

Your Comment on the Meridian Energy Limited for Lake Pūkaki Hydro Storage and Dam Resilience Works

Please include all the contact details listed below with your comments and indicate whether you can receive further communications from us by email to substantive@fasttrack.govt.nz

1. Contact Details			
Please ensure that you have authority to comment on the application on behalf of those named on this form.			
Organisation name (if relevant)	Canterbury Regional Council		
First name	Brett		
Last name	Aldridge		
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Home phone / Mobile phone		Work phone	██████████
Email (a valid email address enables us to communicate efficiently with you)	██████████ ██████████ ██████████		

2. We will email you draft conditions of consent for your comment			
<input checked="" type="checkbox"/>	I can receive emails and my email address is correct	<input type="checkbox"/>	I cannot receive emails and my postal address is correct

Please provide your comments below, include additional pages as needed.

Thank you for your comments

27th March 2026

Hon Kitt Little John,
Expert Panel Chair
Environmental Protection Authority
substantive@fasttrack.govt.nz



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Tēnā koutou,

Lake Pūkaki Hydro Storage and Dam Resilience Works – Lake Pūkaki, Mackenzie Basin

Thank you for the opportunity to comment on this Proposal prepared by Meridian Energy Limited (**Meridian**) under sections 53 and 54 of the Fast Track Approvals Act (FTAA).

The Canterbury Regional Council (**CRC**) has reviewed the substantive application and participated in expert discussions prior to preparing these comments for the Panel's consideration. While undertaking review of the application, CRC technical experts and planners have focused on areas of disagreement or uncertainty rather than restating Meridian's material.

Please find CRC's comments attached. To summarise, the key outstanding issues relate to potential effects on Tasman Delta and Lake Pūkaki ecosystems and dust which may blow up from the exposed lakebed or from the rock armouring works. CRC anticipates its concerns relating to air quality may be able to be explored in discussions between the Applicant and the Panel during the upcoming site visit.

When considering effects of this proposal, consideration should be given to the extent that Meridian already hold consent to draw the lake to 515m RL while the Waitaki Catchment Water Allocation Regional Plan provides for further lowering to 513m RL as a permitted activity during Declared Electricity Supply Emergency situations.

CRC and Meridian are largely in agreement with the proposed conditions for the approvals sought.

While a date of 8 April 2026 was set by the Panel for CRC to provide s53 comments; we considered CRC comments may be of most benefit to the Panel to read before your site visit on 1 April 2026. If you have any questions, please don't hesitate to get in touch. CRC look forward to continuing to work with the Panel and the applicant on this project.

Ngā mihi

A handwritten signature in blue ink, appearing to read "Brett Aldridge".

Brett Aldridge
Director Operations

SECTION A: EXECUTIVE SUMMARY

1. In accordance with s53(2) of the Fast-track Approvals Act 2024 (FTAA) Canterbury Regional Council (CRC) has been invited to provide comment on the substantive application for the for Lake Pūkaki Hydro Storage and Dam Resilience Works (the Application) lodged Meridan Energy Limited (Meridan/the Applicant).
2. The purpose of this memorandum is to summarise CRC assessment and overall conclusions on the application to assist the panel in making a decision on the application under section 81 of the FTAA.
3. The approvals sought from CRC relate to four resource consents under the Resource Management Act 1991 (RMA). The consents relate to sections 13, 14 and 15 RMA for the lowering of Lake Pūkaki to access additional stored water for hydro-electricity generation and to undertake rock armouring works on the dam face while water levels are low. Existing rip-rap protection on the dam face does not extend far enough down the face risking erosion and ultimately dam failure when the level of Lake Pūkaki is low. These works cannot be done while the lake is operating under existing consented levels as rocks need to be placed using a digger. When water levels are at current operational levels a digger cannot reach low enough into the lake to place rock rip-rap at the desired depth.
4. The Canterbury Land and Water Regional Plan (CLWRP) provides for many of the rock armouring works as a permitted activity (maintenance of dams), while the Waitaki Catchment Water Allocation Regional Plan (WAP) permits the lowering of Lake Pūkaki during a Declared Electricity Supply Emergency (513m RL). Meridian also hold consent to draw the lake to 515m FL during a security of supply alert. Meridian seek to lower Lake Pūkaki to the same level as provided for in the WAP and consents but seek access to this stored water before required declarations are made about shortage of supply.
5. Drawing Lake Pūkaki to lower levels will result in adverse effects. This was acknowledged in Plan Change 1 to the WAP which established the permitted activity provision for accessing stored water during a Declared Electricity Supply Emergency. These effects however were considered to be outweighed by the national benefits of access to water for hydro-electricity generation.
6. While this proposal seeks to take water outside of the provisions of existing consents or the WAP, CRC considers it is appropriate to apply a permitted baseline. The applicant has not been able to provide modelling for this permitted baseline to be simply applied however consideration of the permitted activity provisions can still be used in a qualitative rather than quantitative assessment.
7. CRC's assessment determines there will be adverse effects on lake ecosystems, Tasman Delta ecosystems, landscape values and potential effects on adjacent property owners with respect to dust. While CRC technical experts suggest mitigation measures, many would unduly restrict the activity such that the activity as proposed would not be able to occur. For example, limitations on the period of time that the lake may be held below 518m RL restrict the full benefit of power-generation being sought.
8. Management plans in the form of an Erosion and Sediment Control Plan and Dust Management Plans are essential for the mitigation of effects which can be controlled. Further while CRC agrees some effects cannot be mitigated, given these lower lake levels have not yet been tested in the environment, CRC recommends monitoring of Kakī (Black Stilt) and at risk/threatened flora on the Tasman Delta if this application is approved and exercised.

9. CRC considers that the proposal is generally consistent with the relevant policy framework under the RMA and subject to recommended conditions likely achieves the purpose of the RMA stated in Part 2 of the RMA.
10. CRC considers that the application meets purpose of the FTAA, in that it is a development project with significant regional benefits and will not result in any adverse effect that is sufficiently significant to be out of proportion with the regional and national benefits.

SECTION B: INTRODUCTION

11. This document has been prepared by CRC Principal Consents Planner Susanah Black who has 18 years experience in planning; holds a Masters of Applied Science in Environmental Management from Lincoln University; a Bachelor of Science from University of Canterbury and is a qualified hearing commissioner. Further, she has been the processing planner for resource consent applications CRC240441-CRC240549 which relate to the reconsenting of the Waitaki Power Scheme which is being determined by Environment Court¹. She confirms that she has read and agrees to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. This document has been prepared in accordance with that Code.
12. As described in their application, Meridian currently hold resource consents which provide for the operation of the Waitaki Power Scheme. A number of these consents expired in April 2025, with Meridian continuing to operate² under these consents until their reconsenting proposal is decided. Resource consents CRC905321.7 and CRC185833 are water permits associated with the operation of Lake Pūkaki. CRC905321.7 provides for the operation of the lake between 518 and 532 metres Relative Level (m RL). CRC185833 allows Meridian to lower Lake Pūkaki below 518 m RL (to 515 m RL) when a Declared Electricity Supply Emergency alert is issued. The WAP permits the lowering of Lake Pūkaki during a Declared Electricity Supply Emergency (513m RL).
13. This proposal seeks to lower Lake Pūkaki below 518 m RL **without** triggers as to when the lowering may occur. The dam face of Lake Pūkaki has rock armouring present to protect the dam face, ultimately preventing scouring and possible collapse of the dam. This rock armouring does not extend low enough into the lake to protect to 513m RL so further rock armouring is required to be undertaken at such a time the lake is drawn below 518 m RL .
14. Meridian anticipate that, with the exemption of lake level restrictions, they would continue to comply with conditions of existing consents should this proposal be approved and exercised.
15. This memorandum is structured in the following way:

Section A: Executive summary

Section B: Introduction

Section C: Regional or national benefits

Section D: Provisions of the RMA that direct decision making³

¹ Environment Court evidence can be found at [Waitaki Power Scheme - Meridian Energy Limited | Environment Canterbury](#)

² S124 RMA

³ Schedule 5, clause 17(2) FTAA

Section E: Consent conditions

Section F: when an approval may be declined

Section G: conclusions

Section H: Appendices⁴

16. This memorandum has been prepared with consideration to the original substantive application lodged with the Environmental Protection Agency (EPA) and further information provided to the EPA by Meridian:
 - a. Substantive application final
 - b. Treaty settlements and other obligations (section 18) report
 - c. Appendices A to T.
 - d. Addendum to Damwatch report⁵
 - e. Substantive Lizard Management Plan⁶
 - f. Additional drawing showing the Riprap extent plan and Appendix to Appendix B⁷.
 - g. Updated National Policy Statement technical memorandum⁸
 - h. Updated condition sets⁹
 - i. Draft Erosion and Sediment Control Plan¹⁰
 - j. Updated Dust Management Plan¹¹
17. CRC has engaged a number of technical experts to peer-review assessments provided. The full list of experts can be found at Appendix 1.

Consultation

18. Consultation between CRC and the Applicant commenced prior to lodgement of the Fast track application and has been ongoing throughout the process. Internally, CRC staff have met to discuss the application to provide an opportunity for staff across different relevant disciplines to raise questions, identify issues and provide comments within their respective areas of expertise. Expert discussions did not occur between Dr Jack and Dr Bayer with their respective Meridian counterparts. The reason for this being many of their concerns related to matters which

⁴ Note Appendix 1 is included within this document, while remaining appendices are attached as separate documents

⁵ Provided to EPA on 7th October 2025

⁶ Provided to EPA on 7th October 2025

⁷ Titled as this on EPA – Pūkaki website.

⁸ Provided to CRC on 24th February 2026. CRC notes that this is not visible on the Fast Track website.

⁹ Provided to EPA on 5th March 2026

¹⁰ Provided to EPA on 19th March 2026

¹¹ Provided to CRC on 29th January 2026. CRC notes that this is not visible on the Fast Track website.

Meridian consider are unable to be mitigated. Wherever appropriate to do so, CRC have communicated these questions, issues or comments back to the Applicant.

19. CRC have also been in communication with the Department of Conservation (DOC) to better understand the wildlife permit sought, as well as Te Rūnanga o Ngāi Tahu, Aukaha Ltd (providing advice on behalf of Te Rūnanga o Waihao and Te Rūnanga o Moeraki), and Aoraki Environmental Consultancy Ltd (Te Rūnanga o Arowhenua) to seek their recommendation for our panel nomination. Furthermore, as this proposal has progressed Kā Rūnaka have advised for this application Kā Rūnaka are represented by Aoraki Environmental Consultancy Limited and that Aukaha will not be taking an active role.

SECTION C: REGIONAL OR NATIONAL BENEFITS

20. The purpose of the FTAA is to facilitate the delivery of infrastructure and development projects with significant regional or national benefits. When taking in account the purpose of the FTAA the panel must consider the extent of the project's regional or national benefits.
21. To assist the Panel, CRC has considered:
 - a. The positive effects of the Application;
 - b. Whether the positive effects are regionally or nationally significant.

Positive Effects

22. The Applicant identifies the following positive effects of this proposal¹²:
 - a. A reduction in the wholesale spot market over the three years and reduced cost of electricity to consumers
 - b. a nationally significant reduction in contracted forward prices for electricity through resource cost saving due to less need to constrain industrial uses and divert resources to supplying others and less reliance on high valued thermal resources to keep the lights on
 - c. a nationally significant increase in retail competition through removing the high contract prices as a constraint on retailers seeking new clients
 - d. lower spot price volatility
 - e. lower hydro spill
 - f. reduced need for demand response to reduce energy consumption
 - g. reduced carbon dioxide emissions due to increased use of hydro generation displacing fossil-fuelled generation.
23. CRC agrees that these are positive effects that are likely to result from the proposal. The significance of these effects is considered below. CRC **has not** undertaken a peer review of Appendix A - Pūkaki Contingent Storage Project Economic Benefits Report. CRC notes Transpower advise through the correspondence shared in Minute 3 from the Panel that they intend on presenting advice on this matter. This may be a matter the Panel may need to seek independent advice on should they wish to explore positive effects of the proposal further;

¹² Appendix A of Application.

however, in light of Minute 3 note that Transpower’s s53 comment may be of particular benefit for the Panel.

Regional or National Significance

24. The FTAA does not contain a definition of significant regional or national benefits. However, in relation to a referral application, s22(2) lists a number of criteria that the Minister¹³ may consider when determining whether a project is an infrastructure or development project that would have significant regional or national benefits.
25. CRC has considered these matters in forming a view on whether the positive effects likely to result from the application are of regional or national significance.
26. CRC has not relied on the fact that this application has been referred under section 26 and accepted under section 21 of the FTAA by the Minister for infrastructure as evidence of significance regional or national benefits.
27. As noted above, CRC has not peer reviewed Appendix A to the application however CRC does consider providing for Lake Pūkaki to be lowered in accordance with this proposal, would mean there will be more stored water available, providing more energy for consumers. This may have flow on effects of lower wholesale energy prices and resulting lower overall costs for electricity consumers.
28. More energy utilised from hydroelectric power generation under this consent could result in less energy being sourced from traditional fossil fuel generation and result in less carbon emission.
29. Water released from Lake Pūkaki flows through six power stations comprising the Waitaki Power Scheme. The Waitaki Power Scheme is considered to be of national significance providing a significant contribution to hydro-electricity storage in New Zealand.
30. Based on the information provided by the Applicant, CRC anticipates the proposal will likely result in further regionally and nationally significant benefits as described above.

SECTION D: PROVISIONS OF RMA THAT DIRECT DECISION MAKING¹⁴ (SCHEDULE 5. CLAUSE 17(2) FTAA)

Permitted Regional Activities

Table 1: Permitted activities	
Rule	Description of Activity
5.158, CLWRP	Dam resilience and rock armouring works on the face of the dam and associated disturbance of the bed of lake.
Rule 17, WAP	Lowering of Lake Pūkaki below to 513m RL in a Declared Electricity Supply Emergency.
Regional rules not triggered, therefore provided for under section 9 Resource Management Act 1991 (RMA)	Moving the rock stockpiles to be used in dam armouring and resilience works.

¹³ Minister for Infrastructure, s4(1) Fast-track Approvals Act 2024

¹⁴ Schedule 5, clause 17(2) FTAA

31. Rules 5.158 CLWRP and Rule 17 WAP are particularly important to understand for this proposal as permitted baseline plays an important role when considering effects.
32. Rule 5.158 CLWRP provides for “the use and maintenance of a lawfully established dam that existed on 1 November 2013” as a permitted activity. Meridian have provided the schematic in Figure 1 which identifies the footprint of the existing dam. Both Meridian and CRC consider the rock armouring works meet the definition of ‘maintenance’ in the CLWRP. This means that much of the rock armouring works described in the application can in fact be undertaken without triggering consent requirements under section 9 or 13 of the RMA. There are two small areas identified with a red outline in Figure 1 which CRC262543 (s13 consent) applies to.

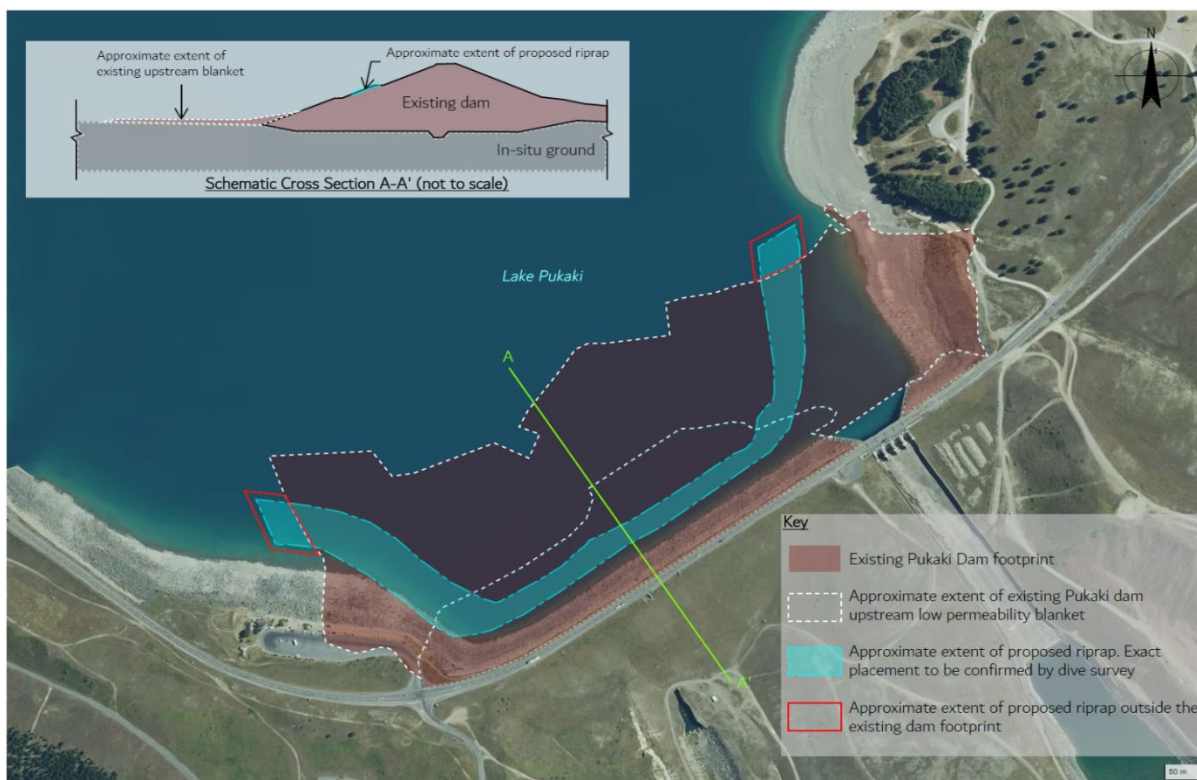


Figure 1: Schematic of extent of existing dam¹⁵ (supplied by Meridian)

33. CRC initially engaged expert advice to review the engineering assessments regarding placement and nature of rip rap for the rock armouring. However, following the provision of Figure 1, it was identified that further assessment was not required given the extent of works that could be undertaken as a permitted activity under Rule 5.158.
34. Rule 17 of the WAP provides for the lowering of Lake Pūkaki during a electricity supply emergency to the same levels sought by this proposal as a permitted activity. The difference between this permitted activity rule and the proposal relates to the ‘trigger’ or time when Lake Pūkaki may be drawn to these levels. In addition to Rule 17, resource consent CRC185833¹⁶ allows Meridian to draw Lake Pūkaki below 518 msl only when a Security of Supply Alert is in effect.
35. Plan Change 1 (PC1) to the WAP was incorporated in 2012 following a private plan change process by Meridian seeking changes to Rule 3, Rule 17 and Policy 36 of the WAP to allow Lake Pūkaki to be managed for Declared Electricity Supply Emergency for New Zealand or the South

¹⁵ Supplementary information provided to EPA by Meridian, December 2025

¹⁶To be replaced by CRC240441 which is being determined by Environment Court

Island by permitting the Lake to be operated between the levels of 513 m RL and 518 m RL during times of independently determined electricity shortage.

36. Effects of the changes sought by PC1 was assessed considering the following scenarios¹⁷:

“It was assessed that the lake level would refill to 518 m RL by the end of December / early January. It is highly unlikely that lake levels would stay below 518 m RL into the following autumn to winter period. Overall, it is reasonable to expect that in emergency conditions the lake will need to be managed below 518m for a period of 4 to 7 months, with the most likely scenario being closer to 4 months, and 7 months being close to an extreme scenario”.

37. A handful of submissions on PC1 were initially received however all were withdrawn before PC1 was decided.

Other Consents

38. In May 2022, the Government introduced the Building (Dam Safety) Regulations 2022 – to be established and implemented under the Building Act 2004 not the RMA 1991. These regulations came into force on 13 May 2024. CRC is responsible for issuing building consents for large dams, as well as ensuring large dams are well constructed, regularly monitored and that the potential risks to people and property are minimised across Canterbury, Southland, Otago, and the West Coast. CRC is a Building Consent Authority (BCA) accredited with International Accreditation New Zealand and are also registered with the Ministry of Business, Innovation and Employment.
39. CRC considers managing safety/integrity the of the dams themselves is managed under the Building Regulations. While the majority of the rock armouring works could be undertaken under the RMA as permitted activities; it is important to note that Meridian will likely require Building Act consent for such works. At the time of preparing this s53 advice, while pre-application discussions have occurred, no consent has been lodged for consent under Building Act.

Regional Consents Sought

40. The Applicant seeks approvals under the FTAA for the following regional consents:

Activity	Planning Document	Activity Status	Consent Number
Section 13 ¹⁸ to use land within the bed of a lake	CLWRP	Discretionary	CRC262543
Section 14 ¹⁹ take and use of water	WAP	Prohibited	CRC262540

¹⁷ Appendix 4 to Meridian’s application for PC1: Assessment of the impacts of lowering Lake Pūkaki below its consented level, Mark James (Aquatic Environmental Services Ltd), March 2012

¹⁸ Section 13 Restriction on certain uses of beds of lakes and rivers, Resource Management Act 1991

¹⁹ Section 14 Restrictions relating to water, Resource Management Act 1991

Section 15 ²⁰ to discharge water or contaminants into surface water	CLWRP	Discretionary	CRC262541
Section 15 ²¹ to discharge dust to air	CARP	Non-complying	CRC262542

41. As noted above, Rule 17 provides for lowering of lake levels within shortage of supply scenarios as a permitted activity. The WAP does not provide an ‘intermediate’ pathway, simply stating lowering the Lake outside of these provisions is a prohibited activity. CRC considers it is appropriate to consider any effect of operating Lake Pūkaki within the proposed levels, for the events or times which are not provided for in the WAP, as new and not provided for by the WAP. It is not overly clear in the application, for modelled scenarios, which periods of time would likely have been operating within consented or permitted limits, or which would be under this proposal.

Activity Classification Relating to Discharge of Dust

42. The application seeks CRC262542 for discharges to air resulting from the rock armouring activities. CRC has given thought to the generation of dust around the lake as a (indirect) result of lowering the level of Lake Pūkaki to levels in the context of s15RMA.
43. S15 RMA requires consent for any activity which is not permitted by a regional rule or NES. The permitted activity rule in the CARP does not specifically provide for the discharge of dust from the lakebed meaning consent under the CARP could be required.
44. However, it is important to understand if it is the proposed activity that will directly influence the discharge of dust, therefore requiring consent under s15 RMA. The eased access to stored water will lower the lake exposing sediment on the lakebed. What makes this situation unusual is that the dust is not being generated at the site of the primary consented activity. The lake is lowered by an action at a single point – being the intake to the Pūkaki canal. Generally, the discharge to air would occur at the location where works are being done (such as the rock armouring discharges). However, in this situation, as a result of taking water from a single point, the dust will arise as wind dries the littoral zone on the entire lake shore depending on topography. Whether this occurs will depend on wind and temperature drying effects on the substrate on the exposed littoral zone (the intervening wind and temperature effect is not controlled by Meridian).
45. If a separate air discharge consent was sought, then when considering the discharge of dust to air, the effects/conditions would likely still track back to the exercise of the water permit. The conditions to reduce effects if any are practical, are likely best on the water permit.
46. As such, CRC considers that one of the effects of lowering Lake levels is the effect of dust on neighbouring properties, and it would be appropriate to manage this effect through mitigation (where appropriate) as conditions of consent on the s14²² consent; rather than being managed on a consent under s15 RMA.
47. Should the Panel disagree with this approach, and determines a resource consent under s15 RMA needed for the potential discharge of dust from margins or bed of Lake Pūkaki, CRC

²⁰ Section 15 Discharge of contaminants into environment, Resource Management Act 1991

²¹ Section 15 Discharge of contaminants into environment, Resource Management Act 1991

²² Resource Management Act 1991

considers conditions could be included on CRC262540 without raising issues of scope as the application has clearly considered and assessed the effects of such an activity.

Assessment of Effects

48. When preparing feedback on this proposal with respect to effects, CRC have applied the following considerations:
- a. Only works within the areas outlined in red in Figure 1 trigger resource consent under s13 RMA.
 - b. Discharges to land or water for all work areas to be considered.
 - c. Discharge to air from all areas of works to be considered.
 - d. Meridian hold resource consent to lower Lake Pūkaki below 518 m RL to 515 m RL during a Security of Supply Alert with no restriction on the period of time this may extend for²³.
 - e. Rule 17 permits the lowering of Lake Pūkaki to 513 msl, in a declared electricity supply emergency. When determining PC1, a period of four to seven months was anticipated however the WAP does not apply limits to the maximum period of time this may occur for.
 - f. Meridian's effects assessments have utilised a period of 39 days (Meridian anticipated the likely time below 518m within the 3 year duration of the consent factoring in the likelihood of the extreme low conditions occurring within the 3 years). The proffered consent conditions do not restrict the period of time Lake Pūkaki may be held below 518m RL as such, consideration should be given to extended periods of low lake levels.
 - g. The worst-case scenario modelled by Meridian being that the lake level falls below 518.0 m RL in September and does not return above 518 m RL until December (a duration of no more than approximately 4 months). Meridian note the likelihood of this scenario is extremely low (1%). This worst case scenario would extend for a period of time much less than the worst case scenario assessed for PC1.
 - h. To date, Meridian has not utilised provisions available to them to draw Lake Pūkaki below 518 m RL so while there are consented/permitted baselines at play; the 'actual effects' of these scenarios have not been tested.
49. In applying the permitted baseline, CRC considers it would be reasonable for the Panel to adopt the environmental effects established as a permitted activity in the WAP - i.e. the operation of Lake Pūkaki down to 513 m RL during Declared Electricity Supply Emergencies. For this proposal, this means the effects of the duration the lake is operated within these levels when **no** Declared Electricity Supply Emergencies would likely have been declared should be considered as new.
50. CRC notes that the assessments provided by Meridian do not extend to this level of modelling. Meridian have explained to CRC²⁴ difficulties and uncertainties associated with modelling such scenarios. CRC suggests the Panel may wish to discuss these difficulties with Meridian to understand the limitations further.

²³ Noting the lake shall be restored to 518msl as soon as practicable (condition (4)(a) of CRC185833).

²⁴ Meeting undertaken on 2nd December 2025 between CRC and Meridian to discuss background and inputs of the Lake level modelling provided within the application. On the 9th December 2025 the Applicant provided further modelling via [Appendix to Appendix B \(PDF, 2MB\)](#),

51. As such, CRC technical experts have provided advice (in Appendices) based on what has been assessed in the application while this s53 FTAA response then considers that advice in the context of FTAA and permitted baselines/existing environment.

Effects on Cultural Values, Practices, and Beliefs

52. The activities proposed in the application will occur adjacent to and potentially have adverse effects upon the Lake Pūkaki Nohoanga entitlement. The relationship of Kāi Tahu and Waitaki Rūnaka (Te Rūnanga o Arowhenua, Te Rūnanga o Moeraki and Te Rūnanga o Waihao) with the whenua and awa, and the enduring kaitiaki responsibility of mana whenua in relation is acknowledged by CRC.
53. Ongoing discussion between Waitaki Rūnaka and Meridian have occurred. While Meridian has provided CRC with high level updates of discussions, CRC has not been privy to such discussions and so provides no further comment on this.
54. CRC notes that Te Rūnanga o Ngāi Tahu and Waitaki Rūnaka (Te Rūnanga o Arowhenua, Te Rūnanga o Moeraki and Te Rūnanga o Waihao) are also s53²⁵ parties to provide advice on this proposal and as such, CRC has not undertaken a detailed assessment of the potential adverse effects that the proposal may have on cultural values, practices, and beliefs. This is not to diminish the importance of these effects, but to recognise that it is for mana whenua to best determine how a proposal impacts on their cultural values and to share this feedback with the Panel.

Affected Parties/ Adjacent Landowners

Genesis Energy Ltd (Genesis)

55. Meridian has highlighted to the EPA, concerns held by Genesis as a matter to be considered for this proposal. While adjacent landowners, Genesis also own Tekapo B Power Station, located in the bed of Lake Pūkaki. In summary, Genesis is concerned drawing Lake Pūkaki down to 513 m RL may result in their infrastructure, namely the tailrace weir and rock chute to become operational again when Lake Pūkaki is drawn down to an estimated minimum level of about RL 514 m RL. Genesis notes that this infrastructure was only supposed to be temporary to allow for Tekapo B Power Station to be operated for generation purposes before the Pūkaki Dam was completed and the level of Lake Pūkaki raised to its operating level range. Genesis is concerned with uncertainties pertaining to how the structure will perform being used again.
56. In response to these concerns, Meridian commissioned a report dated 19 March 2026²⁶ which detailed that the infrastructure is structurally stable with no major degradation, noting the key concern being localised scour is the primary risk under high flows. CRC technical experts have not reviewed this report.
57. CRC notes that in May 2012, Genesis provided a letter to Meridian in relation to PC1, advising that based on its understanding of the proposal it did not intend on lodging a submission as it considers the environmental effects arising from the proposal are unlikely to adversely affect its operations.

²⁵ Section 53 Panel invites comments on substantive application, Fast-track Approvals Act 2024

²⁶ Tekapo B Power Station tailrace weir and chute – condition assessment and review of bathymetric survey data

58. Noting that PC1 modelled between four and seven months of operation at lowered lake levels and under this proposal, modelling shows a ‘worst case’ scenario of four months; effects on Genesis’ infrastructure are unlikely to be beyond that provided for as a permitted activity under Rule 17 WAP.
59. CRC does however acknowledge that 14 years have passed since that letter was prepared, in which time Genesis may have gathered more information to inform their s53 comments to be provided to the Panel.
60. Given the Panel have invited Genesis to provide comments detailing their concerns further, CRC has not provided further assessment of this matter.

Other abstractors

61. There are two potential ways in which this proposal may affect resource consent holders who abstract water from Lake Pūkaki or the Pūkaki Canal. First relates to the mechanics of taking water (ie would lower lake levels expose pumps on side of the lake) while the other relates to minimum lake restrictions on consents (if the lake level is below 518m RL then taking of water for irrigation must cease). The proposal by Meridian to draw the lake below 518m RL means that these minimum lake level restrictions will be in effect for the full duration the lake is below 518m RL.
62. CRC considers this proposal will likely result in adverse effects for two consent holders [CRC155429](#) (Bendrose Farm 2014 Limited) and [CRC251630](#) (M R & K M Ivey²⁷).
63. With respect to mechanics of taking water, Meridian have identified the level at which the intake for [CRC251630](#) (located adjacent to Pūkaki Dam) will no longer be able to take in water. Meridian note that the minimum lake level restrictions would stop CRC251630 from being exercised before the intake cannot physically access water. CRC155429 takes water from Pūkaki Canal so the mechanics of taking water is not a concern. Rather, minimum lake level restrictions will apply.
64. These restrictions have potential to have significant effects on crop and farming decisions for these properties. Meridian has advised in their application that Meridian has legal agreements with these two parties regarding the security of water supply²⁸.

Adjacent landowners

65. Section 8.5.4 of the application identifies a gabion retaining wall along the western shoreline of Lake Pūkaki adjacent to SH80 Mt Cook Road. This is located on land owned by Crown land subject to Lake Pūkaki Operating Easement (Legally described as Sec 1 SO 380603). This section continues to state inspection of the rip-rap below this wall should be inspected whenever water levels fall below the extent of the rip-rap. This is not included in the applicant proposed conditions, as such provision has been made in CRC comments on conditions in Appendix 2.
66. With respect to potential effects of dust on adjacent land owners, please refer to discussion of dust below.

Adverse Effects

²⁷ Referred to as Catherine Fields in Meridian’s application.

²⁸ Sections 4.1.1, 4.1.3 and 8.5.6 of the application

67. CRC agrees that overall, the Applicant has appropriately identified and addressed the key issues of the proposal, subject to some further changes to conditions of consent that CRC considers are necessary and / or are minor drafting changes.
68. CRC has reviewed the application, with findings of this review documented in Appendix 1. The table in Appendix 1 captures the Applicant's assessment (summarised), a summary of CRC's assessment and any CRC recommended solutions and/or conditions. Technical advice provided by CRC experts is included where appropriate in Appendices 3 to 8.
69. Where CRC agrees with the Applicant's assessment and mitigation measures for a potential effect, this is noted (with reasons for agreement), in Appendix 1. No further discussion is provided on those matters.
70. A key theme between many of the technical experts' comments relates to ensuring that the 'intent' of the proposal or limits of what have been modelled are in some way provided for in conditions of consent. Specifically, a shorter period of time of effects has been modelled (while worst case scenario isn't modelled). Short, periodic exercising of lowered lake levels is considered to have effects which may be able to be accommodated by the environment, rather than holding the lake at low levels for extended periods of time year after year.
71. In summary, CRC considers the following potential significant adverse effects are matters for the Panel to determine, with further discussion beyond the summary in Appendix 1 provided below:
 - a. Groundwater
 - b. Lake ecosystems
 - c. Indigenous biodiversity and wetlands
 - d. Air quality
 - e. Landscape
72. For these particular effects, CRC agrees with Meridian many of the effects cannot be mitigated. Restricting draw down rates or duration the lake may be held below 518m RL essentially would defeat the reason this application is being sought. While Meridian holds consent and WAP provides permitted pathway for lower lake levels; to date this has not been utilised. This means continued reliance on 'modelled' or 'anticipated' effects assessments.
73. Further, there are some more minor matters where agreement between the Applicant and CRC cannot be reached. Specifically hydrology and lake geomorphology.
74. Hydrology - With respect to lake level recording, see Appendix 2 for recommended conditions to be included on consent if approved.
75. With respect to Mr Clark's concerns that insufficient modelling has been provided to understand potential effects on spill events into the Pūkaki River, CRC notes there are two key types of spills into the river:
 - a. Operational spills – these are scheduled spills of various sizes and frequencies carried out as part of Meridian's Dam Safety Assurance Programme.
 - b. In-flow driven spills – essentially spills that occur when the lake is at its maximum lake level and rainfall events (in particular) increase the flows into the lake causing spills into Pūkaki River.

76. In-flow driven spills and the extent to which associated effects of those spills should or should not be considered have been subject of discussion at Environment Court for the re-consenting of Meridian's existing consents. Specifically, Meridian considers that any impact from in-flow driven spills is not an effect of the WPS.
77. CRC acknowledges that when the lakes are at capacity, high inflow events will flow into and over Meridian dams; just as high inflow events may result in a river flooding. CRC also agrees it is appropriate these spills are managed in accordance with the Flood Flow Management Plan (FFMP)²⁹ so the integrity of dam structures is preserved. However, management decisions by Meridian relating to lake levels have implications on the frequency and timing of when these spills occur. Meridian, obviously, aims to minimise the frequency of such spills to avoid water lost from power generation. Given this level of manipulation within the hydraulic system, CRC finds it hard to agree that the effects of inflow driven spills are not in some way associated with the WPS.
78. The proposed lowering of the lake may result in less in-flow driven spills as a lower lake level may provide buffering for these in-flow driven events. Regardless, CRC notes some consideration has been given to values downstream of Pūkaki Dam in technical assessments. This potential effect is considered to be similar to groundwater effects in that it is a matter to consider against the positive benefits.
79. *Lake Geomorphology* – while CRC experts generally agree with conclusions in the application; it is noted that inspections of a rock gabion wall is recommended in the application and as such has been recommended as a condition of consent³⁰.

Potential Adverse Effects

*Groundwater*³¹

80. Drawing the lake to proposed levels for extended periods of time may draw water out of the Tasman Delta. Effects discussed below further explore potential implications of this on ecosystems. The scale of such effect is difficult to quantify, nor is there appropriate mitigation available. It is difficult to quantify how much of an effect this proposal may have beyond that which may occur under the pathways to lower the lake during shortage of supply scenarios. However, when considering the 'likely scenario' of 39 days (even if no shortage of supply is declared and so those provisions are not exercised), it is significantly lower than the duration anticipated by PC1 of four to seven months. The worst-case scenario (1% probability of occurring) would extend to four months.
81. As discussed in Appendix 1, CRC considers any monitoring would be difficult to undertake and unlikely to pass the 'onerous' test. CRC considers this to be a potential effect of the proposal for the Panel to consider alongside the potential benefits of additional renewable energy supply.

Lake water quality and ecosystems

82. Dr Bayer³² considers the proposed activity may have adverse effects particularly on the littoral zone of Lake Pūkaki. While Dr Bayer suggests mitigation, these are not considered appropriate

²⁹ Proposed through re-consenting process not this proposal.

³⁰ CRC262540, Condition 9

³¹ Appendix 3 to CRC s53 comments

³² Appendix 4 to CRC s53 comments

by Meridian and CRC agrees such restrictions have the potential to restrict the proposal beyond that which is being sought.

83. The uncertainties Dr Bayer has predominantly relate to the limitations of modelling provided with the application (being the modelled most likely situation, worst case scenarios and what was assessed for PC1).
84. CRC considers this to be a potential effect of the proposal for the Panel to consider alongside the potential benefits of additional renewable energy supply.

Indigenous biodiversity and habitat – specifically avifauna and wetlands/vegetation

85. Dr Jack's concerns are detailed in Appendix 1 and Appendix 5. Meridian do not wish to restrict the duration for which Lake Pūkaki may be held at these lower levels, nor when during the year this may occur. As such, effects on ecosystem values of the Tasman Delta is an adverse effect which CRC anticipates will not be mitigated.
86. Dr Jack's assessment makes comments in relation to conditions discussed at Environment Court. These relate to compensation which is not proposed by Meridian for this proposal and as such cannot be imposed by the Panel³³.
87. Monitoring however is considered an appropriate tool to be utilised for this potential effect. The purpose of monitoring would be to gather information which may support the conclusions made in the application or inform any future proposal. Often monitoring would be linked to conditions providing for review of a resource consent. Given the application has identified there to be an effect (albeit low or very low) on biodiversity values and the short duration of the water permit being sought, this step of linking monitoring to review conditions is not considered necessary.

Air quality

88. Having considered the technical advice provided by Ms Suzanne Cawood and Mr Mathew Noonan, CRC wishes to highlight there remains a level of uncertainty around modelling and/or assessments that have been carried out with respect to both rock armouring and lake lowering. CRC respectfully suggests that many of the matters raised in Appendices 6a and 6b may be able to be discussed by the experts present at the site visit on 1 April 2026.
89. CRC further notes that many of the outstanding issues may also be able to be addressed through a revised DMP(s). It may be of benefit to the Panel to understand from Meridian, proposed timing of any revised DMP(s) and the extent to which the matters in Appendices 6a and 6b will be resolved through those DMPs. Given the durations of the discharge to air and water consents are significantly different, CRC recommends two separate DMPs are prepared for each activity.
90. Unfortunately, due the nature of the s53 process, CRC is unable to provide advice in relation to any specific adjacent landowner concerns as their comments will be provided to the Panel within the same timeframe available to CRC.
91. CRC does anticipate that if a revised DMP is not provided, conditions could be amended to ensure the minimum level of detail that should be included within the DMP. The advice provided in Appendices 6a and 6b could be used by Meridian or the Panel to develop such conditions.

³³ Compensation conditions were proffered as *Augier* conditions

92. CRC considers that the Panel may be able to resolve many of the outstanding matters related to dust – through discussions on site during site visit, through s53 feedback from adjacent landowners and through any additional information Meridian may include within their response.

Landscape

93. With respect to rock armouring works, these works are predominantly permitted, no consents are required from Mackenzie District Council (MDC) and the small areas subject to s13 RMA consent will predominately be located underwater. If these areas are exposed, they will be covered by water as lake level rises. Over time the rocks being used for these works will likely weather as they are covered and exposed by the lake and develop coatings of sediments in some places.
94. The drawing down of Lake Pūkaki will likely have adverse effects on landscape values which cannot be readily avoided, remedied or mitigated. CRC has had further discussions with Mr Glasson³⁴, in order to understand if low lake levels during a security of supply (electricity shortage) would affect the scale of these effects (compared to low lake levels outside of security of supply). Mr Glasson noted that understanding the lake may be low due to an electricity shortage may lower effects. CRC notes that a range of people visit Lake Pūkaki, all with different ‘expectations’ of anticipated lake levels when visiting.

Part 2 of The RMA

95. As noted in the FTAA³⁵ the approvals sought in this application relate to the RMA and so the application must include an assessment of the activity against sections 5, 6, and 7 of the of the RMA. CRC agrees with the Applicant’s assessment provided in the substantive application against these provisions. Further CRC considers, subject to resolution of outstanding issues the sustainable management purpose of the RMA could be achieved.
96. CRC consider that Waitaki Rūnaka as s53 comments would provide the most appropriate guidance to determine whether the following have occurred:
- a. Recognise and provide for the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.
 - b. Have particular regard to Kaitiakitanga.
97. CRC considers that MDC are best placed to assess whether the outstanding natural features and landscapes identified in their district plan are protected from inappropriate subdivision, use, and development, while noting CRC agrees that the Mackenzie District Plan gives effect to the CRPS. CRC acknowledges no consents are required from MDC for the activities proposed.

Policy Assessment

98. The application provides a relatively high-level consideration of relevant statutory planning documents within Appendix P (Statutory Analysis) of the application, in addition to further assessment provided to the EPA. While CRC generally agree with the assessment, there are

³⁴ CRC technical expert, pers comm., 26 March 2026

³⁵ Schedule 5, Clause 5(1)(g), Fast-track Approvals Act 2024

some provisions CRC wish to draw the Panel's particular attention to which are particularly relevant to this proposal.

National Policy Statement for Renewable Electricity Generation 2011 Amended December 2025 (NPS-REG)

99. CRC generally agrees with Meridian assessment of Policies from this legislation, however wanting to bring the Panel's attention to Policy F³⁶ in particular which sets out clear direction for decisionmakers, specifically subsection (1)³⁷ and (5)³⁸:
100. This new policy amended as of December 2025, in the CRCs view to be at the forefront of the Panels mind when considering this proposal. Acknowledging the importance of the Tasman Delta and potential effects on its associated ecosystems warrants providing for monitoring of some species to further understand the scale of potential effects from this proposal.
101. CRC disagrees with Meridians statement that considering the NPS REG is in line with Schedule 5, clause 17 of the FTAA relating to the how the panel must consider a relevant Government Policy Statement. This is because a National Policy Statement (such as NPS-REG) is not a Government Policy Statement, as there has been no applicable Government Policy Statements that have been given royal assent. Further CRC does note that within Schedule 5, clause 17 subsection (1)(c) the phrase "the relevant provisions of any other legislation that directs decision making under the Resource Management Act 1991" does provide for considering a relevant NPS.

National Policy Statement for Freshwater Management 2020 (NPS-FM)

102. CRC is in agreement with the Applicant that the proposal has had regard to the policies in the NPS-FM including Policy 1 (Freshwater is managed in a way that gives effect to TMOTW). CRC notes s104(2F) RMA which the Panel must have regard to, directs that the Panel (in this instance) must not have regard to the Hierarchy of Obligations in Te Mana O Te Wai (TMOTW) (clause 1.3(5)) or in the sole Objective of the NPSFM 2020.
103. CRC considers the Waitaki Power Scheme is "specified infrastructure" as provided for in the NPS-FW³⁹.

National Policy Statement for Indigenous Biodiversity 2023 Amended December 2025 (NPS-IB)

104. The following provision means that the NPS-IB cannot be considered when determining this proposal:

"Nothing in this National Policy Statement applies to the development, operation, maintenance or upgrade of renewable electricity generation assets and activities and electricity transmission network assets and activities. For the avoidance of doubt, renewable electricity generation

³⁶ National Policy Statement for Renewable Electricity Generation 2011 Amended December 2025 Part 2: Objective and policies 2.2 Policies Preliminary Provisions Section 1.4 Interpretation

³⁷ "Decision-makers must enable REG³⁷ assets and activities in all locations and environments"

³⁸ "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"

³⁹ NPS-FM, Subpart – 3 Specific requirements, 3.21 Definitions relating to wetlands and rivers (1)

assets and activities, and electricity transmission network assets and activities, are not “specified infrastructure” for the purposes of this National Policy Statement⁴⁰.”

National Policy Statement for Infrastructure 2025 (NPS-I)

105. The following provision means that the NPS-I cannot be considered when determining this proposal:

“This National Policy Statement does not apply to: renewable electricity generation activities and assets managed under the National Policy⁴¹”

Canterbury Regional Policy Statement (CRPS)

106. The entire Mackenzie Basin is listed as an Outstanding Natural Feature and Landscape (ONFL) under the CRPS. It has this designation due to its exceptional legibility, aesthetic quality, transient, shared and recognised value, high tangata whenua and historic landscape values. It is important to note that the presence of the Waitaki Power Scheme is considered within this determination.
107. CRC generally agrees with the Applicants assessment of Chapter 5 relating to land use and infrastructure, Chapter 7 regarding fresh water and that of Chapter 9 pertaining to Ecosystems and Indigenous Biodiversity.
108. However, CRC acknowledges Dr Jack’s comments in relation to potential effects of the activity on the Tasman Delta (a low effect should not warrant no management approach). While CRC acknowledges changes to the Delta are provided for during periods of “shortage of supply” through resource consent CRC185833 and Rule 17 WAP; this proposal is not consistent with those provisions.
109. CRC agrees with the assessment in Chapter 16 relating to Energy but noting that the application in addition to what is assessed by the Applicant is consistent with Objective 16.2.1 (Efficient use of energy) and corresponding policy 16.3.1.
110. Further, CRC is in agreement with assessment on Chapters 10 (Beds of Rivers and Lakes and their Riparian Zones), 12 (Landscape), 14 (Air Quality), 17 (Contaminated Land) and 18 (Hazardous Substances).

Canterbury Air Regional Plan (CARP)

111. CRC largely agrees with the Applicants assessment regarding this planning instrument. However notes that Policy 6.2 relating to managing adverse effects of discharges into air on wāhi tapu, wāhi taonga, and places of significance to Ngāi Tahu. This would apply as there is a Nohoanga site in close proximity to this application.
112. The proposed DMP, if prepared appropriately should ensure the proposal is likely to be consistent with this policy. CRC considers Waitaki Rūnaka and AEC Ltd may be able to provide further comments to the Panel in relation to this policy.
113. Policy 6.14 provides for discharges associated with the development, operation and maintenance of nationally and regionally significant infrastructure.

⁴⁰ NPS- IB, Part 1: Preliminary provisions, 1.3 Application, subsection (3)

⁴¹ NPS-I, Part 3: Timing, 3.1 Timing, Explanatory note

Canterbury Land and Water Regional Plan (CLWRP)

114. CRC notes the application⁴² includes discussion of Objective 3.6 and 3.18, Policies 4.5, 4.85 and 4.90. The CLWRP should only be considered with respect to activities sought under s13 and s15 of the RMA as the WAP is the document which manages activities under s14 RMA. As such, these objectives and policies should be disregarded.
115. With the exception of the above objectives and policies, CRC largely agrees with the Applicants assessment of the CLWRP noting that this proposal is in line with the intent of Objective 3.3.
116. Advice from Ms Baliue and Dr Jack support the conclusion that the Tasman Delta (a particularly large and environmentally important wetland) will be affected by this proposal meaning particular attention should be paid to wetland policies 4.83-4.85.
117. Further CRC notes also that while the majority of the s13 RMA activity (works in the bed of the lake) are able to fall within conditions of a permitted activity rule, it is considered that Policy 4.86 from a consenting perspective applies to limited areas only.

Waitaki Catchment Water Allocation Regional Plan (WAP)

118. The National direction objectives and policies inserted into the WAP in March 2023 were subject of much discussion at Environment Court with respect to the re-consenting of Meridian's consents to operate the Waitaki Power Scheme. Through those discussions it was identified that the inclusion of clauses 3.22(1) and 3.24(1) of the National Policy Statement for Freshwater Management (NPS-FM) into the WAP in March 2023 was a mistake. The direction to insert provisions pursuant to section 55 RMA did not extend to inserting the provisions appearing as 3.22(2)-(3) and 3.24(2)-(3) of the NPS-FM. It is clear from clause 1.7 of the NPS-FM that this insertion was not allowed under the NPS-FM.
119. CRC intends to remove Policies 5A.3A and 5A.5 from the WAP (as well as removing equivalent provisions of other relevant plans), however it intends to await the Court's decision before doing so. In the interim, the CRC notes that Policies 5A.3A and 5A.5 of the WAP should be disregarded by the Panel as they were not lawfully inserted into the WAP.
120. CRC considers that policy 5A.3 is relevant to consider. The anticipated effects on the Tasman Delta, means the proposal is inconsistent with this policy.
121. Further, CRC agrees the proposal is contrary to Policy 36 which provides for temporary lowering of Lakes Tekapo and Pūkaki for the purpose of electricity generation only in times of national or South Island power shortage as established by the Electricity Commission.

Compensation Under the RMA

122. With respect to the re-consenting being determined by Environment Court, compensation is being proffered in the form of Kahu Ora – an indigenous biodiversity enhancement programme. Meridian is not proffering compensation for this proposal. CRC agrees that compensation is not being proposed for this application however acknowledges this proposal will rely on the consents for Lake Pūkaki that include compensation.

Other Matters (S104(1)(C) RMA)

⁴² Appendix P to the application provides detailed planning assessment

123. The Ngai Tahu Freshwater Policy statement complements and must be read alongside existing iwi management plans. Section 2.3 of this Policy Statement advises for information about a specific water body, resource management agencies must consult Papatipu Rūnanga and continues to note that when determining how to implement the strategies in this statement it is recommended that resource management agencies consult with Papatipu Rūnanga. Further the Waitaki Iwi Management Plan (IMP) is of particular relevance to this proposal. This IMP was published in 2019, meaning that it post-dates Objectives and Policies in the WAP, and is the most appropriate published document to provide guidance when understanding the values of the Waitaki to iwi. Noting the presence of a nohonga area adjacent to the area of works and classification of Lake Pūkaki as a Statutory Acknowledgement Area, these documents should be considered by the Panel. CRC acknowledges that Waitaki Rūnanga are s53 parties providing advice to the Panel on this proposal and respectfully consider advice on implications of these documents on the proposal is best provided through their s53 comments.
124. The Wildlife permit sought under the Wildlife Act 1953 through this fast-track process for the establishing of rock armouring to the Pūkaki Dam, most notably for the moving of rock stockpiles which have naturalised and become lizard habitat over the preceding years. CRC notes that this wildlife permit sits alongside the consents sought under the Resource Management Act 1991 (RMA) and defer comment to DOC to best deal with the appropriate conditions for this permit. Further DOC is best placed to provide advice to the Panel with respect to consideration of any other documents/legislation that may be appropriate for this proposal.
125. Through this proposal CRC noted that Meridian does not currently hold a building consent for the rock armouring of the Pūkaki dam, in light of this Meridian is now actively engaging with the Building Consent Authority team at CRC to work through the matters needed before lodging a building consent. Meridian have confirmed that they will seek this building consent as soon as practicable, noting that it cannot be considered under the FTAA as there is no mechanism to apply for a building consent through Fast-track.

Sections 105 and 107 RMA

126. Sections 105 and 107 remain relevant RMA considerations when applying clause 17 of Schedule 5 of the FFTA (although they cannot be used as a reason to decline an application under the FFTA).
127. In regard to Section 105 of the RMA, specifically (1)(c) CRC notes that the discharge of contaminants to water and to air, cannot be discharged into any other receiving environment due to the specific location of the dam armouring works. The rock armouring works are essential to maintain the structural integrity of the Pūkaki Dam. As such CRC is satisfied that no other reasonable alternatives exist.
128. When considering Section 107, CRC notes Dr Tina Bayer (Dr Bayer) generally agrees with the Applicant's conclusions regarding effects on water quality⁴³. The Applicant's water quality assessment showed that Lake Pūkaki has a very low nutrient state (ultra-microtrophic to oligotrophic nutrient state) and there has been no change in the microtrophic Trophic Level Index (TLI) score over the assessed years (2005/2006 to 2021/2022⁴⁴).

⁴³ Appendix 5 to s53 comments- Lake Water Quality and Ecology technical expert advice, paragraph 3 and 3(a)

⁴⁴ Appendix M to the Application - Ecological Impact Assessment Lake Pūkaki, section 4.1.2 Lake ecosystems

129. Given the Water Quality Limits for Lake Pūkaki are being met for Table 15B(d) CLWRP, Section 107 (2A) RMA is not relevant.

SECTION E: CONSENT CONDITIONS

130. Section 83 of the FTAA requires that conditions be no more onerous than necessary to address the reason for which it is set in accordance with the provision of the Act that confers the discretion. This consideration is particularly relevant for this proposal. CRC experts have identified the proposal is likely to have adverse effects. However available options to mitigate these effects (for example limiting the period Lake Pūkaki may be operated at, or the speed at which the Lake is drawn down to lower levels to mitigate associated ecological effects) essentially counter this proposal. Including such conditions would limit the ability to generate hydroelectricity at times Meridian have identified it is essential to be able to generate – as such conditions along these lines most definitely are onerous.
131. CRC has focussed on conditions that relate to the approvals that would otherwise be granted by Canterbury Regional Council. CRC notes that it is willing to continue to work on conditions, including in collaboration with the Applicant and other participants, to the extent that the Panel requests or directs it to do so. CRC will continue to work with Meridian to establish further agreement Further CRC appreciates the consultation efforts by Meridian with a number of exchanges of drafting of proffered conditions.
132. Through consulting with Meridian about proposed conditions, CRC has incorporated advice from technical experts as well as CRC Compliance Section. The later is pivotal in ensuring the conditions are enforceable as well as providing useful insight prior to any decision being made on this application.

Applicant's Proposed Conditions

133. Generally, CRC considers that the Applicant's proposed consent conditions ('version 2' conditions⁴⁵) are appropriate. The exceptions to this are discussed in the adverse effects section, specifically in relation to:
- a. Monitoring of response of Kakī to lower lake levels
 - b. Monitoring of threatened or at risk flora in response to lower lake levels
 - c. Periodic inspections of a rock gabion wall
 - d. Dust management plan for lowering of Lake Pūkaki.
134. CRC also recommends conditions are added to the start of condition set for s14 RMA consent CRC262520. The purpose of these conditions is to describe how this proposal if authorised operates in conjunction with Meridian's existing resource consents to operate the Waitaki Power Scheme. These conditions do not describe the 'intent' of the proposal (ie situations where this consent would be utilised).
135. A number of additional changes to conditions have been tracked, to ensure consistency between condition sets or make conditions clearer.

⁴⁵ On 5th March 2026 Applicant provided [Version 2 Lake Lowering](#), [Version 2 Section 13 Consent – Disturb and deposit material on bed of lake](#), [Version 2 Section 15 Air Discharge Consent](#) and [Version 2 Section 15 Discharge of Contaminants to Land and Water](#) to the EPA

136. Recommended changes are in CRC's suite of consent conditions attached as Appendix 2. Specifically, changes are tracked with deletions struck through and additions in bold. Supporting reasons of links back to this document or its appendices are included where appropriate alongside the conditions.

Consent Duration

137. Section 123B of the RMA specifically addresses the duration of consent for renewable energy or long-lived infrastructure. This section requires that a resource consent authorising a renewable energy or long-lived infrastructure activity must specify that it is granted for a period of 35 years after the date of commencement of the consent, unless one of the exceptions applies. An application includes an application for a resource consent made under the RMA for the purpose of the FTAA. A period of less than 35 years can only be specified if:⁴⁶
- a. the applicant requests a shorter period; or
 - b. a national environmental standard, a national policy statement, or a national planning standard expressly allows a shorter period; or
 - c. the consent authority decides to specify a shorter period after considering a request from a relevant group⁴⁷ for a shorter period for the purpose of managing any adverse effects on the environment.
138. The Applicant seeks the following consent durations:
- a. CRC262540 (s14) – 3 years
 - b. CRC262541-43 (s13, s15, s15) – 35 years
139. Should the Panel be minded to approve the proposal, CRC considers that these durations are appropriate. With respect to lapsing provisions, for the consents associated with the rock armouring works, the applicant seeks lapse dates equal to the duration. While forecasting suggests the coming three winters will be the critical time for the lowering of Lake Pūkaki; it is possible that the water permit may not be utilised. Providing for extending lapse dates ensures that rock armouring could continue to be carried out into the future if or when provided for within existing resource consents or utilising the permitted activity pathway in WAP.

SECTION F: WHEN AN APPROVAL MUST OR MAY BE DECLINED

140. FTAA section 85 sets out when a panel must or may decline an approval. CRC has not identified any reasons that the Panel must decline any approval sought.
141. There are a number of potential adverse environmental effects arising from this proposal; however, when considering the level of effects provided for under permitted activity rules (Rule 17 WAP and Rule 5.158 CLWRP), the scale of the effects is likely to be diminished.

⁴⁶ RMA, s 123B(2)(a)-(c)

⁴⁷ Relevant group is defined as a group who may be or is required to be involved in processes under this Act that relate to planning documents or resource consents by virtue of any Treaty settlement, the Ngā Rohe Moana o Ngā Hapū o Ngāti Porou Act 2019, or the Marine and Coastal Area (Takutai Moana) Act 2011

142. CRC does not consider that the proposal would result in any adverse effect that is sufficiently significant so as to be out of proportion to the project's regional benefits.

SECTION G: CONCLUSIONS

143. CRC considers that the Application:

- a. Meets purpose of the Act, in that it is a development project with significant regional benefits; and
- b. Will likely not result in any adverse effect that is sufficiently significant to be out of proportion with the regional benefits, provided that recommended changes to proposed conditions are adopted.

SECTION H: APPENDICES

Appendix 1: Summary of potential effects - CRC review of document and recommendations

Appendix 2: Proposed conditions

Appendix 3: Groundwater technical expert advice

Appendix 4: Lake Water Quality and Ecology technical expert advice

Appendix 5: Terrestrial biodiversity (including wetlands, avifauna)

Appendix 6a: Air Quality technical expert advice - rock armouring

Appendix 6b: Air Quality technical expert advice - lake lowering

Appendix 7: Landscape technical expert advice

Appendix 8: Hydrology technical expert advice

Appendix 1: Summary of potential effects - CRC technical review

Applicant's assessment summary	CRC technical assessment summary	Suggested solutions
Groundwater – refer to Appendix 3 for full advice provided by Kate Bailue, Environment Canterbury Senior Scientist		
<p>Applicant has provided an assessment on localised hydrogeological conditions, they have reviewed scientific reports and incorporated data to inform a conceptual groundwater model.</p> <p>The substantive application has made some assumptions these are:</p> <p>It is assumed that the aquifers near the lake are primarily driven by gravity and therefore likely follow topographic gradients. The information and assessment presented within the substantive application rely on secondary information (bore location, levels, geological logs) and on the accuracy of Canterbury Maps, specifically elevation information, and information pertaining to bores.</p> <p>The Applicant provided an assessment of groundwater users which focused on four active domestic bores within 500 m of the lake margin, with their analysis showing these are unlikely to be directly hydraulically connected to the lake due to elevation differences and the geology present.</p>	<p>Ms Bailue states that she generally agrees with the applicant's groundwater conceptual model, description of the existing environment, including climate, hydrology, geology, hydrogeology and topography of the area that surrounds Lake Pūkaki. Ms Bailue also acknowledges that historic groundwater information around Lake Pūkaki is limited.</p> <p>Ms Bailue had some initial concerns regarding the 500m cut off assessment of the four identified domestic wells, however after direct discussions with GHD groundwater technical team a 500 m cut off distance for assessing potentially affected wells was agreed. The wells have been excluded based on having water levels below 510m RL, geology limit hydraulic connection.</p> <p>Ms Bailue further notes that Applicant describes there are 17 wetlands connected to Lake Pūkaki. Most wetlands were assessed as having limited hydrological connectivity. However, the Tasman River Delta wetland was assessed as having a 'high' hydrological</p>	<p>CRC has not recommended conditions in relation to groundwater aspects of this proposal. Monitoring of interactions between groundwater, surface flows and lake levels across the Tasman Delta would be a significant undertaking and subject to other external factors such as seasonal rainfall and snowmelt.</p> <p>Dr Jack provides comments on potential effects on terrestrial biodiversity values of the Tasman Delta.</p> <p>Ms Bailue's comments echo that of Dr Bayer whereby ensuring the lake levels are not drawn down for extended periods would be beneficial to the environment. Please note comments made in other effects summaries in relation to consideration of such mitigation measures with respect to onerous conditions.</p> <p>There may be some residual effects on wetlands in the Tasman Delta that remain unmitigated.</p>

<p>The Applicant concludes that temporary lowering of lake levels will result in negligible groundwater effects, including an impact on groundwater as a result of temporary lake lowering for wetland habitats. In which they describe that these wetlands are subject already to large fluctuations between 518 m RL – 535 m RL.</p> <p>The Applicant goes on to describe that the Tasman Delta wetland is dominated by surface water and likely acts as an interconnected braided fan. Lowering the lake level is unlikely to materially change the groundwater inputs from the lake margins into the delta itself.</p>	<p>connectivity to the lake because the delta interacts with the lake at 525 m RL. Of the 17 wetlands, only the Tasman River Delta was assessed as very high ecological value.</p> <p>Ms Bailue concluded that given the relatively short duration (up to 39 days) of operating the lake below 518 m RL and limited wetland hydrological connection, she agrees with the Applicant that for most wetlands the level of effect is likely to be low.</p> <p>However, she is unsure about how the Tasman Delta hydrology could be impacted by the proposal. Given the high hydrological connectivity to the lake and lack of information regarding its specific hydrology it is difficult to assess its potential impact.</p>	
<p>Lake Water Quality and Ecology - refer to Appendix 4 for full advice provided by Dr Tina Bayer, Environment Canterbury Senior Scientist</p>		
<p>The Applicant has provided an Ecological Impact Assessment which includes an effects assessment against freshwater ecology, lake ecology and associated water quality aspects⁴⁸. This report is based mostly on desktop assessment and some field surveys, but also relies on information gathered from previous technical reports by NIWA and Boffa Miskell.</p>	<p>Dr Bayer is in general agreement regarding the applicant’s description of the existing environment (climate, hydrology, water quality and aquatic ecology) and that fish passage into the tributaries is unlikely to be impeded</p> <p>However, Dr Bayer notes that there is an unusual population of exceptionally large, un-</p>	<p>Dr Bayer considers the following mitigation measures would address her concerns relating to extended periods of lake drawdown ecosystem acclimatisation:</p> <ul style="list-style-type: none"> a. conditions to ensure drawdowns below 518m RL are infrequent if possible occur only for a few months and occur very rarely. b. drawdown speeds should be controlled to allow some acclimatisation, ramping rates

⁴⁸ Appendix M Ecological impact assessment Lake Pūkaki

<p>The Applicant identifies that the lake contains moderate to high ecological value littoral zones in addition to a moderate value fish community, also noting that the ecological function of the lake is heavily linked to lake level variability.</p> <p>The application notes that there is a small effect to water quality in regard to disturbing and mobilising sediment in relation to construction of rock armouring and dam resilience works. In addition, the Applicant notes that as a result of lower lake levels from this proposal there would be an effect on existing littoral zones and fish community, in which they consider to be an overall low effect because the existing environment is dynamic and resilient and often deals with lake level fluctuations.</p>	<p>pigmented kōaro of significant scientific and conservation interest which she considers is not taken into account when describing the fish community as only moderate value.</p> <p>Further Dr Bayer states in her view that the level of assessment into effects on near shore/shoreline and aquatic communities has not been assessed in sufficient detail to determine the level of effects from this proposal.</p> <p>Lastly Dr Bayer notes that the ecological freshwater effects used to model prediction of up to approximately 39 days between 2026 and 2028, to assess impacts on littoral zones and fish communities is not an assessment of the impacts of the worst-case scenario.</p> <p>She further notes that the Ecological Impact Assessment report seems to suggest that an additional 5m of water level variability is not going to make a difference or reduce littoral habitat any further, Dr Bayer disagrees with this assessment.</p> <p>Dr Bayer initially raised concern regarding the absence of any water quality monitoring/trigger conditions relating to the</p>	<p>not exceeding ability of aquatic fauna to migrate.</p> <p>Dr Bayer also comments that the water permit duration should not exceed 3 years nor any ability for it to be extended. There is no ability to imposing a moving duration.</p> <p>CRC notes that any conditions to restrict the drawdowns below 518m RL to a specific timeframe such as a few months a year and or limit the drawdown speeds would defeat the purpose or intent of the application that has been made. As such when considering this technical advice against s83 FTAA, imposing such a condition would be onerous and against the intent of the application sought by Meridian.</p> <p>As such, the proposal is likely to have adverse effects on the Lake Pūkaki aquatic ecosystem. Given the modelling proposed, it is likely (but not guaranteed) that the scale of adverse effects would be less than the worst-case scenario anticipated by PC1.</p> <p>ESCP to be required as a condition on appropriate consents (included in Appendix 2).</p>
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	<p>works in Lake Pūkaki and discharge of contaminants to water. Meridian provided an updated Erosion and Sediment Control Plan (ESCP) which includes measures to address these concerns.</p> <p>Dr Bayer was not available to review these changes to the ESCP, as such her colleague and Team Leader Ms Shirley Hayward reviewed the ESCP providing the following advice:</p> <p>I agree with Dr Bayer’s recommendation regarding monitoring and limiting sediment plumes to avoid effects on littoral zone. I see the draft Erosion and Sediment Control Plan (dated 16th March) included in Section 5 a suite of principals that aim to minimise sediment discharges, as well as visual clarity and TSS monitoring requirement and triggers set out in section 6.1 and 6.2. I consider these adequately address this issue raised by Dr Bayer.</p>	
<p>Terrestrial biodiversity (including wetlands, avifauna) – refer to Appendix 5 for full advice provided by Dr Jean Jack, Environment Canterbury Team Leader Land Ecology</p>		
<p>The substantive application provided a desktop assessment and high-level field survey in order to determine the ecological values at the site. Further supported by previous ecological information and reports by NIWA and Boffa</p>	<p>Dr Jack considers that the potential effects are of a cumulative nature in relation to the wider management of lake levels by Meridian. Therefore, the level of effect of the proposed</p>	<p>Dr Jack suggests the following mitigations to address her concerns:</p> <ul style="list-style-type: none"> a. ensure drawdowns below 518m RL are infrequent, not of a rapid rate and,

<p>Miskell, notably the Boffa Miskell (2011) report and information provided for PC1 of the WAP.</p> <p>The Applicant identifies that wetland ecological values surrounding Lake Pukaki range from moderate to very high, and that the terrestrial habitat in the works area to be low-value and largely unsuitable for native avifauna nesting, resulting in no direct impacts expected for birds.</p> <p>The Ecological Impact Assessment (EclA) considered very low to low level effects might occur from the proposed lowering of the lake to 513m.</p>	<p>drawdown may compound to result in higher levels of effect than assessed by the EclA for wetlands or freshwater avifauna.</p> <p>Further Dr Jack is in agreement with the Applicant regarding potential adverse impacts on wetlands from the proposed eased access of lake water level include changes to wetland and wetland plant extent and condition, and potential modification of resources for wetland/riverine-associated birds. In particular an overall very low to low level of impact is expected for wetlands and wetland/riverine birds.</p> <p>However Dr Jack notes that while she agrees with the applicant's conclusions regarding the potential level of effect, she does not agree that any low-level effects would not require effects management - that efforts to address low-level effects should be taken where feasible.</p> <p>Dr Jack further notes that she is aligned with the advice of Dr Tina Bayer, which acknowledges that if the drawdown to 513 m RL happens infrequently and for short periods of time as outlined in the application, then risks to ecology (including wetlands and</p>	<ul style="list-style-type: none"> b. drawdowns timed if possible to avoid more sensitive times of the year for avifauna – June to December. c. Provisions to monitor At Risk and Threatened plant species at the Tasman Delta when lake levels drop below 518m RL. Results of monitoring should be provided to CRC and DOC d. Provisions to monitor Kaki when lake levels drop below 518m RL. Acknowledge a private agreement is held with DOC in relation to such monitoring however should be included as conditions of consent for visibility and to ensure data shared with CRC. e. Consistency with EC conditions relating to Kahu Ora. <p>CRC notes that any conditions to restrict the drawdowns below 518m RL to a specific timeframe such as a few months a year and or limit the drawdown speeds would defeat the purpose or intent of the application that has been made. As such when considering this technical advice against s83 FTAA, imposing such a condition would be onerous and against the intent of the application sought by Meridian.</p> <p>As such, the proposal is likely to have adverse effects (albeit a low level of effect) on the Tasman Delta on threatened or at risk species of birds and vegetation in particular. While monitoring does not mitigate effects, it would provide useful information</p>
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	<p>avifauna) are reduced compared to longer, more frequent drawdowns</p>	<p>to test the conclusions made by the applicant's technical assessments.</p> <p>Further while CRC acknowledges any private agreement held with DOC in relation to Kaki monitoring on the Tasman Delta during times of lowered lake levels; this should also be conditioned into this proposal to ensure certainty that monitoring will be undertaken.</p> <p>With respect to consistency with conditions imposed by Environment Court, CRC notes no compensation programme is proposed directly on this consent; however new conditions 1 and 2 recommended in Appendix 2 for water permit CRC262540 ensure the important link between consents is identified.</p>
<p>Air Quality - refer to Appendix 6a (rock armouring) and Appendix 6b (lake lowering) for full advice provided by Ms Suzanne Cawood, Senior Environmental Scientist and Mr Mathew Noonan, Senior Associate – Environmental Science – Beca Limited (External)</p>		
<p>The Applicant provided assessment against air quality effects in relation lake shore wind erosion (operational) and riprap placement (construction) in their application. The application provides a qualitative assessment that considers Frequency, Intensity, Duration, Offensiveness and Location (FIDOL) regarding dust.</p> <p>The Applicant concludes that with mitigation proposed, air quality effects from both construction and lake lowering are manageable and temporary effects are primarily relating to</p>	<p>Initial pre-application review before the applicant lodged their substantive application raised concerns regarding the dispersion modelling and inconsistencies. As such expert conferencing was undertaken between the Applicants specialist and CRCs specialist in November 2025. Changes to the application that resulted from this included largely removing dispersion modelling and reliance upon this modelling in the application.</p>	<p>Ms Cawood and Mr Noonan have reviewed the air discharge conditions provided and the updated Dust Management Plan (DMP), they wish to make the following recommendations:</p> <p>Conditions</p> <ol style="list-style-type: none"> a. Split out loading and unloading of rock at stockpiles and Usage of haul roads/tracks by vehicles within the conditions. b. Provide a value for minimum water storage on site (xx Litres) to meet their water

<p>short-term construction dust and wind erosion events.</p> <p>The applicant indicates that concentrations of PM10 and PM2.5 are predicted to exceed air quality standards at some sensitive receptors. These results would suggest that there may be an adverse impact if the lake levels were to be dropped from 518m to 513m.</p>	<p>Ms Cawood and Mr Noonan disagree with a number of conclusions presented in the assessment including specific receptors, lack of measures and cumulative effects, and assessment of PM10 / PM2.5 exposure vs the National Environmental Standards for Air Quality (NESAQ).</p> <p>Ms Cawood and Mr Noonan note that the move from a modelling assessment to qualitative, uncertainty-heavy assessment for the dust risk is more appropriate.</p> <p>Further Ms Cawood and Mr Noonan note that while they agree with the FIDOL for the long term dust storm effects, FIDOL assessment for events that would occur for a short period of time should also be considered.</p> <p>They further note that dust nuisance effects has not been fully assessed in the proposal. It should be expanded upon to be consistent with Schedule 2 of the Canterbury Air Regional Plan (CARP) and the MfE's 'Good Practice Guide for Assessing and Managing Dust' (GPG Dust).</p> <p>The comments above are a high-level summary of this technical advice. CRC recommends the Panel refers to Appendices</p>	<p>suppressing needs for the rock armouring works.</p> <p>c. Need to delineate what the site boundary is on a plan to be referred to in conditions that mention site boundary</p> <p>DMP</p> <p>a. The DMP should address the lowering of the lake and subsequent wind blown dust likely to occur from the additional exposed lake shore as well as the wind blown dust from the construction site.</p> <p>b. The specific dust mitigation measures need to be stated in the DMP to control effects on receptors that are in close proximity to exposed areas of the shore or construction activities.</p> <p>c. The list of dust emission sources needs to include the construction set up and break down activities that may cause dust, including the construction of haul roads, work benches.</p> <p>d. Provide a defined site boundary within the DMP.</p> <p>e. Monitoring should be conducted at the start of the project, before or when construction activities begin rather than "<i>Should it become evident that continuous monitoring is required at the site</i>". Trigger levels should be set for when management responses are required.</p>
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	<p>6a and 6b and considers the full technical advice on this matter as Ms Cawood and Mr Noonan provide a detailed breakdown of areas of concern. In essence they consider there is insufficient information to determine full scale of potential effects on sensitive receptors. Further they indicate the draft Dust Management Plan requires further work before it could be certified.</p>	<ul style="list-style-type: none"> f. The DMP mentions that no dust generating activities should occur during '<i>adverse weather conditions</i>' but does not define these. This should be refined to provide guidance to the contractor/site staff working under the DMP what triggers this. g. DMP states that "<i>Regular watering of access roads will be undertaken if rainfall is insufficient</i>" insufficient should be defined to understand what the triggers are. h. Recommendation is that DMP provides the quantity of water that needs to be stored on site for dust suppression. i. Amend to provide for how the DMP will manage out of Hours dust emissions. <p>With respect to effects of dust around Lake Pūkaki (beyond the area of rock armouring and associated activities), arising from the lowering of the lake, CRC acknowledges other s53 parties may suggest mitigation measures they consider appropriate.</p> <p>CRC considers many of the concerns raised in this technical advice may be able to be addressed by the applicant through further supporting information to the Panel, through discussions on the site visit, through an amended draft DMP and through s53 comments from adjacent landowners (it may be that no comments raising concern are received).</p> <p>CRC understands Meridian are working on providing for a DMP with respect to dust from the</p>
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		<p>lowering of lake Pūkaki. As such, while some initial conditions (condition 10 onwards) have been proposed for CRC262540 by CRC; these are to a certain extent ‘placeholders’ anticipating further work on these to be provided by Meridian.</p> <p>CRC considers the details of the DMP for such an effect may need to be developed by the Panel after considering the above.</p>
<p>Landscape – refer to Appendix 7 for full advice provided by Chris Glasson, Senior Consultant Landscape Architect</p>		
<p>The Applicant provided a detailed landscape assessment⁴⁹; this assessment includes a record of photographic viewpoints at different locations around Lake Pūkaki from 2025 and comparison to historic photos from 2012. The application also provides a comparative photo study of the southern area of Lake Pūkaki between two different water levels at two different times of the year 531 m RL in January 2025 and 523 m RL in September 2025. The assessments are also supported by visual simulation graphics to demonstrate what the lake level would look like at 513 m RL to 518 m RL.</p> <p>The landscape assessment of the Applicant focusses on two areas which will have changes associated with Rock armouring (dam resilience works), and changes since PC1. PC1 provided a detailed Landscape and Visual</p>	<p>Mr Glasson’s advice was provided on the 19th December 2026 however this review was underway while agreement was being reached between CRC and Meridian regarding the area of proposed works that would be subject to permitted activity Rule 5.158. No further information was provided that warranted further review. In order to ensure efficient costs charged to this proposal it was decided not to ask Mr Glasson to amend his advice, rather key relevant matters that still apply to the proposal have been included in this summary.</p> <p>Mr Glasson states that he is in agreement with the Applicant that the landscape effects can be average, beneficial, or neutral and the NZILA 7-point scale can be utilised. He also agrees with the methodology of conducting site visits made to the sites when the lake</p>	<p>CRC notes that none of the proposed works will trigger consent from Mackenzie District Council (MDC). The Mackenzie District Plan specifically considers implications on natural character and landscape values of Lake Pūkaki and the Mackenzie Basin.</p> <p>With respect to the solutions for outstanding areas of concern in Table 2 of Mr Glasson’s advice, the following are appropriate for consideration:</p> <ul style="list-style-type: none"> a. Exposure of shoreline and coarse lake base material – Mr Glasson suggests grading the wider shoreline to integrate with existing. Import gravel material to match if necessary. This activity in itself would trigger resource consent requirements under s13 RMA, have potential to generate dust and it may not be practical to match gravel materials given lake sediments also

⁴⁹ [Appendix N File 1 of 2 Meridian Lake Pukaki FTC SA Landscape 05112025](#) and [Appendix N File 2 of 2 Meridian Lake Pukaki SA graphic attachments 05112025](#)

<p>Assessment which the Applicant considers this as a landscape baseline.</p> <p>The application categorises landscape effects into three categories Adverse (negative), Beneficial (positive) and Neutral (benign).</p>	<p>levels were at different stages to consider the changes for viewing areas, roads, shorelines, and the dam infrastructure.</p> <p>However Mr Glasson would like to highlight that there are some outstanding areas of contention, these relate to greater clarity between the landscape visual effects in regards to natural character and amenity to inform what contributes to something being considered as moderate or high values.</p> <p>Mr Glasson notes that the application is light in terms of delving into details on what the level of effect that will occur on the natural character of the shorelines. Mr Glasson disagrees with the characterisation of calling Lake Pūkaki a “working lake” and notes it means different things to many people be it recreational, biodiversity, providing uninterrupted views, or being part of an ONFL. Further he notes the comment of “<i>Utilitarian Landscape Character</i>” could be disputed give the ONFL status of the Lake, also that the components of the Lake Pūkaki landscape are far from being utilitarian.</p>	<p>present. Further, as lake level rises and potentially years pass before being lowered again, works would need to be repeated each time the lake is lowered. Such works would be beyond the scope of this proposal and onerous.</p> <ul style="list-style-type: none"> b. Eroded embankments – defer to Mr Cope’s advice and recommended condition 9 ofCRC262540. c. Loss of biophysical characteristics. Mr Glasson suggests retaining areas which have biophysical characteristics. It is not possible to adjust the lake level in specific parts of the Lake. <p>With respect to rock armouring works, CRC considers much of the works that would have potential to impact landscape values are in fact provided for by permitted activity Rule 5.158.</p> <p>With respect to effects on landscape values associated with lowered lake levels, these may be adverse, beneficial or neutral. PC1 provides for the lake to be drawn down to these levels as a permitted activity however in the scenario that there is an Declared Electricity Supply Emergency.</p>
<p>Hydrology - refer to Appendix 8 for full advice provided by Daniel Clark, Environment Canterbury Senior Scientist</p>		

<p>The applicant provided a desktop based hydrological assessment with the application.</p> <p>The hydrological regime of Lake Pūkaki is influenced by the Waitaki Power Scheme (WPS), with lake levels actively managed between 518.0 m RL and 532.5 m RL under normal operations, and proposed to extend down to 513.0 m RL under this application.</p> <p>The applicant has identified within the application that lake levels and hydrology are largely driven by climatic variability, including inflows from glacial melt, rainfall, and seasonal snowmelt.</p> <p>The applicant provided further quantitative modelling (91 year dataset) assessment post lodgement of the substantive application, which highlighted modelling outcomes with and without access to contingent storage at lake Pūkaki</p>	<p>The applicant provided a desktop based hydrological assessment with the application.</p> <p>The hydrological regime of Lake Pūkaki is influenced by the Waitaki Power Scheme (WPS), with lake levels actively managed between 518.0 m RL and 532.5 m RL under normal operations, and proposed to extend down to 513.0 m RL under this application.</p> <p>The applicant has identified within the application that lake levels and hydrology are largely driven by climatic variability, including inflows from glacial melt, rainfall, and seasonal snowmelt.</p> <p>The applicant provided further quantitative modelling (91 year dataset) assessment post lodgement of the substantive application, which highlighted modelling outcomes with and without access to contingent storage at lake Pūkaki</p>	<p>The applicant provided a desktop based hydrological assessment with the application.</p> <p>The hydrological regime of Lake Pūkaki is influenced by the Waitaki Power Scheme (WPS), with lake levels actively managed between 518.0 m RL and 532.5 m RL under normal operations, and proposed to extend down to 513.0 m RL under this application.</p> <p>The applicant has identified within the application that lake levels and hydrology are largely driven by climatic variability, including inflows from glacial melt, rainfall, and seasonal snowmelt.</p> <p>The applicant provided further quantitative modelling (91 year dataset) assessment post lodgement of the substantive application, which highlighted modelling outcomes with and without access to contingent storage at lake Pūkaki</p>
<p>Herpetofauna (Lizards) – reviewed by Dr Mandy Tocher, Herpetologist. Note no technical appendix has been provided in relation to this matter - Lizard Expert NZ (External)</p>		
<p>The applicant has included a desktop ecological assessment, then later a field survey was provided post lodgement to determine the ecological value of the proposed works in relation to lizard habitat.</p>	<p>While CRC initially engaged technical advice on this matter, following clarification of works areas and agreement on permitted activities, CRC considers impacts on lizards is a matter to be addressed by DOC in relation to the</p>	<p>Consider best addressed by DOC.</p>

<p>The assessment has determined that native lizards inhabit the site surrounding the shore and land adjacent to the proposed dam armouring works which likely includes three threatened species the Lakes, Mackenzie and Scree Skink. As such a wildlife permit is sought under the Wildlife Act 1953, as removing rocks from the stockpile will be used for the dam armouring works. These rocks have naturalised to become lizard habitat.</p> <p>The Applicant states that a high level salvage approach will be used under their Lizard Management plan where threatened species are identified.</p> <p>The Applicant further notes that potential effects on lizards include disturbance, injury or incidental mortality during the construction phase, however they consider operating under their Lizard Management Plan and the conditions of their wildlife permit sought that effects on lizards will be low and not significant.</p>	<p>Wildlife Permit also being sought as part of this proposal.</p> <p>While the lowering of the lake is unlikely to affect existing lizard habitat, the exposure of any rocky lakebed materials may encourage lizards to habitat lower areas of the banks of the lake. Rising lake levels could pose an issue to lizards habituating these lower areas of bank/lakebed. Other experts have raised concerns with the 'speed' at which lake levels may change.</p>	
<p>Lake Geomorphology – reviewed by Justin Cope, Environment Canterbury Principal Science Advisor, however detailed advice not considered necessary</p>		
<p>The Applicant has provided a report to review and summarise lake processes and geomorphology of Lake Pūkaki relevant to the proposed drawdown of lake levels below 518.0</p>	<p>The Applicant has provided a report to review and summarise lake processes and geomorphology of Lake Pūkaki relevant to the proposed drawdown of lake levels below</p>	<p>The Applicant has provided a report to review and summarise lake processes and geomorphology of Lake Pūkaki relevant to the proposed drawdown of lake levels below 518.0 m RL and proposed rock</p>

<p>m RL and proposed rock armouring works. The geomorphology report was largely produced by desktop assessment and based on available project information like design reports and secondary publicly available information including aerial imagery, and historic survey data.</p> <p>The Applicant notes in their report that this assessment of Lake Pūkaki processes and geomorphology is not intended to be an exhaustive academic assessment and that the assessment does not include numerical or physical modelling of lake processes.</p>	<p>518.0 m RL and proposed rock armouring works. The geomorphology report was largely produced by desktop assessment and based on available project information like design reports and secondary publicly available information including aerial imagery, and historic survey data.</p> <p>The Applicant notes in their report that this assessment of Lake Pūkaki processes and geomorphology is not intended to be an exhaustive academic assessment and that the assessment does not include numerical or physical modelling of lake processes.</p>	<p>armouring works. The geomorphology report was largely produced by desktop assessment and based on available project information like design reports and secondary publicly available information including aerial imagery, and historic survey data.</p> <p>The Applicant notes in their report that this assessment of Lake Pūkaki processes and geomorphology is not intended to be an exhaustive academic assessment and that the assessment does not include numerical or physical modelling of lake processes.</p>
<p>Civil and Dam Engineering– reviewed by Mr Imteaz Bhuiyan, Principal Engineer and James Burr, Principal - Geotechnical Engineering in regards to Dam engineering and Ms Jennifer Hart, Senior Technical Director regarding Civil engineering – Beca Limited (External)</p>		
<p>The Applicant provided an engineering assessment for both the dam riprap design and also the construction methodology. The assessment includes wave modelling (fetch, wind speed and height) and calculation for rip rap. The assessment heavily relies on a previous Wave and Armouring Assessment Damwatch from 2013.</p> <p>The methodology outlines how construction will be undertaken and at what stages things will be done in terms of site preparation, stockpiling, and placement of rock armouring.</p>	<p>The Applicant provided an engineering assessment for both the dam riprap design and also the construction methodology. The assessment includes wave modelling (fetch, wind speed and height) and calculation for rip rap. The assessment heavily relies on a previous Wave and Armouring Assessment Damwatch from 2013.</p> <p>The methodology outlines how construction will be undertaken and at what stages things will be done in terms of site preparation, stockpiling, and placement of rock armouring.</p>	<p>The Applicant provided an engineering assessment for both the dam riprap design and also the construction methodology. The assessment includes wave modelling (fetch, wind speed and height) and calculation for rip rap. The assessment heavily relies on a previous Wave and Armouring Assessment Damwatch from 2013.</p> <p>The methodology outlines how construction will be undertaken and at what stages things will be done in terms of site preparation, stockpiling, and placement of rock armouring.</p>

<p>The applicant concludes that the riprap armouring will protect the Main Dam and abutments from wave erosion associated with lowering lake levels.</p>	<p>The applicant concludes that the riprap armouring will protect the Main Dam and abutments from wave erosion associated with lowering lake levels.</p>	<p>The applicant concludes that the riprap armouring will protect the Main Dam and abutments from wave erosion associated with lowering lake levels.</p>
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