

Section 32 Evaluation Report for the Proposed Otago Land and Water Regional Plan

Chapter 21: Area Specific Matters

**This Section 32 Evaluation Report should be read together with the Proposed
Otago Land and Water Regional Plan**



**Otago
Regional
Council**

List of tables	7
Abbreviations	8
Area-specific matters	9
1. Introduction	9
1.1. General overview	9
2. Setting FMU boundaries for the Otago region	10
2.1. Overview of relevant national direction.....	10
2.2. Approach for setting FMUs for the Otago region.....	11
3. Identifying values for Otago’s FMUs	13
3.1. Overview of relevant national direction.....	13
3.2. Overview of approach and process for identifying values	13
3.3. Overview of Clause 3 feedback.....	14
3.4. Overview of Clause 3 and 4A feedback from iwi authorities	14
3.5. Conclusion.....	14
4. Setting environmental outcomes for Otago’s FMUs	15
4.1. Overview of relevant national direction.....	15
4.2. Overview of approach and process for setting environmental outcomes.....	15
4.3. Evaluation of the Environmental outcomes	16
4.4. Overview of Clause 3 feedback.....	16
4.5. Overview of Clause 3 and Clause 4A feedback from iwi authorities.....	17
4.6. Conclusion.....	17
5. Attributes and alternative criteria	18
5.1. Overview of relevant national direction.....	18
5.2. Approach and process for selection of attributes and other criteria.....	18
5.3. Overview of Clause 3 feedback.....	19
5.4. Overview of Clause 3 and Clause 4A feedback from iwi authorities.....	19
5.5. Conclusion.....	20
6. Monitoring sites (including primary contact monitoring sites)	20
6.1. Overview of relevant national direction.....	20
6.2. Approach for identifying monitoring sites.....	20
6.3. Approach for identifying primary contact sites.....	21
6.4. Overview of Clause 3 feedback.....	22

6.5.	Overview of Clause 3 and Clause 4A feedback from iwi authorities.....	22
6.6.	Conclusion.....	22
7.	Baseline States	23
7.1.	Overview of relevant national direction.....	23
7.2.	Approach and process for setting baseline states.....	23
7.3.	Setting baseline states for rivers	23
7.4.	Setting baseline states for lakes	25
7.5.	Overview of Clause 3 feedback.....	25
7.6.	Overview of Clause 3 and Clause 4A feedback from iwi authorities.....	25
7.7.	Conclusion.....	26
8.	Target attribute states and interim target attribute states	26
8.1.	Overview of relevant national direction.....	26
8.2.	Site-based target attribute states.....	26
8.3.	River network-based target attribute states	27
8.4.	Hybrid approach	28
8.5.	Special provisions for attributes affected by nutrients (Clause 3.13)	28
8.6.	Naturally occurring processes.....	29
8.7.	Timeframes	30
8.8.	Interim target attribute states.....	30
8.9.	Overview of Clause 3 feedback.....	31
8.10.	Overview of Clause 3 and Clause 4A feedback from iwi authorities.....	32
8.11.	Conclusion.....	32
9.	Policies	32
9.1.	Policy FMU(1-5)-P1 – Target attribute states	32
9.1.1.	Introduction	32
9.1.2.	Objectives	33
9.1.3.	Discounted options.....	33
9.1.4.	Reasonably practicable options.....	34
9.1.5.	Option 1: Provide policy direction in the pLWRP (preferred option).....	34
9.1.6.	Option 2: Set permitted activity conditions or entry conditions requiring the achievement of TAS	34
9.1.7.	Overview of Clause 3 feedback	34

9.1.8.	Overview of Clause 3 and Clause 4A feedback from iwi authorities.....	35
9.1.9.	Effectiveness and efficiency assessment.....	35
9.1.10.	Conclusion	37
9.2.	Policy FMU1-P1 – Lake Wānaka.....	37
9.2.1.	Introduction	37
9.2.2.	Objectives	38
9.2.3.	Reasonably practicable options.....	38
9.2.4.	Option 1: status quo	38
9.2.5.	Option 2: include policy direction (preferred option).....	39
9.2.6.	Overview of Clause 3 feedback	39
9.2.7.	Overview of Clause 3 and 4A feedback from iwi authorities	40
9.2.8.	Effectiveness and efficiency assessment.....	40
9.2.9.	Conclusion	41
9.3.	Policy FMU1-P2 - Discharges from instream dams in the Clutha River/Mata-au mainstem.....	41
9.3.1.	Introduction	41
9.3.2.	Objectives	43
9.3.3.	Reasonably practicable options.....	43
9.3.4.	Option 1: Rely on regionwide policy direction	44
9.3.5.	Option 2: Rely on bespoke policy direction (preferred option)	44
9.3.6.	Overview of Clause 3 feedback	44
9.3.7.	Overview of Clause 3 and 4A feedback from iwi authorities	45
9.3.8.	Effectiveness and efficiency assessment.....	45
9.3.9.	Conclusion	47
9.4.	CAT3-P2 – Manuherekia River and FMU2-P2 – Taiari River	47
9.4.1.	Introduction	47
9.4.2.	Objectives	48
9.4.3.	Reasonably practicable options.....	49
9.4.4.	Option 1: Rely on regionwide policy direction in EFL chapter	49
9.4.5.	Option 2: Include policy direction to support the future management of allocation (preferred option)	49
9.4.6.	Overview of Clause 3 feedback	50

9.4.7.	Overview of Clause 3 and clause 4 feedback from iwi authorities	50
9.4.8.	Effectiveness and efficiency assessment.....	51
9.4.9.	Conclusion	54
9.5.	FMU3-P2 to P5 – Policies that give effect to the Waitaki Allocation Plan	54
9.5.1.	Introduction	54
9.5.2.	Objectives	55
9.5.3.	Reasonably practicable options.....	55
9.5.4.	Option 1: Rely on regionwide policy direction in EFL chapter.	55
9.5.5.	Option 2: Give effect to a direction set in the Waitaki Catchment Water Allocation Regional Plan (WCWARP), to ensure that the pLWRP gives effect to the WCWARP (preferred option)	55
9.5.6.	Overview of Clause 3 feedback	56
9.5.7.	Overview of Clause 3 and Clause 4A feedback from iwi authorities.....	56
9.5.8.	Effectiveness and efficiency assessment.....	56
9.5.9.	Conclusion	58
10.	Rules	58
10.1.	FMU1-R1 Maintenance of the Clutha Hydroelectricity Scheme	58
10.1.1.	Introduction	58
10.1.2.	Objectives	59
10.1.3.	Reasonably practicable options.....	59
10.1.4.	Option 1: do not include policy direction.....	60
10.1.5.	Option 2: include policy direction (preferred option).....	60
10.1.6.	Overview of Clause 3 feedback	60
10.1.7.	Overview of Clause 3 and Clause 4A feedback from iwi authorities.....	60
10.1.8.	Effectiveness and efficiency assessment.....	61
10.1.9.	Conclusion	62
10.2.	FMU2-R2 – Lake Waipōuri/Waihola wetland complex	62
10.2.1.	Introduction	62
10.2.2.	Objectives	64
10.2.3.	Reasonably practicable options.....	64
10.2.4.	Option 1: Rely on regionwide policy and rule framework in EFL chapter	64

10.2.5. Option 2: include policy direction to support the future management of allocation (preferred option)	65
10.2.6. Overview of Clause 3 feedback	65
10.2.7. Overview of Clause 3 and Clause 4A feedback from iwi authorities.....	65
10.2.8. Effectiveness and efficiency assessment.....	65
10.2.9. Conclusion	65
10.3. CAT(2-5) – R1 & FMU2,4 and 5 – R1 - Cultivation	65
11. Methods.....	66
11.1. CAT2-M1 – Lake Hayes Catchment Action Plan.....	66
11.1.1. Introduction	66
11.1.2. Objectives	67
11.1.3. Reasonably practicable options.....	68
11.1.4. Option 1: do not include a method direction.....	68
11.1.5. Option 2: include policy direction (preferred option).....	68
11.1.6. Overview of Clause 3 feedback	68
11.1.7. Overview of Clause 3 and Clause 4A feedback from iwi authorities.....	69
11.1.8. Effectiveness and efficiency assessment.....	69
11.1.9. Conclusion	70
References	Error! Bookmark not defined.

List of tables

Table 1: Benefits and costs for FMU(1-5)-P1 – Target attribute states.....	35
Table 2: Effectiveness and efficiency assessment – FMU(1-5)-P1 – Target attribute states ..	36
Table 3: Benefits and costs for Lake Wānaka policy.....	40
Table 4: Effectiveness and efficiency assessment – Lake Wānaka policy	40
<i>Table 5: Benefits and costs for policy direction for maintaining minimum discharges from the hydro-electricity dams on the Clutha Mata-au and Hāwea River main stems.....</i>	<i>45</i>
<i>Table 6: Effectiveness and efficiency assessment – policy direction for maintaining minimum discharges from the hydro-electricity dams on the Clutha Mata-au and Hāwea River main stems</i>	<i>46</i>
<i>Table 7: Benefits and costs for additional policy direction to support the future management of allocation in the Manuherehia rohe and Taiari FMU.</i>	<i>52</i>
<i>Table 8: Effectiveness and efficiency assessment for additional policy direction to support the future management of allocation in the Manuherehia rohe and Taiari FMU.</i>	<i>54</i>
Table 9: Benefits and costs for policy options for managing water in those parts of the Waitaki catchment that are situated within the Otago region	57
<i>Table 10: Effectiveness and efficiency assessment for managing water in those parts of the Waitaki catchment that are situated within the Otago region.</i>	<i>58</i>
<i>Table 11: Benefits and costs for Clutha Hydro-electric generation scheme maintenance rule</i>	<i>61</i>
<i>Table 12: Effectiveness and efficiency assessment – Clutha hydro-electric generation scheme maintenance rule</i>	<i>62</i>
Table 13: schedule for the tentative roll-out of CAPs for the region.	67
Table 14: Benefits and costs - Lake Hayes Method	69
Table 15: Effectiveness and efficiency assessment – Lake Hayes Method	69

Abbreviations

FMU	Freshwater Management Unit
LWPA	Lake Wānaka Preservation Act 1973
NES	National Environmental Standard
NESAQ	National Environmental Standards for Air Quality 2004
NOF	National Objectives Framework
NPS	National Policy Statement
NPSFM	National Policy Statement for Freshwater Management 2020
ORPS	Otago Regional Policy Statement 2019
pORPS	Proposed Otago Regional Policy Statement 2021
pLWRP	Proposed Otago Land and Water Regional Plan 2024
RPS	Regional Policy Statement
RPW	Regional Plan: Water
RMA	Resource Management Act 1991
WCWARP	Waitaki Catchment Water Allocation Regional Plan

Area-specific matters

1. Introduction

1. This chapter of the s32 report sets out the evaluation of the provisions included within the Area-specific matters chapter of the pLWRP.
2. The Area-specific matters chapter of the pLWRP contains six sections. There is an introductory section, that provides an explanation of the relationship between the values identified within the region's FMUs, the environmental outcomes set for these values and the attributes and alternative criteria identified to measure the achievement of these outcomes. The introduction is followed by five sections, one for each FMU in the region.
3. Each FMU chapter has the following structure:
 - a. A short Overview section that describes the main characteristics (e.g. hydrology, geography, key land uses and/or economic activities) and lists the relevant monitoring sites and primary contact sites of the relevant FMU; and
 - b. An Objectives section that includes all the relevant environmental outcomes for identified values; and
 - c. A Policies section that includes:
 - i. A policy and associated tables that set out the relevant target attribute states (including interim target attribute states) for relevant monitoring sites and river management classes and the dates by which these must be achieved; and
 - ii. Any FMU specific policies or any part thereof; and
 - d. A Rules section that includes any FMU specific rules; and
 - e. A Methods section that includes any specific FMU methods.

1.1. General overview

4. The following sections discuss the provisions included in the Area-specific matters chapter of the pLWRP and, where appropriate, evaluates these in accordance with the requirements of RMA s32.
5. The sections do not consistently follow the order of the FMU chapters in the pLWRP but instead are structured in a manner that follows the National Objectives Framework (NOF) process steps set out in Clause 3.7(2) of the NPSFM, which requires regional councils to undertake the following steps:
 - a. identify FMUs in the region (Clause 3.8)
 - b. identify values for each FMU (Clause 3.9)
 - c. set environmental outcomes for each value and include them as objectives in regional plans (Clause 3.9)
 - d. identify attributes for each value and identify baseline states for those attributes (Clause 3.10)

- e. set target attribute states, environmental flows and levels, and other criteria to support the achievement of environmental outcomes (clauses 3.11, 3.13, 3.16)
- f. set limits as rules and prepare action plans (as appropriate) to achieve environmental outcomes (clauses 3.12, 3.15, 3.17).

2. Setting FMU boundaries for the Otago region

2.1. Overview of relevant national direction

6. The NOF process in the NPSFM requires regional councils to identify Freshwater management units (FMU) in Otago. Specifically, Clause 3.8 (1) and (2) require that:
 - a. Every regional council must identify FMUs for its region, and
 - b. Every water body in the region must be located within at least one FMU.
7. The NPSFM¹ defines *freshwater management unit*, or FMU as:

all or any part of a water body or water bodies, and their related catchments, that a regional council determines under Clause 3.8 is an appropriate unit for freshwater management and accounting purposes; and part of an FMU means any part of an FMU including, but not limited to, a specific site, river reach, water body, or part of a water body.
8. The Guide to Identifying Freshwater Management Units Under the National Policy Statement for Freshwater Management 2014 further explains:

The concept of FMUs was added to the NPSFM following recommendations by the Land and Water Forum to:

 - i. *encourage a pragmatic approach to freshwater management by allowing water bodies to be grouped together where appropriate,*
 - ii. *allow a single objective to apply to freshwater bodies that are not connected,*
 - iii. *establish a spatial scale at which management activities are undertaken, including freshwater accounting and setting freshwater objectives and limits (Ministry for the Environment, 2014).*
9. The definition of FMUs is intentionally flexible so councils can determine the spatial scale best suited to managing freshwater in the specific circumstances of their region. Management includes setting values, objectives, limits, and undertaking freshwater accounting and monitoring.
10. While the use of the term “FMU” is a relatively new one, the use of spatial units in land and water planning is not a new concept for councils. This approach has been used by various regional councils in New Zealand in the past for the management of both water quality, particularly nutrient management, and water allocation.
11. The identification of FMUs in the region is the first step of the NOF process set out under Clause 3.7(2) of the NPSFM. The identification of FMUs precedes the development of the pLWRP provisions, including the identification of values, the setting of environmental

¹ Clause 1.4, NPSFM

outcomes for each value, the identification of attributes and setting of target attribute states, environmental flows and levels and other criteria to support the achievement of environmental outcomes, and the setting of limits as rules.

12. Clause 3.3(1) of the NPSFM requires every regional council to develop long-term visions for freshwater in its region and include those long-term visions as objectives in its regional policy statement². Clause 3.3(2)(a) of the NPSFM further allows for these long-term visions to be set at FMU, part of an FMU, or catchment level.

2.2. Approach for setting FMUs for the Otago region

13. To give effect to the NPSFM requirements with respect to the development of long-term visions for freshwater for the Otago region³, the identification of FMUs was commenced prior to the start of the development of the pLWRP and was completed in time for the proposed FMU structure and boundaries to be included in the pORPS for Otago 2021. The non-Freshwater Planning Instrument part of the pORPS was notified on 26 June 2021, while the Freshwater Planning Instrument part of the pORPS 2021 was publicly notified on 30 September 2022.
14. To set FMUs for Otago, a multidisciplinary team consisting of two iwi representatives and Council staff from across the organisation (including scientists, policy analysts and consents officers) was formed to develop draft FMUs for the Otago region. The team met weekly over a three-month period at the start of 2019. When developing FMU boundaries the team considered and applied, as far as possible, various criteria and principles, including:
 - a. Capturing the unique characteristics of the different parts of the Otago region;
 - b. Adopting a ki uta ki tai (mountains to the sea) approach to the management of natural and physical resources;
 - c. Alignment with the natural boundaries of hydrological catchments and aquifers;
 - d. Setting FMU boundaries at a scale conducive to having discussions on values and objectives with community and iwi;
 - e. Recognising the presence of nationally significant hydro dams on the Clutha / Mata-au at Clyde and Roxburgh; and
 - f. Setting FMU boundaries that are reflective of the location of distinct communities within the region (Briggs, Leduc, & De Pelsemaecker, 2019).
15. The Otago region contains over 300 catchments (if catchments that are tributary catchments of Lakes Hāwea, Wakatipu, Wānaka, Dunstan and Roxburgh and the main stems of the Clutha River/Mata-Au and Kawarau River are considered as individual catchments). Therefore, setting FMUs based on catchment boundaries was not considered a reasonably practicable option for the following reasons:
 - a. Setting FMUs at catchment scale would significantly increase the plan's complexity.
 - b. The hydrological interactions between water bodies and catchment boundaries not always aligning with those of connected aquifers. Therefore, setting FMUs

² LF-FW – Fresh water Chapter of the pORPS.

³ LF-FW – Fresh water Chapter of the pORPS.

solely based on catchment boundaries is in various instances likely to pose challenges for the management of connected groundwater and is not always the most appropriate way for providing for the integrated management of water and recognising the management principle of ki uta ki tai.

- c. Rural landholdings often span different catchments and having different objectives and plan provisions applying to different parts of a landholding is likely create challenges in terms of plan implementation and land management on a property scale.
 - d. Communities and settlement boundaries often span the boundaries of catchments.⁴ Having different objectives and plan provisions applying to different parts of a community is likely to create challenges in terms of plan implementation at community scale, including the management of community infrastructure (such as water services) under the plan.
16. As a result of the above considerations the team developed a proposal for an FMU structure whereby the two largest catchments in the region, the Clutha/Mata-Au and Taiari catchments, were each given their own FMU, with the Clutha/Mata-au, due to its size, being split into 5 sub-FMUs, called rohe. The remaining catchments were grouped into 3 FMUs; the North Otago FMU, Dunedin & Coast FMU and Catlins FMU.
 17. The team’s proposal for setting FMUs and rohe for the Otago region, which is described in more detail in section 1.2 of Chapter 2 of this report, was adopted by the Otago Regional Council during its meeting on 3 April 2019 (Briggs, Leduc, & De Pelsemaeker, 2019).
 18. Engagement with communities on FMU and rohe boundaries and on the long-term visions for these FMUs occurred in October and November 2020 as part of the consultation and engagement process on the pORPS. The process for collecting feedback from the Otago community on the proposed FMUs and rohe boundaries for Otago was described previously in section 6.1 of Chapter 4 of this report.
 19. No changes were made to the FMU and rohe boundaries as a result of this engagement process and the proposal for setting FMUs and rohe that was adopted by the Otago Regional Council during its April 2019 meeting was included in the pORPS that was notified in June 2021. However, further changes to these boundaries have been made through the submissions and hearings process for the pORPS, with the Otago Regional Council adopting in March 2024 the pORPS hearings panel’s recommendation to:
 - a. amend the boundaries of the North Otago and Dunedin & Coast FMUs so that the Waikōuaiti River catchment is included in the Dunedin & Coast FMU; and
 - b. amend the boundary between Catlins and Clutha Mata-au FMUs so that the Pūerua River catchment is included in Lower Clutha rohe of Clutha River/Mata-au FMU.

⁴ Examples include the Alexandra community, which includes parts of the Fraser/Earnsclough River, Manuherekia River and the Waikerikeri Creek catchments, and the Wanaka community, which includes parts of the Cardrona River, Clutha River/Mata-Au River, Lake Wanaka and Bullock Creek catchments.

3. Identifying values for Otago’s FMUs

3.1. Overview of relevant national direction

20. The NOF of the NPSFM requires regional councils to identify values for each FMU in Otago⁵. Specifically, the NPSFM stipulates that:
- a. The compulsory values listed in Appendix 1A apply to every FMU (Clause 3.9(1)).
 - b. A regional council may identify other values applying to an FMU or part of an FMU and must in every case consider whether the values listed in Appendix 1B apply (Clause 3.9(2)).

3.2. Overview of approach and process for identifying values

21. The community engagement process undertaken in accordance with the NOF process to identify the relevant values for each FMU and rohe is outlined in detail in section 6.2 of Chapter 4 of this report. Stage 1 of this engagement process, in particular, was instrumental in identifying the values for different FMUs and rohe in Otago. Stage 1, which is discussed in greater detail in section 6.2 of Chapter 4 of this report, focused on getting feedback on each of the four compulsory values listed in Appendix 1A of the NPSFM, as well as on identifying the relevance of other values included in Appendix 1B of the NPSFM in each of the FMUs and rohe in Otago. The stage 1 community engagement also built on values information gathered through earlier community consultation undertaken as part of the development of the pORPS’ long-term visions (see section 6.1 of Chapter 4 of this report) by seeking participants to confirm the values identified during this earlier consultation process.
22. The feedback received during the community engagement process and through engagement with mana whenua indicated that, in addition to the compulsory values, the following other values listed in Appendix 1B were relevant for all FMUs.
- a. Natural form and character
 - b. Drinking Water Supply
 - c. Fishing
 - d. Animal drinking water
 - e. Irrigation, cultivation and production of food and beverages
23. This process also identified that some other values listed in Appendix 1B were relevant for some but not all FMUs and rohe in Otago. These values are:
- a. Hydro-electric power generation (Clutha Mata-au FMU); and
 - b. Commercial and industrial use (Dunedin & Coast FMU, Roxburgh rohe, Lower Clutha rohe).⁶

⁵ Clause 3.7(2)(b) the NPSFM.

⁶ The values transport and tauranga waka, included in Appendix 1B of the NPSFM, were not identified as relevant freshwater values in Otago.

24. In addition, other suggested values not included in NPSFM Appendix 1B were also identified as potential freshwater values during the engagement process with the wider community and tangata whenua. This led to the inclusion of the values wāhi tupuna, taoka species and wetlands in the draft pLWRP version that was prepared for pre-notification consultation under Clause 3 of the First Schedule of the RMA. Other values suggested in the feedback received during community engagement, such as suction dredge mining, gravel extraction, general economic activity, duck shooting or habitat for waterfowl were not included. Key reasons why these potential values were not included in the Clause 3 draft of the pLWRP are the following:
- a. The suggested value is sufficiently provided for by other identified values (e.g. freshwater habitat for waterfowl is provided by the value ecosystem health; economic activity supported by freshwater is provided by the value irrigation, cultivation and production of land and beverages); and
 - b. The suggested value is not considered a freshwater value but rather an activity that the pLWRP seeks to manage or enable where appropriate (e.g. gravel management and suction dredge mining).

3.3. Overview of Clause 3 feedback

25. No specific feedback on the identified values was received during pre-notification-consultation under Clause 3 of the First Schedule of the RMA. However, some of the feedback received from Clause 3 pre-notification consultation parties on the environmental outcomes suggested the need to reconsider the range of values that were considered relevant for the various FMUs and rohe in Otago.
26. As a result of this feedback the values hydro-electricity generation and commercial and industrial use were included in the draft pLWRP as an identified value in all FMU and rohe. Following the conclusion of the Clause 3 pre-notification consultation process, the value wetlands was also removed as a value in all FMU and rohe. Staff considered that this value and environmental outcome sought is sufficiently covered in the Wetlands chapter of the pLWRP.

3.4. Overview of Clause 3 and 4A feedback from iwi authorities

27. No feedback on the identification of relevant values was received from iwi authorities during the Clause 3 and Clause 4A pre-notification consultation.

3.5. Conclusion

28. Building on previous knowledge about freshwater values relevant to each of the region's FMUs and rohe, values for the FMUs and rohe in the Otago region were identified through engagement with the community and mana whenua in accordance with the requirements of the NOF and refined in response to feedback received through Clause 3 consultation.

4. Setting environmental outcomes for Otago’s FMUs

4.1. Overview of relevant national direction

29. The NOF process in the NPSFM requires:
- a. the regional council to identify an environmental outcome for every value that applies to an FMU or part of an FMU (Clause 3.9(3));
 - b. the regional council must include the environmental outcomes as an objective, or multiple objectives, in its regional plan (Clause 3.9(4)); and
 - c. the environmental outcomes to:
 - i. describe the environmental outcome sought for the value in a way that enables an assessment of the effectiveness of the regional policy statement and plans (including limits and methods) and action plans in achieving the environmental outcome; and
 - ii. when achieved, fulfil the relevant long-term visions and the objective of this National Policy Statement (Clause 3.9(5)).

4.2. Overview of approach and process for setting environmental outcomes

30. Following the completion of stage 1 of the community engagement process, ORC staff, in partnership with Aukaha, developed draft environmental outcomes for identified values. The approach for developing draft environmental outcomes was to have consistently worded outcomes across all FMUs and rohe in Otago. The reasons for adopting a drafting approach that seeks to develop consistently worded draft environmental outcomes were the following:
- a. The water bodies within the 5 rohe within the Clutha Mata-au FMU have a strong hydrological connection and the ecosystems within these rohe often rely on the health and well-being of water bodies in other parts (rohe) within this FMU.
 - b. Setting different environmental outcomes for different FMUs and rohe can create inequitable economic outcomes for communities. Communities in FMUs or rohe with more ambitious environmental outcomes are likely to be subject to more restrictions on water use or land use and may have fewer opportunities for economic development compared to communities in FMUs or rohe with environmental outcomes that set less ambitious targets for freshwater health.
 - c. Setting different environmental outcomes for different FMUs and rohe can create “pressure points” within the region, whereby those FMUs and rohe with more lenient environmental outcomes may experience increased economic activity and resource use, thereby increasing the pressure on instream, cultural or non-economic values (e.g. recreational values, natural form and character).
 - d. The need to recognise unique local characteristics and variances between water bodies can be more accurately reflected through the identification of baseline states and the setting of target attribute states (see below).

31. An initial draft of the environmental outcomes was presented to the community during stage 2 of the community engagement. Feedback received during stage 2 was then used to further refine the draft environmental outcomes and seek further feedback on these during stage 3 of the community engagement process. Although various participants in the community engagement process made suggestions to amend the draft environmental outcomes, and some sought greater recognition of the unique characteristics of different FMUs and rohe within these outcome statements, there was overall general support for the general direction set by the draft environmental outcomes.
32. Further detail on the community engagement process undertaken in accordance with the NOF process to set environmental outcomes for identified values for each FMU and rohe is included in sections 6.3 and 6.5 of Chapter 4 of this report.

4.3. Evaluation of the Environmental outcomes

33. An evaluation in accordance with s32 of the RMA of all the environmental outcomes that apply to Otago's FMUs is set out in section 4.9 of Chapter 6 of this report.

4.4. Overview of Clause 3 feedback

34. Various stakeholders provided feedback on the draft environmental outcomes during pre-notification-consultation under Clause 3 of the First Schedule of the RMA. While some parties expressed general support for the environmental outcomes included in the draft pLWRP, others sought for amendments to the outcome statements and/or how these apply to different FMUs and rohe within the region. Some of the more specific concerns or matters raised with respect to the environmental outcomes in the feedback received during the Clause 3 pre-notification consultation process include the following:
- a. Remove the name 'Environmental outcomes' in the names of each objective;
 - b. Include a new environmental outcome for domestic food supply;
 - c. Opposition against the objective to ensure that water bodies are accessible for cultural connection;
 - d. The environmental outcome for mahika kai should be a people-centric concept, not a mana whenua centric concept;
 - e. Review the order of the environmental outcomes;
 - f. Recognise the importance of commercial and industrial uses in all FMUs and rohe;
 - g. Amend the wording of the environmental outcomes so it becomes clear that the hierarchy of obligations in the objective of the NPSFM does not preclude the necessity for regional council to provide (in an integrated way) for the second and third priorities when implementing the pLWRP;
 - h. Give greater recognition in the environmental outcomes for new and existing hydro-electricity generation schemes; and
 - i. Make minor wording changes.
35. In response to the feedback received under the Clause 3 pre-notification consultation a number of amendments were made to the environmental outcomes, including:

- a. Making small wording changes to improve clarity;
 - b. Removing the words 'Environmental outcomes' from each objective;
 - c. Applying the environmental outcome commercial and industrial uses and an amended environmental outcome for hydroelectricity generation, that provides for both new and existing activities, to all FMUs and rohe.
36. Staff did not consider there being a need to reconsider the order of the objectives, amend the outcomes that provide for Kāi Tahu values or include a new environmental outcome for domestic food supply as this value is already provided for under the outcome for cultivation, and production of food beverages and fibre.
37. The feedback on the environmental outcomes that apply to Otago's FMUs received during pre-notification consultation under Clause 3 of the First Schedule of the RMA is further discussed in section 4.9 of Chapter 6 of this report.

4.5. Overview of Clause 3 and Clause 4A feedback from iwi authorities

38. Feedback from iwi authorities was received on the draft environmental outcome for the value irrigation cultivation, and production of food beverages and fibre during pre-notification consultation under Clause 3 of the First Schedule of the RMA. This feedback suggested that it was inappropriate to set an outcome for irrigation without clarity on the purpose of this end use. In response to this feedback the description of the value and its associated environmental outcome was amended to remove the reference to irrigation.
39. The feedback on the environmental outcomes that apply to Otago's FMUs received from iwi authorities during pre-notification consultation under Clause 3 of the First Schedule of the RMA is further discussed in section 4.9 of Chapter 6 of this report.
40. No specific feedback from iwi authorities was received on draft of the environmental outcomes during pre-notification consultation under Clause 4A of the First Schedule of the RMA. However, in their Clause 4A feedback mana whenua expressed a general concern around the need to identify more clearly FMU environmental outcomes as part of the strategic direction and the need to provide a stronger link between the outcomes (as well as attribute targets and criteria) and the provisions of the topic chapters. To address this issue, amendments were made to Part 2 of the pLWRP and the provisions in the IM – Integrated Management chapter. These changes must ensure that plan users and decision-makers will give adequate consideration to the strategic directions, the topic-specific objectives as well as the relevant environmental outcomes and associated (interim) target attribute states.

4.6. Conclusion

41. Environmental outcomes for FMUs and rohe in the Otago region were set through engagement with the community and mana whenua in accordance with the relevant requirements of the NOF and refined in response to feedback received through Clause 3 pre-notification consultation.

5. Attributes and alternative criteria

5.1. Overview of relevant national direction

42. The NOF process in the NPSFM requires regional councils to identify attributes and their baseline state for each value that applies to an FMU (or part of FMU) in Otago. Specifically, Clause 3.10(1) requires that regional council:
- (a) *must use all the relevant attributes identified in Appendix 2A and 2B for the compulsory values listed (except where specifically provided otherwise); and*
 - (b) *may identify other attributes for any compulsory value; and*
 - (c) *must identify, where practicable, attributes for all other applicable values; and*
 - (d) *if attributes cannot be identified for a value, or if attributes are insufficient to assess a value, must identify alternative criteria to assess whether the environmental outcome of the value is being achieved.*

5.2. Approach and process for selection of attributes and other criteria

43. In order to assess a value and measure whether the environmental outcomes have been achieved, either attributes or alternative criteria have been identified for each value. Attributes are a measurable characteristic (which may be numeric, narrative, or both) that can be used to assess the extent to which a particular value is provided for.
44. Following the NOF process, attributes for each of the values were identified through engagement with tangata whenua and the community. The attributes identified are the compulsory attributes set out in Appendices 2A and 2B of the NPSFM. No other attributes have been identified. Some of the attributes are relevant for multiple values. Table 5 at the beginning of the Area-specific matters chapter of the pLWRP shows which attributes are relevant to each value.
45. The NPSFM introduced 13 new attributes, some of which ORC have only monitored since July 2018. These new attributes are indicators of ecosystem health, such as dissolved fine sediment, lake submerged plants (SPI - native or invasive plants), dissolved oxygen and ecosystem metabolism. It will take some time to collect sufficient data to identify the state of these attributes. Therefore, there are significant gaps in the data. This monitoring gap is being addressed as the ORC monitoring programme is being progressively revised to comply with the requirements of the NPSFM. The science programme is further discussed in section 3.2 of Chapter 4 of this report.
46. For some values, attributes cannot be set or are insufficient to assess that value. In these cases, Clause 3.10(1)(d) of the NPSFM provides that alternative criteria may be developed which assist with assessing whether the environmental outcome of the value is being achieved.
47. Alternative criteria were developed by ORC in response to feedback from stage 3 engagement and were consulted on during Clause 3 and Clause 4A pre-notification consultation. Table 6 of the pLWRP shows alternative criteria that apply to each value where attributes cannot be identified for a value, or to assess a value where attributes are insufficient.

48. Monitoring sites to measure each of the measured attributes have been identified. Section 6 below describes the approach for identifying monitoring sites. Baseline states have been identified where possible and target attribute states have been identified for each site. Interim target attribute states have been set where appropriate in accordance with Clause 3.11(6) of the NPSFM. Each of these processes are discussed below. Tables for each attribute with available data are included in each FMU chapter of the pLWRP, showing target attribute states and where relevant, baseline states and interim target attribute states.

5.3. Overview of Clause 3 feedback

49. Feedback from Clause 3 parties noted gaps in the attribute tables or lack of linkage between values and attributes. Feedback sought new attributes for nitrates, wetland extents and condition index, animal drinking water, natural form character and physical habitat of rivers, and new values and alternative criteria for food cultivation and domestic good supply and water for commercial and industrial use. Amendments were sought to attributes/alternative criteria: hydroelectricity, indigenous species, water yield retained in catchments, and water body accessibility to enable Kāi Tahu whānui to maintain their cultural connection. An error was identified in the measurement for periphyton in Table 5.
50. Staff considered the feedback and amended the unit of measurement for periphyton from mg chl-a/m³ (milligrams chlorophyll-a per cubic metre) to mg chl-a/m² (milligrams chlorophyll-a per square metre) in Table 5 to correct the error. Animal drinking water was added as a value, while the value wetlands was removed as a regionwide objective for wetlands is already included in the WET – Wetlands chapter of the pLWRP. As discussed previously, gaps in the attribute tables are due to insufficient data and this will be remedied in the future as monitoring continues.
51. Alternative criteria were reviewed and refined. Several were removed as they were outcome statements rather than measurements of how the value could be achieved. For example, the draft alternative criteria *“There is sufficient drinking water to supply current and estimated future populations”* has been removed. Other alternative criteria were amended to clarify their purpose. For example, the draft alternative criterion *“Riparian margins are vegetated and support the integrity and functioning of the water body”* has been amended to *“There is an increase in the extent of vegetated riparian margins that support the integrity and functioning of the water body”*. Finally, an alternative criterion for animal drinking water has been added.

5.4. Overview of Clause 3 and Clause 4A feedback from iwi authorities

52. Following feedback from iwi authorities, attributes in Table 5 that currently apply to wāhi tupuna and taoka species were expanded to apply these attributes to environmental outcomes for the value mahika kai. The attributes for threatened species were applied to taoka species as they have the same ecosystem/habitat requirements. Feedback also sought for the narrative in the FMU chapters to be shortened to focus on explaining how the environmental outcomes, attributes and alternative criteria are to be used. This feedback resulted in no changes, as the information is considered helpful to plan users and guidance on how outcomes of the plan are achieved is set out in the IM – Integrated Management chapter of the pLWRP.

5.5. Conclusion

53. Attributes and/or alternative criteria for each of the identified values were set through engagement with the community and mana whenua in accordance with the relevant requirements of the NOF and refined in response to feedback received through Clause 3 and Clause 4A pre-notification consultation.

6. Monitoring sites (including primary contact monitoring sites)

6.1. Overview of relevant national direction

54. The identification of sites to be used for monitoring and primary contact sites is required as part of identifying FMUs and special sites and features in the NOF process set out under of the NPSFM. Clause 3.8(4) and (5) of the NPSFM requires that:

- (4) monitoring sites for an FMU must be located at sites that are either or both of the following:
- representative of the FMU or relevant part of the FMU
 - representative of one or more primary contact sites in the FMU (Clause 3.8(4)).
- (5) monitoring sites relating to Māori freshwater values:
- need not comply with subclause (4), but may instead reflect one or more Māori freshwater values; and
 - must be determined in collaboration with tangata whenua (Clause 3.8(5)).

6.2. Approach for identifying monitoring sites

55. Monitoring sites for each FMU and rohe were selected based on three criteria.
- a. Sites were selected that have been monitored by ORC's State of the Environment (SOE) monitoring programme for rivers and lakes prior to 2017. These sites have long data sets that allow a baseline state to be established for these sites and will assist with understanding the impacts of longer-term trends and the effectiveness of plan provisions.
 - b. Sites were selected as 'primary contact sites' if they were identified as long-term recreation sites in 2017.
 - c. A third set of sites were added to the monitoring programme following the amendment to the NPSFM 2014 in 2017 when ORC's SoE monitoring programme was reviewed and significantly improved.
56. A review of the SoE monitoring network and further development of monitoring sites is intended to take place in the next couple of years.
57. As discussed in section 8 of this chapter, the existing monitoring network is currently stratified by river class to provide the state of the region as a whole and has not been set up to include sites that are representative of the state of an FMU, rohe or primary contact sites, or relate to Māori freshwater values as required under NPSFM Clause 3.8(4) and (5). In addition, some FMUs and rohe currently have very few sites. The future monitoring network

review will address how to better meet the NPSFM Clauses 3.8(4) and (5) and plan for the associated monitoring work programme.

58. Methods have been included in the plan to signal Council's intent to undertake this monitoring site review. As the scope of this review will include ORC's entire SoE monitoring network, sites listed in the pLWRP will be included in this review. As the review happens sites may be removed from and/or added to the pLWRP through a variation to the proposed plan or a plan change once the plan has been made operative.
59. Given that the SoE sites are not intended to be representative of the overall state of the FMU, some FMUs and rohe have very few sites, and ORC's existing monitoring network is stratified by river class to provide the state of the region as a whole, a second approach of using river network modelling is considered to give a more representative picture of attribute state. However, this approach may not comply with the requirements of the NPSFM. A hybrid approach using both site and river network-based target attribute states has been used. In this hybrid approach, river network-based target attribute states apply to every river segment within an FMU, rohe or catchment, and the site-based target attribute states apply to their respective monitoring site. This is discussed below in section 8 of this chapter.
60. Through stage 3 engagement, feedback was received seeking additional monitoring sites in the Manuherekia rohe, Roxburgh rohe and Catlins FMU. No additional sites were added based on this feedback because the hybrid approach described above is considered to fill gaps in the monitoring sites, and adding a new site incurs costs. However, the future review will be able to consider this feedback further.

6.3. Approach for identifying primary contact sites

61. The NPS-FM defines primary contact recreation as '*a site identified by a regional council that it considers is regularly used or would be regularly used but for existing freshwater quality, for recreational activities such as swimming, paddling, boating, or water sports, and particularly for activities where there is a high likelihood of water or water vapour being ingested or inhaled*'.⁷
62. In 2018 ORC ran an online swim survey asking people where they swim, how they rate these swimming sites and on what basis. Ratings were received on 1,298 swim sites within Otago, from over 850 respondents. Results showed that people swim all around the Otago region, particularly in the Southern Lakes part of Otago, the rivers of Central Otago and the coastal areas around Dunedin.
63. Fifty-five water bodies were selected by respondents as waterbodies used for swimming. Sites with more than twenty responses were considered further⁸. The exception to this rule was existing monitoring site of Waikouaiti River at Bucklands as this site is at a DCC domain/camping ground and is popular with visitors over summer. These sites were then compared with the current monitored freshwater contact recreation sites and an assessment was made whether additional sites should be added to the monitoring programme. As a result of this process one extra site, Arrow River at Cornwall Street

⁷ Clause 1.4, NPSFM.

⁸ An arbitrary cut off point indicating popularity.

(Dunstan Rohe), was added to the ORC monitoring programme for current freshwater contact recreation sites.

64. The monitoring sites were selected to be included in the pLWRP because there was sufficient data to provide baseline states (Ozanne R. , 2023a) (Ozanne R. , 2024). All sites will continue to be monitored and the results are available on the LAWA website⁹
65. The suggested primary contact sites are in the Upper Lakes, Manuherekia and Dunstan rohe and the Taiari and Dunedin and Coast FMUs.
66. No freshwater contact recreation sites have been selected for the North Otago or Catlins FMU or the Lower Clutha rohe, in the current recreational monitoring programme these FMUs and rohe are served by coastal sites. The Lower Taiari in the Taiari FMU also does not have any freshwater contact recreation sites selected.
67. Primary contact site attribute bands are measured through the 95th percentile of E. coli/100 mL (number of E. coli per hundred millilitres). Table 22 of Appendix 2B of the NPSFM sets out a range for primary contact sites from 'excellent' to 'poor'. In the pLWRP these have been translated as:
- Excellent = 'A' band
 - Good = 'B' band
 - Fair = 'C' band
 - Poor = 'D' band.
68. All primary contact sites have a TAS of 'A' band, with interim TAS bands that reflect the pathway to achieving the TAS.

6.4. Overview of Clause 3 feedback

69. No specific feedback was received on monitoring sites in the Clause 3 feedback.

6.5. Overview of Clause 3 and Clause 4A feedback from iwi authorities

70. There was no specific feedback received from iwi authorities on the proposed monitoring sites during Clause 3 and Clause 4A pre-notification consultation.

6.6. Conclusion

71. Monitoring sites have been developed based on the existing ORC science monitoring programme with addition of sites being added following reviews in 2017. However, the monitoring sites are not fully compliant with the NPSFM as they are not representative of the FMU, part of the FMU or primary contact sites, and nor do they relate to Māori freshwater values. A method has been included in the plan to signal Council's intent to undertake this monitoring site review. As the scope of this review will include ORC's entire SoE monitoring network, sites listed in the pLWRP will be included in this review. As the review happens sites may be removed from and/or added to the pLWRP through a variation to the proposed plan or a plan change once the plan has been made operative.

⁹ Land Air Water Aotearoa <https://www.lawa.org.nz/explore-data/swimming>

7. Baseline States

7.1. Overview of relevant national direction

72. The NOF process in the NPSFM requires regional councils to identify attributes and their baseline state for each value that applies to an FMU (or part of FMU) in Otago. (Clause 3.10(3)). Clause 1.4 of the NPSFM defines baseline state as being *the best state out of the following*:

- (a) *the state of the attribute on the date it is first identified by a regional council under Clause 3.10(1)(b) or (c) (i.e. attributes other than those in Appendices 2A and 2B.);*
- (b) *the state of the attribute on the date on which a regional council set a freshwater objective for the attribute under the National Policy Statement for Freshwater Management 2014 (as amended in 2017);*
- (c) *the state of the attribute on 7 September 2017.*

7.2. Approach and process for setting baseline states

73. All of the attributes identified in the pLWRP are found in Appendices 2A and 2B of the NPSFM. The Regional Plan: Water (RPW) does not include attributes for freshwater objectives that were developed in accordance with the NOF process set out in the National Policy Statement for Freshwater Management 2014 (as amended in 2017)¹⁰. Therefore, the baseline state must be set as the state of the attribute on 7 September 2017. The ORC's approach to setting baseline states and target attribute states is discussed fully in the water Quality Baseline State report (Augspurger J. , 2024a).

7.3. Setting baseline states for rivers

74. Sub-clause (4) of Clause 3.10 states *“attribute states and baseline states may be expressed in a way that accounts for natural variability and sampling error”*.

75. Natural variability relating to NOF attributes is variation in an attribute “state” due to natural processes such as climate cycles, weather events, or other natural factors. Natural variations can occur on sub-daily to decadal timescales. Sample error is a statistical term meaning the difference between the unknown, actual, population statistic and the sample statistic. It is not related to a lab or field-based error while taking a sample. The sample error is generally quantified using confidence intervals (Milne J, 2023).

76. While it is possible to use a longer timeframe to represent state which would incorporate natural variation due to climate cycles, such as a 10- or 20-year period, these timeframes include both natural and anthropogenic-induced change. Separating natural variation from anthropogenic-induced change over this period is not possible. (Augspurger J. , 2024a)

¹⁰ The RPW identifies a number of attributes for achieving Good Quality Water in Schedule 15.2. However, these attributes are set for objectives that were introduced in the RPW by Plan Change 6A, which was notified in March 2012 and predates the NPSFM 2014 (as amended in 2017).

77. Six, five-year rolling periods (beginning September 1, 2012, and ending August 30, 2022) were analysed to indicate environmental variability (i.e., both natural and anthropogenic) in attribute states present at each site.
78. Attributes considered included ammonia toxicity (Table 5)¹¹, nitrate toxicity (Table 6), suspended fine sediment (Table 8), *E. coli* (Table 9), dissolved reactive phosphorus (Table 20), fish index of biotic integrity (IBI; Table 13), macroinvertebrate community index (MCI; Table 14), average score per metric (ASPM; Table 15), and nutrients in relation to periphyton biomass (Table 2)¹².
79. Where the five-year rolling analysis (2012 to 2022) resulted in a range of attribute states, the approach, to allow for natural variability over time, was to set the lower attribute state as the baseline state.
80. For monitoring sites where no baseline state has been established due to insufficient data, an alteration of the River Environment Classification (Snelder & Biggs, 2007) was used to classify river segments in Otago in to one of five management classes (Mountain, Hill, Lowland, Lower Lake, and Upper Lake). The river management class applicable to the site is used to set default target attribute states.
81. There are exceptions to this approach for some monitoring sites where the 2017-2022 SoE data shows the site should be in a higher band than the river management class default. If the river management class target attribute state is lower than the 2017-2022 SoE data for the site there is a risk that the site could degrade from the current state to the target band without triggering action.
82. There is also a risk in using the 2017-2022 SoE data to set targets, as this data set is short and may not account for natural variations in the state of the site from factors such as climate variability, with the result that in the longer term, the site may fail to meet the target attribute state.
83. ORC's SoE monitoring programme was reviewed and significantly improved following the 2017 SoE report and the 2017 amendment to the NPSFM 2014. This review added a large number of sites as well as implementing periphyton and additional macroinvertebrate monitoring. As a result of the monitoring programme review, baseline state is not available for all attributes on the 7 September 2017 date specified in the NPSFM. Due to the availability of monitoring data, an alternative period of 1 July 2019 to 30 June 2022 was used for periphyton biomass (Table 2) which requires three years of sampling to calculate a score¹³.
84. For some attributes, including deposited sediment (NPSFM Table 16), dissolved oxygen (NPSFM Tables 7 and 17), and ecosystem metabolism (NPSFM Table 21), the sample record does not have enough observations to provide five-year NOF scores. Indicative scores for deposited sediment (Ozanne, Levy, & Borges, 2023) and dissolved oxygen (Fraser, 2022) are available. The ecosystem metabolism attribute does not yet have a table of grades but

¹¹ The tables in brackets refer to the tables in the NPSFM Appendices 2A and 2B.

¹² Required sample numbers for each attribute were relaxed slightly in alignment with ORC's most recent state of the environment report (Ozanne, Levy, & Borges, 2023).

¹³ Full current-state results for sites implemented after the 2017 network review are available in this report (Ozanne, Levy, & Borges, 2023).

requires monitoring. A monitoring programme is currently being implemented to gather data on ecosystem metabolism across a number of sites in Otago.

85. Baseline states for rivers are included in attribute tables in the FMU chapters of the pLWRP. They are expressed as bands using the NPSFM attribute bands. This is because values fluctuate due to natural and anthropogenic variability and sample error. While it is possible to express the baseline state as a numeric value, this would not account for uncertainty resulting from natural variability or sample error. Attempting to quantify and convey the associated uncertainty numerically in the plan can complicate the picture for plan users. The use of NPSFM bands is considered to be a pragmatic solution and is paired with trends to ensure degradation does not occur.

7.4. Setting baseline states for lakes

86. For lake attributes, the baseline state is represented by the results previously published in the SoE report (Ozanne, Levy, & Borges, 2023) which uses the period 2017-2022. This alternative period is used for lakes because a monitoring programme review was undertaken in 2017 resulted in site, and measurement, changes to better represent state and to comply with NPSFM 2014 (amended 2017) requirements. While the outcome of this review was an improvement in the monitoring programme, it has also resulted in short datasets for lakes attributes.
87. For some attributes, including submerged plants (NPSFM table 11 and 12), dissolved oxygen (NPSFM table 18 and 19), and cyanobacteria (NPSFM table 10) there is insufficient data to evaluate a baseline state. These attributes were introduced by the NPSFM 2020 and at the time of analysis, ORC did not have 5 years' worth of data (Borges, 2023). Therefore, there are some gaps in the attribute tables. There are interim results for these attributes, and baseline states will be added to the pLWRP through a variation to the proposed plan or a plan change once the plan has been made operative.
88. Attempts to model all Otago lakes were unsuccessful and results did not correspond with the actual state of the monitored lakes. Given this, extrapolating from the 8 monitored lakes to other locations based on a class system has limited utility at the moment (Borges, 2023).
89. Baseline states were presented in stage 3 community engagement. Feedback received noted that there were gaps in the data and the reasons for those gaps are discussed above.

7.5. Overview of Clause 3 feedback

90. Feedback from Clause 3 parties noted that there are gaps in target attribute tables for baseline states and considered that the use of numerical values is more appropriate than using bands to describe baseline state. No changes were made as a result of this feedback. The reasons for the gaps are discussed in sections 7.3 and 7.4 above. The use of bands is considered to be appropriate as the NPSFM allows for attribute states and baselines to be expressed in a way that accounts for natural variation and sampling error.

7.6. Overview of Clause 3 and Clause 4A feedback from iwi authorities

91. No specific feedback on baseline states was received from iwi authorities during Clause 3 and Clause 4A pre-notification consultation.

7.7. Conclusion

92. Baseline states for each of the identified values were set with the relevant requirements of the NOF process, including engagement with the community and mana whenua in accordance with the NPSFM and RMA.

8. Target attribute states and interim target attribute states

8.1. Overview of relevant national direction

93. Clause 3.11 of the NPSFM requires regional councils set target attribute states for every attribute identified for a value. Target attribute states must:

- (a) *be set at or above the baseline state of that attribute (except for the value human contact which must be set above the baseline state unless the baseline state is already in the A band of Tables 9 or 10 of Appendix 2A of the NPSFM) (Clause 3.11(2) and (3)).*
- (b) *be set at or above the national bottom line, if the baseline state is below the national bottom line for that attribute (Clause 3.11(4))¹⁴,*
- (c) *specify a timeframe for achieving the target attribute state, or if the target attribute state has already been achieved, that state it will be maintained from a specified date (Clause 3.11(5)(a)),*
- (d) *set interim target attribute states if the timeframes set for the target attribute states are long-term (Clause 3.11(6)),*
- (e) *for attributes identified in Appendix 2A or 2B, be set in the terms specified in the relevant Appendix; and for any other attribute, be set in any way appropriate to the attribute (Clause 3.11(5)(b) and (c)),*
- (f) *be set in such a way to that they will achieve the environmental outcomes for the relevant values and long-term visions (Clause 3.11(7)).¹⁵*

8.2. Site-based target attribute states

94. Site-based target attribute states have been set at sites for which sufficient data is available. The target attribute states have been developed in partnership with mana whenua and consulted on in two phases. Feedback was sought in stage 2 community engagement on suggested bands that would be required to achieve the proposed environmental outcomes. Following that engagement, proposed target attribute states were developed for each monitored attribute by site for stage 3 community engagement. Following stage 3 engagement, target attributes states were set at a level required to achieve the environmental outcomes. Where applicable, interim target attribute states have also been

¹⁴ Exceptions to this clause are one of the 5 large named hydro schemes (Waikato, Tongariro, Waitaki, Manapouri and Clutha) and where a water body is affected by naturally occurring processes that mean that the current state is below the national bottom line and a target attribute state above the national bottom line cannot be achieved. (NPSFM clauses 3.31 and 3.32)

¹⁵ LF-FW – Fresh water Chapter of the pORPS.

set, and these are discussed below. Some attributes have only been monitored for a short period of time and target attribute states have not been included in the pLWRP for these. The ORC's approach to setting baseline states and target attribute states is discussed fully in the water Quality Baseline State report (Augspurger J. , 2024a).

95. For many attributes (particularly biological response attributes such as periphyton, macroinvertebrates and fish IBI) monitoring data from a site has limited informative value about other locations up, or downstream, of the monitoring site. This causes a disconnect between site and FMU outcomes. While a monitored river reach may comply with the target attribute state, reaches immediately up, or downstream may fail to comply with the target attribute state. A site may also be compliant with a nutrient concentration criterion, but this does not necessarily mean that other locations within the catchment are similarly compliant.
96. Further, biological response outcomes vary over a wide range of spatial scales. While they are influenced by water quality, they also have a strong association with reach scale physical habitat. This means the response of biotic communities to drivers such as nutrients may vary on a reach level. Therefore, the state of a monitoring site is an uncertain estimate of state at an FMU scale (Augspurger J. , 2024a). This leads to difficulty in determining a site-based target attribute that achieves the desired outcome across the rest of the catchment, or FMU, potentially failing to comply with Clause 3.11(7) which requires that target attribute states are set in such a way that they will achieve the environmental outcomes for the relevant values, and the relevant long-term vision.
97. Developing site-based target attribute states which provide for these outcomes and visions without further modelling, requires a monitoring network representative of the FMU and an understanding of how monitored sites link to other areas. Site-based results presented in this baseline analysis are provided for sites with available data. These sites are not, nor are intended to be, representative of the overall state of the FMU or rohe. For example, some FMU/rohe, such as the Upper Lakes rohe, have very few sites. Instead, Otago Regional Council's existing monitoring network is currently stratified by river class to provide the state of the region as a whole. ORC is intending to review and further refine its monitoring network in the future to make it more representative of the overall state within an FMU or rohe.

8.3. River network-based target attribute states

98. To estimate the state across larger spatial scales such as a catchment, FMU, rohe, or region, river-network modelling can be used (Whitehead, 2018). (Ministry for the Environment, 2023). With sufficient input data, river-network models are better able to incorporate spatial variation to portray broadscale outcomes that are more representative of true "state" than simple aggregations of monitoring sites. If applied to a single segment (i.e., to predict a site-based outcome), the models have high uncertainty and are not appropriate for informing site-based attribute states.
99. Target attribute states have been developed that apply to a wider area using river network modelling rather than a site-specific target. To achieve this, an alteration of the River Environment Classification (Snelder & Biggs, 2007) was used to classify river segments in Otago in to one of five management classes (Mountain, Hill, Lowland, Lower Lake, and Upper Lake). Target attribute states were applied to each of the five river management classes in order to achieve the environmental outcomes. The river management class applicable to the site is used to set default target attribute states specific to each FMU.

8.4. Hybrid approach

100. To provide a target attribute state framework that complies with the “site-based” requirements of clauses 3.11(1)(a) and (b) as well as Clause 3.11(7), a hybrid approach using both site and river network-based target attribute states is required. In this hybrid approach, river network-based target attribute states apply to every river segment within an FMU or catchment, and the site-based target attribute states apply to their respective monitoring site. To assess progress toward the river-network target attribute state, models are reproduced by pooling up-to-date site-based monitoring data as samples of the overall population. Results are then compared with prior modelling results. To assess progress of a site toward its site-based target attribute state, state and trends are calculated at a future date. Notably, in the hybrid approach, network models are not used to assess compliance of individual monitoring sites which removes potential conflicting results.

8.5. Special provisions for attributes affected by nutrients (Clause 3.13)

101. Clause 3.13, the NPSFM requires that in order “*to achieve the target attribute state of any nutrient attribute, and any attribute affected by nutrients, regional councils must also set, at a minimum, appropriate instream concentrations or exceedance criteria for nitrogen and phosphorus*”.
102. Attributes affected by nutrients include but are not limited to, periphyton, dissolved oxygen, submerged plants, fish IBI, macroinvertebrates, and ecosystem metabolism. Nitrogen and phosphorus are nutrients that may contribute to both primary (i.e., algae/phytoplankton growth), and secondary (macroinvertebrates), production in freshwater. Nitrogen and phosphorus concentrations tend to be higher in landscapes with land-use intensification than concentrations in natural systems (Ministry for the Environment, 2023).
103. While conceptual links between nutrients and attributes such as periphyton, macroinvertebrates, fish and others are well understood, direct relationships between concentrations of nitrogen and phosphorus and affected attribute band thresholds are difficult to determine with appropriate levels of certainty for planning purposes (i.e., a nutrient concentration of x provides for an MCI score of y). This difficulty is partially due to affected attributes also being influenced by other factors such as sunlight, hydrological regime, habitat type and others. For instance, periphyton biomass may be limited by the consistent occurrence of flushing flows, which scour periphyton from the riverbed, instead of nutrient concentrations. When moving up trophic levels in the food web from primary to secondary consumers (i.e., algae to macroinvertebrates), links to nutrients become less direct and may break down altogether. For instance, in headwater catchments dominated by natural land cover, such as forest or tussocks, production is often driven by external inputs such as leaf litter (termed allochthonous production). The combination of shading and external inputs with lower nutrient uptake can result in higher instream nutrient concentrations than might be expected. Response of invertebrates to nutrients in these systems is likely to be lower than in systems, or downstream reaches, where shading is less prevalent.
104. In systems where production is driven by primary producers (termed autochthonous), periphyton represents the lowest trophic level in river ecosystems taking up nitrogen and phosphorus directly. Attributes in higher trophic levels, such as macroinvertebrates and fish, may be influenced by periphyton biomass through its influence on food availability, food

quality and habitat. As a result of the direct linkage between periphyton and nutrient concentrations, the relationship between periphyton biomass and nutrient concentration is likely to be the strongest of the nutrient-affected attributes (Ministry for the Environment, 2023). While linkages in allochthonous reaches are likely to be weaker, autochthonous reaches often occur downstream. Further, whether a river is autochthonous or allochthonous may vary over time. Therefore, it is important to consider the response of autochthonous reaches, even where allochthonous production may dominate. As a result, to meet Clause 3.13, we evaluate nutrient concentrations that provide for periphyton biomass outcomes by using previously published periphyton-nutrient criteria (Snelder T. , 2023). These tables provide nutrient concentrations to meet the A, B and C periphyton biomass bands (Augspurger J. , 2024a).

105. The level of under-protection risk must be selected to use the periphyton biomass-nutrient look-up tables. The under-protection risk is the proportion of the river network which is likely to exceed the biomass objective despite being compliant with the associated nutrient criteria. Therefore, if all segments comply with the nutrient criteria, a 20% under-protection risk would result in 80% of segments complying with the biomass objective. As a result, by selecting the under-protection risk, the proportion of segments that will not comply with the biomass objective is selected. Lower under-protection risks are associated with lower, and therefore more stringent, nutrient criteria (Snelder T. , 2023). The ORC has selected a 20% under-protection risk for the periphyton biomass (De Pelsemaeker, 2024).
106. As the relationship between periphyton and nutrient concentrations is influenced by multiple factors and is subject to a degree of uncertainty, nutrient concentrations for attributes in higher trophic levels (macroinvertebrates, fish IBI) or with less data (ecosystem metabolism, aquatic plants), have not been modelled. These attributes are likely to have nutrient relationships that are more uncertain, weak, or may not exist compared with the link between nutrients and periphyton. As a result, these higher trophic level relationships currently have limited utility in setting instream nutrient concentration target attribute states as the affected attribute outcome would widely vary (Augspurger J. , 2024a).

8.6. Naturally occurring processes

107. Clause 3.32 of the NPSFM provides for water bodies that are affected by naturally occurring processes that mean that the current state is below the national bottom line, and a target attribute state at or above the national bottom line cannot be achieved. In these instances, a target attribute state may be set that is below the national bottom line for that attribute¹⁶. Target attribute states should be set to achieve an improved attribute state, to the extent practicable given the naturally occurring process.
108. Several rivers in the Upper Lakes rohe, and the Catlins and Taiari FMUs are affected by tannin staining or glacial flour. In these instances, target attributes states have been set at either the baseline state, where sufficient data is available to establish the baseline, or at the current state as detailed in the SoE report (Ozanne, Levy, & Borges, 2023). with the aim of maintaining or improving those states to the extent possible.

¹⁶ Clause 3.32(1)(a), NPSFM

8.7. Timeframes

109. Clause 3.3 of the NPSFM requires that every regional council must develop long-term visions for freshwater in its region and include those long-term visions as objectives in its regional policy statement¹⁷. It also requires that the timeframes to achieve those the long-term visions should be both ambitious and reasonable (for example 30 years after the commencement date¹⁸. Long-term visions for each FMU have been included in in the pORPS¹⁹ and the timeframes for achieving those outcomes have been set as follows:
- a. by 2030 in the Upper Lakes rohe,
 - b. by 2035 in the Catlins FMU,
 - c. by 2040 in the Dunedin & Coast FMU
 - d. by 2045 in the Dunstan and Roxburgh rohe,
 - e. by 2050 in the Taiari and North Otago FMUs and Manuherekia and Lower Clutha rohe.
110. Clause 3.11(8) of the NPSFM states that the timeframes for achieving target attribute states may be of any length or period. To align with the timeframes for achieving the pORPS long-term visions, the timeframes for achieving the environmental outcomes and target attribute states in pLWRP have been set the same as the timeframes for achieving the long-term visions.

8.8. Interim target attribute states

111. Clause 3.11(6) goes on to state that where the timeframes for achieving target attribute states are long-term, interim target attribute states must be set for intervals of not more than 10 years to assess progress towards achieving the target attribute state in the long-term.
112. In FMUs and rohe that have time frames longer than 10 years, interim target attribute states have been set to measure progress towards achieving the target. Interim target attribute states were developed using the following protocols:
- a. Where the target attribute state is two or more bands above the baseline state for a site and the site is above the national bottom line for that attribute, the interim target attribute band should be set as the median between the current and target attribute band. For example, if a site is required to move two bands, the first interim target attribute state is an improving trend and the second interim target attribute state is the next band and sustaining the improving trend. The final step is the achievement of the target attribute state by the date set in the long-term vision for that FMU;
 - b. Where the baseline state at a site is below the national bottom line for an attribute, the target attribute state must be set at least the C-band within the given

¹⁷ LF-FW – Fresh water Chapter of the pORPS.

¹⁸ Clause 3.3 (2)(c), NPSFM

¹⁹ LF-FW – Fresh water Chapter of the pORPS.

timeframe of the vision (i.e. above the national bottom line). Therefore, if the baseline is E or D band:

- i. the target attribute state should be set at no less than C-band, and
 - ii. interim target attribute state should be set at no less than 10-yearly intervals;
 - c. Where the baseline state is one band below the target attribute state the interim target attribute state is an improving trend and the target is the target attribute state by the date set in the long-term vision for that FMU;
 - d. Where the baseline state and the target attribute state for a site are in the same band for an attribute, but the trend (20-year or 10-year) indicates that the state is degrading, the interim target attribute state is to reverse the trend to an improving direction.
 - e. If the baseline state is equal to the target attribute state and doesn't have a degrading trend, the interim target is to maintain the current trend.
113. As a result of sample error and natural variability, changes in "state" scores over differing time periods do not necessarily indicate progression towards a target attribute state or degradation. Changes in score also do not indicate the likely cause. Trend analyses indicate changes in state at an individual site (i.e., the probability a site is improving or degrading) and are recommended as the primary means to determine whether a site is progressing towards its target attribute state (Milne J, 2023).
114. Interim target attribute states were developed after stage 3 community engagement and consulted on in Clause 3 and Clause 4A pre-notification consultation. Amendments were made to the target attribute tables in the FMUs and rohe chapters to make them clearer and easier to read.

8.9. Overview of Clause 3 feedback

115. For target attribute states feedback queried whether the target attribute states will give effect to the plan's outcomes, whether the timeframes for achieving the states are reasonable and if the plan will prevent degradation within the state bands. A request was also made for interim targets to be numbers that provide greater progress towards the desired outcome. Gaps for some of the attributes in the NPSFM were noted and reasons behind sites being exempt from attributes were queried. A target attribute state was sought for estuaries to give effect to the principle of *ki uta ki tai*. Finally, queries were made about appropriateness of attributes for DRP, *E. coli*, and suspended sediment.
116. Staff considered the feedback and made the following changes:
- a. Data was updated with the most recent science information.
 - b. Any baseline states containing ranges were amended to remove uncertainty.
 - c. Amendments were made to the policies in the Area-specific chapters of the pLWRP to more clearly link these provisions to the target attribute tables.
117. No other changes were made for the following reasons:
- a. The environmental outcomes of the plan must fulfil the pORPS visions. Timeframes for achieving the target attribute state (and therefore the environmental

outcomes) are not able to extend longer than the timeframes provided in the pORPS to meet visions.

- b. The request to set more ambitious interim target attribute state was considered. However, there is generally a lag between implementing a measure and seeing the environmental impact, and so the proposed interim targets were considered to be appropriate.
- c. Gaps in the ORC monitoring programme are being addressed through a review of the monitoring programme.
- d. Bands have been used in the pLWRP to allow for natural variation and sample error.
- e. There is currently insufficient technical information to set target attribute state for wetlands and estuaries.

8.10. Overview of Clause 3 and Clause 4A feedback from iwi authorities

- 118. Feedback from Iwi authorities queried why targets for some attributes are missing from some monitoring sites, the reasons for inconsistencies in targets set for different rivers with similar physical characteristics, and an apparent lack of ambition and alignment with mana whenua freshwater outcomes in some targets (in terms of the standard to be achieved and/or the timeframe for change).
- 119. No changes have been made as a result of this feedback for the reasons outlined above.

8.11. Conclusion

- 120. Target attributes states for each of the identified attributes in the pLWRP have been set through engagement with the community and mana whenua in accordance with the relevant requirements of the NOF and refined in response to feedback received through Clause 3 and Clause 4A consultation. Where applicable, interim target attribute states have also been set. Gaps in the ORC monitoring programme have been identified and a method has been included in the plan to signal Council's intent to undertake this monitoring site review. As the scope of this review will include ORC's entire SoE monitoring network, sites listed in the pLWRP will be included in this review. As the review happens sites may be removed from and/or added to the pLWRP through a variation to the proposed plan or a plan change once the plan has been made operative.

9. Policies

9.1. Policy FMU(1-5)-P1 – Target attribute states

9.1.1. Introduction

- 121. Clause 3.7(2)(e) of the NPSFM requires that every regional council must set target attribute states to support the achievement of environmental outcomes. In addition, Clause 3.11(7) of the NPSFM requires that every regional council must ensure that target attribute states are set in such a way that they will achieve the environmental outcomes for the relevant values, and the relevant long-term vision.

122. To ensure that the pLWRP is effective in making progress towards achieving the target attribute states (including interim target attribute states) regional council must ensure that the target states and the timeframes for achieving them can be adequately considered by decision-makers and other plan users when making decisions or undertaking activities managed under the plan.

9.1.2. Objectives

123. Section 32(1)(b) of the RMA requires an examination of whether the provisions in a proposal are the most appropriate way to achieve the objectives. The environmental outcomes for which one or more target attribute states have been set and that are particularly relevant for this topic are:

- a. The following environmental outcomes included as objectives in chapters FMU1 to FMU5 (including chapters CAT1 to CAT5):
- i. FMU1 to 5-O1 Ecosystem health
 - ii. FMU1 to 5-O2 Human contact
 - iii. FMU1 to 5-O3 Threatened species (habitat)
 - iv. FMU1 to 5-O4 Threatened species (recovery)
 - v. FMU1 to 5-O5 Mahika kai (condition)
 - vi. FMU1 to 5-O6 Mahika kai (access, harvest, and use)
 - vii. FMU1 to 5-O7 Natural form and character
 - viii. FMU1 to 5-O10 Wāhi tupuna
 - ix. FMU1 to 5-O11 Taoka species
 - x. FMU1 to 5-O12 Fishing
 - xi. FMU1 to 5-O14 Cultivation, and production of food, beverages and fibre.

124. The following sections outline how these environmental outcomes will be achieved through the use of provisions in the pLWRP. To achieve the objectives three options were developed, one of which has been discounted as not being a reasonably practicable option.

9.1.3. Discounted options

125. One option was discounted as a reasonably practicable option for ensuring the target attributes states (including interim target attribute states) and the timeframes for achieving them can be adequately considered by decision-makers and other plan users. This discounted option is to provide no policy guidance.

126. Under this option there is no specific policy direction included in the pLWRP that requires consideration of the target attributes states (including interim target attribute states) and the timeframes for achieving them. As there is no other mechanism in the pLWRP that requires consideration of these when considering applications for resource consent for activities that may impact on ORC's ability to achieve the environmental outcomes within the timeframes set out in the pORPS long-term visions this option is not likely to give effect to the requirements of the NPSFM and has therefore been discounted.

9.1.4. Reasonably practicable options

127. Two reasonably practicable options were identified to achieve the relevant environmental outcomes.
- a. **Option 1:** Provide policy direction in the pLWRP (preferred option)
 - b. **Option 2:** Set permitted activity conditions or entry conditions requiring the achievement of TAS

9.1.5. Option 1: Provide policy direction in the pLWRP (preferred option)

128. Option 1 seeks to include policy direction in each of the FMU and rohe chapters of the pLWRP alerting decision-makers and other plan users to the need to achieve the target attribute states (including interim target attribute states) within the relevant timeframes.
129. Specifically, the policy direction proposed under this option requires the achievement of:
- a. the interim target attribute states within the timeframes for achieving them set out in accordance with protocols set out in section 8.8 of this chapter of the report and included in the attribute tables of the pLWRP; and
 - b. the target attribute states in accordance with the relevant timeframes for achieving these specified in the pORPS long-term visions.

9.1.6. Option 2: Set permitted activity conditions or entry conditions requiring the achievement of TAS

130. Option 2 requires the achievement of relevant target attributes states as a permitted activity condition or entry condition to rules in the pLWRP. This means that under this option any activity managed under the pLWRP will require a resource consent if the relevant target attribute states and interim states are not being met within the relevant FMU or rohe.

9.1.7. Overview of Clause 3 feedback

131. Option 1 was consulted on during the pre-notification consultation under Clause 3 of the First Schedule of the RMA. Two parties commented on the draft policy during Clause 3 pre-notification consultation.
132. One party commenting on the draft policy raised concerns with respect to the practicality and appropriateness of the interim target attribute states and any proposed timeframes to achieve these targets. No amendments to the interim target attribute states and the timeframes for achieving these were made in response to this specific feedback. This is because the interim target attribute states in the pLWRP have been developed to ensure the target attribute states and the environmental outcomes, upon which the target attribute states are based, are achieved within the timeframes for achieving the pORPS long-term visions.
133. A second party raised concerns with respect to the wording of the policies and pointed at errors in the referencing to the attribute tables. In response to this feedback minor corrections to the wording of the policy (including the references to the table).

9.1.8. Overview of Clause 3 and Clause 4A feedback from iwi authorities

134. No specific feedback from iwi authorities was received on the draft policy during pre-notification consultation under clauses 3 and 4A of the First Schedule of the RMA.

9.1.9. Effectiveness and efficiency assessment

135. As the obligations to achieve target attribute states within set timeframes on ORC already exist in the requirements of the NPSFM and will continue to exist whether or not this policy direction is included in the pLWRP, many of the environmental, cultural, social, and economic benefits and costs already exist as part of the status quo and are not further assessed as part of these options.

136. Table 1 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the proposed option.

Table 1: Benefits and costs for FMU(1-5)-P1 – Target attribute states

	BENEFITS	COSTS
Option 1 (preferred option)	<ul style="list-style-type: none"> ▪ There is no uncertainty around whether and how the (interim) target attribute states and timeframes for achieving these need to be considered when making decisions under the pLWRP. ▪ Including the policy in the pLWRP will help to ensure that relevant matters for decision-making on the granting of consents are not inadvertently missed and reduces the risk of granting resource consents in situations where their environmental effects are jeopardising the ability to achieve the relevant (interim) target attribute states within set timeframes. This increases the effectiveness of the pLWRP in terms of implementing the NPSFM and RMA. ▪ Option 1 has ecological benefits as well as benefits for various social values (e.g. recreational and amenity values), as it will ensure that the potential or likely impacts of consented activities on water quality can be considered. ▪ Option 1 has benefits for Kāi Tahu values and the Kāi Tahu economy by ensuring that iwi have improved opportunities to exercise kaikiakitaka 	<ul style="list-style-type: none"> ▪ There is an increased risk that activities will not be able to continue or take place, particularly in situations where the activities put the ability at risk to achieve the relevant (interim) target attribute states within set timeframes.

and have greater access to mahika kai species.

- Option 2**
- Option 2 has ecological benefits as well as benefits for various cultural values (e.g. mahika kai, taoka species) and social values (e.g. recreational and amenity values), as it will ensure that activities are not provided for as a permitted activity if a target attribute state/interim target attribute state is currently not being achieved within an FMU or rohe. This means that any activity managed under the pLWRP will require a consent if the (interim) target attribute state is currently not being met.
 - Option 2 also benefits Kāi Tahu values and the Kāi Tahu economy by ensuring that iwi have improved opportunities to exercise kaikiakitaka and have greater access to mahika kai species.
 - In areas that are currently not achieving the relevant (interim) target attribute states this option is likely to have undue economic or financial costs for land holders. Option2 is likely to prevent activities with no or no discernible effects from occurring in catchments where one or more relevant target attribute states are not being met.
 - A permitted activity condition or entry condition that requires the achievement of one or more relevant target attribute states is unlikely to be certain and may prevent long-term investment decisions, as permitted activities would be required to cease if one or more attributes no longer achieve the (interim) target attribute state.

137. Table 2 below assesses the effectiveness and efficiency of the proposed option in achieving the relevant environmental outcomes.

Table 2: Effectiveness and efficiency assessment – FMU(1-5)-P1 – Target attribute states

Effectiveness	
Option1 (preferred option)	Option 1 is considered to be effective at achieving the relevant environmental outcomes in the pLWRP, particularly when compared to the discounted option, which relies on a policy framework with no clearly visible links to the (interim) target attribute states in the pLWRP.
Option 2	Option 2 is also considered to be effective at achieving the relevant environmental outcomes in the pLWRP, and may be slightly more effective compared to option 1 by better managing the cumulative effects of permitted activities.
Efficiency	
Option1 (preferred option)	Option1 is considered to be efficient at achieving the relevant environmental outcomes in the pLWRP. While this option may restrict or prevent activities where their environmental effects put the achievement of the interim) target attribute states at risk, it assists in raising awareness among plan users around the need to achieve the attribute states and will encourage them to plan their activities accordingly.
Option 2	Compared to option 1, option 2 is considered to be less efficient in achieving the relevant environmental outcomes in the pLWRP, as it is much more restrictive and could prevent activities with no or no discernible effects to occur in catchments where one or more target attribute states are currently not met.

138. Section 32(2)(c) of the RMA requires ORC to take into account the risk of acting or not acting if there is uncertain or insufficient information. As the obligation is an existing obligation on the Otago Regional Council, there is sufficient and sufficiently certain information. Overall, the information supporting the preferred option is suitably certain and sufficient that there is a minimal risk of acting compared to the status quo.

9.1.10. Conclusion

139. The effectiveness and efficiency assessments have shown that while both options are considered to be effective in achieving the relevant environmental outcomes in the pLWRP, option 1 is considered a much more efficient way to achieve these outcomes.
140. While option 2 has not been pursued any further in the development of the pLWRP, it should be noted that, a standard set of permitted activity conditions with more certain and clearer criteria and thresholds has been developed to ensure that these activities do not:
- a. have a more than minor impacts on the environment and that any activities managed under the pLWRP; and
 - b. prevent the achievement of the target attribute states (including interim target attribute states) within the timeframes for achieving them.

9.2. Policy FMU1-P1 – Lake Wānaka

9.2.1. Introduction

141. Lake Wānaka is the subject of specific legislation, the Lake Wānaka Preservation Act 1973 (LWPA), that makes provision for the preservation of the normal water levels and shoreline of Lake Wānaka, and the maintenance and improvement of its water quality.²⁰
142. The LWPA has the following purposes:²¹
- a. To prevent the water in the body of Lake Wānaka from being impounded or controlled by, or, as far as possible, obstructed by, any works except in an emergency;
 - b. To prevent the natural rate of flow of lake water between the outlet of Lake Wānaka which forms the source of the Clutha River and the confluence of that river and the Cardrona River from being varied or controlled by any works except in an emergency;
 - c. To preserve, as far as possible, the water levels of Lake Wānaka and its shoreline in their natural state; and
 - d. To maintain and, as far as possible, to improve the quality of water in Lake Wānaka.
143. When exercising functions under the RMA, ORC is required to have regard to the purposes of the LWPA and shall give effect to the policy of the government in relation to those

²⁰ Section 12 of the LWPA provides that no provision of any other Act shall derogate from the provisions of the LWPA unless that provision expressly so provides.

²¹ Section 4 of the LWPA.

functions as communicated by the Minister of Conservation.²² These functions include the preparation of a regional plan and exercising its functions as a consent authority making decisions on resource consent applications.

144. The LWPA provides that ORC cannot grant resource consent under the RMA, authorising any activity in relation to Lake Wānaka that is referred to in Section 13 or Section 14 of the RMA, without first:²³
- a. seeking the advice of the Guardians of Lake Wānaka on the proposed activity concerned, and considering all advice received from them within a reasonable time of its being sought; and
 - b. having regard to the purposes of the LWPA.
145. This part of the report assesses the inclusion of policy direction in the pLWRP to reflect the restrictions on granting resource consents affecting Lake Wānaka. A wider discussion on the implementation of other direction in the LWPA is set out in section 5 of Chapter 5 of this report.

9.2.2. Objectives

146. Section 32(1)(b) of the RMA requires an examination of whether the provisions in a proposal are the most appropriate way to achieve the objectives. The objectives and environmental outcomes that are particularly relevant for this topic are:
- a. The following objectives in the IM – Integrated management chapter:
 - i. IO-01 Te mana o te Wai
 - ii. IO-03 Long-term visions and environmental outcomes, and
 - b. The following environmental outcomes included as objectives in chapter FMU1 Clutha Mata-au freshwater management unit and relevant to chapters CAT1 Upper Lakes rohe and CAT2 Dunstan rohe:
 - i. FMU1-01 Ecosystem health
 - ii. FMU1-07 Natural form and character

9.2.3. Reasonably practicable options

147. Two reasonably practicable options were identified to achieve the objectives:
- a. **Option 1:** do not include policy direction in the pLWRP
 - b. **Option 2:** include policy direction in the pLWRP (preferred option)

9.2.4. Option 1: status quo

148. Under this option there is no specific policy direction included in the pLWRP that incorporates the restrictions on the granting of resource consent for Lake Wānaka (as set out in Section 11 of the LWPA). This will not remove the obligations on ORC under that

²² Section 8(1) of the LWPA.

²³ Section 11 of the LWPA.

Section of the LWPA, which will continue to apply when ORC is considering applications for resource consent for activities affecting Lake Wānaka. However, these obligations/restrictions will not be reflected in the pLWRP.

9.2.5. Option 2: include policy direction (preferred option)

149. This option is to include policy direction in the pLWRP that reflects the obligations/restrictions under Section 11 of the LWPA on ORC in relation to granting resource consents affecting Lake Wānaka.
150. Lake Wānaka is located in both the Upper Lakes rohe and the Dunstan rohe (which covers the outlets of Lake Wānaka). Therefore, it is considered that the policy is only relevant to the Clutha Mata-au FMU and can be appropriately located in the FMU1 chapter of the pLWRP (being FMU1-P1).
151. The policy provides that in the Upper Lakes and Dunstan rohe, resource consent must not be granted for any use of the bed of Lake Wānaka managed under Section 13 of the RMA, or any take, use, damming, or diversion of water from Lake Wānaka managed under Section 14 of the RMA, without first:
- a. seeking and considering the advice of the Guardians of Lake Wānaka on the proposed activity; and
 - b. having regard to the purposes listed in Section 4 of the LWPA.

9.2.6. Overview of Clause 3 feedback

152. Three parties commented on the draft policy provided under option 2 during Clause 3 pre-notification consultation. One party supported the draft policy in full and sought no amendments. Two parties opposed the draft policy. One party considered that affected party and notification provisions are set out in the RMA. Therefore, the policy is unnecessary. No amendments were made in response to this feedback because the policy reflects the requirements of the LWPA, which applies in addition to the RMA.
153. The remaining party was opposed to the policy for the following reasons:
- a. The policy extends beyond the functions of the Guardians of Lake Wānaka as provided for LWPA;
 - b. The role of the Guardians of Lake Wānaka should not be stipulated as an objective, policy or rule in the Plan because this is inappropriate and creates a burden of precedent for ORC in terms of how other interested and potentially affected statutory groups and organisations are identified (and the role in which they play in the resource consent process); and
 - c. The policy is subjective and open ended.
154. This policy implements the requirements of Sections 11 and 12 of the LWPA. While there is a 'burden' for ORC to implement this policy, it is an existing burden under the LWPA. Deleting this policy does not remove the burden but increases the risk that resource users or decision-makers are not aware of the specific requirements of the LWPA. The direction is specific and only applies in limited circumstances, so it is unlikely to set a precedent for other interested parties. Rather, it sets a precedent that ORC will implement its obligations under other statutes in a purposeful manner.

155. However, it was acknowledged that clause (2) of the draft policy consulted on during the Clause 3 pre-notification consultation was more prescriptive than the requirements of the LWPA. An amendment was therefore recommended to incorporate its direction into clause (1) in a more general way, which is considered to be better aligned with the Act.

9.2.7. Overview of Clause 3 and 4A feedback from iwi authorities

156. No specific feedback from iwi authorities was received on the draft policy during pre-notification consultation under Clause 3 and 4A of the First Schedule of the RMA.

9.2.8. Effectiveness and efficiency assessment

157. As the obligations on ORC already exist in the LWPA and will continue to exist whether or not the additional policy direction is included in the pLWRP, many of the environmental, cultural, social, and economic benefits and costs already exist as part of the status quo and are not further assessed as part of these options.
158. Table 3 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in each option.

Table 3: Benefits and costs for Lake Wānaka policy

	BENEFITS	COSTS
Option 1	<ul style="list-style-type: none"> There is no duplication between the provisions in the pLWRP and the LWPA which means there is no uncertainty between the application of two competing obligations on ORC as the consent authority. 	<ul style="list-style-type: none"> There is an increased risk that the restrictions on the grant of consent set out in the LWPA are inadvertently overlooked and not carried out. This could result in consents being granted that do not follow due process. Such consents may be amenable to being challenged via judicial review proceedings. This would create uncertainty and financial burdens for the applicant/consent holder and ORC.
Option 2 (preferred option)	<ul style="list-style-type: none"> Including the policy will help ensure that restrictions on the grant of consent contained in the LWPA are not inadvertently missed and increases the effectiveness of implementing the LWPA and RMA. It will also help ensure that consent applicants are aware that additional consultation is required under the LWPA. Compared to Option 1, Option 2 provides Kāi Tahu with better opportunities to exercise kaikiakitaka with respect to Lake Wānaka. 	<ul style="list-style-type: none"> This option does result in duplication of the LWPA provision in the pLWRP, which may result in inconsistencies as to how they are applied if the provisions impose different obligations on ORC (although as presently drafted the provisions are consistent).

159. Table 4 below assesses the effectiveness and efficiency of the proposed provisions in achieving the objectives.

Table 4: Effectiveness and efficiency assessment – Lake Wānaka policy

Effectiveness	
Option 1	Option 1 is considered to be effective at achieving the objectives (including the relevant environmental outcomes) in the pLWRP, as the LWPA will continue to impose the restrictions on the granting of resource consents on ORC.
Option 2 (preferred option)	Option 2 will also be effective at achieving the objectives (including the relevant environmental outcomes) in the pLWRP, and is considered to be more effective than Option 1, due to the increased visibility of the LWPA requirements by including them in the pLWRP.
Efficiency	
Option 1	Option 1 is considered to be efficient at achieving the objectives, as the LWPA will continue to impose the restrictions on the granting of resource consents on ORC.
Option 2 (preferred option)	Option 2 is also considered to be efficient at achieving the objectives, but is likely to be more efficient than Option 1 as the latter will enable plan users to be aware of the obligations in the LWPA without needing to go beyond the pLWRP in the first instance. Ensuring the policy direction included in the pLWRP is consistent with the requirements in the LWPA will also ensure that these efficiencies are retained and not impose additional obligations on ORC.

160. Section 32(2)(c) of the RMA requires ORC to take into account the risk of acting or not acting if there is uncertain or insufficient information. As the obligation is an existing obligation on ORC, there is sufficient and sufficiently certain information. Overall, the information supporting the preferred option is suitably certain and sufficient that there is a minimal risk of acting compared to the status quo.

9.2.9. Conclusion

161. For the reasons set out above Option 2 is considered to be a more effective and efficient way to achieve the relevant objective and environmental outcome in the pLWRP and have regard to the purposes of the LWPA, compared to Option 1.

9.3. Policy FMU1-P2 - Discharges from instream dams in the Clutha River/Mata-au mainstem

9.3.1. Introduction

162. The nationally significant Clutha hydro-electric generation scheme is located on the Clutha River/Mata-au main stem. The main infrastructure components of this scheme are two hydro-electric power stations, the Clyde Dam and the Roxburgh Dam, that provide electricity to the New Zealand power grid, and a third dam at the outlet of Lake Hāwea. The latter maintains the water level in the lake up to 20 metres above its natural level and manages controlled releases of flow from this lake for both the Roxburgh and Clyde power stations, which are otherwise dependent on the natural flow of the Clutha River/Mata-au and Kawarau rivers.

163. The Clutha hydro-electric generation scheme is managed by Contact Energy Ltd and operated under a suite of consents that seek to manage the effects of the scheme on a range of values, including its effects on ecological, amenity and recreational values. These consents, many of which are due to expire in 2042, currently have conditions that provide for the maintenance of minimum and maximum lake levels in Lake Hawea and the hydro-lakes behind the Clyde and Roxburgh Dams as well as the maintenance of minimum and maximum discharges from these dams.²⁴
164. The long-term vision for the Clutha Mata-au FMU in the pORPS seeks that:
- ...the national significance of the ongoing operation, maintenance and upgrading of the Clutha hydro-electricity generation scheme, including its generation capacity, storage and operational flexibility and its contribution to climate change mitigation, is recognised and protected, and potential further development is provided for within this modified catchment...*
165. This long-term vision gives effect to the objective of the NPSREG, which recognises the benefits of renewable electricity generation.²⁵
166. Various other clauses within the NPSREG are also of relevance, specifically Policies B and E1 of the NPSREG. Policy B(a) requires that decision-makers shall have particular regard to the maintenance of the generation output of existing renewable electricity generation activities which requires protection of the assets, operational capacity and continued availability of the renewable energy resource.²⁶ Policy E1 requires that regional policy statements and regional (and district) plans shall include objectives, policies and methods (including rules within plans) to provide for the development, operation, maintenance, and upgrading of new and existing renewable electricity generation activities.²⁷
167. The NPSFM is also relevant when considering hydro-electricity generation activities. Specifically, NPSFM Policy 4 requires that freshwater is managed as part of New Zealand's integrated response to climate change, while Clause 3.31(2) requires that in implementing the NPSFM, the regional council must have regard to the importance of the Clutha hydro-electric generation scheme's (alongside several others):²⁸
- a. Contribution to meeting New Zealand's greenhouse gas emission targets; and
 - b. Contribution to maintain the security of New Zealand's electricity supply; and
 - c. Generation capacity, storage and operational flexibility.
168. Although NPSFM Clause 3.31(2) requires the regional council to have regard to the importance of the Clutha hydro-electric generation scheme's generation capacity, storage and operational flexibility, it does not exempt the regional council from the requirement under NPSFM Clause 3.16(1) to include rules that set environmental flows and levels for each FMU.²⁹ Discharges from the Clyde, Roxburgh and Hāwea Dam sites play a pivotal role in

²⁴ Key resource consents authorising the critical components of the Clutha hydro-electric generation scheme are Consent 2002.383; 2001.392.V5; 2001.385.V2; 2001.393; 2001.386.V4 and 2001.394.V1.

²⁵ Objective of the NPSREG

²⁶ Policy B(a) of the NPSREG

²⁷ Policy E1 of the NPSREG

²⁸ Policy 4, NPSFM; Clause 3.31(2) of the NPSFM

²⁹ Clause 3.16(1) of the NPSFM

ensuring that environmental flows in the river reaches of the Clutha River/Mata-au and Hāwea main stems below these dams sites are maintained.

169. The Clutha hydro-electric generation scheme is defined in pLWRP as follows:

means the hydro-electric generation scheme on the Clutha River/Mata-au between Hāwea and Roxburgh, including the Hāwea Dam, Gladstone Gap Stop Bank, Clyde Dam, and Roxburgh Dam

170. Given the highly modified natural of the Clutha River/Mata-au mainstem the pLWRP proposes to set an environmental flow regime for the Clutha Mata-au mainstem by managing discharges from the Clutha River/Mata-au main stem below the Clyde and Roxburgh Dam sites and in the and Hāwea River below Hāwea Dam site. The proposed regime in the pLWRP is consistent with the current regime for maintaining river flows, lake levels, minimum and maximum discharges from the Clyde, Roxburgh and Hāwea Dam sites established by Contact Energy Ltd's current consents.

171. This part of the report evaluates options for providing direction for the maintenance of minimum discharges in the Clutha River/Mata-au mainstem, while also setting out the circumstances where exemptions to these thresholds can be allowed. This is to ensure that the pLWRP gives effect to the NPSFM requirement to set environmental flows for the Clutha River/Mata-au, while also giving effect to the long-term vision for the Clutha Mata-au FMU in the pORPS and the relevant objective and policies in the NPSREG

172. A wider discussion on the implementation of other direction associated with the NPSFM and NPSREG is set out in sections 3.2 and 3.5 of chapter 5 of this report.

9.3.2. Objectives

173. Section 32(1)(b) of the RMA requires an examination of whether the provisions in a proposal are the most appropriate way to achieve the objectives. The objectives and environmental outcomes that are particularly relevant for this topic are:

- a. The following objectives in the IM – Integrated management chapter:
 - i. IO-O1 Te mana o te Wai
 - ii. IO-O3 Long-term visions and environmental outcomes
 - iii. IO-O4 Ki uta ki tai/integrated management
 - iv. IO-O5 Manahau āhuarangi/climate change
 - v. IO-O10 Significant infrastructure,
- b. The following environmental outcomes included as objectives in chapter FMU1 Clutha Mata-au freshwater management unit:
 - i. FMU1-O1 Ecosystem health
 - ii. FMU1-O15 Hydro-electricity generation.

9.3.3. Reasonably practicable options

174. Two reasonably practicable options were identified to achieve the objectives:

- a. **Option 1:** Set limits for maintaining minimum discharges from the hydro-electricity dams on the Clutha River/Mata-au main stem in the pLWRP and rely on regionwide policy direction.
- b. **Option 2:** Set limits and provide specific policy direction for maintaining minimum discharges from the hydro-electricity dams on the Clutha River/Mata-au main stem in the pLWRP (preferred option)

9.3.4. Option 1: Rely on regionwide policy direction

175. This option sets the minimum discharge limits for Clutha River/Mata-au main stem below the Clyde and Roxburgh Dam sites and in the and Hāwea River below Hāwea Dam site, but does not provide specific policy direction for maintaining minimum discharges from the hydro-electricity dams on the Clutha River/Mata-au and in the pLWRP.
176. Under this option decisions on resource consent applications with respect to conditions that require maintenance of environmental flows below the Clyde, Roxburgh and Hāwea Dam sites are guided by:
- a. The bespoke environmental flows and minimum discharge limits set for the Clutha River/Mata-au main stem in SCHED 3 - Rivers: A Block environmental flows, levels and take limits of the pLWRP,³⁰ and
 - b. The policy direction set in the region wide provisions in the IM and EFL chapters, which do not provide specific policy guidance or direction for the management of discharges from hydro-electricity generation dams.

9.3.5. Option 2: Rely on bespoke policy direction (preferred option)

177. This option proposes bespoke policy direction for minimum discharges from the hydro-electricity dams on the Clutha River/Mata-au main stem.
178. Under this option bespoke policy direction for discharges from dams on the Clutha River/Mata-au main stem sets out the circumstances where exemptions to the requirement to maintain minimum discharges are allowed. The exemptions allow activities below the dams to occur, including infrastructure maintenance or to enable the undertaking of any consented activities in the river downstream of dams.
179. The policy direction provided under option 2 is also consistent with the current regime for managing discharges from the Clyde, Roxburgh and Hāwea Dam sites established by Contact Energy Ltd's current consents.

9.3.6. Overview of Clause 3 feedback

180. Draft provision based on option 1 were presented during Clause 3 consultation.
181. Feedback was received that there is need for bespoke provisions that provide for the ongoing maintenance of Otago's nationally and regionally significant hydro schemes. This included giving greater recognition of the national significance of Clutha Hydro scheme by

³⁰ which are consistent with the current regime for maintaining river flows, lake levels, minimum and maximum discharges from the Clyde, Roxburgh and Hāwea Dam sites established by Contact Energy Ltd's current consents.

adding bespoke provisions. There was no specific feedback received from Iwi authorities on the draft provision.

182. In response to this feedback, Option 2 as described above was developed and added to the Clutha Mata Au FMU section of the draft plan. This approach sets the same minimum discharge limits but included additional policy direction that sets out when discharges may be allowed reduced temporarily below the minimum requirements.

9.3.7. Overview of Clause 3 and 4A feedback from Iwi authorities

183. No feedback was received through Clause 3 and 4A pre-notification consultation from Iwi authorities.

9.3.8. Effectiveness and efficiency assessment

184. Section 32(2)(c) of the RMA requires ORC to take into account the risk of acting or not acting if there is uncertain or insufficient information. There is sufficient support within higher order planning instruments to warrant specific policy framework which provides hydro-electricity generation scheme operators with a limited degree of flexibility when it comes to maintaining minimum discharges when essential activities, such as infrastructure maintenance, need to be carried out. Overall, the information supporting Option 2 is suitably certain and sufficient that there is a minimal risk of acting compared to the status quo.
185. Table 5 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in each option.

Table 5: Benefits and costs for policy direction for maintaining minimum discharges from the hydro-electricity dams on the Clutha Mata-au and Hāwea River main stems

	BENEFITS	COSTS
Option 1	<ul style="list-style-type: none"> ▪ Option 1 provides benefits for the operator of the Clutha hydro-electric generation scheme and decision-makers by setting clear and certain minimum discharge thresholds for discharges from the three dam sites on the Clutha hydroelectric generation scheme in a schedule of the Plan. ▪ Option 1 also benefits operator of the Clutha hydro-electric generation scheme and the wider community by setting minimum discharge thresholds in the pLWRP that are based on the thresholds referred to in the pLWRP. ▪ Option 1 is likely to have benefits for the river's natural character values, as the thresholds set in the pLWRP do not provide the scheme operator with the same level of flexibility currently afforded through the consent conditions that allow the operator to release less 	<ul style="list-style-type: none"> ▪ Option 1 provides less direction on exceptions. This may have economic, and social costs as it creates some uncertainty for downstream activities. This could impact downstream infrastructure maintenance, for example, downstream bridges, flood protection, in stream community recreational assets on Hāwea River.

water than the required minimum discharge in specific circumstances.

- Option 1 is also likely to benefit Kāi Tahu values and the Kāi Tahu economy by ensuring that iwi have improved opportunities to exercise kaikiakitaka and have greater access to mahika kai species provided by the Clutha River/Mata-au main stem.

**Option 2
(preferred
option)**

- Option 2 provides further benefits for the operator of the Clutha hydro-electric generation scheme and decision-makers by not only setting clear and certain minimum discharge thresholds for discharges from the three dam sites on the Clutha hydroelectric generation scheme, but also providing policy guidance as to how minimum discharges need to be provided for when essential activities such as maintenance works need to be undertaken.
- Compared to option 1, option 2 also provides slightly greater benefits operator of the Clutha hydro-electric generation scheme and the wider community by setting a policy framework in the pLWRP that is better aligned with the management regime set out in the current suite of consents for the scheme and therefore is unlikely to result in a reduction of the scheme's current electricity generation capacity. As such, option 2 is considered to give greater effect to the NPSREG.
- Greater policy direction provides more flexibility for operation and more certainty for downstream infrastructure maintenance.
- By adopting the management regime currently embedded in the suite of consents that authorise the operation of the Clutha hydro-electricity generation scheme in the pLWRP framework, option 2 impedes the ability to restore the natural character or reverse the loss of extent or value of the Clutha River/Mata-au. However, it is acknowledged that the reaches affected by the Clutha hydro-electric generation scheme have already been altered significantly from their natural state.
- Option 2 poses a slightly greater risk in terms of Kāi Tahu being able to exercise kaikiakitaka, as the scheme operator will be provided with exemptions from the requirement to maintain the stated minimum.

186. Table 6 below assesses the effectiveness and efficiency of the proposed provisions in achieving the objectives.

Table 6: Effectiveness and efficiency assessment – policy direction for maintaining minimum discharges from the hydro-electricity dams on the Clutha Mata-au and Hāwea River main stems

Effectiveness

Option 1 Option 1 is considered an effective proposal for achieving the relevant objectives in the pLWRP as it proposes an environmental flow regime for the Clutha River/Mata-au main stem that give effect to policy direction in the NPSFM.

Option 2 (preferred option) Option 2 is considered a more effective proposal for achieving the relevant objectives in the pLWRP than option 1. This option is likely to be slightly more effective in terms of giving effect to the policy direction in higher planning instruments, notably the NPSREG, NPSFM and pORPS, and to the environment outcomes for hydro-electricity generation in the pLWRP by providing for environmental flows while also providing more flexibility for managing discharges from the dams associated with the Clutha hydroelectric generation scheme.

Efficiency

Option 1 Option 1 is considered an efficient proposal for achieving the objectives, as it is assessed above to have a net benefit, although it is acknowledged that relying on regionwide policy direction is potentially less enabling than option 2.

Option 2 (preferred option) Option 2 is considered to be a slightly more efficient option than Option 1 as the additional policy guidance provided under option 2 will provide additional benefits to scheme operator and decision-makers with greater certainty regarding the need to maintain of minimum discharges at a time when necessary maintenance works need to be undertaken. This also provide greater certainty downstream activities that may require exemption from the proposed regime for the purpose of infrastructure maintenance.

9.3.9. Conclusion

187. Option 2 is considered the most appropriate way to achieve the relevant objectives. As discussed above, option 2 is considered the more effective and efficient proposal for achieve the relevant objectives.

9.4. CAT3-P2 – Manuherekia River and FMU2-P2 – Taiari River

9.4.1. Introduction

188. The EFL chapter of the pLWRP sets bespoke environmental flows and take limits set for some catchments in Otago, and for some of these catchments the pLWRP sets interim take limits as the sum of allocation to existing resource consents in catchment to provide the transition to bespoke limits, or as a temporary approach in catchments where long-term take limits cannot be identified prior to notification of this plan. The Taiari catchment, which comprises the entire Taiari FMU, and the Manuherekia catchments, which forms the Manuherekia rohe are two catchments where bespoke flows and interim take limits are proposed in the pLWRP.³¹

189. These two catchments are the most complex catchments in Otago in terms of water quantity management. This is largely due to the historic and current planning framework failing to effectively manage legacy issues present in Otago's water allocation (Augspurger, Olsen, &

³¹ See the case study on the Manuherekia in Chapter 13 (EFL) of this report.

Dyer, 2024) (Augsburger J. , 2023). The pLWRP proposes a policy framework that sets the first step to resolve these issues. For example, by implementing provisions for more water accounting and implementing requirements such as minimum flows, and sinking lid policies to reduce over-allocation as existing resource consent are replaced in these catchments. However, further steps and further technical work are needed and planned to determine long-term take limits that give effect to the NPSFM and achieve the long-term visions³² and environmental outcomes for the relevant rohe or FMU.

190. While the policy and rule framework within the EFL chapters provides for the management of water takes in these two catchments, additional policy direction for these two catchments is proposed to:
- a. Support the collection of data to inform of the management of the Manuherekia rohe and Taiari FMU, including the development of long-term take limits that support the achievement of the long-term visions³³ and environmental outcomes for the relevant rohe or FMU; and
 - b. Signal that:
 - i. the interim take limits for the Manuherekia rohe and Taiari FMU calculated as the sum of the maximum instantaneous rate of take of all resource consents granted at the date of notification of the pLWRP are interim limits, and
 - ii. that when long-term take limits are set in the future, further reductions in the rate and volume allocated to consents will be required if the relevant take limit is exceeded.
191. This proposal has been developed through internal and external stakeholder feedback provided through the community and stakeholder engagement processes, internal reviews and Clause 4A pre-notification consultation. This section of the report evaluates the options for managing allocation in the Manuherekia and Taiari catchments.

9.4.2. Objectives

192. Section 32(1)(b) of the RMA requires an examination of whether the provisions in a proposal are the most appropriate way to achieve the objectives. The objectives and environmental outcomes that are particularly relevant for this topic are:
- a. The following objectives in the IM – Integrated management chapter:
 - i. IO-01 Te mana o te Wai
 - ii. IO-03 Long-term visions and environmental outcomes
 - b. Objective CAT2-01
 - c. All of the environmental outcomes included as objectives in chapter FMU2 – Taiari freshwater management unit.

³² LF-FW – Fresh water Chapter of the pORPS.

³³ LF-FW – Fresh water Chapter of the pORPS.

9.4.3. Reasonably practicable options

193. Two reasonably practicable options were identified for managing allocation in the Manuherekia and Taiari catchments to achieve the objectives:
- a. **Option 1:** Rely on regionwide policy direction in EFL chapter.
 - b. **Option 2:** Include additional policy direction to support the future management of allocation in in the Manuherekia rohe and Taiari FMU (preferred option).
194. It is noted that neither option proposes to:
- a. Alter the interim take limits and environmental flows proposed for the Manuherekia rohe and Taiari FMU in the pLWRP; or
 - b. Alter the approach in the EFL chapter for managing water quantity including the requirements to:
 - i. Reduce over-allocation, and
 - ii. Measure water takes and associated discharges.

9.4.4. Option 1: Rely on regionwide policy direction in EFL chapter

195. This option relies on regionwide policy direction in EFL chapter to support the future management of allocation in the Manuherekia rohe and Taiari FMU.
196. This option will not remove the need for ORC to undertake further technical work to inform the setting of a long-term take limit for these catchments that gives effect to the objective of the NPSFM.

9.4.5. Option 2: Include policy direction to support the future management of allocation (preferred option)

197. Under this option two policies will be included within the relevant Area-specific matters chapters of the pLWRP.
198. A policy will be included within the CAT3 – Manuherekia rohe chapter that emphasises the need to provide for the health and wellbeing of water bodies in the Manuherekia rohe by:
- a. requiring all surface water takes and takes of connected groundwater to comply with the main stem minimum flows at Alexandra Campground, and where relevant with the relevant environmental flows for tributaries, in accordance with the timeframes in set out in *SCHED3 – Rivers: A Block environmental flows, levels and take limits* and *SCHED 4 - Rivers: B Block environmental flows, levels and take limits* of the pLWRP; and
 - b. requiring the metering of all takes of water from, and discharges of water to, the Manuherekia River and tributaries, to inform the further development of a water quantity management of the rohe in the future, including the setting of a take limit that supports the achievement of the relevant long-term visions³⁴ and environmental outcomes; and

³⁴ LF-FW – Fresh water Chapter of the pORPS.

- c. setting an interim take limit for the Manuherekia rohe as the sum of the maximum instantaneous rate of take of all resource consents granted at the date of notification of the plan; and
 - d. avoiding any new allocation of water and reducing over-allocation in the rohe in accordance with EFL-P16; and
 - e. recognising that when a take limit is set in the future, further reductions in the rate and volume allocated to consents will be required if the take limit is exceeded; and
 - f. enabling takes of water during periods of high flows in the Manuherekia River subject to compliance with relevant allocation Block Minimum flows and take limits for rivers.
199. A second policy, similar to the policy described above for the CAT3 – Manuherekia rohe chapter, will be included in FMU2 – Taiari FMU for managing water takes from the Taiari catchment.

9.4.6. Overview of Clause 3 feedback

200. Draft provisions for managing water in the Manuherekia rohe, together with a policy in the EFL-chapter outlining the approach for reducing the allocation in the Manuherekia and Taiari catchments were presented during Clause 3 consultation.
201. Under the Clause 3 pre-notification process, there was feedback received on the draft provision from two parties. One party opposed the policy for the Manuherekia rohe requesting it to be replaced with a policy that sets a minimum flow for the Manuherekia River of 1,100 l/s at Alexandra Campground taking effect in 2028. A second party opposed the approach for reducing allocation in the Manuherekia and Taiari catchments and all catchments where the take limit is exceeded and asked for the inclusion of any policy direction on this matter in the PLWRP to be delayed until decisions are made on the overarching direction set in the pORPS.
202. Iwi authorities provided feedback that the over-all approach to managing over-allocation was not clear in the draft provisions.
203. Given the extensive body of knowledge that informed the setting of the minimum flows for the Manuherekia catchment,³⁵ ORC staff did not recommend a change to the minimum flow for the Manuherekia catchment. Staff also did not recommend amending the approach for reducing allocation in the Manuherekia and Taiari catchments and all catchments where the take limit is exceeded, as this approach was found to be aligned with the direction set in the Council Decisions on the pORPS adopted by ORC on 27 March 2024. However, following the Clause 3 feedback, the draft provisions were amended to make the policy clearer. The policy direction on the management of allocation in the Manuherekia was removed from the regionwide provisions in the EFL chapter and incorporated as a bespoke policy in the CAT3 – Manuherekia rohe chapter.

9.4.7. Overview of Clause 3 and clause 4 feedback from iwi authorities

204. Iwi authorities provide feedback through Clause 3 and Clause 4A pre-notification consultation on the policy framework for managing water takes in the Manuherekia rohe

³⁵ See the case study on the Manuherekia catchment in Chapter 13 of this report for a summary.

and Taiari FMU. Specifically, Iwi authorities expressed the need for clearer signal in the Plan that a reduction in take will be required in the Manuherehia and Taiari catchments to phase out over-allocation and that the approach of setting the initial take limit in these catchments, at the existing maximum consented take does not appear to comply with NPSFM 3.17(4).

205. In response to the concerns raised by iwi authorities above, as well as other matters raised through internal reviews, staff have developed option 2.

9.4.8. Effectiveness and efficiency assessment

206. Section 32(2)(c) of the RMA requires ORC to take into account the risk of acting or not acting if there is uncertain or insufficient information available. Overall, the information supporting the either option is suitably certain and sufficient that there is a minimal risk of acting compared to the status quo.

207. Table 7 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the two options described above. It should be noted that this assessment does not consider in great detail the costs and benefits associated with the following aspects of option 2:

- a. The proposed minimum flows and interim take limits for the Taiari catchment and Manuherehia catchment, as the costs and benefits of these proposed minimum flows and limits are discussed in Chapter 13 of this report; and
- b. The proposed approach for reducing allocation where the take limit, including any further take limit is exceeded, as the costs and benefits of this approach is discussed in Chapter 13 of this report of this report; and
- c. The proposed requirements set in the pLWRP for measuring water takes and associated discharges as the costs and benefits of these requirements are discussed in Chapter 13 of this report of this report; and
- d. The reductions in the rate and volume allocated to consents that may be required if a long-term take limit that supports the achievement of the long-term visions³⁶ and environmental outcomes is exceeded. At present it is not possible to describe or quantify these costs and benefits as further work needs to be undertaken to inform the setting of long-term take limits and determine the likelihood or scale of any reductions that may be required to achieve these take limits.

208. Instead, the analysis below therefore only considers the costs and benefits associated with provision of further policy direction within the CAT3 – Manuherehia rohe and FMU2 - Taiari FMU chapters that signals:

- a. the need to collect data, including water metering data, to inform of the management of the water bodies within this FMU and rohe, including the development of long-term take limits that support the achievement of relevant long-term visions³⁷ and environmental outcomes; and

³⁶ LF-FW – Fresh water Chapter of the pORPS.

³⁷ LF-FW – Fresh water Chapter of the pORPS.

- b. that when these long-term take limits are set in the future further reductions in the rate and volume allocated to consents may be required if a take limit is exceeded.

Table 7: Benefits and costs for additional policy direction to support the future management of allocation in the Manuherekia rohe and Taiari FMU.

BENEFITS	COSTS
<p>Option 1</p> <ul style="list-style-type: none"> ▪ Compared to option 2, option 1 does not have any obvious short to mid-term economic benefits for water users, nor does it have any meaningful benefits for the social, cultural or ecological values supported by the Manuherekia and Taiari river catchments. This is because the minimum flows and take limits set for the Manuherekia and Taiari catchments in <i>SCHED3 - Rivers: A Block environmental flows, levels and take limits</i> of the pLWRP are identical under both options. ▪ Other aspects of the water management framework of the PLWRP relevant to the Manuherekia and Taiari catchments (such as, the requirement to provide for water metering, the need to avoid further overallocation and the need to achieve reductions in the rate and volume allocated to consents if the long-term take limit exceeds the consented allocation) are also identical under both options. 	<ul style="list-style-type: none"> ▪ Compared to Option 2, Option 1 poses a higher risk of longer-term economic costs for water permit holders in the Manuherekia rohe and Taiari FMU. This is because Option 1 creates a risk that water users may consider the take limit for the Manuherekia rohe and Taiari FMU set in the pLWRP (as the sum of the maximum instantaneous rate of take of all resource consents) to be a long-term take limit that achieves the relevant environmental outcomes and long-term visions³⁸ for these catchments. This could result in investment decisions being based on inaccurate information and creates further risk of future investments becoming redundant due to reduced availability of water. ▪ Option 1 also provides less transparency and clarity to plan users and decision-makers as various aspects of the policy framework for managing water allocation the Taiari and Manuherekia catchments that need to be considered when making decisions-under the plan are embedded in different parts (i.e. chapters and schedules) of the pLWRP. ▪ As a result, there is a slightly greater risk under option 1, that decision-makers intentionally overlook relevant aspects of the policy framework in the plan when making decisions on consent application to take water from these catchments. This may impact the transition towards a long-term take limit that adequately provides for all social, cultural and ecological values supported by the river.

³⁸ LF-FW – Fresh water Chapter of the pORPS.

**Option 2
(preferred
option)**

- Option 2 is likely to provide more transparency and clarity to plan users by providing two, clear one-stop-shop policies in the plan (one for each catchment) that consolidate and bundle the relevant policy direction and policy considerations that are embedded in different parts of the pLWRP).
- Option 2 will benefit water users as it more clearly signals that the take limit for the Manuherekia and Taiari set in the pLWRP is a temporary one and will be replaced by a take limit that achieves the relevant environmental outcomes and long-term visions³⁹ for these catchments.
- Option 2 has economic benefits as it increases the likelihood of investment decisions being based on realistic assumptions regarding the availability of water in the future and reduces the risk that any future investment.
- Option 2 is likely to benefit the ecological values, as well as certain social values (e.g. recreational and amenity values), of the Manuherekia and Taiari catchments by reducing the risk that relevant aspects of policy framework that need to inform the development of and transitioning towards future take limits will be overlooked when making consent decisions under the pLWRP.
- Compared to Option 1, Option 2 is also likely to provide better outcomes for Kāi Tahu by providing better assurances that overtime iwi will have improved opportunities to exercise kaikiakitaka with respect to the water resources of the Manuherekia and Taiari catchments and will have access to mahika kai from the water bodies in these catchments in the future.
- As the take limits, environmental flows and key policy direction relevant to the Manuherekia and Taiari catchments, are identical under options 1 and 2, there are no discernible differences in terms of the costs on social, economic, cultural and ecological values supported by the waterbodies in these catchments under both options.

209. Table 8 below assesses the effectiveness and efficiency of the proposed provisions in achieving the relevant objectives and environmental outcomes.

³⁹ LF-FW – Fresh water Chapter of the pORPS.

Table 8: Effectiveness and efficiency assessment for additional policy direction to support the future management of allocation in the Manuherekia rohe and Taiari FMU.

Effectiveness	
Option 1	Option 1 is considered an effective proposal for achieving the relevant objectives and environmental outcomes for the Taiari FMU and Manuherekia rohe. This option is likely to be successful at managing water quantity in the Manuherekia rohe and Taiari FMU as it relies on the regionwide direction in the EFL chapter and take a consistent approach to phasing out over-allocation.
Option 2 (preferred option)	Option 2 is considered an effective proposal for achieving the relevant objectives and environmental outcomes for the Taiari FMU and Manuherekia rohe. This option is likely to be successful as it proposes bespoke policy direction for the future management of water quantity in the Manuherekia rohe and Taiari FMU. This option sends clear signals on the changes that are required in these 2 catchments including that interim take limits are temporary, and that reduction in allocation will likely be required in the future.
Efficiency	
Option 1	As discussed above, option 1 may result in an increased risk that consent holders will make investment decisions based on unrealistic expectations around future availability of water. While this approach in option 1 is consistent with the regionwide approach, this risk creates a net cost to society as a whole. Therefore, option 1 is consider the less efficient option for achieving the relevant objectives
Option 2 (preferred option)	Option 2 is considered a more efficient option than Option 1. This option sends clearer signals on the future management of water quantity in Manuherekia rohe and Taiari FMU. This has a net benefit as it provides more certainty to the community and all interested stakeholders. For example, this option provides better assurances that investment decisions made by consent holders will be based on more realistic expectations around future availability of water.

9.4.9. Conclusion

210. Option 2 is the preferred option as it considered the most appropriate proposal for achieving the relevant objectives. Option 2 provides a clear signal with respect to the future management of water quantity in the Manuherekia rohe and Taiari FMU and on balance is considered to be a more effective and efficient way to achieve the relevant objectives.

9.5. FMU3-P2 to P5 – Policies that give effect to the Waitaki Allocation Plan

9.5.1. Introduction

211. The Waitaki Catchment Water Allocation Regional Plan is the regional plan for the allocation of water in that part of the catchment that is within the Canterbury Region. This Plan was prepared by the Waitaki Catchment Water Allocation Board in accordance with the requirements of the Resource Management (Waitaki Catchment) Amendment Act 2004. Section 16 of the Resource Management (Waitaki Catchment) Amendment Act 2004 also

provides that the Waitaki Catchment Water Allocation Board may change the RPW as it relates to the Waitaki catchment, as necessary, to ensure that the RPW gives effect to the Waitaki Catchment Water Allocation Regional Plan (WCWARP).

212. The WCWARP includes provisions that require changes to the RPW in order to give effect to the provisions of the WCWARP in the Otago region in relation to the allocation of water to activities and the setting of a minimum flow for Welcome Creek.

9.5.2. Objectives

213. Section 32(1)(b) requires an examination of whether the provisions in a proposal are the most appropriate way to achieve the objectives. The objectives and environmental outcomes that are particularly relevant for this topic are:

- a. The following objectives in the IM – Integrated management chapter:
 - i. IO-01 Te mana o te Wai
 - ii. IO-03 Long-term visions and environmental outcomes
- b. All of the environmental outcomes included as objectives in chapter FMU3 – North Otago freshwater management unit.

9.5.3. Reasonably practicable options

214. Two reasonably practicable options were identified for managing water in those parts of the Waitaki catchment that are situated within the Otago region in order to achieve the relevant objectives and environmental outcomes in the pLWRP:

- a. **Option 1:** Rely on regionwide policy direction in EFL chapter.
- b. **Option 2:** Give effect to a direction set in the WCWARP, to ensure that the pLWRP gives effect to the WCWARP.

9.5.4. Option 1: Rely on regionwide policy direction in EFL chapter.

215. This option relies on regionwide policy direction in EFL chapter to support the future management of allocation in those parts of the Waitaki catchment that are situated within the Otago.

9.5.5. Option 2: Give effect to a direction set in the Waitaki Catchment Water Allocation Regional Plan (WCWARP), to ensure that the pLWRP gives effect to the WCWARP (preferred option)

216. Under this option 4 policies that seek to provide for the management of water bodies located within Otago that from part of the Waitaki Catchment are included in the FMU3- North Otago FMU chapter in the pLWRP. The policies are:

- a. FMU3-P2 – Waitaki River whole of catchment approach

This policy requires plan users to recognise the importance of connectedness between all parts of the catchment from the mountains to the sea and between all parts of freshwater systems of the Waitaki River and associated beds, banks, margins, tributaries, islands, lakes, wetlands and aquifers.

b. FMU3-P3 – Waitaki River allocation to activities

This policy sets out fixed annual allocations to specific activities within the Waitaki catchment and requires the consent authority to ensure that granting of the consent does not result in an exceedance of these allocations, when considering resource consent applications to take, divert or use water within the Waitaki catchment.

c. FMU3-P4 – Use of water outside of the Waitaki catchment

This policy requires the consent authority to have regard to the extent to which granting consent to take, divert or use water outside of the Waitaki catchment will reduce the availability of water to current and reasonably foreseeable in-catchment needs when.

d. FMU3-P5 – Welcome Creek

This policy requires the Otago Regional Council to:

- i. Set an environmental flow and level regime for Welcome Creek;
- ii. Ensure that any take, use, damming or diversion of water in Welcome Creek recognises and provides for the relationship of Kāi Tahu and their culture and traditions with Welcome Creek; and
- iii. Enables appropriate access to water for activities for which annual allocations have been set under Policy FMU-P3.

217. Policies FMU3 – P2 to P5 apply in addition to the policies in the region-wide topic-chapters of the pLWRP, while further locational restrictions to align with and ensure consistency with the Waitaki Plan are also included in relevant rules within the DAM, FLOOD and WET chapters.

218. Policies FMU3 – P2 to P5 of the pLWRP are based on similar provisions that were required to be incorporated into the Regional Plan: Water for Otago by the Waitaki Catchment Water Allocation Regional Plan to give effect to its provisions.

9.5.6. Overview of Clause 3 feedback

219. Draft pLWRP provisions based on Option 2 were consulted on as part of the pre-notification consultation under Clause 3 of the First Schedule of the RMA. No specific feedback was received on these draft provisions during pre-notification consultation under Clause 3.

9.5.7. Overview of Clause 3 and Clause 4A feedback from iwi authorities

220. No specific feedback from iwi authorities was received on the draft provisions during pre-notification consultation under clauses 3 and 4A.

9.5.8. Effectiveness and efficiency assessment

221. Table 9 below identifies and assesses the environmental, cultural, social, and economic benefits and costs associated with each option.

Table 9: Benefits and costs for policy options for managing water in those parts of the Waitaki catchment that are situated within the Otago region

	BENEFITS	COSTS
Option 1	<ul style="list-style-type: none"> ▪ Option 1 has a benefit for plan users as it provides for a less complex plan. 	<ul style="list-style-type: none"> ▪ Option 1 is likely to result in uncertain and potentially adverse outcomes for economic, social, ecological and cultural values supported by the water bodies by creating the potential for inconsistent decision-making under the two regional plans that manage the water resources.
Option 2 (preferred option)	<ul style="list-style-type: none"> ▪ Option 2 gives effect to a direction set in the Waitaki Catchment Water Allocation Regional Plan by Waitaki Catchment Water Allocation Board under section 16 of the Resource Management (Waitaki Catchment) Amendment Act 2004. ▪ Option 2 is likely to have positive outcomes for diverse social, economic and cultural and ecological values for the following reasons: <ul style="list-style-type: none"> ○ Option 2 provides specific policy guidance that seeks to ensure a holistic approach is applied in the management of water from the Waitaki catchment; and ○ Option 2 ensures a more consistent approach between the management of water within those parts Waitaki catchment that are managed by ORC under its pLWRP and those parts of the Waitaki catchment that are managed by Ecan under the WCWARP. ○ Option 2 will ensure that iwi will have improved opportunities to exercise kaikiakitaka with respect to freshwater within the Waitaki catchment and will have access to mahika kai from the Waitaki catchment’s water bodies by requiring a holistic and catchment-wide perspective to be taken into account in decision-making . 	<ul style="list-style-type: none"> ▪ Option 2 provides for a more complex planning framework as proposals involving the taking, use, diversion and damming of water in parts of the Otago region that from part of the Waitaki Catchment are subject to a larger set of provisions.

222. Table 10 below assesses the effectiveness and efficiency of the proposed provisions in achieving the relevant objectives and environmental outcomes.

Table 10: Effectiveness and efficiency assessment for managing water in those parts of the Waitaki catchment that are situated within the Otago region.

Effectiveness	
Option 1	Option 1 is not considered to be an effective proposal for achieving the relevant objectives and environmental outcomes as it does not give effect to the Waitaki Catchment Water Allocation Regional Plan and does not ensure that a holistic approach is applied in the management of water from the Waitaki catchment.
Option 2 (preferred option)	Option 2 is considered an effective proposal for achieving the relevant objectives and environmental outcomes as ensures that the pLWRP gives effect to the Waitaki Catchment Water Allocation Regional Plan. .
Efficiency	
Option 1	Option 1 is considered a less efficient option for achieving the relevant objectives as it creates a risk of inconsistent decision-making under the different regional plans that provide for the management of the water resources in the Waitaki catchment.
Option 2 (preferred option)	Option 2 is considered the most efficient option for achieving the relevant objectives as it ensures consistency in decision-making under the different regional plans that provide for the management of the water resources in the Waitaki catchment.

9.5.9. Conclusion

223. As the inclusion of Policies FMU4 – P2 to P5 within the pLWRP gives effect to a direction set in the Waitaki Catchment Water Allocation Regional Plan by Waitaki Catchment Water Allocation Board under section 16 of the Resource Management (Waitaki Catchment) Amendment Act 2004 and provides for an integrated and consistent approach in the management of water from the Waitaki catchment, option 2 is considered the a more effective and efficient way to achieve the relevant objectives and environmental outcomes in the pLWRP.

10. Rules

10.1. FMU1-R1 Maintenance of the Clutha Hydroelectricity Scheme

10.1.1. Introduction

224. The long-term vision for the Clutha Mata-au FMU in the pORPS seeks that:

the national significance of the ongoing operation, maintenance and upgrading of the Clutha hydro-electricity generation scheme, including its generation capacity, storage and operational flexibility and its contribution to climate change mitigation, is recognised and protected, and potential further development is provided for within this modified catchment,⁴⁰

⁴⁰ LF-VM-02 – Clutha Mata-au FMU vision, pORPS 2021

225. This long-term vision aligns with the NPSREG which recognises the benefits of renewable electricity generation,⁴¹ and the NPSFM which requires that the regional council must have regard to the importance of the Clutha Scheme's (alongside several others):⁴²
- a. Contribution to meeting New Zealand's greenhouse gas emission targets; and
 - b. Contribution to maintain the security of New Zealand's electricity supply; and
 - c. Generation capacity, storage and operational flexibility.
226. The pLWRP defines the Clutha hydro-electric generation scheme as follows:
- means the hydro-electric generation scheme on the Clutha River/Mata-au between Hāwea and Roxburgh, including the Hāwea Dam, Gladstone Gap Stop Bank, Clyde Dam, and Roxburgh Dam*
227. This part of the report assesses the inclusion of a rule enabling the maintenance of the Clutha hydro-electric generation scheme. A wider discussion on the implementation of other direction associated with the NPSFM and NPSREG is set out in sections 1.8 and 1.12 of Chapter 5 of this report.

10.1.2. Objectives

228. Section 32(1)(b) of the RMA requires an examination of whether the provisions in a proposal are the most appropriate way to achieve the objectives. The objectives and environmental outcomes that are particularly relevant for this topic are:
- a. The following objectives in the IM – Integrated management chapter:
 - i. IO-O1 Te mana o te Wai
 - ii. IO-O3 Long-term visions and environmental outcomes
 - iii. IO-O5 Manahau āhuarangi/climate change
 - iv. IO-O10 Significant infrastructure,
 - b. The following environmental outcomes included as objectives in chapter FMU1 Clutha Mata-au freshwater management unit:
 - i. FMU1-O1 Ecosystem health
 - ii. FMU1-O15 Hydro-electricity generation.

10.1.3. Reasonably practicable options

229. Two reasonably practicable options were identified to achieve the objectives:
- a. **Option 1:** do not include a specific rule pathway in the pLWRP for the maintenance of hydro-electric generation schemes
 - b. **Option 2:** include a specific rule pathway in the pLWRP for the maintenance of hydro-electric generation schemes (preferred option)

⁴¹ Objective of the NPSREG

⁴² Clause 3.31(2), NPSFM

10.1.4. **Option 1: do not include specific rule pathway for maintenance activities of the Clutha hydro-electric generation scheme**

230. This option does not include a specific rule in the pLWRP that provides for the maintenance of the Clutha hydro-electric generation scheme. Any such activities would be managed under the region-wide provisions, which do not provide a specific pathway for these maintenance activities.

10.1.5. **Option 2: include specific rule pathway for maintenance activities of the Clutha hydro-electric generation scheme (preferred option)**

231. This option is to include a specific rule pathway in the pLWRP that specifically provides for the maintenance of the Clutha hydro-electric generation scheme. The rule pathway includes a controlled activity rule for maintenance works that are demonstrated as being necessary to maintain the function and integrity of the scheme, and are undertaken by or on behalf of the operator of the scheme.
232. The matters of control are fairly broad, and capture a range of effects likely to be relevant to the maintenance works.
233. Where the conditions of the controlled activity rule cannot be met, the maintenance works are classified as discretionary.
234. Specific policy direction is not included in the FMU chapter to support this rule, with the relevant policies contained in the region wide chapters of the plan, including, in particular, IM, BED and EARTH.

10.1.6. **Overview of Clause 3 feedback**

235. The Clause 3 version of the plan did not include a specific rule pathway for the Clutha hydro-electric generation scheme, such that maintenance works in the bed or margins would be managed by the BED provisions.
236. One Clause 3 party provided specific feedback on the Clutha Mata-au FMU chapter and sought that based on the significance of the Clutha hydro-electric generation scheme as recognised by both the NPSREG and the pORPS, there be bespoke provisions for the scheme. They considered that a bespoke rule could provide for some of the maintenance related activities associated with the scheme, including sediment and vegetation removal, and in doing so provide certainty for the wider community that these activities would be able to occur, and related to the ongoing operational efficiency of the scheme.
237. In response to this feedback, Option 2 as described above was drafted, in order to provide a pathway for maintenance works associated with the Clutha scheme.

10.1.7. **Overview of Clause 3 and Clause 4A feedback from iwi authorities**

238. No feedback was received from iwi authorities through Clause 3 and 4A consultation specifically on the Clutha hydro maintenance rule in FMU1.

10.1.8. Effectiveness and efficiency assessment

239. Table 11 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in each option.

Table 11: Benefits and costs for Clutha Hydro-electric generation scheme maintenance rule

	BENEFITS	COSTS
Option 1	<ul style="list-style-type: none"> ▪ The benefits for this option are the same as those identified for Option 1 of the Omnibus sub-topic in Chapter 9 (BED) of this report, given maintenance works associated with the Clutha hydro-electric generation scheme would be managed under the BED provisions. ▪ Option 1 is likely to have benefits for the river’s natural character values, as the thresholds set in the pLWRP do not provide the scheme operator with the same level of flexibility currently afforded through the consent conditions that allow the operator to release less water than the required minimum discharge in specific circumstances. ▪ Option 1 may also benefit Kāi Tahu by ensuring that, through the consenting framework iwi have improved opportunities to exercise kaikiakitaka with respect to the waters of the Clutha River/Mata-au main stem. 	<ul style="list-style-type: none"> ▪ The benefits for this option are the same as those identified for Option 1 of the Omnibus sub-topic in Chapter 9 (BED) of this report. For the Clutha hydro-electric generation scheme specifically, Option 1 would result in costs associated with consenting, on the basis that there maintenance activities would be of a scale that they would not be permitted. Given the extent of the scheme and the maintenance required, the consent process and its outcome may be uncertain.
Option 2 (preferred option)	<ul style="list-style-type: none"> ▪ Option 2 provides certainty to the operator of the Clutha hydro-electric generation scheme in relation to their maintenance activities, particularly where the controlled activity pathway is able to be used. ▪ Providing an enabling pathway is more consistent with the overarching direction regarding renewable electricity generation and existing hydro schemes in particular, and will have benefits associated with New Zealand’s climate change targets. 	<ul style="list-style-type: none"> ▪ This option may result in some loss of extent or value of the Clutha River/Mata-au and may also result in reduced opportunities for Kāi Tahu to exercise kaikiakitaka. However, it is acknowledged that in the reach affected by the Clutha hydro-electric generation scheme, that extent and value have already been altered significantly from their natural state. ▪ Option 2 would result in costs associated with consenting, but based on the controlled activity status, these costs are likely to be lessor than a consenting pathway under Option 1, and with greater certain regarding the outcome, given consents for controlled activities must be granted.

240. Table 12 below assesses the effectiveness and efficiency of the proposed provisions in achieving the objectives.

Table 12: Effectiveness and efficiency assessment – Clutha hydro-electric generation scheme maintenance rule

Effectiveness	
Option 1	Option 1 is considered to be effective at achieving the objectives (including the relevant environmental outcomes) in the pLWRP, with a likely consent requirement enabling consideration of all relevant direction in the LWRP.
Option 2 (preferred option)	Option 2 will be more effective at achieving the objectives (including the relevant environmental outcomes) in the pLWRP than Option 1, given it provides a more enabling pathway for the maintenance works associated with the Clutha hydro-electric generation scheme. The enabling consent pathway is likely to be more effective than the more ambiguous framework under the region wide provision, which does not specifically recognise the scheme or its maintenance requirements.
Efficiency	
Option 1	Option 1 is considered to be efficient at achieving the objectives, as a likely consent requirement will enabling consideration of all relevant direction in the LWRP.
Option 2 (preferred option)	Option 2 is also considered to be efficient at achieving the objectives. It may be slightly more efficient than Option 1 as the more enabling pathway for scheme maintenance activities is better aligned with IO-O10, IO-O11 and FMU1-O15 by providing a controlled activity pathway, rather than the likely discretionary activity pathway under Option 1. This is likely to result in a more efficient process to obtain the relevant consents, which will provide the scheme operator and affected communities with greater certainty regarding the ability to undertake the necessary maintenance works.

241. Section 32(2)(c) of the RMA requires ORC to take into account the risk of acting or not acting if there is uncertain or insufficient information. Given the maintenance activity managed by Option 2 will be captured regardless of whether or not they have a specific framework, there is considered to be a minimal risk of acting compared to the status quo.

10.1.9. Conclusion

242. The effectiveness and efficiency assessments have shown that both options are considered to be an effective and efficient way to achieve the Objectives in the pLWRP. Overall, Option 2 is considered to be a more effective and efficient way to achieve the objectives in the pLWRP compared to Option 1.

10.2. FMU2-R2 – Lake Waipōuri/Waihola wetland complex

10.2.1. Introduction

243. The Lake Waipōuri/Waihola wetland complex is located in the Taiari FMU and consists of two large shallow lakes, Lakes Waipōuri (220 ha) and Waihola (640 ha) surrounded by extensive system of lagoons, ponds, vegetated islands, channels and swamps that likely

meet the definition of a natural inland wetland under the NPSFM.⁴³ There are currently no consented water takes from these water bodies.

244. Lakes Waipōuri and Waihola are categorised as natural lakes in the pLWRP.⁴⁴ Therefore, the policy direction for managing natural lakes under the provisions of the pLWRP is relevant. In particular, Policy EFL-P7 seeks to protect the health and well-being of natural lakes by only allowing:
- a. small takes from natural lakes and their tributaries that are permitted under the rules of the pLWRP; or
 - b. non-consumptive takes; or
 - c. takes that comply with environmental flows and levels and take limits set for the natural lakes and their tributaries in Part 2A of APP8 of the pLWRP.
245. *SCHED5 – Lakes: Environmental levels and take limits* of the pLWRP sets a take limit for the Waipōuri/Waihola wetland complex of OI/s.
246. As the Lake Waipōuri/Waihola wetland complex is part of the Taiari catchment, the regime for allocating water for this catchment set out in the pLWRP is also relevant. The take limit for the Taiari catchment set in *SCHED3 - Rivers: A Block environmental flows, levels and take limits* of the pLWRP is calculated as the sum of the maximum instantaneous rate of take of all resource consents granted at the date of notification of the plan. The pLWRP policy framework for managing allocation in policies EFL-P15 and EFL-P16 and in FMU2-P2 avoids the allocation of any additional water that would result in this take limit being exceeded.
247. The Taiari catchment is currently also considered to be fully allocated under the provisions of the operative Water Plan. As a result, the Water Plan does also not allow for any further water as primary allocation to be allocated from surface water bodies or connected groundwater bodies within this catchment.
248. Therefore, the proposal for managing any new proposed takes from the Lake Waipōuri/Waihola wetland complex and from the wider the Taiari catchment under the framework of the pLWRP has the same effect as the management regime for the Taiari catchment currently included in the operative Water Plan and no further water can be

⁴³ Clause 3.21 of the NPSFM defines natural inland wetland as follows: *natural inland wetland means a wetland (as defined in the Act) that is not:*

(a) *in the coastal marine area; or*

(b) *a deliberately constructed wetland, other than a wetland constructed to offset impacts on, or to restore, an existing or former natural inland wetland; or*

(c) *a wetland that has developed in or around a deliberately constructed water body, since the construction of the water body; or*

(d) *a geothermal wetland; or*

(e) *a wetland that:*

(i) *is within an area of pasture used for grazing; and*

(ii) *has vegetation cover comprising more than 50% exotic pasture species (as identified in the National List of Exotic Pasture Species using the Pasture Exclusion Assessment Methodology (see clause 1.8)); unless*

(iii) *the wetland is a location of a habitat of a threatened species identified under clause 3.8 of this National Policy Statement, in which case the exclusion in (e) does not apply*

⁴⁴ The pLWRP defines the term "natural lake" as follows: means a lake that is not a controlled lake or an off-stream artificial lake.

allocated from any surface water body or connected groundwater body within this catchment, including from the lake Waipōuri /Waihola Wetland complex.

249. It should also be noted, the NESF 2020⁴⁵ contains a number of permitted, restricted discretionary, discretionary and non-complying activity rules for a suite of activities that involve water takes in or near a Natural inland Wetland.
250. The pLWRP proposes a prohibited activity rule for water takes from the Lake Waipōuri/Waihola wetland complex unless provided for by Part 3, subpart 1 of the NESF 2020 the take and use of surface water.

10.2.2. Objectives

251. Section 32(1)(b) of the RMA requires an examination of whether the provisions in a proposal are the most appropriate way to achieve the objectives. The objectives and environmental outcomes that are particularly relevant for this topic are:
- a. The following objectives in the IM – Integrated management chapter:
 - i. IO-01 Te mana o te Wai
 - ii. IO-03 Long-term visions and environmental outcomes
 - b. All of the environmental outcomes included as objectives in chapter FMU2 – Taiari freshwater management unit.

10.2.3. Reasonably practicable options

252. Two reasonably practicable options were identified for managing allocation from the Lake Waipōuri/Waihola wetland complex to achieve the objectives:
- **Option 1:** Rely on the regionwide policy and rule framework in the EFL chapter for managing the take and use of water from the Lake Waipōuri/Waihola wetland complex (preferred option).
 - **Option 2:** Include an additional prohibition for the take and use of water from the Lake Waipōuri/Waihola wetland complex in the FMU2 - Taiari/Taiari Freshwater Management Unit Chapter (preferred option).

10.2.4. Option 1: Rely on regionwide policy and rule framework in EFL chapter

253. This option relies on regionwide policy and rule framework in EFL chapter to support the future management of the take and use of water from the Lake Waipōuri/Waihola wetland complex.
254. This option does not allow for any new consented takes from the Lake Waipōuri/Waihola wetland complex to be granted as the framework for managing allocation set out in the EFL chapter of the pLWRP proposes to set a take limit of 0 l/s for the Lake Waipōuri/Waihola wetland complex and avoid the granting of any new allocation from within the wider Taiari catchment.

⁴⁵ NESF 2020, Part 3, subpart 1

10.2.5. Option 2: include policy direction to support the future management of allocation (preferred option)

255. Under this option a prohibited activity rule for the take and use of water from the Lake Waipōuri/Waihola wetland complex will be included within the FMU2 - Taiari/Taiari Freshwater Management Unit Chapter
256. The addition of this prohibited activity rule does not require any change to the regionwide policy and rule framework in EFL chapter of the pLWRP and is consistent with the framework set out in this chapter.

10.2.6. Overview of Clause 3 feedback

257. The version of the pLWRP consulted on during the Clause 3 pre-notification process did not include the prohibited activity rule for the take and use of water from the Lake Waipōuri/Waihola wetland complex proposed under option 2. While no specific feedback was received on the management of the take and use of water from the Lake Waipōuri/Waihola wetland complex, the prohibited activity rule was introduced to the plan in response to more general feedback from Clause 3 parties seeking for a more transparent framework within the pLWRP.

10.2.7. Overview of Clause 3 and Clause 4A feedback from iwi authorities

258. No feedback was received from iwi authorities through Clause 3 and Clause 4A consultation on the prohibited activity rule proposed under option 2.

10.2.8. Effectiveness and efficiency assessment

259. Section 32(2)(c) of the RMA requires ORC to take into account the risk of acting or not acting if there is uncertain or insufficient information available. Overall, the information supporting the either option is suitably certain and sufficient that there is a minimal risk of acting compared to the status quo.
260. As the outcomes of options 1 and 2 for water users and for the instream environment are identical there is no difference between them in terms of their ecological, cultural, economic and social values impacts. The only practical difference between both options is the extra degree of clarity in the pLWRP that is provided under option 2, which may make this option on balance slightly more effective and efficient way to achieve the relevant objectives and environmental outcomes.

10.2.9. Conclusion

261. Option 2 is the preferred option as, on balance, it is considered a more effective and efficient way to achieve the relevant objectives and environmental outcomes.

10.3. CAT(2-5) – R1 & FMU2,4 and 5 – R1 - Cultivation

262. The Taiari, Dunedin & Coast and Catlins FMU chapters as well as the Dunstan, Manuherekia, Roxburgh and Lower Clutha rohe chapters within the Clutha Mata-au FMU chapter all contain a rule framework for managing the use of land for cultivation and any incidental

discharges of contaminants onto or into land where these may enter water associated with this activity.

263. As the evaluation of this area specific rule framework under s32 of the RMA is discussed in detail in Chapter 14 of this report, this rule framework does not need further discussion in this section of the s32 report.

11. Methods

11.1. CAT2-M1 – Lake Hayes Catchment Action Plan

11.1.1. Introduction

264. Clause 3.15 of the NPSFM provides for the preparation of action plans, non-regulatory instrument that outline regional council's commitments and actions towards achieving specific attributes in relevant FMUs or otherwise supporting the achievement of environmental outcomes.
265. The NPSFM further states that action plans, which may describe both regulatory non-regulatory measures, may be prepared for whole FMUs, parts of FMUs or multiple FMUs and may set out a phased approach to achieving environmental outcomes.⁴⁶ If the action plan's purpose is to achieve a target attribute state, the action must identify the environmental outcome the target attribute state is seeking to achieve and outline how the council plans to achieve this target attribute state.⁴⁷
266. Action plans may be prepared for achieving target attribute states for attributes in Appendix 2A of the NPSFM, but must be prepared for achieving target attributes states for attributes in NPSFM Appendix 2A.⁴⁸
267. The development of action plans, which must be reviewed within five years of being published⁴⁹, must involve consultation with communities and tangata whenua.⁵⁰
268. As part of its wider work programme to giving effect to the NPSFM and to assist with the fulfilment of the pORPS' long-term visions⁵¹ and the achievement of the pLWRP's environmental outcomes ORC has developed the Integrated Catchment Management (ICM) Programme. This programme which is now included in ORC's Long-Term Plan (2024-2034), provides for the development, implementation, and review of integrated Catchment Action Plans (CAP) in collaboration with iwi and community. The programme provides for the roll-out of 9 CAPs, one for each of the five rohe in the Clutha Mata-au FMU and four for the remaining FMUs in the region.

⁴⁶ Clause 3.15(1) and (2), NPSFM.

⁴⁷ Clause 3.15(3), NPSFM.

⁴⁸ Clause 3.12(1) and (2), NPSFM.

⁴⁹ Clause 3.15(5) and (6), NPSFM.

⁵⁰ Clause 3.15(5), NPSFM.

⁵¹ LF-FW – Fresh water Chapter of the pORPS.

269. During ORC’s Environmental Implementation Committee meeting on 9th August 2023 ORC staff presented the Committee with a schedule for the tentative roll-out of CAPs for the region.⁵² The schedule is shown in table 13 below:

Table 13: schedule for the tentative roll-out of CAPs for the region.

FMU/rohe	CAP roll-out
Catlins FMU	Oct 2023 – Oct 2024
Upper Lakes rohe	April 2024 - April 2025
Taiari FMU	Oct 2024 – Oct 2025
Dunstan rohe	April 2025 - April 2026
North Otago FMU	Oct 2025 – Oct 2026
Manuherekia rohe	April 2027 - April 2028
Dunedin and Coast FMU	Oct 2028 – Oct 2029
Roxburgh rohe	April 2029 - April 2030
Lower Clutha rohe	Oct 2029 – Oct 2030

270. In the meeting the Committee approved the next three FMU/rohe in the proposed rollout sequence (i.e. Upper Lakes rohe, Taiari FMU and Dunstan rohe) and approved the remaining sequence in principle with the option of re-evaluating the rollout sequence once the Catlins pilot CAP would be completed.
271. Lake Hayes is a 280-ha lake that has become eutrophic due to elevated nutrient inputs from its catchment. While the Lake Hayes catchment, which is located in the Dunstan rohe, has been used for agriculture since late 1800s, water quality in the lake has deteriorated from the late 1960s, when land drainage and conversion of wetlands in the catchment farmland. While catchment nutrient loads from agricultural land uses have stabilised in recent decades, the lake remains eutrophic due to its internal phosphorus load and increased sediment loadings from commercial, recreational and residential development in the catchment.
272. In response to stakeholder feedback received during stages 2 and 3 of the community engagement ORC staff have drafted a method that specifically provides for the development of an action plan for Lake Hayes outlining actions to reduce key contaminants including phosphorus. It is envisaged that this action plan will likely become part of the CAP for the wider Dunstan rohe.

11.1.2. Objectives

273. Section 32(1)(b) of the RMA requires an examination of whether the provisions in a proposal are the most appropriate way to achieve the objectives. The objectives and environmental outcomes (included as objectives) particularly relevant for this topic are:
- a. The following objectives in the IM – Integrated management chapter:

⁵² 8.2. Integrated Catchment Management Programme, Report No. OPS2323. Presented to the ORC’s Environmental Implementation Committee meeting on 9th August 2023.

- i. IO-O1 Te mana o te Wai
- ii. IO-O3 Long-term visions and environmental outcomes
- b. The following environmental outcomes included as objectives in chapter FMU1 Clutha Mata-au freshwater management unit and relevant to chapter CAT2 Dunstan rohe:
 - i. FMU1-O1 Ecosystem health
 - ii. FMU1-O2 Human contact
 - iii. FMU1-O3 Threatened species (habitat)
 - iv. FMU1-O4 Threatened species (recovery)
 - v. FMU1-O5 Mahika kai (condition)
 - vi. FMU1-O6 Mahika kai (access, harvest, and use)
 - vii. FMU1-O7 Natural form and character
 - viii. FMU1-O11 Wāhi tupuna
 - ix. FMU1-O11 Taoka species
 - x. FMU1-O12 Fishing
 - xi. FMU1-O13 Cultivation, and production of food, beverages and fibre

11.1.3. Reasonably practicable options

274. Two reasonably practicable options were identified to achieve the objectives:

- **Option 1:** do not include a method in the pLWRP
- **Option 2:** include a method in the pLWRP (preferred option)

11.1.4. Option 1: do not include a method direction

275. Under this option there is no specific method included in the pLWRP that provides for the development of an action plan for Lake Hayes. This will not remove the requirement for ORC to prepare action plans for achieving target states for attributes included in NPSFM Appendix 2B or the council's ability to prepare these plans for achieving the environmental outcomes for the rohe or the target states for attributes included in NPSFM Appendix 2A. It also does not impact on the Council's commitment to develop CAPs for each of the region's FMUs and rohe as part of its ICM programme.

11.1.5. Option 2: include policy direction (preferred option)

276. This option is to include a method in the pLWRP that requires the development of an action plan for Lake Hayes that outlines actions for reducing key contaminant including phosphorus.

11.1.6. Overview of Clause 3 feedback

277. No specific feedback was received on the draft method during pre-notification consultation under Clause 3 of the First Schedule of the RMA.

11.1.7. Overview of Clause 3 and Clause 4A feedback from iwi authorities

278. No specific feedback from iwi authorities was received on the draft method during pre-notification consultation under Clause 3 and Clause 4A of the First Schedule of the RMA.

11.1.8. Effectiveness and efficiency assessment

279. Table 14 below identifies and assesses the environmental, cultural, social, and economic benefits and costs associated with each option.

Table 14: Benefits and costs - Lake Hayes Method

	BENEFITS	COSTS
Option 1	<ul style="list-style-type: none"> Option 1 provides ORC with greater flexibility in terms of the content of the CAP for the Dunstan rohe. 	<ul style="list-style-type: none"> Option 1 entails a risk that the CAP for the Dunstan rohe will be inadequate in terms of setting out appropriate actions to restore the health of Lake Hayes.
Option 2 (preferred option)	<ul style="list-style-type: none"> Including the method will help ensure that the CAP for the Dunstan rohe will include actions that seek to restore the health of Lake Hayes. 	<ul style="list-style-type: none"> No costs were identified.

280. Table 15 assesses the effectiveness and efficiency of the proposed method in achieving the objectives.

Table 15: Effectiveness and efficiency assessment – Lake Hayes Method

Effectiveness	
Option 1	Option 1 is likely to be effective at achieving the relevant environmental outcomes for the Dunstan rohe in the pLWRP, as the ORC's ICM programme will provide for the development of a CAP for the wider Dunstan rohe.
Option 2 (preferred option)	Option 2 is likely to be slightly more effective at achieving the relevant environmental outcomes for the Dunstan rohe in the pLWRP, as the ORC's ICM programme will provide for the development of an action plan for the wider Dunstan rohe, as the method will better ensure that the CAP for the Dunstan rohe will include an action plan that focusses on key contaminants that threaten the health of Lake Hayes.
Efficiency	
Option 1	Option 1 is considered to be efficient at achieving the objectives, as the LWPA will continue to impose the restrictions on the granting of resource consents on ORC.
Option 2 (preferred option)	Option 2 is also considered to be efficient at achieving the objectives. It may be slightly more efficient than Option 1 as it will enable plan users to be aware of the obligations in the LWPA without needing to go beyond the pLWRP in the first instance. Ensuring the policy direction included in the pLWRP is consistent with the requirements in the LWPA will also ensure that these efficiencies are retained and not impose additional obligations on ORC.

281. Section 32(2)(c) of the RMA requires ORC to take into account the risk of acting or not acting if there is uncertain or insufficient information. Overall, the information supporting the preferred option is suitably certain and sufficient that there is a minimal risk of acting compared to the status quo.

11.1.9. Conclusion

282. The effectiveness and efficiency assessments have shown that Option 2 is considered to be a more effective and efficient way to achieve the environmental outcomes for the Dunstan rohe in the pLWRP, compared to Option 1.

