catchment;

- (b) Be kept informed on any additional environmental monitoring undertaken by the consent holder as part of the exercise of these resource consents; and
- (c) Provide recommendations to, and request responses from, the consent holder in respect of the matters listed above or other matters that the Mana Whenua Kaitiaki Rōpū may raise from time-to-time.

15.4 In addition to condition 15.4.3 above, the consent holder must invite the Mana Whenua Kaitiaki Rōpū to contribute to the development and implementation of a Native Fish Passage Management Plan for the Kaimai Hydro-Electric Power Scheme required in accordance with Condition 15.4.1.

The invitation to the Mana Whenua Kaitiaki Rōpū must be made within six months of the commencement of these resource consents. A copy of all correspondence provided to [Ngāti Ranganui Iwi Society Incorporated](#), [Ngāti Hāngarau](#), [Ngāti Kahū](#), [Ngāti Pango](#), [Ngāti Rangī](#), [Ngāti Tamarāwaho](#), [Ngāti Hinerangi](#), [Ngāti Raukawa](#) and [Pirirākau](#) [INSERT HAPŪ ENTITIES] in accordance with this condition must also be forwarded to the Bay of Plenty Regional Council.

15.5 The consent holder shall:

- (a) Be responsible for convening the meetings of the Mana Whenua Kaitiaki Rōpū; and
- (b) Cover the administrative costs associated with the establishment and operation of the meetings and the contribution of the Mana Whenua Kaitiaki Rōpū to the development and implementation of the Native Fish Passage Management Plan.

The consent holder must maintain records of key interactions, issues, agreements, and any outcomes reached and implemented through the Mana Whenua Kaitiaki Rōpū. A summary of these records must be provided annually to the Council for the purposes of the Council's annual compliance reporting

15.6 The consent holder must invite the Mana Whenua Kaitiaki Rōpū to meet at least two times per year (with the first meeting to be scheduled within 12 months following the commencement of the resource consents) or a lesser frequency as agreed by the Mana Whenua Kaitiaki Rōpū (and advised to the Bay of Plenty Regional Council).

16 CONSENT TERM

16.1 This resource consent shall expire on [35 years from the date of grant].

ADVICE NOTES:

1. *Notification and reporting as required by the conditions of this resource consent shall be directed (in writing) to the Regulatory Compliance Manager, Bay of Plenty Regional Council, PO Box 364, Whakatane, 3158 or email notify@boprc.govt.nz and should include the resource consent number [insert consent number].*
2. *The consent holder is advised that non-compliance with consent conditions may result in enforcement action against the consent holder and/or their contractor(s).*
3. *The consent holder shall pay the Bay of Plenty Regional Council any administrative charges, which are fixed in accordance with section 36 of the Resource Management Act 1991.*
4. *If you wish to continue this activity upon the expiry date of this permit, a new application should be lodged at least six months prior to the expiry date of this permit. Applying at least six months before the expiry date may enable you to continue to exercise this permit until a decision is made, and any appeals are resolved, on the replacement application.*
5. *Should the site in respect of which this consent is granted be sold, a transfer of the consent to the new owner or occupier of the site must take place. The named consent holder will be responsible for any breach of conditions and compliance costs relating to the consent which occur before the transfer of the consent. The transfer of the holder's interest in a consent has no effect until written notice of the transfer is given to the Bay of Plenty Regional Council.*

APPENDIX A

RESOURCE CONSENT LOCATION MAP

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APPENDIX B

WATER MEASUREMENT SITES / SYSTEMS FOR THE KAIMAI HYDRO-ELECTRIC POWER SCHEME

Waterbody / Structure	Parameter	Condition	Monitoring Methodology	Monitoring Frequency	Submission Frequency
K5 PS	Discharge	4.1	Flow supplied from MW to flow rating conversion	Real time	Daily
Lloyd Mandeno PS	Discharge	5.1	Flow supplied from Lloyd Mandeno PS MW to flow rating conversion	Real time	Daily
Lloyd Mandeno PS	Discharge rate of change	5.2	Lloyd Mandeno PS MW to flow rating conversion. Consent holder to report the maximum 1-minute ramp change in the preceding hour, every hour. BOPRC to check that the maximum ramp rate per hour does not exceed 2 m ³ /s.	Real time	Daily
Lower Mangapapa PS	Discharge	7.1	Flow supplied from Lower Mangapapa PS MW to flow rating conversion.	Real time	Daily
Lower Mangapapa PS	Discharge rate of change	7.2	Flow supplied from Lower Mangapapa PS MW to flow rating conversion. Consent holder to report the maximum 1-minute ramp change in the preceding hour, every hour. BOPRC to check that the maximum ramp rate per hour does not exceed 15m ³ /s.	Real time	Daily
Ruahiri PS	Discharge	11.1	Flow supplied from Ruahihi PS MW to flow rating conversion.	Real time	Daily

Ruahihi PS	Discharge rate of change	11.2	<p>Flow supplied from Ruahihi PS MW to flow rating conversion.</p> <p>Consent holder to report the maximum 1-minute ramp change in the preceding hour, every hour.</p> <p>BOPRC to check that the maximum ramp rate per hour does not exceed 5 m³/s.</p>	Real time	Daily
McLaren Fall spillway	Discharge rate of change	9.5	<p>Flow supplied from gate opening to flow relationship at the McLaren Falls Gated Channel Spillway.</p> <p>Report the maximum 1-minute ramp change in the preceding hour, every hour.</p> <p>Compliance to check that the maximum ramp rate per hour does not exceed 2 m³/s</p>	Real time	Daily
Ruahihi Canal spillway	Discharge	10.2	<p>Flow supplied from Level to flow relationship.</p> <p>In the event of a spill over Ruahihi Spillway, the consent holder to supply BOPRC with the 15-minute spill flow data for the period of the spill event.</p>	15-minute intervals	Daily
Opuaki River	Residual flow	3.1	Level to flow relationship	15-minute intervals	Daily
Ngatuhaoa River	Residual flow	3.2	Pipe flow meter	15-minute intervals	Daily
Mangakerenorenga River	Residual flow	8.1	Level to flow relationship	15-minute intervals	Daily

Mangapapa River	Residual flow	2.2	To be installed and monitoring methodology to be agreed with BOPRC prior to installation.	15-minute intervals	Daily	
Omanawa River	Residual flow	2.1	To be installed and monitoring methodology to be agreed with BOPRC prior to installation.	15-minute intervals	Daily	
McLaren Falls	Residual flow	9.3	To be installed and monitoring methodology to be agreed with BOPRC prior to installation.	15-minute intervals	Daily	
Lake Mangaonui	Level	4.2 (a-c)	Level sensors at Tunnel 6 intake and spillway.	Real time	Every 6 months in October and April	
		4.3				
		4.4				
Lake Matariki	Level	6.1	Level sensors at intake.	Real time	Daily	
		6.1 (emergency)				Within 48 hours of emergency event
		6.2				
Lake McLaren	Level	9.1	Level sensors at canal intake and spillway.	Real time	Daily	
Ruahihi Canal	Level	10.3 - 10.4	Ruahihi Canal Intake level sensor.	15-minute intervals	As requested	