

IN THE MATTER OF

The Resource Management Act 1991

AND

IN THE MATTER OF

Application by Meridian Energy Limited for water permits and discharge permits for activities associated with the construction and maintenance of a new channel, parallel to the existing channel in the Waiiau Arm, Lake Manapōuri.

REPORT AND DECISION OF THE HEARING PANEL

Sharon McGarry and Lyndal Ludlow

5 November 2024

Heard on the 17-18 September 2024,
In the Council Chambers of Environment Southland,
corner of North Road and Price Street, Invercargill.

It is the decision of the Southland Regional Council, pursuant to sections 104, 104B and 104D, and subject to Part 2 of the Resource Management Act 1991, to **GRANT** resource consent application APP-20233670 by Meridian Energy Limited for a consent term of 25 years, subject to the conditions set out in Appendix 1 of this decision.

Representations and Appearances

Applicant:

Mr Stephen Christensen, Counsel

Mr Andrew Feierabend, Statutory Advocacy Strategy Manager, Meridian Energy Limited

Dr Dougal Clunie, Associate Principal Engineer, Damwatch Engineering Limited

Dr Leigh Bull, Ecologist (ornithology specialist), Blue Green Ecology Limited

Dr Jo Hoyle, River Geomorphologist, NIWA

Dr Kristy Hogsden, Periphyton Ecologist and Group Manager (Freshwater Ecology), NIWA

Dr Mike Hickford, Freshwater Ecologist, NIWA

Mr Scott Hooson, Ecologist and Associate Partner, Boffa Miskell Limited

Dr Martin Single, Director and Principal Consultant, Shore Processes and Management

Mr Daniel Murray, Technical Director – Panning, Tonkin & Taylor

Tabled statement of evidence

Mr Brydon Hughes, Hydrogeologist and Director, LWP Limited

Submitters:

Real Journeys Limited

- Ms Fiona Black

Waiau Working Party

- Ms Claire Jordon
- Dr Susan Bennett
- Mr Maurice Rodway
- Mr Roger Hodson

Te Rūnanga o Ōraka Aparima

- Mr Dean Whaanga, Kaupapa Taiao Kaiwhakahaere, Te Ao Mārama Incorporated
- Ms Stevie-Rae Blair, Kaitohutohu Kaupapa Taiao, Te Ao Mārama Incorporated

Ms Uli Sirch

Mr Chris Wood

Section 42A Reporting Officer and Technical Reviewers:

Ms Bianca Sullivan, Director and Environmental Planner, Environment Matters Limited

- **Mr Ramon Strong**, Technical Director Water Resources, Pattle Delamore Partners Limited

- **Dr Greg Burrell**, Freshwater Ecologist and Director, Instream Consulting
- **Dr Mike Thorsen**, Principal Ecologist and Director, Whirika Consulting Limited

BACKGROUND AND PROCEDURAL MATTERS

1. This is the report and decision of the Hearing Panel comprising Ms Sharon McGarry (Chair) and Lyndal Ludlow. We were delegated¹ the necessary functions and powers by the Southland Regional Council, Environment Southland (**ES** or **the Council**) to hear and decide an application by Meridian Energy Limited (**Meridian** or **the Applicant**) pursuant to the Resource Management Act 1991 (**RMA** or **the Act**) for resource consents to construct and maintain a new channel, parallel to the existing channels in the Waiau Arm above the Manapōuri Lake Control Structure (**MLCS**) to facilitate the provisions of flushing flows to the Lower Waiau River (**LWR**) from the operation of the Manapōuri Power Scheme (**MPS**). The application is referenced by the Council as APP-20233670 and is referred to as the Manapōuri Lake Control Structure Improvement Project (**MLC:IP** or **the Project**) by Meridian.
2. The application was lodged with the Council on 21 December 2023.
3. A workshop was held on 16 February 2024 with the Meridian application team and the ES processing team attending to identify key issues and questions. Meridian provided written response to the matters identified by the ES processing team on 15 March 2024.
4. The application was publicly notified on 18 March 2024, at the request of the Applicant. A total of 14 submissions were received. Three submissions were in support, seven were in opposition and four were neutral to the application, with all submitters indicating they wished to be heard.
5. The Council requested further information under section 92 of the Act on 13 May 2024. The Applicant provided a response to the further information request on 4 June 2024.
6. Two prehearing meetings pursuant to section 99 of the RMA were held on 19 June 2024 and 24 July 2024. Pre-hearing reports were provided by the independent chair of the meetings².
7. We have had regard to these pre-hearing reports in making our decision³. We note the concerns of the Waiau Working Party (**WWP**) that the second pre-hearing report did not accurately record the matters raised and had not included the request to provide an elevated area adjacent to the new channel for nesting and feeding habitat for black billed gulls and other endangered species.
8. Prior to the hearing, a report was produced pursuant to section 42A of the Act (**s42A Report**) by the Council's Reporting Officer, Ms Bianca Sullivan, an Environmental Planner with Environment Matters Limited. The s42A Report provided an analysis of the matters requiring consideration and included technical reviews of the application by Mr Ramon Strong (Attachment 1 - relating to physical effects and alternatives), Dr Mike Thorsen (Attachment 2 - relating to terrestrial ecology, wetlands and avifauna), and Dr Greg Burrell (Attachment 3 - relating to freshwater ecology and water quality). The s42A Report noted that the initial

¹ RMA section 34A

² RMA section 99(5)

³ RMA section 99(7)

- concerns regarding the application had been resolved through further information and additional mitigation. It recommended the consent sought should be granted for 25 years, subject to conditions.
9. The s42A Report, the Applicant’s evidence and submitter evidence were pre-circulated prior to the hearing in accordance with section 103B of the Act. This evidence was pre-read by us prior to the hearing and was ‘taken as read’ at the hearing.
 10. Prior to the commencement of the hearing, we received an email from the Director-General of Conservation (dated 30 August 2024) advising of the withdrawal of her request to be heard. However, the submission remains ‘live’ and we have considered the matters raised in making our decision.
 11. During the hearing, we received an email advising Landcorp Farming Limited/Pāmu Farms of New Zealand had withdrawn its submission.
 12. We undertook a site visit on 16 September 2024. We were driven to the site by Ms Catherine Ongko, Consent Co-ordinator with ES and Ms Chris Thomson, Environmental Manager with Meridian, escorted us around the Project site. We record here that Ms Thomson was not involved in the hearing.
 13. The hearing commenced at 9:00 am on 17 September 2024 and evidence was heard over the course of two days. The hearing was adjourned at 2:25 pm on 18 September 2024 to enable further refinement of the proposed consent conditions addressing matters raised during the hearing, the circulation of the revised conditions to the parties for written comment and the subsequent provision of the Applicant’s right of reply.
 14. We received the revised set of proposed conditions on 25 September 2024 which identified any outstanding matters of disagreement between the Applicant and the Reporting Officer.
 15. Submitters were given five working days to provide feedback on the revised proposed conditions. Written comments were received from the WWP. We have considered these written comments in making our decision.
 16. We received the Applicant’s written right of reply and its final set of proposed consent conditions on 8 October 2024.
 17. We closed the hearing on 14 October 2024.

THE APPLICATION

18. The Tonkin and Taylor Limited report titled ‘Proposed Manapōuri Lake Control Improvement Project – Resource Consent Applications and Assessment of Effects on the Environment’ dated December 2023 (**AEE**) describes the application. It included the following assessments as appendices:
 - (a) Damwatch Engineering report titled ‘Proposed Manapōuri Lake Control Improvement Project. Construction Planning – Proposed Methodology’ dated 19 December 2023 (**Appendix C**)
 - (b) NIWA report titled ‘Manapōuri Lake Control Flow Improvement Project. Assessment of Environmental Effects: Freshwater Ecology’ dated December 2023 (**Appendix D**);

- (c) NIWA report titled 'Assessment of risk of phytoplankton blooms in the Waiau Arm immediately upstream of the MLC following excavation of a new parallel channel' dated December 2023 (**Appendix E**);
 - (d) Boffa Miskell report titled 'Manapōuri Lake Control Improvement Project. Wetland Assessment Report' dated 15 December 2023 (**Appendix F**);
 - (e) Brydon Hughes report titled 'Meridian Energy. Manapōuri Lake Control Improvement Project. Groundwater Assessment' dated October 2023 (**Appendix G**);
 - (f) Boffa Miskell report titled 'Manapōuri Lake Control Improvement Project. Landscape Effects Assessment' dated 13 November 2023 (**Appendix H**);
 - (g) Boffa Miskell 'Proposed Manapōuri Lake Control Improvement Project. Landscape Effect Assessment Graphic Supplement' dated November 2023 (**Appendix H**);
 - (h) Marshall Day Acoustics report titled 'MLC Low Improvement Project. Construction Noise Assessment' dated 19 December 2023 (**Appendix I**); and
 - (i) Assessment of key relevant regional planning objectives and policies (**Appendix J**).
19. A summary of the application, background to the application, and a description of the activity were provided in the s42A Report and should be read in conjunction with this decision. We adopt these⁴ for the purposes of our decision.
20. Briefly, the application seeks to improve the conveyance of water from the Waiau Arm to the MLCS for the release of supplementary flushing flows to the LWR to reduce the excessive growth of periphyton (primarily *Didymosphenia geminata* 'Didymo') in the summer period. Condition (7) of resource consent AUTH-206156-V4, for the operation of the MPS, requires implementation of a Protocol for 'voluntary' supplementary flows releases. However, Meridian has had difficulty delivering these supplementary flushing flows due to the physical constraints in the existing channel in the Waiau Arm. The gates of the MLCS were designed to deliver minimum low flows to the LWR and not flushing flows at low lake levels.
21. The application seeks to increase the reliability of providing supplementary flushing flows by constructing a new channel, parallel to the existing channel, to address the identified constriction of flows in the existing channel. The Project avoids excavating the bed of the existing channel and instream works. It is estimated that up to 80-85% of the excavation of the new channel (Stages 1 and 2) will be undertaken 'offline' outside of areas of flowing water, with the remaining excavations involving removal of the material 'plugs' at each end of the new channel (Stage 3).

CONSENTS SOUGHT

22. The application seeks the following resource consents:
- (a) Water Permit to temporarily take, divert and use water to facilitate construction and maintenance activities, including within and in proximity to wetlands and for dewatering, dust suppression, and erosion and sediment control activities;
 - (b) Water Permit to permanently divert surface water into the new parallel channel; and
 - (c) Discharge Permit to temporarily discharge water and suspended sediment to land and water (the Waiau Arm, Mararoa River and Lower Waiau River) for the purposes of facilitating construction and maintenance activities, including within and in proximity to wetlands and for dewatering, dust suppression, and erosion and sediment control activities.

⁴ As provided for in s113(3) of the Act.

23. Consent is also sought under Regulation 47 of the Resource Management (National Environmental Standard for Freshwater) Regulations 2020 (**NES-F**) in relation to vegetation clearance, earthworks and diversion, and discharge of water within an inland natural wetland.
24. The application seeks a 35 year term for the consents sought.

DESCRIPTION OF THE ENVIRONMENT

25. The application documentation and s42A Report accurately described the affected environment and we adopt these descriptions for the purposes of our decision.
26. A Cultural Impact Statement (**CIS**) for the Project was prepared by Te Ao Mārama Incorporated and was appended to their statement of evidence. The CIS sets out the cultural values, rights, and interests of Te Rūnanga o Aparima; and the measures that can be implemented to mitigate effects on those values, rights, and interests.

THE HEARING – SUMMARY OF EVIDENCE

Applicant's Case

27. **Mr Stephen Christensen**, Counsel, conducted the Applicant's case by providing legal submissions on behalf of Meridian and calling nine witnesses.⁵ Mr Christensen's submissions outlined background to the proposal, the MPS, the statutory context, cultural effects, submissions and consent duration. He highlighted the Project addresses the identified constraint to releasing flushing flows to reduce high levels of Didymo accumulation in the LWR in summer months when lake levels are in the lower part of the operating range. He noted a high level of agreement regarding the assessment of environmental effects and conditions of consent. He highlighted the importance of the MPS in providing around 12% of the current electricity needs and the authorisation of its operation and maintenance by the Manapōuri Te Anau Development Act 1963 (**MTADA**) and a variety of existing resource consents.
28. Mr Christensen submitted the application passed both limbs of s104D and that there was no restriction to granting the consents under s107(1)(g) given the 'exceptional circumstances'. He submitted there was acknowledgment that any cultural effects from the operation of the MPS cannot be addressed through this application and need to be addressed in Plan Change Tuatahi⁶ and the re-consenting of the MPS in due course. He noted more reliable flushing flows should improve ecosystem health and functioning in the lower LWR; and that outside the consent framework Meridian was looking to ensure appropriate cultural oversight of the construction work and to enhance cultural values.
29. **Mr Andrew Feierabend**, Statutory Advocacy Strategy Manager for Meridian, provided a written statement of evidence explaining the operation of the MPS and the rationale and need for the new channel. He highlighted the agreement between Meridian and ES regarding the activities authorised under the MTADA and those under the RMA. He outlined the introduction of Didymo to the wider Waiau catchment in 2004; the problems this and other nuisance periphyton causes by smothering macroinvertebrate habitat; the development of the Protocol to provide flushing flows; and difficulties in providing flushing flows in low lake operating levels due to identified

⁵ A tenth witness, Mr Brydon Hughes, provided a statement of evidence but was not called at the hearing given we had indicated prior to the hearing that we had no questions of clarification.

⁶ Implementation of the national objectives framework for the NPS-FM by Environment Southland.

constraints in the existing channel. He described the options evaluated and the development of the parallel channel (Option 6) due to 85% of the works occurring outside the existing channel and the ability to control and manage sediment. He noted maintenance of the new channel was expected to be infrequent involving the removal of relatively small volumes of gravel. He considered the concerns raised by the community at Bluecliffs were out of scope given there was no change to the existing flow regime of the LWR. He considered Rule 5 of the pSWLP should apply given the exception provided for. Attached to his evidence were copies of sections 4 and 4A of the MTADA (Appendix 1), Operating Guidelines for Levels of Lake Manapōuri and Te Anau (Appendix 2), Descriptions of Values and Management Interventions Required for Environmental Protection within Lakes Operating Guidelines for Lakes Manapōuri & Te Anau (Appendix 3), section 6X of the Conservation Act 1987 (Appendix 4), Consent No. 204160 (Appendix 5), and the Protocol (2018) under Condition 7 of Consent No. 206156 (Appendix 6).

30. **Dr Dougal Clunie**, an Associate Principal Engineer for Damwatch Engineering Limited, provided a written statement of evidence outlining the hydraulic modelling used to investigate the constraint on flow releases through the existing channel and excavation of a new channel to increase the conveyance capacity at a wider range of lake levels. He evaluated different construction technologies to achieve a new excavated channel and assessed the potential effects and risks. He outlined the conceptual construction methodology, separated into three stages over a total construction programme of approximately 19 weeks (under normal hydrological conditions); and the general arrangement of the Project site, including the excavation footprint, spoil disposal area, contractor's establishment area, haul road and flood protection bunds. He confirmed the channel design included space for a slipway ramp in consultation with Real Journey Limited. He concluded a new parallel channel would result in the bulk of works (85%) occurring outside of flowing water and minimises the extent and duration of instream works, which significantly minimised the potential for suspended sediment releases to the LWR.
31. **Dr Leigh Bull**, an Ecologist (ornithology specialist) with Blue Green Ecology Limited, provided a statement of evidence addressing potential adverse effects on avifauna species, including disturbance, water quality impacts on foraging, loss of habitat and lighting. She noted the avifauna assemblage included several At Risk or Threatened species (see Table 1 of her evidence) but considered any direct effects on these species would be mitigated by their mobility, preferred locations and timing works to avoid critical periods such as the breeding season. She concluded the overall effect would be 'low to very low', which equates to a minor adverse effect. She considered that the level of adverse effect on birds did not warrant the creation of new nesting habitat such as an island but considered the final form of the channel and bunds would provide habitat for species such as black billed gulls.
32. **Dr Jo Hoyle**, a River Geomorphologist with NIWA, provided a written statement of evidence describing the hydrology and flow variability of the Mararoa River, Waiiau Arm and LWR; and suspended sediment concentrations and deposited fine sediment (**DFS**) in the receiving environment. She highlighted the concentrations of suspended sediment in the Waiiau Arm are generally low given all Mararoa River flows with turbidity greater than 30 NTU⁷ are passed through MLCS to the LWR. She noted the deposition of DFS in the lower Waiiau Arm (900m below the MLCS) and the upper reaches of the LWR was highly variable over time. She considered the potential sediment generation using the proposed construction methodology would be within the range of suspended sediment that comes naturally from the Mararoa during floods. She acknowledged the potential for suspended sediment generated by the

⁷ Nephelometric Turbidity Units

Project to deposit on the bed would be greater given this could occur at times of low flow. She concluded the turbidity limits and DFS limits proposed in the receiving waters were set at levels and for durations aimed to protect all biota from both acute and chronic effects. She noted the highest likelihood of suspended sediment was over a week or two during the Stage 3 breakout period but that these can be mitigated by releasing flushing flows.

33. **Dr Kristy Hogsden**, a Periphyton Ecologist and Group Manager (Freshwater Ecology) with NIWA, provided a statement of evidence addressing potential adverse effects on water quality, plants and macroinvertebrates. She described the existing environment at the Project site in the Waiau Arm and downstream in the LWR. She noted that bed disturbance associated with excavation of the breakout areas would remove the macrophytes, periphyton and macroinvertebrates but that any adverse effect would be minor due to the small and localised area affected and the presence of communities that do not have special ecological value. She highlighted the risk to freshwater mussel/kākahi would be managed by recovery and relocation, as set out the Freshwater Fish Management Plan (**FFMP**). She considered water quality effects and the deposition of fine sediment would be minor, temporary and within the range of natural variation. She noted lower water velocities in the Waiau Arm during excavation activities may result in an increase in risk of phytoplankton blooms but that this is expected to be small given the timing of excavations (mid-autumn to early spring). She considered any increased risk in phytoplankton blooms in the Waiau Arm following construction could be monitored and, if necessary, mitigated by managed flow releases. She concluded the potential adverse effects on water quality, plants and macroinvertebrates would be minor.
34. **Dr Mike Hickford**, a Freshwater Ecologist with NIWA, provided a statement of evidence addressing potential adverse effects on freshwater fish. He noted that salmonids and longfin eel/tuna could be at risk from elevated fine sediment, along with non-migratory southern flathead galaxias and Gollum galaxias in the LWR. He highlighted the further fish survey completed in July 2024 targeting small fish and considered there was sufficient data on fish communities to assess the direct and indirect effects of the proposal. He concluded any adverse effects of elevated suspended sediment and additional DFS would be minor given the short duration of the Stage 3 breakout, the water quality limits imposed, timing to avoid the elver and eel transfer and trap periods and the proposed fish salvage set out in the FFMP. He considered these matters were addressed by the proposed consent conditions. He noted the sensitivity of lamprey/kanakana to elevated suspended sediment was unknown but that adults are transitory to the area while migrating up the Mararoa River. He considered construction lighting posed little risk to the predation/feeding and migratory cues of any At Risk or Threatened fish species. He highlighted the 2018 NZ Fish Passage Guidelines prefer the use of large, single, round culverts (embedded 1/3 to 1/2 of the culvert diameter) over fords to keep vehicles out of the waterway.
35. **Mr Scott Hooson**, an Ecologist/Associate Partner with Boffa Miskell Limited, provided a statement of evidence addressing potential adverse effects on wetlands, terrestrial vegetation and habitats, and riparian wetlands downstream of the MLCS. He described 12 small discrete areas of palustrine marsh (nine assessed as having 'low' ecological value and three assessed as having 'low-moderate' ecological value), three lacustrine channels (assessed as having 'moderate' ecological value) and seven riparian wetlands (six assessed as having 'moderate' ecological value and one assessed as having 'low' ecological values). He noted the proposal avoided direct effects on these wetlands, except for Wetland 1. He highlighted the small wetland and lake margins of the Project site that support the nationally At Risk - Declining Buchanan's sedge met the threshold for 'significance' in Appendix 3 of the Southland Regional Policy Statement (**RPS**). He assessed the loss of 49 Buchanan's sedge plants as a potential 'moderate' adverse effect but considered this could be mitigated and remedied through

translocation and planting within the Project site to achieve no net loss. Similarly, he considered requiring the remediation of a wetland area within the Project site would achieve no net loss from the removal of a small (122m²) area of *Juncus sp.* rush land marsh (Wetland 1). He considered there would be no discernible effect in the downstream riparian wetlands given there would be only minor changes in flow (within the current consented regime). Overall, he concluded the direct and indirect effects of the proposal would be 'very low to low' on wetlands and terrestrial vegetation, which he confirmed equated to a minor adverse effect.

36. **Dr Martin Single**, a Director and Principal Consultant with Shore Processes and Management, provided a statement of evidence addressing potential adverse effects on coastal processes. He described the existing physical environment of the Waiau River mouth and lagoon/hāpua and geomorphological processes driven by both fluvial and oceanic processes. He considered recent changes to the Waiau River hāpua were consistent with hāpua process theory and historical variability that pre-dates and post-dates the operation of the MPS and MLCS. He noted monitoring of the river flow and sediment movement as part of the operation of the MPS (measured between 2009 and 2017) showed no evidence of the consented flow regime having any effect on shoreline behaviour detectible from the variable behaviour under natural processes. He concluded there would be no adverse effects on coastal processes from the Project given the consented flow regime for the LWR remained unchanged.
37. **Mr Brydon Hughes**, a Hydrogeologist and Director with LWP Limited, provided a statement of evidence describing the geological and hydrogeological setting; and assessing the potential adverse effects of groundwater and natural hydrological variation in wetlands. He highlighted the highly permeable unconfined aquifer into which the channel would be excavated and the high degree of hydraulic connection with the Waiau Arm and the Mararoa River, with groundwater levels at, or close to, river level. He considered the effects of dewatering and the discharge via seepage ponds constructed along the river margin. He concluded any adverse effects of the proposal would be less than minor with implementation of the proposed dewatering methodology.
38. **Mr Daniel Murray**, Technical Director – Planning with Tonkin & Taylor, provided a statement of evidence summarising the site and the existing environment, the proposed activities, matters not within scope of the application, activities authorised by the MTADA, the consented LWR flow regime, the consents sought, the planning context, the assessment of environmental effects, submissions, the s42A Report, proposed conditions, sections 104D, 105 and 107, and Part 2 of the Act. He considered the application met both gateway tests of s104D and that any breaches of s107(1) would meet both the exceptional circumstances and temporary in nature exceptions provided for under s107(2). He considered a comprehensive set of proposed consent conditions had been developed with the input of recognised specialists to ensure the effects were no more than minor, and with feedback from submissions and the pre-hearing processes. He confirmed that any future removal and processing of the stockpiled gravel from the excavation works did not form part of the application. He noted Meridian have an access agreement with Real Journeys Limited to access a consented slipway within the Project site. He confirmed provision had been made for a new slipway location but that the final form and its subsequent use was not within the scope of the application. He considered a 35-year consent term was appropriate given the permanent nature of the diversion and the intended long-term benefits to the LWR from increased flushing flows.

39. Mr Murray provided an updated set of proposed conditions at the hearing. He noted that further changes had been made in consultation with Ms Sullivan to better describe the consented activities.

Submitters

40. **Real Journeys Limited** were represented at the hearing by Ms Fiona Black, who provided a written statement outlining the background to the consented slipway (Land Use Consent AUTH-20222195-01 and Discharge Permit AUTH-20222195-02) on the bed of the Waiau Arm, approximately 725m upstream of the MLCS. She highlighted the critical importance of this slipway to be able to undertake out of water surveys, and repair and maintenance work on large vessels used on Lake Manapōuri. She acknowledged Meridian had incorporated a new location for the slipway in the design of the new channel but noted the company would still need to obtain resource consent outside of this process. She emphasised the need to have the 'Titiroa' slipped prior to 8 November 2025 (expiry of its Certificate of Survey) and that this depended on completion of the Project within the coming January-October timeframe.
41. **The Waiau Fisheries and Wildlife Habitat Enhancement Trust (the Trust)** were represented at the hearing by Ms Claire Jordan and Mr Roger Hodson. Ms Jordan presented an oral submission on behalf of the Trust, as an independent planning contractor. She noted the Trust supported the application subject to its concerns being addressed through consent conditions. She outlined the remaining issues related to the provision of additional bird nesting habitat (i.e. constructing a bird refuge island) for the black billed gull, provision of an additional turbidity monitoring site in the Waiau Arm and the duration of consent and review clause. She highlighted the loss of 2/3 of the flow in the existing channel and the potential for phytoplankton blooms and fine sediment ingress into the new channel from the Mararoa River. She noted the Trust endorsed the WWP's position in relation to provision of a bird island.
42. **The Waiau Working Party (WWP)** were represented at the hearing by Mr Maurice Rodway and Dr Sue Bennett, who provided written statements of evidence prior to the hearing outlining the remaining issues.
43. The written statement authored by Mr Rodway, Dr Bennett and Ms Jordan for the WWP highlighted the need to provide real time monitoring to avoid phytoplankton blooms in the new channel, protection of the existing wetlands and their connection to the main channel, provision of an island suitable for use by black billed gulls, and alignment of the expiry of the consents sought with the MPS consent expiry in 2031. It highlighted the inadequacies of the current water quality monitoring programme in the Waiau Arm (under Appendix A of the MPS consents) and the need to monitor an increase in risk of phytoplankton blooms from reduced water velocities in all three channels from the increase in water temperatures and light penetration due to shallower water depths in the channels. It considered a robust water quality monitoring and mitigation plan was needed for the Waiau Arm for the duration of the consent to ensure the risk of phytoplankton blooms and sediment laden water from the Mararoa River can be addressed by providing flows from the lake when required. It requested an additional water quality monitoring site for turbidity in the vicinity of the new and existing channels, as close as possible to the Mararoa channel; and weekly sampling at both the existing and new channels of chlorophyll *a* concentrations from 1 September to 31 May each year for the duration of the consent (unless mean flow velocities are more than 0.4 m/s towards the MLCS in the previous five days or water temperature is less than 10 degrees Celsius). It noted the proposed culverts would restrict natural flows in and out of the wetland channels and therefore preferred the use of fords or to have these removed following construction.

44. Dr Bennett's statement of evidence for the WWP highlighted there was insufficient certainty that any limited increase in flushing flows would be sufficient to mitigate the magnitude of an increased risk of elevated phytoplankton levels. She considered water quality in the Waiau Arm needed to be monitored on a long-term basis to detect issues, particularly given the high quality, pristine lake environment. She requested a threshold trigger level for chlorophyll *a* concentrations of 2 mg/m³ given this defines the upper limit of an oligotrophic body of water. She considered the proposed limit of 5mg/m³ was not robust given it corresponds with the threshold between mesotrophic and eutrophic states, and not the context of the microtrophic/oligotrophic receiving environment of the lake. She requested two water quality monitoring sites for phytoplankton, one each in the new and existing channels. In response to questions, Dr Bennett provided suggested wording for a condition requiring real time turbidity monitoring, as sought by the Trust and the WWP.
45. **Te Rūnanga o Ōraka Aparima** were represented at the hearing by Mr Dean Whaanga and Ms Stevie-Rae Blair, who provided a joint statement of evidence, a table commenting on the revised proposed conditions and the Cultural Impact Statement (**CIS**). Their statement noted a lack of meaningful time and engagement with the Ōraka Aparima Rūnanga had severely impacted the ability to assess the effects on their values, rights and interests. They considered the application had the potential to significantly affect mana whenua values, rights and interests associated with cultural landscapes, mauri, mahinga kai, species habitat, wāhi tapu and water quality. They highlighted the importance of the river, catchment and surrounding land to Ngāi Tahu ki Murihiku.
46. The CIS recommended ongoing kōrero to determine possible pathways for addressing effects on ki uta ki tai/from the mountains to the sea, mauri, mahinga kai, wetlands and access. It requested facilitating and resourcing Te Rūnanga o Ōraka Aparima to enhance the Project site or another site for the purpose of health and cultural use; and involvement in management plans and monitoring using Mātauranga Māori principles and practices, restoration and enhancement activities, and monitoring taonga species. It also requested research into the future management of effects with the Rūnanga, planting of locally sourced indigenous vegetation, pest plant and animal control at the Project site for the duration of consent, and a maximum consent term of 20 years, with a consent review in 2031 if there are any material changes to the LWR flow regime. It acknowledged the positive impact of the application on the Waiau through higher reliability for flushing flows but highlighted the construction and maintenance of the proposed channel would significantly affect mana whenua values, rights and interests. They noted uncertainty remained whether the proposed conditions addressed these identified significant adverse effects.
47. In response to questions, Ms Blair and Mr Whaanga considered that both a specific review condition in 2031 and a shorter consent term were required. They considered this would enable integration of the consents and noted that a 25-year consent duration recognised the need to enable future generations to speak for themselves.
48. **Ms Uli Sirch**, a resident of Bluecliffs since 1992, presented a written statement drawing on her and her family's observations of the Waiau River mouth over many years of watching and listening to people. She highlighted the recent flood flows in the Waiau River on 10 September 2024 and protection of the beach from Southern Ocean waves provided by the 'big river'. She disagreed with Mr Single's use of the term 'small' river and his comparison to South Island east coast rivers given none of the other rivers referred to have 95% of the water taken away and that the southern coast is exposed to a far rougher climate. She considered the construction of

the new channel could not be separated from the wider flow reductions from the MPS and that any interference in the LWR must be seen in the context of the wider picture. She was concerned the new channel would give Meridian the chance to restrict the flow to the LWR more and for longer periods of time. She strongly believed the consent should be considered and integrated into the 2031 consent process.

49. **Mr Chris Wood**, a lifelong visitor to and 35-year resident of Bluecliffs, presented a written statement and provided a series of photographs of the Waiau River mouth and gravel bar. Mr Wood noted he neither supported nor opposed the application but suggested conditions to maximise the protection of the Bluecliffs settlement and the river mouth environment. He was concerned the reduction in sediment washing into the LWR had disrupted the equilibrium by reducing protection. He noted that when he was a child the force of the river would visibly move the rock and gravel bed load, supplying material to the gravel bar. He noted the gravel bar was getting thinner over time and now allowed waves to wash over the bar and into the lagoon. He considered Dr Single's evidence was not robust scientifically and was speculative at best, drawing conclusions unsupported by data. He considered local knowledge provided the best picture of what was going on. He requested a restricted rate of flow increase through the MLCS in flood flows, any gravel extracted to be returned to the LWR, alignment of the expiry with the consent expiring in 2031, no sediment discharges in whitebait season, and a text alert system for Bluecliffs residents of high flows.

Section 42A Report

50. The s42A Report set out a summary of the proposal, the regional framework, the activity status of the consents sought, further information requests, notification and submissions, a summary of submissions, the pre-hearing meetings, statutory considerations, a description of the affected environment, actual and potential effects, relevant provisions of the regional plans, sections 105 and 107 of the RMA, Part 2 of the Act, a recommendation to grant the application, consideration of consent duration and proposed conditions of consent.
51. Ms Sullivan spoke to her s42A Report and provided a written response to matters raised at the hearing. She confirmed her recommendation that the consents sought should be granted subject to conditions, for a consent term of 25 years. She considered further refinement of the conditions could address some of the matters discussed in the hearing and noted alignment of the timing of potential review opportunities could be achieved with the maintenance consent for the existing channel that was currently in process.
52. Ms Sullivan was unsure what a review of conditions at the time when the wider MPS consent that expire in 2031 are considered would achieve. She noted the long-term ongoing activities post construction activities related to the permanent diversion of water through the parallel channel, as well as the maintenance component. She considered the conditions of consent should address the effects of these longer-term activities.
53. **Mr Ramon Strong**, Technical Director Water Resources with Pattle Delamore Partners Limited, provided a technical review of the AEE, proposed construction methodology, groundwater assessment, further information responses and submissions. He concluded there was sufficient information to justify the approach proposed and the consideration of alternatives. He considered the physical effects were both relatively limited and small scale and were likely to be minor or less than minor with the imposition of conditions. He generally agreed the Project would result in increased reliability in delivering flushing flows and would not contribute to erosion in the downstream coastal environment.

54. In response to questions, Mr Strong considered there was a high level of confidence in the hydraulic modelling undertaken. He noted the concerns raised by Mr Wood at the hearing in relation to the release of water more quickly in flood flows to the LWR from the new channel but considered this would be a minor change in the flood flows, with 'a slightly steeper front end on a hydrograph'. He noted flood flows were largely driven by hydraulic head in the lake, operation of the gates on the MCS and the level of the sill. He considered any 'ramping up' of flood flows (as suggested by Mr Wood) would hardly be discernible at the mouth of the Waiau River with the attenuation of the flood wave as it moves downstream. Mr Strong provided a written summary confirming his comments made at the hearing in relation to Mr Wood and the need for monitoring potential sediment release from the new channel into the Waiau Arm from the Mararoa River.
55. **Dr Greg Burrell**, Freshwater Ecologist and Director with Instream Consulting, provided a technical review of the AEE, Appendix D, Appendix E, further information responses, submissions, proposed conditions and the draft Freshwater Fauna Management Plan (**FFMP**). He considered it was reasonable to assume the goal of increasing the frequency of flushing flows to the LWR would be achieved and overall would result in positive ecological effects. He considered the potential adverse effects on water quality and aquatic ecology could be avoided, remedied and mitigated with the imposition of conditions. He made recommendations to improve certainty regarding effects and an additional condition to only enable maintenance if monitoring of the initial excavation works shows it has achieved the intended goals. He considered preparation and implementation of a FFMP would minimise harm to freshwater fish and other fauna.
56. In response to questions, Dr Burrell considered it should be relatively simple to monitor and demonstrate that the goals of the Project had been achieved and whether it had been effective in reducing excessive periphyton growth in the LWR. He noted that inanga (whitebait) species are relatively tolerant of sediment and that he was therefore not concerned about the timing of the break out stage of the channel excavation (Stage 3). He considered turbidity monitoring in the Waiau Arm to monitor any flow of sediment towards Lake Manapōuri for a limited duration was sensible given the sensitive nature of the receiving environment. He agreed the correlation used to set turbidity limits based on water clarity and total suspended solid monitoring was strong. However, he was sceptical about the utility of the DFS monitoring given the natural variability.
57. Dr Burrell highlighted the need for any trigger limit for chlorophyll *a* concentrations to be above 'natural levels' to be an effective alert. He noted that a limit of 2 mg/m³ as a threshold limit in the Waiau Arm would be triggered up to a third of the time during the summer period based on existing monitoring and that 5 mg/m³ was the median concentration over multiple years. For these reasons, he considered 5 mg/m³ was an appropriate trigger for a management response to mitigate any increased risk of phytoplankton blooms in the Waiau Arm from the Project.
58. **Dr Mike Thorsen**, a Principal Ecologist and Director with Whirika Consulting, provided a technical review of the AEE, further information responses including avifauna information and submissions. He considered any matters identified relating to vegetation and avifauna had now been addressed. He considered the WWP's request to create a suitable bird refuge/island was not necessary to address the potential effects on bird habitat from the Project. However, he considered the proposed final form of the channel would provide permanent avian habitat and the channel bunds would provide for roosting. He supported the construction of culverts rather

than fords as suggested by submitters. He acknowledged the important ecological values of the surrounding area and concluded the adverse effects on these values would be minor, subject to consent conditions.

Applicant's Right of Reply

59. The Applicant provided a written right of reply and a final set of proposed conditions on 8 October 2024. The reply reiterated the purpose of the Project is for environmental maintenance and enhancement to mitigate the effects of Didymo, which is not an adverse effect of the MPS *per se*. It highlighted care was needed to focus the conditions on the effects of the Project and not the effects of the operation of the MPS generally. It outlined further changes to the proposed conditions to address matters raised in the hearing.

ASSESSMENT

60. In assessing the application, we have considered the application documentation and Assessment of Environmental Effects (**AEE**), the s42A Report and technical reviews, expert evidence, submissions, pre-hearing reports, the evidence and statements provided at the hearing, written comments on conditions and the Applicant's right of reply. We have briefly summarised this evidence above. We have considered all the relevant issues raised in making our determination.
61. The Manapōuri Te Anau Development Act 1963 (**MTADA**) and other consents held by Meridian authorise the operation and maintenance of the MPS. Our consideration of the application is limited to the environmental effects of the activities for which consent it sought.
62. We accept the agreement reached between the Applicant and ES that activities subject to RMA sections 9, 12, 13, 15(1)(c) and (d) are regulated under MTADA. We have disregarded effects on landscape and visual values, recreation and amenity values, including from noise and vibration.
63. We have not considered issues raised in submissions relating to matters that are not within the scope of the consents sought. In having regard to the pre-hearing reports and s42A Report the following matters are not within scope and are not considered further:
- (a) Environmental effects of the operation of the MPS and the existing minimum flow regime, including effects on cultural values ecological values and coastal processes.
 - (b) The effectiveness of the Protocol under Condition (7) of Consent 206156.
 - (c) Adequacy of water quality monitoring of the Waiau Arm under the existing MPS consents
 - (d) Financial compensation if increased supplementary flushing flows are not provided through these consents.
 - (e) Changes to the MLCS sill height.

Status of the Application

64. The starting point for our assessment of the application is to determine the status of the activities under the statutory planning provisions.
65. The resource consents sought and relevant activity status for the proposed activities were set out in Table 2 of the s42A Report.

66. There was agreement that it is appropriate to 'bundle' the consents sought (including the NES-F consent) and consider these overall as a non-complying activity.
67. There was disagreement whether the temporary discharge of suspended sediment and water during construction and maintenance of the new channel was subject to Rule 5 (Discretionary) or Rule 6 (Non-complying) of the pSWLP. However, it was agreed this was of no consequence given the permanent, partial diversion of water into the new channel was subject to Rule 52(b) as a non-complying activity.
68. We consider it is appropriate to bundle the activities and consider the application overall as a **non-complying activity** under section 104D of the Act.

Statutory Considerations

69. In terms of our responsibility for giving consideration to the application, we are required to have regard to the matters listed in sections 104, 104D, 105, and 107 of the Act.
70. Pursuant to s104(1), and subject to Part 2 of the Act, which contains the Act's purpose and principles, we must have regard to-
 - (a) *Any actual and potential effects on the environment of allowing the activity;*
 - (ab) *Any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity;*
 - (b) *Any relevant provisions of a national environmental standard, other regulations, a national policy statement, a New Zealand coastal policy statement, a regional policy statement or a proposed regional policy statement, a plan or proposed plan; and*
 - (c) *Any other matters the consent authority considers relevant and reasonably necessary to determine the application.*
71. Section 104(2) of the RMA states that when forming an opinion for the purposes of s104(1)(a), we may disregard an adverse effect of the activity on the environment if a national environmental standard or the plan permits an activity with that effect. This is referred to as consideration of the 'permitted baseline'. In this case, we have not applied any permitted baseline.
72. Under s104(3)(a)(ii) of the RMA, in considering the application, we must not have regard to any effects on any person who has given written approval to the application. No written approvals were provided.
73. Section 104(6) of the RMA allows us to decline an application if we determine there is inadequate information to determine the application. We are satisfied we have adequate information to determine the application.
74. In making our assessment of the application under s104D(1) of the RMA, we can only grant consent for a non-complying activity, if we are satisfied that either of the following 'gateway tests' is passed:
 - (a) *The adverse effects of the activity on the environment will be minor; **or***

- (b) *The application is for an activity that will not be contrary to the objectives and policies of –*
- (i) *the relevant plan, if there is a plan but no proposed plan in respect of the activity; or*
 - (ii) *the relevant proposed plan, if there is both a plan and a proposed plan in respect of the activity; or*
 - (iii) *both the relevant plan and the relevant proposed plan, if there is both a plan and a proposed plan in respect of the activity.*
75. Provided there are no restrictions under s104D, s104B provides that we may grant or refuse the application; and if we grant the application, we can impose conditions under section 108.
76. In terms of s105 of the RMA, when considering s15 (discharge) matters, we must, in addition to s104(1), have regard to –
- (a) *The nature of the discharge and the sensitivity of the receiving environment to adverse effects; and*
 - (b) *The applicant’s reason for the proposed choice; and*
 - (c) *Any possible alternative methods of discharge, including discharge to any other receiving environment.*
77. In terms of s107(1) of the RMA, we are prevented from granting consent allowing any discharge into a receiving environment which would, after reasonable mixing, give rise to all or any of the following effects, unless one of the three exceptions specified in s107(2) exist (i.e., exceptional circumstances, temporary discharges, and/or maintenance works) -
- (a) *The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended material:*
 - (b) *Any conspicuous change in the colour or visual clarity:*
 - (c) *Any emission of objectionable odour:*
 - (d) *The rendering of fresh water unsuitable for consumption by farm animals:*
 - (e) *Any significant adverse effects on aquatic life.*
78. We consider each of the relevant sections of the RMA below.

RMA SECTION 104(1)(a) - ACTUAL AND POTENTIAL EFFECTS ON THE ENVIRONMENT

The Existing Environment

79. In making our assessment, we are required to consider the actual and potential effects of the activities on the existing environment. The existing environment is that which exists at the time this determination is made and includes lawful existing activities, permitted activities and activities authorised by existing resource consents.
80. We acknowledge the existing consents and the provisions of the MTADA that enable the current operation of the MPS form a significant part of the existing environment. We consider the issues raised by submitters in relation to adverse effects on coastal processes and the mouth of the Waiau River relate to the current operation of the MPS and are not within the scope of this application.
81. We acknowledge the concerns raised at the hearing by Mr Wood that the new channel may result in flood flows from the lake being delivered downstream faster than currently occurs through the existing channel. Although this was not a point made in his submission, and is

therefore out of scope, we note the existing consents require gate operating and closing procedures to avoid rapid increases in the rate at which water enters the LWR to protect people and animals downstream. This requirement will not change as a result of this application.

Actual and Potential Effects

82. The proposal will result in a number of actual and potential effects, both positive and adverse. There is a high level of agreement between the Applicant's experts and the Council's experts that any adverse environmental effects will be no more than minor, with implementation of the proposed construction methodology and mitigation measures.
83. The proposed activities do not change the existing operational requirements for the MPS or the minimum flow regime for the LWR. There are no changes proposed that will enable Meridian to further restrict flows to the LWR or to restrict flows for longer periods of time.
84. It is accepted that the intention in constructing the new channel is to increase the Applicant's ability to deliver flushing flows to the LWR by improving the conveyance capacity at a wider range of lake levels. However, Dr Clunie's evidence confirms that the works will not enable 100 percent reliability to discharge 160m³/s through the MLCS gates over the normal control range (RL 176.8 to 178.6m above sea level) given a headwater level of at least 177.0m is required to pass this flow through the fully open gates. The evidence suggests an increase of between 30 percent to 60 percent reliability is likely, but that this is uncertain, and will vary greatly from year to year. The predicted magnitude of benefit to the LWR is therefore unknown but will likely range from no change in some years to an additional 1-2 flushing flows a year.
85. The 'off-line' design of the Project enables 85% of the construction works to be completed without working in flowing water and disturbance to the wetted river bed. The turbidity and DFS limits proposed are within the natural range of the Mararoa River in an average year and are for limited durations (consecutive hours) to ensure aquatic biota can tolerate and recover from sediment releases. We note that during Stage 3 excavations the Mararoa River will be directed to the LWR and there will be no upstream flows (towards Lake Manapouri) in the Waiau Arm. We acknowledge Meridian can control the flow direction in the Waiau Arm to manage sedimentation levels in the LWR through dilution with lake water and if necessary, by ceasing works.
86. We accept any maintenance activities will be infrequent and of a much smaller scale, and can be managed through appropriate water quality limits. We find the sedimentation effects of the proposal will likely be no more than minor with the imposition of water quality limits and standards in the downstream receiving waters outside the zone of reasonable mixing.
87. We accept the evidence of Drs Hogsden and Hickford that any downstream effects on aquatic species will be minor and temporary, with the recovery of these communities over time after construction works are completed. We are satisfied that the proposed salvage and relocation of kākahi; and the preparation and implementation of a FFMP will ensure any adverse sedimentation effects are no more than minor.
88. The consents sought will not change the requirement for the provision of minimum flows to the LWR. It is anticipated that the proposal will increase the frequency of releases of flushing flows to the LWR to mitigate the adverse ecological and cultural effects of excessive periphyton growth. The increase in reliability is uncertain but is predicted to be in the order of a doubling

from 30 percent to 60 percent of the time. We consider it is appropriate to monitor the effectiveness of the new channel in increasing the provision of flushing flows to ensure the adverse effects of any ongoing maintenance works on water quality are outweighed by the benefits of increased flushing flows to the LWR.

89. The evidence suggests that any adverse effects on downstream flows in the LWR following construction will be positive by enabling more frequent releases of flushing flows during summer periods of low downstream flow. The channel is designed to achieve the release of these flushing flows under low flow/low lake level conditions. While there may be potential for lake flows to reach the MLCS faster through the new channel, we accept the evidence of Mr Strong that the effects are likely to be more muted at progressively high flow and lake levels and that any effect at the river mouth is likely to be 'imperceptible'. Overall, we accept the evidence that the diversion of water into the new channel during flood events will not have more than a minor effect on water quality or quantity in the LWR.
90. We have considered the potential for turbid Mararoa River water to enter the Waiau Arm through the new channel. We agree with Mr Strong that hydraulic efficiency of the channel and the manner in which it converges with the Mararoa River make it unlikely it will exacerbate sedimentation in the Waiau Arm. However, despite agreeing this is a low risk, we agree with Mr Strong that in the absence of quantitative data to demonstrate that high Mararoa River events are commonly or almost always accompanied by high Lake Manapōuri level events, it is prudent to monitor turbidity (as a proxy for total suspended solids) in the Waiau Arm. We address this further below in relation to consent conditions.
91. Dr Hogsden has identified and quantified the increased risk of phytoplankton blooms in the Waiau Arm following the completion of the works. Drs Hogsden and Burrell agree the likelihood of blooms remains low and can be monitored and, if necessary, mitigated by releasing water from the lake.
92. Mr Hooson has assessed the potential effects on wetlands, and terrestrial and lacustrine vegetation and habitats. He and Dr Thorsen agree that any adverse effects on values identified can be managed to be no more than minor by requiring the achievement of no net loss of Buchanan's sedge and indigenous *Juncus sp.* rush land marsh within the Project site.
93. We are conscious that the small wetland lost (Wetland 1) has been created by formation of the existing gravel road, within the context of a highly modified river delta and lake arm interface. The identified 'Eastern' lacustrine channel is a remnant of a previously excavated channel and the extent of wetlands at the Project site fluctuates with the lake water levels. The limited direct and indirect effects of this proposal on these wetlands must be considered within this context of controlled lake levels and by taking into account the mitigation measure to achieve no net loss.
94. We agree with Mr Hooson and Dr Thorsen that use of temporary and permanent culverts for the Haul Road is preferable to lowering the Haul Road and using fords, provided best practice guidelines are followed to sufficiently allow for fish passage. We acknowledge that the 'New Zealand Fish Passage Guidelines: For structures up to 4 metres 2018' are not well suited to application in lake environs. However, we accept that requiring consistency with the principles of good fish passage design in Section 3.4 of those guidelines can achieve the outcomes intended. Again, we are mindful that the hydrology of the lacustrine channels and wetlands are significantly impacted by lake levels and the operation of the MPS. We consider any adverse effects

on the hydrology of the wetlands must be considered within the context of the significant effects of controlled lake levels.

95. We accept the evidence of Dr Bull that any direct effects of the Project on At Risk or Threatened bird species is sufficiently mitigated by their mobility, other nearby habitats available and timing of the works to avoid critical times such as breeding. In addition, pre-work bird surveys are required to ensure no works will occur within 50m of a nesting bird. There is agreement between Drs Bull and Thorsen that there is no habitat loss associated with the Project that requires the creation of an additional bird island/refuge. We accept this view but note that the proposed final form of the channel and bunds will provide suitable habitat following completion of the Project.
96. We acknowledge the information provided by Mr Rodway on the black billed gulls and the importance of the Waiau River habitat to the Southland population. However, we find there are no direct or indirect adverse effects from this proposal that would justify a requirement to construct a new island as a condition of consent. We also acknowledge the effects of doing so, including increasing the platform height to provide refuge in flood flows, have not been assessed.
97. We accept the evidence of Mr Hughes that any adverse effects on groundwater quantity and quality, and natural hydrological variation in wetlands from the proposed works and dewatering activities can be managed to have less than minor effects.
98. Our consideration of effects on coastal processes and erosion is limited to the potential effects of the construction of the new channel and the potential increase in flushing flows released to the LWR. We accept the evidence of Dr Single that there will not be any detectable effects from the construction or operation of the new channel at the mouth of the Waiau River.
99. In relation to effects on cultural values and relationships, we acknowledge the compartmentalisation of the environmental effects associated with the proposed activities from the wider consents for operation of the MPS is challenging from a Te Ao Māori perspective. However, we accept that the aim of the proposal is to increase the frequency of flushing flows to the LWR which will potentially have significant positive effects on the health and life sustaining capacity of the downstream environment and the mauri of the river. It will potentially contribute to addressing the adverse environmental effects on the LWR associated with managed flows and long periods of stable low flows.
100. We consider the concerns raised by Ms Black on behalf of Real Journeys Ltd regarding the provision of an alternative slipway are addressed by making provision for this in the design of the new channel and acknowledge this will need to be authorised through separate resource consent.
101. We agree and adopt⁸ the conclusions reached in the Applicant's assessment of effects and the s42A Report that, overall, any adverse environmental effects will be no more than minor with the imposition of conditions.

⁸ RMA section 113(3)(a)(i) and (ii)

RMA SECTION 104(1)(ab) – POSITIVE EFFECTS TO OFFSET OR COMPENSATE FOR ADVERSE EFFECTS

102. Section 104(1)(ab) of the RMA requires us to have regard to any measure proposed or agreed to by the Applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity. No specific measures were proposed by the Applicant.

RMA SECTION 104(1)(b) - RELEVANT PLANNING PROVISIONS

103. Analyses of the relevant provisions of the (RPS) and pSWLP were provided in Appendix J of the AEE, the evidence of Mr Murray and the s42A Report. There was agreement that the application is consistent with the relevant provisions.
104. We agree and adopt⁹ Mr Murray and Ms Sullivan’s assessments for the purposes of our decision and therefore do not consider it necessary to present a detailed analysis of the objectives and policies of the relevant planning provisions in our decision.
105. We agree with Mr Murray and Ms Sullivan that the application is consistent with the requirements of the NES-F and that any potential adverse effects on wetlands can be appropriately avoided, mitigated and remedied.

RMA SECTION 104(1)(c) - OTHER MATTERS

106. We have had regard to the relevant provisions of Te Tangi a Tauria in making our decision. We agree with Mr Murray that many of the relevant provisions are well aligned with the RPS and pSWLP. We consider that with the imposition of appropriate conditions the application is consistent with the outcomes sought.
107. We also consider the CIS prepared by Te Ao Mārama Incorporated on behalf of the Te Rūnanga o Ōraka Aparima to be a relevant matter under section 104(1)(c) of the RMA. We have considered its contents in making our decision. We acknowledge the significance of the Waiau River and its surrounding catchment to tangata whenua and the concerns raised regarding significant adverse effects on cultural values and relationships from the operation of the MPS.

RMA SECTIONS 105 and 107

108. We are satisfied the Applicant has considered alternative methods of discharge and discharge to alternative receiving environments as required by s105 of the RMA. We find the option chosen minimises direct discharges to water and disturbance of the wetted bed of the existing channel.
109. We find that given the nature of the discharge it is unlikely to give rise to any of the effects in listed in s107(1)(c) to (g) outside a zone of reasonable mixing, with the exception of (d) any conspicuous change in colour and visual clarity. However, we accept the evidence that this will be temporary in nature given the conditions imposed and are satisfied the water quality limits and durations will protect aquatic ecological values from significant adverse effects.

⁹ RMA section 113(3)(b)

110. We have considered the matter of a 'zone of reasonable mixing' and the proposed location of the downstream monitoring site above the confluence with the Excelsior Creek. We accept this is appropriate.

111. We find we are not prevented from granting the discharge on this basis s107 restrictions.

RMA PART 2

112. For completeness, we record that reference to Part 2 would not add anything to the evaluative assessment we have undertaken under sections 104 and 104D of the RMA. We find that with the imposition of appropriate consent conditions the application is consistent with achieving the purpose and principles of the Act.

OVERALL CONCLUSION

113. On the basis of the evidence before us, we find that the adverse environmental effects of the application will be appropriately avoided, remedied, and mitigated with the imposition of appropriate consent conditions to such a degree that they will be no more than minor. This conclusion relies heavily on the Applicant successfully implementing its proposed mitigation measures and complying with the conditions it has volunteered. We acknowledge the mitigation of adverse water quality effects relies on there being sufficient water available to maintain a positive flow from the lake and to dilute the discharges as necessary to meet the water quality limits. However, we also acknowledge that the Applicant can also stop works if this is not possible.

114. We find the application has the potential to reduce the adverse effects of excessive periphyton growth in the LWR in summer by enabling the Applicant to deliver supplementary flushing flows which may result in significant positive ecological effects in the LWR.

115. We find the application meets both gateway tests in s104D and that there is no restriction on granting the consents sought.

116. We conclude that the application should be granted on the basis that it is consistent with the promotion of sustainable management of natural and physical resource and will meet the purpose of the RMA.

CONDITIONS

117. The application included a set of proposed conditions, and these have gone through several iterations as a result of the Council's technical reviews, pre-hearing meetings, discussions with submitters and in response to questions and comments from us during the hearing process.

118. We note that the Applicant's right of reply confirms there is agreement between the Applicant and the Reporting Officer on the wording of all of the conditions, with the exception of the term of consent.

119. We have carefully considered the written comments received from the WWP requesting the following changes to the proposed conditions:

- (a) Changing the period for allowing maintenance works from 1 January – 1 October to 1 March -1 September;
- (b) An additional turbidity monitoring site in the new channel no more than 100m north of the MLCS, as well as the existing Upstream Monitoring Site (UMS) in the Mararoa River, to ensure sediment is not travelling into the Waiau Arm via the new channel;
- (c) The ability for the WWP in particular, as well as all parties, to comment on management plans;
- (d) The forwarding of management plans to all parties;
- (e) Correction of the spelling of *Didymosphenia geminata*;
- (f) Rewording the condition regarding the monitoring of translocated and planted Buchanan's sedge plants to be required annually for three years to ensure no net loss at the end of the monitoring period;
- (g) A reduction in the height of the haul road to 177m above sea level to avoid constructing artificial culvert structures that will inhibit free fish passage and modify the environment;
- (h) If culverts are constructed, no provision has been made for maintenance;
- (i) A new clause requiring excavation of the upstream ends of the lacustrine wetlands to 177m above sea level to replace the area of wetland to be replaced by the new channel and haul road (estimated to be 1 hectare);
- (j) A chlorophyll *a* concentration trigger level of 2 mg/m³ to maintain the pristine lake water given it has a median of less than 2 mg/m³ and 5 mg/m³ would allow for deterioration;
- (k) Chlorophyll *a* concentration monitoring for the duration of the consent because climatic conditions that can lead to phytoplankton blooms can occur at any time of year and the first 5 years are not predictors of the risk from September to May each year;
- (l) Provision of the Water Quality Management Plan (**WQMP**) monitoring results to the WWP each year, as is the case with existing periphyton and phytoplankton monitoring undertaken by Meridian;
- (m) Deletion of the words 'and piles or humps shall be avoided' and replacement with 'including the provision of an area of land no less than 2,500m² and 180m above sea level on the right bank (west side) of the new channel in the area where land above 180m above sea level already exists';
- (n) A requirement to keep the land provided for in clause (m) above free of live vegetation for the duration of the consent;
- (o) Notification of the WWP of the commencement and completion of construction and maintenance works;
- (p) Notification of the WWP in the event of non-compliance with conditions; and
- (q) The addition of a clause enabling a review of conditions when the main consents for the MPS are applied for.

120. In reply, the Applicant outlined the following changes to conditions:

- (a) Restricting the timing of Stage 3 works to the period 1 April – 31 October;
- (b) Maintaining a positive flow in the Waiau Arm during construction works;
- (c) The need for flexibility in how turbidity limits are met by releasing flows or if necessary ceasing works temporarily;
- (d) Demonstrating the achievement of improved reliability to enable maintenance of the channel;
- (e) Translocation or planting of at least as many Buchanan's sedge plant as will be lost within the excavation footprint;
- (f) Maintenance of fish passage through the proposed culverts;
- (g) No net loss of the extent of indigenous *Juncus* wetland; and

- (h) Providing for ongoing involvement for Te Ao Mārama Incorporated on behalf of Ngāi Tahu ki Murihiku to recognise their special role and status in relation to the Waiau River.
121. We note that some of the changes proposed by the Applicant address matters raised by the WWP.
122. We agree with Drs Hogsden and Burrell that the appropriate trigger threshold for releasing flows from the lake to mitigate any increase in risk of phytoplankton blooms is when chlorophyll *a* concentrations reach 5 mg/m³. We accept the evidence that 2 mg/m³ is too conservative given the existing frequency that these levels are reached in the Waiau Arm over the summer period.
123. We agree with the WWP that chlorophyll *a* concentration monitoring should be undertaken for the duration of consent given the predicted increase in risk of phytoplankton blooms from construction of the new channel. We agree that the first five years are not likely to be representative of the next five years and should not be used to predict the future risk given highly variable climatic conditions. Accordingly, we have deleted clauses (f), (g) and (h) and the Advice Note from Condition 15 of the General Conditions. We consider this monitoring should be required for the duration of consent. It may be appropriate to review this requirement when the WQMP for monitoring the effects for the operation of the MPS are considered at a future date.
124. We agree with the Applicant and the s42A Report that there are no environmental effects associated with this application that require further avoidance, mitigation or remediation. We consider it is appropriate for the Applicant to demonstrate the new channel is effective in increasing the reliability of providing flushing flows to enable ongoing maintenance works. This will ensure that any 'short term pain for long term gain', as stated by Dr Burrell, is actually realised before allowing ongoing maintenance of the new channel.
125. We agree with the Applicant that the formal ability to comment on management plans should be limited to mana whenua given the limited adverse environmental effects of the application in the context of the operation of the MPS and the receiving environment. However, we consider it is appropriate to provide the WWP and other interested parties identified in Condition (2) of the General Conditions with results of water quality monitoring; and to notify these parties of the commencement and completion of works and any non-compliance with consent conditions. We consider this provision of information provides for transparency and is not onerous for the Applicant. We consider this provision of information of information should be to all parties identified in the conditions to receive copies of management plans.
126. The need to monitor turbidity in the new channel to ensure water with turbidity greater than 30 NTU from the Maraoa River does not enter the Waiau Arm via the new channel was discussed at the hearing. The Applicant advised that there was already an existing monitoring site close to the lake to ensure lake water quality is not reduced at these times. The proposed conditions included the same requirement as the existing consents to divert turbid water (greater than 30 NTU) to the LWR and to record NTU hourly at the UMS. However, the proposed conditions did not address monitoring turbidity in the new channel to monitor the potential for turbid Maraoa River water to enter the Waiau Arm.
127. We agree with the Trust and the WWP that it is appropriate to require turbidity monitoring in the Waiau Arm to ensure that water with high suspended sediment levels from the Maraoa River does not inadvertently enter the Waiau Arm via the new channel flow path. We consider

this is appropriately precautionary given the importance of maintaining the existing very high water quality of Lake Manapōuri and Waiau Arm. Again, we do not consider this to be overly onerous for the Applicant and this monitoring will inform any future consideration of the wider consents for the operation of the MPS. We consider this should be required for the duration of the consent to enable a management response if such potential effects occur from the new channel.

128. In the absence of a volunteered condition referencing the existing turbidity monitoring site in the Waiau Arm, as indicated by the Applicant during the hearing, we have sought advice from Ms Sullivan for appropriate condition wording to require use of the existing monitoring site in the Waiau Arm to be used in conjunction with the upstream monitoring site on the Mararoa River. On the basis of the expert evidence that the risk of backflow to the lake via the new channel is low, we consider use of this existing monitoring site is appropriate.
129. We have made minor changes and corrections to conditions including replacing 'shall' with 'must' and minor rewording to enhance clarity. We have added 'all reasonably practicable measures' in Condition (13) of the Discharge Permit; new clause (b) to Condition (23) of the General Conditions to maintain records of the timing and duration of maintenance activities and the results of turbidity monitoring during maintenance activities; and have added 'in writing' to Condition (24) of the General Conditions. We also consider records of water quality monitoring results required under Condition (23) of the General Conditions should be provided to the Council monthly during parallel channel construction works, following completion of maintenance works and following receipt of any complaint.
130. Overall, we are satisfied that the conditions, both singularly and in total, are necessary and appropriate to avoid, remedy, or mitigate potential adverse effects identified in the application, submissions and the evidence.
131. Finally, in relation to the need for a specific clause in the s128 review condition to enable review of the conditions of consent at the time the existing consents for the operation of the MPS are considered, we find it is appropriate to include such an opportunity for the Consent Authority. As noted by Mr Murray and Ms Sullivan, the flow regime of the LWR will be a central matter to be considered in the 2031 consent process for the operation of the MPS.
132. The Panel considers the effective conveyance of low flows through the new channel and its ongoing maintenance is likely to be an important component of the future operation of the MPS and the ability to mitigate adverse environmental effects on the LWR. We see a direct connection between the potential outcomes of the 2031 process and the exercise of the consents sought and agree with Te Rūnanga o Aparima, the Trust and the WWP that an additional review clause is warranted. Furthermore, by 2031 the effectiveness of the new channel in achieving increased reliability of flushing flows at low lake levels should be known. At that time, it will be up to the Consent Authority to decide whether there is a need to review these resource consents to align and integrate them with the wider consents for the operation of the MPS.

CONSENT TERM

133. Mr Christensen considered the Applicant was entitled to as much security of consent term as was consistent with sustainable management. He noted Policy 40 of the pSWLP and considered

- none of the listed factors indicated a consent term less than 35 years was appropriate. He considered the effects were well understood and would be managed to a very low level.
134. Mr Murray noted that consent was required for the ongoing partial long-term diversion of water into the parallel channel as a result of a planning ‘quirk’ where no rules permit the diversion. He considered a 35-year consent term was appropriate given no water is taken or used, and there was no proposal to prescribe or regulate the magnitude and frequency of water diverted. He noted that once the channel is complete and the intended benefits achieved, there was no proposal to abandon the channel or redivert the water back to the existing channels. He considered there was no evidence to suggest the diversion could give rise to future adverse effects of such significance that the partial diversion would be amended or reversed. He concluded a short consent duration was not necessary to achieve the submitters’ objectives and could not be used to cancel the consent. He noted the Maraoa Diversion Cut had been granted for 35 years.
135. Ms Jordan disagreed with Mr Murray that the pSWLP’s treatment of non-consumptive diversions was ‘inadvertent’ given the specificity for non-consumptive diversions comes in Policy 42. She noted the Trust holds a diversion consent for habitat enhancement at the Waiau River mouth that was initially granted for 10 years and a subsequent diversion was granted for 7 years to align with the existing consent. She noted the consent was granted for 35 years in 2021 on the basis it had demonstrated the wetland’s sustainability. She noted the 35-year consent term for the Maraoa Cut was granted over 30 years ago in a very different regulatory context. She requested a seven year consent term or inclusion of a specific review condition to coincide with the 2031 expiry of the MPS consents.
136. Mr Rodway considered aligning the expiry dates with the 2031 expiry of the MPS consents would support a holistic and integrated approach to managing the effects associated with the MPS as a whole and the flow regime of the LWR.
137. Ms Blair and Mr Whaanga re-iterated the view of Ngāi Tahu ki Murihiku that a consent term of no more than 25 years was appropriate based on a intergenerational equity and allowing future generations to speak for themselves.
138. In reply, the Applicant stated there was no proper resource management reason to restrict the term to 2031; and that Meridian would likely not exercise the consents if they were only granted for a short term. It noted the stance of Ngāi Tahu ki Murihiku of no more than 25 years based on a generation and considered this should not be treated as a ‘rule’. It highlighted the added requirement to show that the new channel is effective in delivering more reliable flushing flows to enable maintenance works to be undertaken.
139. In considering all of the views summarised above and the guidance of Policy 40 of the pSWLP, we consider the appropriate consent term is 25 years given the permanence and economic life of the capital investment. We consider this is in line with the view of Ngāi Tahu ki Murihiku in not tying future generations to decisions made in the past and letting future generations speak for themselves. This also sits more comfortably with timeframes viewed by the wider community in terms of giving ‘social license’ to operate.
140. There is uncertainty as to how effective the new channel will be at increasing the reliability in flushing flows to the LWR at low lake levels. There is also uncertainty in relation to the predicted

increased risk of phytoplankton blooms in the Waiau Arm as a result of constructing the new channel.

DECISION

141. It is the decision of the Southland Regional Council, pursuant to section 104, 104B and 104D of the Resource Management Act 1991, to **GRANT** resource consent application APP-20233670 by Meridian Energy Limited for a consent term of 25 years, subject to the conditions set out in **Appendix 1** of this decision.

Dated this 5th Day of November 2024



Sharon McGarry
Hearing Panel Chair



Lyndal Ludlow
Hearing Panel Member

Appendix 1 – Conditions

Water Permit

<p>Purpose: To take, use, and divert water Duration: 25 years</p>	
<p>Definitions used in this resource consent</p>	
<p>In the conditions of this resource consent:</p> <ol style="list-style-type: none"> a. “Parallel channel excavation works” means the construction of the parallel channel; b. “Maintenance activities” means those activities, including removal of gravel and bed material, as necessary to maintain the parallel channel, and the existing channels of the Waiau Arm upstream of and around the confluence with the Mararoa River at Manapōuri Lake Control Structure, in general accordance with their constructed dimensions; c. “Duration of the parallel channel excavation works” means from the commencement of excavation works in the parallel channel to the conclusion of excavation works on the parallel channel including a period ending five days (120 hours) after the parallel channel is made fully open to the Waiau Arm; d. “Stage 3 breakouts” means the removal of the riverbank plugs at the upstream and downstream end of the parallel channel excavation works during Stage 3 of the construction works; e. “Deposited fine sediment” (DFS) means sediment less than 2 millimetres in diameter; and 	
<p>General</p>	
<p>1.</p>	<p>This resource consent authorises the take, use, and diversion of water as required to construct, operate and maintain the Manapōuri Lake Control Improvement Project at or about map reference NZTM2000 1186072E 4935093N and as shown on Figure 1 attached to and forming part of this consent. The activities authorised under this consent are:</p> <p>Construction works</p> <ol style="list-style-type: none"> a. Take and use surface and ground water for dewatering and dust suppression; and b. Divert surface water, drainage water and stormwater associated with temporary structures, installing permanent structures (including culverts), drainage features, and implementing erosion and sediment control measures. <p>Operational and maintenance activities</p> <ol style="list-style-type: none"> c. Partially divert surface water in the Waiau Arm into the completed parallel channel; and d. Divert surface water, drainage water, and stormwater associated with permanent structures (including culverts), drainage features, and erosion and sediment control measures.
<p>2.</p>	<p>This resource consent must be exercised in conjunction with Discharge Permit AUTH-20233670-01 (or any subsequent variation versions).</p>
<p>3.</p>	<p>The Consent Holder must comply with Schedule 1: General Conditions attached to and forming part of this consent.</p>

Discharge Permit

Purpose: To discharge contaminants to water and to land in circumstances where contaminants may enter water.

Duration: 25 years

Definitions used in this resource consent

In the conditions of this resource consent:

- a. “Parallel channel excavation works” means the construction of the parallel channel;
- b. “Maintenance activities” means those activities, including removal of gravel and bed material, as necessary to maintain the parallel channel, and the existing channels of the Waiau Arm upstream of and around the confluence with the Mararoa River at Manapōuri Lake Control Structure, in general accordance with their constructed dimensions;
- c. “Duration of the parallel channel excavation works” means from the commencement of excavation works in the parallel channel to the conclusion of excavation works on the parallel channel including a period ending five days (120 hours) after the parallel channel is made fully open to the Waiau Arm;
- d. “Stage 3 breakouts” means the removal of the riverbank plugs at the upstream and downstream end of the parallel channel excavation works during Stage 3 of the construction works;
- e. The “upstream monitoring site” (UMS) means the Mararoa River, as shown on Figure 1 attached to and forming part of this resource consent:
 - i. For turbidity, at or about the ‘Mararoa turbidity at Cliffs’ station approximately 150 metres (m) downstream of the Weir Road Bridge; and
 - ii. For flow, at or about the ‘Mararoa flow at Cliffs’ station located approximately 200m upstream of the Weir Road Bridge.
- f. The “downstream monitoring site” (DMS) means the existing site monitored by the Southland Regional Council upstream of the confluence of the Excelsior Stream with the Lower Waiau River at or about map reference NZTM2000 1185763E 4933776N, as shown on Figure 1 attached to and forming part of this resource consent;
- g. “Total turbidity” must be calculated by subtracting the mean hourly turbidity reading at the UMS from the same mean hourly turbidity reading at the DMS;
- h. “Deposited fine sediment” (DFS) means sediment less than 2 millimetres in diameter; and
- i. “Baseline DFS” is to be determined in accordance with Condition 10.

General

- | | |
|----|--|
| 1. | <p>This resource consent authorises the discharge of water and sediment to water, and to land in circumstances where it may enter water, as required to construct, operate and maintain the Manapōuri Lake Control Improvement Project at or about map reference NZTM2000 1186072E 4935093N and as shown on Figure 1 attached to and forming part of this consent. The activities authorised under this resource consent are:</p> <p>Construction works</p> <ol style="list-style-type: none"> a. Discharge suspended sediment to surface water from the disturbance and excavation of the bed of the Waiau Arm and riparian margins during parallel channel excavation activities; and b. Discharge water and sediment to land, in circumstances where it may enter water, from: |
|----|--|

Purpose: To discharge contaminants to water and to land in circumstances where contaminants may enter water.

Duration: 25 years

- i. Development and use of (and where relevant, disestablishment and/or rehabilitation of) the Contractor’s Establishment Area, Spoil Disposal Area, haul road, bunding, drainage features, erosion and sediment control measures, and dewatering ponds; and
- ii. Dewatering activities and dust suppression activities.

Operational and maintenance activities

- c. Discharge suspended sediment to surface water from the disturbance and excavation of the bed of the Waiau Arm, parallel channel, and riparian margins during maintenance activities, namely the removal of gravel and bed material, as necessary to maintain the parallel channel, and the existing channels of the Waiau Arm upstream of and around the confluence with the Mararoa River at the Manapōuri Lake Control Structure; and
- d. Discharge water and sediment to land, in circumstances where it may enter water, from permanent structures, drainage features, and erosion and control measures.

2. This resource consent must be exercised in conjunction with Water Permit AUTH-20233670-02 (or any subsequent variation versions).

3. The Consent Holder must comply with Schedule 1: General Conditions attached to and forming part of this consent.

Timing of discharges and flow requirements during works

4. Discharges of sediment to surface water in the Waiau Arm must only occur from the following activities at the stated times in each calendar year (all dates are inclusive):
- a. **Parallel channel excavation works** (except for **Stage 3 breakouts**): 1 January to 31 October;
 - b. **Stage 3 breakouts**: 1 April to 31 October; and
 - c. **Maintenance activities**: 1 January to 31 October.

5. For the duration of **parallel channel excavation works**, and for the duration of **maintenance activities**, the Consent Holder must deliver a positive flow within the Waiau Arm (from Lake Manapōuri towards the Manapōuri Lake Control Structure) sufficient to prevent movement of suspended sediment towards Lake Manapōuri.

Parallel channel excavation works: Turbidity thresholds for the Lower Waiau River

6. **Total turbidity** generated for the **duration of the parallel channel excavation works**, as attributable to the works, must not exceed the maximum total hours for any of the following Formazin Nephelometric Units (FNU) thresholds:

FNU threshold	Maximum total hours
>330	36
>160 to ≤330	95
>30 to ≤160	504
>12.4 to ≤30	945

Purpose: To discharge contaminants to water and to land in circumstances where contaminants may enter water.

Duration: 25 years

7. a. **Total turbidity** generated for the **duration of the parallel channel excavation works**, as attributable to the works, must not exceed the maximum consecutive hours for any of the following Formazin Nephelometric Units (FNU) thresholds:

FNU threshold	Maximum consecutive hours
>330	12
>160 to ≤330	32
>30 to ≤160	168
>12.4 to ≤30	315

b. In the event **total turbidity** reaches 95 percent of the maximum consecutive hours in any FNU threshold in Condition 7(a), the Consent Holder must implement measures to prevent the limits being reached, which may include but are not limited to:

- i. Temporarily suspending work on the **parallel channel excavation works**, and/or
- ii. Releasing sufficient flow through the Manapōuri Lake Control Structure to provide sufficient dilution to comply with the specified threshold durations.

8. In Condition 6, an FNU threshold may be exceeded for more than the total maximum hours stated, provided that there is a concomitant reduction in the total maximum hours provided for in the next highest FNU threshold.

9. In the event that **total turbidity** does not exceed 160 FNU for a period of at least 180 consecutive days, the turbidity thresholds set out in Condition 6 will be reset to their original maximum total hours.

Parallel channel excavation works: Deposited fine sediment (DFS) thresholds for the Lower Waiau River

10. The Consent Holder must measure **DFS** at the **DMS** weekly for a period of at least six weeks prior to commencing the **parallel channel excavation works**. The mean average **DFS** recorded during this period will be the "**baseline DFS**".

11. The Consent Holder must measure **DFS** weekly at the **DMS** for the **duration of the parallel channel excavation works** and eight weeks thereafter, and document any changes to **DFS** relative to the **baseline DFS**. These changes must be determined by using a rolling average of **DFS** measurements at the **DMS** over a four week period.

12. If an additive increase of more than 20 percent over in **DFS** above the **baseline DFS** at the **DMS** is observed, which is attributable to fine sediment generated by **parallel channel excavation works** (attribution to be determined in accordance with Condition 13, the Consent Holder must adopt all reasonably practicable measures to avoid, remedy or mitigate this effect. This includes but is not limited to:

- a. Releasing sufficient flow through the Manapōuri Lake Control Structure to mobilise **DFS** at the **DMS**;
- b. Temporarily suspending work on the **parallel channel excavation works**; and

Purpose: To discharge contaminants to water and to land in circumstances where contaminants may enter water. Duration: 25 years	
	<p>c. Increasing the duration of the initial first flush discharge from the parallel channel as it is opened to the Waiau Arm.</p>
13.	<p>An increase of 20 percent cover in DFS at the DMS will be considered attributable to the parallel channel excavation works if turbidity measured at the DMS minus turbidity measured at the UMS has exceeded 30 FNU for more than 37 hours consecutively during the preceding week.</p>
Operational and maintenance activities	
14.	<p>Throughout the term of this consent, the Consent Holder must ensure the parallel channel is maintained in general accordance with its as-built dimensions by periodically undertaking maintenance activities.</p>
15.	<p>a. Notwithstanding Condition 14, maintenance activities can only be undertaken if it is demonstrated the parallel channel is successful in increasing the reliability of flushing flow delivery to the Lower Waiau River.</p> <p>b. At least 20 working days prior to first undertaking any maintenance activities authorised under this consent, the Consent Holder must provide information to the Southland Regional Council Compliance Manager demonstrating success under clause (a).</p>
16.	<p>When undertaking maintenance activities, the Consent Holder must:</p> <p>a. Adopt all practicable measures to minimise the use of any machinery in flowing water and minimise generation of suspended sediment;</p> <p>b. Deposit any excavated material in the existing spoil stockpile area; and</p> <p>c. Ensure any increase in turbidity in the Lower Waiau River, as measured at the DMS, does not exceed 160 FNU for more than 12 consecutive hours, and does not exceed 330 FNU at any time. The Consent Holder must implement measures to prevent these limits being reached, which may include but not be limited to:</p> <p style="margin-left: 20px;">i. Temporarily suspending work on the maintenance activities, and/or</p> <p style="margin-left: 20px;">ii. Releasing sufficient flow through the Manapōuri Lake Control Structure to provide sufficient dilution to stay within the limits.</p>
17.	<p>The Consent Holder must ensure that, under normal operations (those periods not subject to parallel channel excavation works or maintenance activities), a positive flow is delivered within the Waiau Arm if required to prevent the movement of turbid water from the Mararoa River towards Lake Manapōuri. To achieve this, whenever the Mararoa River at the UMS has a turbidity greater than 30 Nephelometric Turbidity Units, the Consent Holder must discharge from the Manapouri Lake Control Structure a flow no less than the flow in the Mararoa River measured at the same time.</p>
18.	<p>To determine compliance with Condition 17, the Consent Holder must measure and record the following information at the sites listed below (shown at Figure 1 attached to and forming part of this resource consent):</p> <p>a. Nephelometric Turbidity Units in the Mararoa River at the UMS; and</p>

Purpose: To discharge contaminants to water and to land in circumstances where contaminants may enter water.

Duration: 25 years

- b. Nephelometric Turbidity Unites at the Waiiau Arm Turbidity Monitoring Site located at or about NZTM2000 1185102E 4935578N.
 - c. Flow rates in the Waiiau Arm shall be reported on by calculating the 30-minute average of flow as measured at the Manapōuri Lake Control structure flow minus the 30-minute average of the Mararoa River flow as measure at the UMS.
- Data must be collected at a frequency of not less than once every 60 minutes and the correlated records supplied to the Southland Regional Council one month after completing the parallel channel excavation works and quarterly thereafter .

(a) Schedule 1: General Conditions

General	
1.	In the conditions of Discharge Permit AUTH-20233670-01, Water Permit AUTH-20233670-02, and Schedule 1: General Conditions, a Suitably Qualified Person means a person (or persons) who can provide sufficient evidence to demonstrate their suitability, competence, and experience in the relevant field of expertise.
2.	<p>For the management plans referred to in Conditions 11 and 16:</p> <p>a. At least 20 working days prior to providing the final management plans to the parties in Condition 2(b), the Consent Holder must invite Te Ao Mārama Inc to comment on drafts of the management plans. Any feedback received from Te Ao Mārama Inc must be provided to the Southland Regional Council Compliance Manager when final management plans are provided under Condition 2(b), together with comments from the Consent Holder explaining how that feedback has been addressed in the final management plans.</p> <p>b. At least 15 working days prior to implementation of the management plans, a copy must be provided to the following parties for their information:</p> <ul style="list-style-type: none"> • Southland Regional Council Compliance Manager, • Department of Conservation, • Guardians of Lakes Manapōuri, Monowai and Te Anau, • Te Ao Mārama Inc, • Waiau Fisheries and Wildlife Habitat Enhancement Trust, • Waiau Rivercare Group, and • Waiau Working Party. <p>c. The management plans must be independently reviewed by a Suitably Qualified Person(s), with evidence of that review being provided in the management plan provided to the parties in Condition 2(b).</p> <p>d. In the event that the management plans are materially updated or amended during or following construction works, an updated copy must be provided to parties in Condition 2(b) for their information.</p>
Ecology (general)	
3.	Except where authorised by Discharge Permit AUTH-20233670-01 and Water Permit AUTH-20233670-02, activities within flowing water are to be minimised as far as reasonably practicable.
4.	<p>a. All fuel storage or machinery refuelling must occur outside the bed of the lake or river;</p> <p>b. All equipment, machinery, or operating plant must be cleaned before entering, and leaving the site, in accordance with Biosecurity New Zealand’s “Clean, check, dry” hygiene procedures for machinery; and</p> <p>c. All equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity must be removed from the site following completion of the <u>parallel channel excavation works</u>.</p>

General	
	<p>Advice Note: Biosecurity New Zealand’s hygiene procedures are available at www.biosecurity.co.nz and are intended to prevent the spread of pests and unwanted organisms as defined in the Biosecurity Act 1993, including <i>Didymosphenia geminata</i>.</p>
Avifauna	
5.	<p>a. Within 10 days prior to the commencement of construction works (including establishment works) occurring during the period commencing 15 September and ending 31 January (inclusive), a survey must be undertaken by a Suitably Qualified Person to determine if any black fronted tern, black billed gull, banded dotterel, black fronted dotterel, or New Zealand pipit are nesting within the footprint to be disturbed by the works during that period.</p> <p>b. No works must occur within 50 m of a nesting bird identified in the survey in clause (a). Once nesting is complete, the 50 m exclusion zone at that nest no longer applies.</p> <p>c. The survey results from clause (a) must be provided to the Consent Authority prior to commencement of construction works.</p>
Buchanan’s sedge	
6.	<p>The Consent Holder must undertake translocation and planting of Buchanan’s sedge plants located within the Project site, in accordance with clauses (a) to (f) below:</p> <p>a. The translocation and planting must at minimum achieve no net loss of the number of Buchanan’s sedge plants existing within the parallel channel excavation footprint at the commencement of parallel channel excavation works. The calculation of no net loss must be made at the conclusion of the monitoring described under clause (e).</p> <p>b. Prior to the commencement of parallel channel excavation works, all Buchanan’s sedge plants within the construction footprint must be transplanted into suitable habitat within the Project site but outside the construction footprint. Translocation must follow best practice methods for transplanting sedges.</p> <p>c. Seed must be collected from Buchanan’s sedge plants within the Project site, if practicable, (or else within the Upukekeroroa Ecological District) and provided to a commercial nursery to raise a minimum of 100 plants.</p> <p>d. Within 12 months of the completion of parallel channel excavation works, a minimum of 100 nursery-raised plants must be planted into suitable habitats within the Project site. The number of translocated and nursery-raised Buchanan’s sedge plants must be recorded and their locations marked using a handheld GPS.</p> <p>e. The Consent Holder must monitor the survival of translocated and nursery-raised Buchanan’s sedge plants 12 months after the nursery-raised plants have been planted.</p> <p>f. Within 10 working days of completion of the monitoring in clause (e), a brief report must be prepared by a Suitably Qualified Person and provided to the Consent Authority. The monitoring report will include:</p> <ol style="list-style-type: none"> i. The number of surviving translocated and nursery raised Buchanan’s sedge plants. ii. A map of the locations of the translocated and nursery raised Buchanan’s sedge plants. iii. An overall statement on compliance with this condition (Condition 6).

General	
	<p>iv. In the event there has been a net loss of the number of Buchanan’s sedge plants under these conditions, the actions that will subsequently be undertaken to ensure no net loss will be achieved.</p>
Freshwater fauna	
7.	<p>At the following times and locations, and subject to Condition 8, fish and kākahi potentially affected by the parallel channel excavation works must be recovered and relocated, by a Suitably Qualified Person(s), to identified suitable donor and receiving habitat:</p> <p>a. A maximum of three days prior to any disturbance work or temporary closure of the lacustrine channels of the Waiau Arm;</p> <p>b. A maximum of three days prior to establishing the Stage 3 breakouts during parallel channel excavation works; and</p> <p>c. A maximum of three working days prior to excavation or bunding work in the lagoon area.</p>
8.	<p>Except where Condition 9 applies, the recovery required by Condition 7 must continue until:</p> <p>a. A catch rate of less than 10 percent of the first or second (whichever is the greater) recovery event is achieved; and</p> <p>b. No brown trout, rainbow trout, or ‘Threatened or At-risk’ species are captured.</p>
9.	<p>Where fish numbers are low, such that compliance with Condition 8(a) cannot be achieved, the recovery must be completed as directed by a Suitably Qualified Person(s).</p>
10.	<p>Where pest fish species and exotic fish (with the exception of sports fish) are captured, they must be humanely euthanised and not relocated.</p>
11.	<p>A Freshwater Fauna and Management Plan (FFMP) must be prepared and implemented by a Suitably Qualified Person(s). The purpose of the FFMP is to demonstrate how effects on fish and kākahi will be minimised during the parallel channel excavation works and future maintenance activities. The FFMP must include at least, but not limited to, the following:</p> <p>a. Identification of key personnel undertaking the implementation of the FFMP, including their roles and responsibilities;</p> <p>b. For parallel channel excavation works:</p> <p style="margin-left: 20px;">i. Identification of suitable donor and receiving habitat for fish and kākahi that is not affected by the parallel channel excavation works;</p> <p style="margin-left: 20px;">ii. Industry best practice methodologies, protocols and timing for recovery and relocation, which may include (but are not limited to) electro-fishing (including targeted larval lamprey electric fishing methods), trapping, spotlighting and netting, and dewatering and muck out;</p> <p style="margin-left: 20px;">iii. Storage and transport measures including minimisation of predation and death during salvage; and</p> <p style="margin-left: 20px;">iv. Euthanasia methods for diseased or pest species.</p> <p>c. For maintenance activities, a specific section outlining the measures to minimise effects on fish and kākahi in areas where surface water is present at the time of maintenance activities.</p> <p>d. For all works:</p>

General	
	<ul style="list-style-type: none"> i. Guidance on fish migration and spawning times; ii. Placement of appropriate fish screens on the inlets of any pumps used; and iii. Measures to minimise effects on fish and kākahi from construction activities, including with respect to construction lighting.
12.	The FFMP under Condition 11 must be adhered to throughout the <u>parallel channel excavation works</u> and <u>maintenance activities</u> .
13.	<p>The Consent Holder must provide written confirmation to the Consent Authority from a Suitably Qualified Person:</p> <ul style="list-style-type: none"> a. At least 10 working days prior to the commencement <u>of parallel channel excavation works</u>, that the design of any permanent culverts within the lacustrine channels of the Waiau Arm achieves the outcomes intended by the ‘New Zealand Fish Passage Guidelines: For structures up to 4 metres, 2018’, including that the culvert design is consistent with the principles of good fish passage design in Section 3.4 of those guidelines; and b. Within six months of the completion of the <u>parallel channel excavation works</u>, that the culverts have been installed accordance with the designs referred to in Condition 13(a).
Wetland remediation	
14.	<p>To remediate the removal of Wetland 1 (shown on Figure 2 attached to and forming part of this resource consent), within 12 months of the completion date of the <u>parallel channel excavation works</u>, the Consent Holder must implement wetland remediation, in accordance with clauses (a) to (c) below, to achieve no net loss in extent of indigenous <i>Juncus</i> rushland marsh within the Project site. The calculation of no net loss must be made at three years after completion of the <u>parallel channel excavation works</u>.</p> <ul style="list-style-type: none"> a. <i>Juncus sarophorus</i>, <i>Juncus edgariae</i> and <i>Carex virgata</i> must be planted over a minimum area of 200m², with that area meeting the following further criteria: <ul style="list-style-type: none"> i. Located within the area mapped as Wetland 3 (shown on Figure 2 attached to and forming part of this resource consent); ii. Have hydrological conditions appropriate for the long-term survival of the three plant species; and iii. Be generally comprised of exotic grasses or herbs. b. Plants must be planted at spacings that, when mature, will achieve an overall cover of indigenous wetland plants that exceeds 65 percent vegetation cover across the wetland remediation site. c. At a period not exceeding three years following the completion date of the <u>parallel channel excavation works</u>, the Consent Holder must provide to the Consent Authority and to Te Ao Mārama Inc a report from a Suitably Qualified Person setting out the extent to which the wetland remediation is achieving compliance with this condition, including confirmation that the overall percentage cover of indigenous wetland plant species within the wetland remediation site exceeds 65 percent.
Water quality monitoring programme (WQMP)	
15.	<ul style="list-style-type: none"> a. At the completion of <u>parallel channel excavation works</u>, the Consent Holder must prepare and implement a water quality monitoring programme (WQMP) for the

General	
	<p>detection of phytoplankton blooms in the parallel channel and existing channels (adjacent to the parallel channel) during the summer period (1 January to 31 March).</p> <p>b. The protocol for the WQMP must be prepared by a Suitably Qualified Person and provided to the Consent Authority for its records prior to the implementation of the WQMP.</p> <p>c. During each summer period, the WQMP will consist of fortnightly measurements of water temperature, dissolved oxygen, water clarity, pH and chlorophyll <i>a</i> at two Representative Sites.</p> <p>d. For the purposes of clause (c), ‘Representative Sites’ means one site in the parallel channel and one site in the existing channel. The location of the Representative Sites must be agreed in writing with the Consent Authority prior to the implementation of the WQMP.</p> <p>e. Within three working days of receiving notice that chlorophyll <i>a</i> has been detected in a sample at or above 5 milligrams per cubic metre (mg/m³), the Consent Holder will release a flow, the volume of which must be identified in the protocol under clause (b), across the Manapōuri Lake Control Structure into the Lower Waiau River to mitigate the risk of phytoplankton blooms.</p> <p>f. Within six months after 31 March of each summer period a brief written report must be prepared by a Suitably Qualified Person and supplied to the Consent Authority to document the implementation and outcomes of the WQMP in that summer period. This report must also be provided to the parties listed in Condition 2(b).</p>
Erosion and sediment control	
16.	<p>Land-based activities (those activities not located in the bed of a river or lake) associated with construction works and <u>maintenance activities</u> must be undertaken in accordance with an Erosion and Sediment Control Plan (ESCP). The ESCP must be prepared by a Suitably Qualified Person and at minimum include details of:</p> <p>a. Appropriate structural and non-structural erosion and sediment control measures to be installed, as the circumstances require, before and during construction works and <u>maintenance activities</u> to minimise the potential for sediment to enter surface water;</p> <p>b. Key environmental risks, particularly in relation to topography, soil type and form, and the receiving environment, including proximity to any sensitive receivers;</p> <p>c. The approach and procedures for ensuring advance warning of a rainfall event;</p> <p>d. Procedures for decommissioning the erosion and sediment control measures;</p> <p>e. Procedures for determining the staging and sequencing of earthworks; and</p> <p>f. Methods for amending and updating the ESCP as required.</p>
Landscape and rehabilitation	
17.	<p>During <u>parallel channel excavation works</u>, all work areas must be maintained in a tidy state. Following the completion of the <u>parallel channel excavation works</u>, all temporary buildings and structures, plant, machinery and equipment must be removed (except machinery required for the works in Conditions 18 and 19 below) and the site left in a tidy state.</p>

General	
18.	Following the completion of parallel channel excavation works , the spoil disposal area, contractor's establishment area, and any construction area in the Waiau Arm no longer required for permanent structures, must be shaped and profiled to be sympathetic to the contours of the surrounding landscape and piles or humps must be avoided.
19.	The spoil disposal area and contractors' establishment area must be rehabilitated within the next available planting season following the completion of the parallel channel excavation works . This rehabilitation must achieve a final cover of pasture or similar vegetation.
Future gravel extraction from gravel stockpile cell	
20.	Any future removal of gravel from the spoil disposal area must be limited to within the defined 'gravel stockpile cell' as shown on Figure 1 attached to and forming part of these resource consents and must be completed in sequential stages moving from south to north to facilitate progressive rehabilitation.
21.	Once any future gravel removal from within the 'gravel stockpile cell' is complete, the resultant surface must be scarified to promote plant growth and rehabilitated within the next available planting season. This rehabilitation must achieve a final cover of pasture or similar vegetation.
Advice Note: for Conditions 20 and 21 - Any future gravel removal and processing from the gravel stockpile cell may be subject to requirements of additional resource consents.	
Notifications, records and reporting	
22.	The Consent Holder must notify the Consent Authority and Te Ao Mārama Inc in writing no less than ten working days prior to the following activities under these resource consents: <ul style="list-style-type: none"> a. Commencing any construction works; b. Undertaking Stage 3 breakouts; c. Completion of construction works; and d. Commencing any maintenance activities.
23.	The Consent Holder must maintain a record of the following activities, and must supply these records to the Consent Authority within the time periods specified: <ul style="list-style-type: none"> a. Turbidity and DFS monitoring results must be provided monthly during parallel channel excavation works under Discharge Permit AUTH-20233670-01; b. The timing and duration of maintenance activities and turbidity monitoring results during maintenance activities must be provided within ten working days of the completion of the maintenance activities; and c. A record of any incidents or complaints during construction works and maintenance activities must be provided within five working days of the incident or complaint.
24.	In the event of a non-compliance with Conditions 7 to 14 of Discharge Permit AUTH-20233670-01 during parallel channel excavation works the Consent Holder must notify the Consent Authority and Te Ao Mārama Inc in writing immediately. The notification must include a summary of the actions undertaken to address the non-compliance.
Accidental discovery protocol	

General	
25.	<p>In the event of a discovery, or suspected discovery, of a site of cultural importance (Waahi Taonga/Tapu) during the exercise of this consent, the Consent Holder must immediately cease operations in that location and inform the local iwi authority (Te Ao Mārama Inc, office@tami.maori.nz). Operations may recommence at a time as agreed upon in writing with the Consent Authority. The discovery of Koiwi (human skeletal remains) or Taonga or artefact material (e.g. pounamu/greenstone) would indicate a site of cultural importance. Appendix A outlines the process that is to be followed in the event of such a discovery.</p>
Review	
26.	<p>The Consent Authority may, in accordance with Sections 128 and 129 of the Resource Management Act 1991, serve notice on the Consent Holder of its intention to review the conditions of these resource consents during the period 1 February to 30 September each year, or within two months of any enforcement action being taken by the Consent Authority in relation to the exercise of this consent, for the purposes of:</p> <ol style="list-style-type: none"> a. Ensuring the alignment and integration of the conditions of these resource consent with the resource consents for the operation of the Manapouri Power Scheme; b. Determining whether the conditions of these resource consents are adequate to deal with any adverse effect on the environment, including cumulative effects, which may arise from the exercise of the resource consents, and which it is appropriate to deal with at a later stage, or which become evident after the date of commencement of these resource consents; c. Ensuring the conditions of these resource consents are consistent with any National Environmental Standards Regulations, relevant plans and/or the Environment Southland Regional Policy Statement; d. Requiring the Consent Holder to adopt the best practicable option to remove or reduce any adverse effect on the environment arising as a result of the exercise of these resource consents.

Appendix A - Protocol in the event of a discovery, or suspected discovery, of a site of cultural importance (Waahi Taonga/Tapu)

Upon the discovery of artefact discovery, the following shall take place:

1. In the event that Kōiwi (human skeletal remains) are discovered, the works in that area of the site shall cease immediately and Tangata Whenua (Te Ao Marama and appropriate Papatipu Rūnanga), NZ Police and/or Heritage New Zealand Pouhere Taonga, and the Southland Regional Council, shall be notified as soon as practicable.
 - a. The site is to be immediately secured upon discovery to prevent further disturbance of the discovery site.
2. Taonga or artefact material (e.g. pounamu / greenstone artefacts) other than Kōiwi will be treated in similar manner so that their importance can be determined, and the environment recorded by qualified archaeologists alongside the appropriate Tangata whenua. Te Ao Mārama Inc are to be contacted in the event of taonga or archaeological artefact discovery in accordance with the Protected Objects Act 1975.

Contact details for Te Ao Marama Inc. are as follows:

Te Ao Mārama Inc.
98 Yarrow Street, Invercargill, 9810.
office@tami.maori.nz
(03) 9321242

3. In-situ (Natural State) Pounamu/Greenstone Accidental Discovery Pursuant to the Ngāi Tahu (Pounamu Vesting) Act 1997: All natural state pounamu/greenstone in the Ngāi Tahu tribal area is owned by Te Rūnanga o Ngāi Tahu. The Ngāi Tahu Pounamu Resource Management Plan provides for the following measures:
 - a. Any in-situ (natural state) pounamu/greenstone accidentally discovered should be reported to the Pounamu Management Officer of Te Rūnanga o Ngāi Tahu as soon as is reasonably practicable. The Pounamu Management Officer of Te Rūnanga o Ngāi Tahu will in turn contact the appropriate Kaitiaki Papatipu Rūnanga; and
 - b. In the event that the finder considers the pounamu is at immediate risk of loss such as erosion, animal damage to the site or theft, the pounamu/greenstone should be carefully covered over and/or relocated to the nearest safe ground. The find should then be notified immediately to the Pounamu Management Officer.
 - c. The find should then be notified immediately to the General Manager, Te Ao Turoa, at Te Rūnanga o Ngāi Tahu.

Ngai Tahu contact details are as follows:

General Manager, Te Ao Turoa
Te Rūnanga o Ngāi Tahu
Te Whare o Te Waipounamu

15 Show Place, Addington, PO Box 13 046
Christchurch 8024
Trudy.Heath@ngaitahu.iwi.nz

Archaeological Sites

Archaeological sites are protected under the Heritage New Zealand Pouhere Taonga Act (2014), and approval is required from Heritage New Zealand before archaeological sites can be modified, damaged or destroyed. Not all archaeological sites are known or recorded precisely.

Where an archaeological site is inadvertently disturbed or discovered:

1. Further disturbance must cease until approval to continue is obtained from Heritage New Zealand; and
2. The New Zealand Police and Te Ao Marama Inc also need to be advised if the discovery includes kōiwi tangata/human remains.

Contact details for Heritage New Zealand are:

Heritage New Zealand
c/o Regional Archaeologist Otago/Southland
PO Box 5467, Dunedin
Phone: (03) 477 9871
Mobile 027 240 8715
infodeepsouth@heritage.org.nz

Figure 1: Key Features of the Manapouri Lake Control Improvement Project

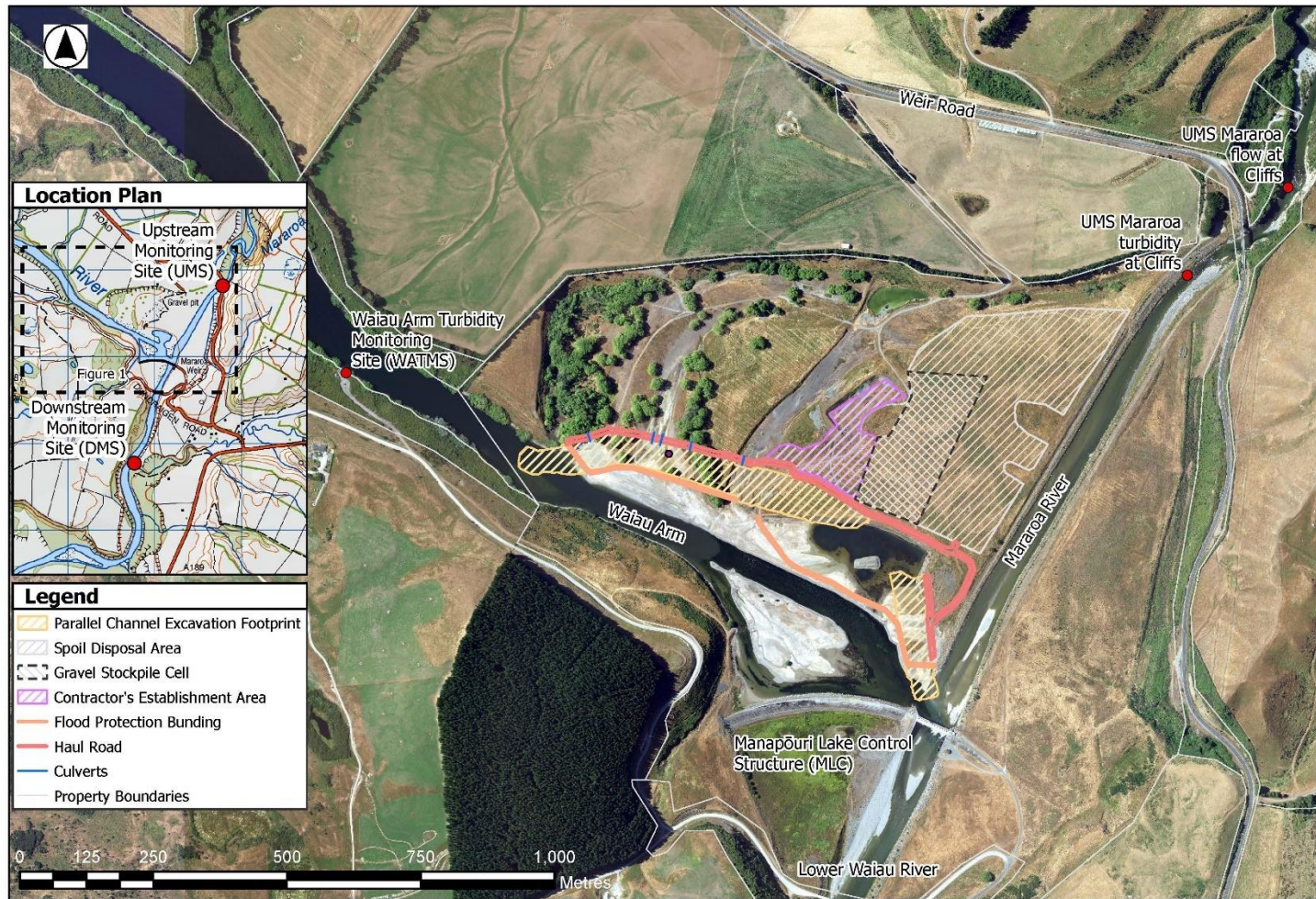


Figure 1: Key Features of the Manapouri Lake Control Improvement Project

Figure 2: Location of Wetlands 1 and 3

