23 October 2024

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

Chapter 8: Integrated Management

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

Otago Regional Council

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Abbreviations

FMU	Freshwater Management Unit
NES	National Environmental Standard
NPS	National Policy Statement
NPSFM	National Policy Statement for Freshwater Management 2020
NPSREG	National Policy Statement for Renewable Electricity Generation 2011
NZFFD	New Zealand Freshwater Fish Database
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

1. Introduction

1. This chapter of the s32 report considers the integrated management policies in the pLWRP that are relevant to the management of all activities in the pLWRP. Consequently, these policies cover a wide range of matters. For the purposes of assessment, the policies have been grouped into the following topics:

    a. Plan integration and implementation,

    b. Relationship of Kāi Tahu to water,

    c. Environmental practice and resource use,

    d. Natural form and character,

    e. Outstanding water bodies,

    f. Threatened species,

    g. Fish passage,

    h. Natural hazards,

    i. Discharges,

    j. Drinking water protection zones, and

    k. Consent duration.

2. Reasons for including an IM – Integrated management chapter

2. There are five primary drivers for the content of the strategic direction provided by the integrated management policies:

    a. Requirements in the RMA;

    b. Requirements in the National Planning Standards;

    c. Giving effect to national policy statements and the pORPS 2021;

    d. Responding to the Minister for the Environment's review of ORC's functions, and

    e. Setting clear strategic direction for the pLWRP so that activities are managed in a consistent way to achieve the outcomes sought by the plan.

3. Many national policy statements as well as the PORPS have come into force after the existing regional plans in Otago became operative. Consequently, they have not been fully implemented through either the Water Plan or Waste Plan. This issue is further discussed in Chapter 3 of this report.

4. The final key driver is to set a clear strategic direction for the pLWRP, so that activities are managed in a consistent way to achieve the outcomes sought by the plan. As discussed in section 3 of this chapter, this is one of the key issues with the existing operative regional plans for Otago.

5. Collectively, these requirements form the principal reason for the content of this part of the pLWRP.

2.1. Requirements in the RMA

6. The purpose of a regional plan is to assist a regional council to carry out any of its functions in order to achieve the purpose of this Act.[1] This purpose includes establishing, implementing and reviewing objectives and policies (but not rules) to achieve integrated management of the natural and physical resources of the region.[2] The IM chapter sets out how the integrated management of Otago's natural and physical resources will be achieved. Integrated management is an approach that seeks to manage resources together rather than creating silos by managing different areas, resources, or effects separately. The concept of integrated management is consistent with the Kāi Tahu understanding that all parts of the environment (te taiao) are interconnected, and that it is important to reflect this through holistic management – ki uta ki tai (from the mountains to the sea).

2.2. Requirements in the National Planning Standards

7. Standard 3 – Regional Plan Structure in the National Planning Standards sets out mandatory requirements for the structure of regional plans. Relevantly, Standard 3 requires that:

   a. Chapters and sections shown in grey (including LF – Land and freshwater) in the table in Standard 3 must be included if relevant to the regional plan;[3] and

   b. Objectives addressing the integrated management of resources or providing strategic direction on resource management, must be located in the Integrated objectives chapter;[4] and

   c. Policies addressing the integrated management of resources or providing strategic direction on resource management, must be located in the Integrated policies chapter. [5]

8. The term "strategic direction" is commonly used to describe the overarching policy direction for a plan that applies to the whole region or district, rather than only to a specific topic. There are many matters relevant to freshwater management that are applicable to all, or many, activities managed by the pLWRP, such as natural character. Where policy direction is considered to apply to more than one topic chapter, the drafting convention in the pLWRP is to include that direction in the IM chapter as part of the plan's strategic direction.

9. Standard 6 – Introduction and General Provisions Standard sets out additional requirements for these parts of the mandatory plan structure(s), including for regional plans. This standard states that the provisions under the *Tangata whenua/Mana whenua* heading must only include context and process-related provisions. Other tangata whenua/mana whenua provisions must be integrated throughout the policy statement or plan where the local authority determines it is appropriate. [6]

[1] RMA, s63(1).

[2] RMA, ss 30(1)(a) and 68(1).

[3] Direction 3, Standard 3, National Planning Standards.

[4] Direction 6, Standard 3, National Planning Standards.

[5] Direction 7, Standard 3, National Planning Standards.

[6] Direction 6, Standard 3, National Planning Standards.

10. The standard goes on to list matters to consider for provisions under the *Tangata whenua/Mana whenua* heading, including:

    a. Recognition of hapū and iwi;

    b. Tangata whenua/mana whenua – local authority relationships;

    c. Hapū and iwi planning documents; and

    d. Involvement and participation with tangata whenua/mana whenua.

11. In accordance with this direction, the MW – Mana whenua chapter contains only contextual information, while objective IO-O2 – Relationship of Kāi Tahu to freshwater, IP-P2 – Rakatirataka and kaitiakitaka, and IP-P3 – Kā honaka ki te wai have been included in the IM chapter because they are broader.

2.3. Giving effect to national policy statements and the pORPS 2021

12. A suite of national policy statements is relevant to the pLWRP. Chapter 5 of this report identifies the requirements of these and assesses their implementation in the pLWRP, including through the IM – Integrated management chapter.

13. The IM – Integrated management chapter is also required to give effect to the ORPS 2019 and to have regard to the pORPS 2021. The ORPS does not contain a chapter on integrated management. One of the reasons for preparing the pORPS was to address concerns that the ORPS did not properly outline an integrated approach to managing the resources in the region. The pORPS therefore contains a range of direction that is not included in the ORPS.

14. To assist with understanding where additional direction may be needed, a gap analysis was undertaken of the IM chapter of the pORPS. The results of this analysis are presented in section 4.2.1 below.

2.4. Responding to the Minister for the Environment's review of ORC's functions

15. Section 1.2 of Chapter 3 of this report describes the investigation by the previous Minister for the Environment in relation to ORC's planning functions. As set out in that section, the previous Minister for the Environment made a number of recommendations to ORC on the future of its freshwater planning framework. These were accepted by ORC in December 2019 and included agreements to (among other things) develop and adopt a programme of work to notify a new LWRP for Otago that includes:

    a. region-wide objectives,

    b. strategic policies,

    c. region-wide activity policies, and

    d. provisions for each of the Freshwater Management Units, covering all the catchments within the region.

16. The IM chapter responds directly to the requirements set out in (a), (b) and (c).

2.5. Clear strategic direction

17. As discussed in relation to the National Planning Standards, the IM – Integrated Management chapter provides the strategic direction for the pLWRP, which includes the development of other chapters in the pLWRP, and the subsequent implementation and interpretation of those chapters. These policies apply to all activities managed in the plan, in addition to any topic-specific provisions.

18. The National Planning Standards also provide that provisions under the tangata whenua/mana whenua chapter must only include context and process-related provisions. Other tangata whenua/mana whenua provisions must be integrated throughout a policy statement or plan where the local authority determines it is appropriate.[7]

3. Issues

19. The well-being of people and communities in Otago relies on their continuing ability to access and use the region's natural and physical resources. Failing to plan and provide for economic activities, including those of Kāi Tahu, can lead to adverse socio-economic outcomes. The use and development of these resources can compromise or conflict with the achievement of environmental outcomes.

20. Conversely, failure of activities to sustainably manage their effects on natural and physical resources can also lead to poor socioeconomic outcomes. The costs of production can rise because of poor quality natural resources, for example, through higher input costs (e.g. fertiliser, weed and pest control); and remediation requirements (e.g. riverbank restoration, erosion control). Some land management practices can compromise productive capacity of agricultural land, for example, loss of soil through erosion or soil structure through compaction. Business environmental performance is becoming increasingly important in terms of providing access to investment. Poor business environmental performance can also lead to increased regulatory requirements and associated higher costs of doing business.

21. Appropriate access to and use of natural and physical resources needs a planning framework that recognises and provides for the essential operational, locational and functional requirements of activities while managing the adverse effects of these activities.

22. Some of the issues addressed by the IM chapter apply across all activities managed under the pLWRP, whereas other issues are specific to a particular region-wide topic, such as threatened species. This section summarises the region-wide issues that apply to all topics in this chapter. These issues are:

    a. Significant resource management issues for the region (as set out in the pORPS);

    b. Resource management issues of significance to iwi authorities in the region (as set out in the pORPS);

    c. Freshwater issues in Otago; and

    d. Climate change.

[7] Planning Standard, Part 6, direction 25.

23. Where there are additional issues specific to a topic, those are discussed in the section on that topic. For example, issues relating to threatened species are discussed under Topic 11: Threatened species.

24. Additional issues with the status quo policy context that the IM chapter seeks to address are outlined in 'Status quo policy context (including operative plan provisions)' section.

3.1. Significant resource management issues for the region (as set out in the pORPS)

25. As required by section 62(1)(a) of the RMA, the pORPS states the significant resource management issues for the region. All of these are relevant to the IM – Integrated management chapter of the pLWRP:

a. SRMR-I1: Natural hazards pose a risk to many Otago communities.

b. SRMR-I2: Climate change will impact our economy and environment.

c. SRMR-I3: Pest species pose an ongoing threat to indigenous biodiversity, economic activities and landscapes.

d. SRMR-I4: Poorly managed urban and residential growth affects productive land, treated natural assets, rural industry, infrastructure and community well-being.

e. SRMR-I5: Freshwater demand exceeds capacity in some places.

f. SRMR-I6: Declining water quality has adverse effects on the environment, our communities, and the economy.

g. SRMR-I7: Rich and varied biodiversity has been lost or degraded due to human activities and the presence of pests and predators.

h. SRMR-I8: Otago's coast is a rich natural, cultural and economic resource that is under threat from a range of terrestrial and marine activities.

i. SRMR-I9: Otago lakes are subject to pressures from tourism and population growth.

j. SRMR-I10A: The social, cultural and economic well-being of Otago's communities depends on the use and development of natural and physical resources, but that use and development can compromise or conflict with the achievement of environmental outcomes.

k. SRMR-I10: Economic and domestic activities in Otago use natural resources but do not always properly account for the environmental stresses or the future impacts they cause.

l. SRMR-I11: Cumulative impacts and resilience – the environment costs of our activities in Otago are adding up with tipping points potentially being reached.

26. These issues are described in more detail in the SRMR chapter of the pORPS.

3.2. Resource management issues of significance to iwi authorities in the region (as set out in the pORPS)

27. As required by section 62(1)(b) of the RMA, the pORPS states the resource management issues of significance to iwi authorities in the region. All of these are relevant to theIM – Integrated management chapter of the pLWRP:

a. RMIA-WAI-I1: The loss and degradation of water resources through drainage, abstraction, pollution, and damming has resulted in material and cultural deprivation for Kāi Tahu ki Otago.

b. RMIA-WAI-I2: Current water management does not adequately address Kāi Tahu cultural values and interests.

c. RMIA-WAI-I3: The effects of land and water use activities on freshwater habitats have resulted in adverse effects on the diversity and abundance of mahika kai resources and harvesting activity.

d. RMIA-WAI-I4: Effective participation of Kāi Tahu in freshwater management is hampered by poor recognition of mātauraka.

e. RMIA-WAI-I5: Poor integration of water management, across agencies and across a catchment, hinders effective and holistic freshwater management.

f. RMIA-MKB-I1: The diversity and abundance of terrestrial and aquatic indigenous species has been reduced due to adverse effects of resource use and development.

g. RMIA-MKB-I2: Regulatory and physical barriers have impeded the ability of Kāi Tahu to access mahika kai and to undertake customary harvest.

h. RMIA-MKB-I3: Impacts of climate change on both species/habitat viability and increasing pest (flora/fauna) encroachments.

i. RMIA-MKB-I5: Inconsistent approaches to biodiversity protection amongst regulatory authorities.

j. RMIA-MKB-I6: Lack of information on species health and viability.

k. RMIA-WTU-I1: The values of wāhi tūpuna are poorly recognised in resource management in Otago.

l. RMIA-WTA-I1: Activities have resulted in disturbance and degradation of wāhi tapu and wāhi taoka sites and the cultural and spiritual values associated with these areas.

m. RMIA-WTA-I2: Access to wāhi tapu and wāhi taoka and the ability to undertake customary activities on these sites has been impeded.

n. RMIA-CE-I1: Mahika kai and coastal systems are adversely affected by lack of integrated management across the land-water interface.

o. RMIA-CE-I3: The ability for Kāi Tahu ki Otago to access and harvest kaimoana has been impeded by the effects of activities in the coastal and marine environment.

p. RMIA-CE-I4: Habitat disturbance and modification has contributed to decline in populations of indigenous marine species, including marine mammals.

q. RMIA-CE-I5: Wāhi tapu and wāhi tūpuna values in the coastal environment are poorly recognised and protected.

28. These issues are described in more detail in the RMIA chapter of the pORPS.

3.3. Freshwater issues in Otago

29. Chapter 2 of this report outlines in detail the issues with freshwater in Otago. In summary, the primary freshwater management issues for the region include:

    a. Some catchments are water short and/or water quantity is overallocated. Many catchments in Otago have a medium to high ecological risk due to water abstraction.

    b. River and lake state results show that water quality across Otago is spatially variable, water quality is best at lakes, river and stream reaches located at high or mountainous elevations under predominantly native cover. When considering the major four contaminants (nitrogen, phosphorus, E.coli and sediment), E.coli is most often the attribute for which sites and segments fail to comply with the national bottom line.

    c. There has been a significant loss of wetlands throughout the region, and only 6% of those remaining have some form of legal protection. These ecosystems are highly vulnerable to the effects of exotic invasions, open-cast mining, and pastoral intensification.

    d. Excessive nutrient input (eutrophication) threatens many Otago estuaries causing ecological problems, such as algal blooms and poor physical and chemical conditions for estuarine life.

    e. Indigenous freshwater species are subject to pressure from predation and competition with introduced species, as well as loss of habitat due to modification of waterways, water abstraction, water quality deterioration, barriers to fish passage, and predation by native taxa outside of their normal range.

    f. A range of issues affect the coverage and continuity of flow recording in Otago. These issues include a lack of monitoring in some catchments, few or no measurements for smaller tributaries, diversions in/out of catchments, abstractions for out-of-stream use, and manipulation of flows due to storage.

3.4. Climate change

30. Climate change is affecting Otago's natural and physical resources. Otago's climate is changing, and these changes will continue for the foreseeable future. The rate of future climate change depends on how fast greenhouse gas concentrations increase. These changes are expected to result in higher temperatures, changes in precipitation, drought, fire weather, extreme weather events, inland and coastal flooding, landslides and soil erosion, salinity, sea level rise, erosion, reduced snow and ice, and marine heatwaves. Climate change is now affecting and will continue to affect habitat availability and suitability for species in Otago. In some cases, this will mean that species will be able to increase their distribution, which will encourage spread of pest/weed species.

31. Climate change will also reduce habitat and distributions for some species and affect habitat quality. These effects may also accumulate; for example, a native species may have worse, and less habitat and its pest/predator's distribution and population may increase due to climate change effects. However, in some cases the reverse may occur, and native species may gain an advantage over introduced species (e.g. trout are near thermal limits in some

areas). Climate change also has the potential to seriously challenge ecosystem adaptive capacity. Much work is being undertaken to address this challenge, but it is still possible that permanent changes may occur.

32. It is expected temperatures will increase across Otago, and by 2090, Otago is projected to have from 4 to 25 extra days per year where maximum temperatures exceed 25˚C, with around 13 to 45 fewer frosts per year (and consequently less snow). Precipitation overall will increase slightly (by up to 10%), more so in the western part of the region, with less precipitation in central and eastern Otago.

33. There will be an increase in average annual flows across the region, apart from Taiari and North Otago, and flooding will be more severe – there will be an increase in the mean annual flood by 100% in some locations by the end of the century. Rainfall and temperature change may result in drier soils and changes to river flow (low flow and floods), as well as increased occurrence of slips/landslides. Increased intensity of flooding would result in an increase in sediment which will change the physical composition of freshwater and marine waters and, for example, may reduce light availability, or smother fragile habitats. Warmer temperatures could also reduce oxygen and cause stratification in shallow bays (resulting in water quality impacts).

34. Central Otago is likely to see more varied precipitation, leading to increased flooding and reduced water reliability. This will be compounded by stronger winds, increased temperatures and longer dry periods, which may affect the number and types of crops and animals that the land can sustain, and the potential for renewable electricity generation. On the coast, low lying areas like South Dunedin are at risk of inundation from rising sea levels. This will also exacerbate coastal erosion.

35. By 2090, the time spent in drought ranges from minimal change through to more than double, depending on the climate model and emissions scenario considered. More frequent droughts are likely to lead to water shortages, increased demand for irrigation and increased risk of wildfires. Reduced snowfalls may affect water availability since snow acts as a storage mechanism until the water is required in summer. As a result, river ecosystems could be altered through reduced flows during drought periods with associated declining water quality, reduced food resources, and availability of habitats. This would affect ecosystems for key species, such as river nesting birds and endemic freshwater fish species. Lakes could be subject to temperature increases, affecting their health (for example, as a result of increased algal blooms).

36. Wetland plant species and wetland habitats, and other species reliant on wetlands (including threatened bird species) are at risk of being negatively impacted. There are also likely to be cascading impacts on surrounding environments and ecosystems from hydrological changes (e.g. increased flood risk/changing water flows due to wetland loss). Coastal wetlands are particularly at risk due to salinisation from sea level rise and coastal flooding. Human adaptation to climate change, such as building or expanding dams or flood protection schemes, may give rise to adverse impacts on ecosystems, in addition to those imposed by climate change itself, and may also exacerbate the original risk.

37. Groundwater impacts will include coastal aquifers being affected by salinisation, and reduced rainfall in some areas will affect groundwater recharge, flow and surface water discharges, with potential adverse impacts on ecosystems and species dependent on groundwater.

4. Status quo policy context (including operative plan provisions)

4.1. Overview of provisions that comprise the status quo

4.1.1. Proposed Otago Regional Policy Statement 2021 (pORPS)

38. The pORPS contains an IM – Integrated Management chapter and the integrated management objectives, along with the policies and methods that implement those objectives, form a suite of 'process' provisions whose primary focus is on defeating a 'silo approach' to resource management. In particular, the pORPS IM chapter provisions set out the interconnections and interdependencies within the environment, the intrinsic value of ecosystems, involvement of mana whenua in resource management, the importance of environmental health to human wellbeing, and holistic assessment of human effects on the environment. They also address climate change as the key threat to environmental stability. The provisions seek to ensure explicit recognition and implementation of these facets into decision making. The pLWRP must give effect to these provisions.

4.1.2. Otago Regional Policy Statement (ORPS)

39. The Otago Regional Policy Statement does not contain a chapter on integrated management. One of the reasons for preparing the pORPS was to address concerns that the ORPS did not properly outline an integrated approach to managing the resources in the region. There are some provisions in the ORPS that address integrated management, including Objective 5.4 that adverse effects of using and enjoying Otago's natural and physical resources are minimised, Policies 5.4.2 and 5.4.3 in relation to managing uncertainties, and Method 2.2 which deals with cross-boundary management. The direction in the ORPS related to integrated management is not as comprehensive as the equivalent direction in the pORPS.

4.1.3. Regional Plan: Water for Otago (Water Plan)

40. Many of the issues with the Water Plan outlined in Chapter 3 of this report are relevant to this topic. The Water Plan does not contain an overarching chapter or overarching provisions that provide strategic direction for activities managed by the plan or guidance on how plan users are to interpret or apply competing policy direction.

41. The introduction to the Water Plan states that that Plan takes a "holistic, integrated approach to resource management" and that "[a]lthough this Plan comprises discrete chapters, these should not be viewed in isolation, as the Plan needs to be read as a whole". The Water Plan also contains a system of cross-referencing to link issues, objectives, policies, rules and methods, which is stated to assist with the "achievement of [a] holistic approach to resource management, and to assist users to read the Plan as a whole".[8]

42. Chapter 5 Natural and Human Use Values of Lakes and Rivers contains policy direction that relates to the maintenance or enhancement of natural and human use values and applies to all activities that may affect these values in respect of lakes and rivers. It has limited

[8] Water Plan, section 1.5

application to discharges and land uses generally, except where such activities may impact the values of rivers and lakes.

43. Policy 5.4.1 identifies water bodies that should be protected on the basis that they support natural and human use values. Policy 5.4.2 seeks that when managing activities involving lakes and rivers, priority is given to avoiding adverse effects (in preference to remedying or mitigating them) on identified values including adverse effects on natural values, water supply values, historic places, and spiritual and cultural beliefs, values, and uses that have been identified in the schedules. Policy 5.4.3 also seeks that priority is given to avoiding adverse effects on existing lawful uses of lakes or rivers.

44. Policy 5.4.4 seeks to recognise Kāi Tahu's interests in Otago's lakes and rivers by "promoting opportunities for their involvement in resource consent processing." Kāi Tahu spiritual and cultural beliefs, values, and uses are identified in Schedule 1D of the Water Plan, and are referred to at a high-level in policies and rules throughout the Plan. However, there are no objectives or policies containing specific detail about Kāi Tahu's relationship with the Otago region and its resources.

45. The remainder of the policies in Section 5.4 of the Water Plan largely address matters that decision-makers should consider when making a decision on applications for resource consent, along with encouraging the group or community management of resources.

46. The Water Quantity chapter of the Water Plan contains a specific section on integrated water management. It contains four policies:

    a. 6.4.0 Understanding the water system

    b. 6.4.0A Allocation for purpose of use

    c. 6.4.0B Promotion of shared use and management of water

    d. 6.4.0C Nearest practicable source

47. These provisions seek to recognise relationships between the hydrological characteristics of water resources and/or the use of water.[9]Chapter 10A of the Water Plan (which was introduced by PC7 in 2020) contains policy direction to address the replacement of the deemed permits which were due to expire. The direction includes to avoid granting consents with a duration longer than December 2025 unless specific exemptions were met, which include that there is no increase in irrigated land area. The policy direction in the Water Plan is further discussed in Chapter 3 of this report.

48. The objectives and policies of the Water Plan focus on 'balancing' resource use against protection of those resources, which has been replaced by the concept of Te Mana o te Wai and the hierarchy of obligations contained in the NPSFM. This is a fundamental shift from the philosophy that underpinned the Water Plan when it was written.

4.1.4. Regional Plan:Waste for Otago

49. The introductory section of the Waste Plan recognises that:[10]

[9] Policies 6.4.0, 6.4.0A, 6.4.0B, and 6.0.4C of the Water Plan.

[10] Waste Plan, section 1.6.

> *"Integration of air, water and land resources is only partly achieved by this Plan, being limited to the effects of waste management on those resources. Full integration will be achieved once the Otago Regional Council completes regional plans on air, water, coast and land. The provisions in this Plan are a necessary first stage in the integrated management of all waste in Otago."*

50. The Waste Plan does not contain specific integrated management provisions, and the policies generally only refer to related environmental impacts at a high-level (e.g. avoiding, remedying, mitigating adverse effects on the environment).

51. Additionally, many policies in the operative regional plans include such broad statements that they provide little guidance on the outcomes to be prioritised by decision-makers. These provisions are pitched at a high level; are insufficiently directive of either outcome or implementation method to secure the desired outcomes; do little more than repeat or paraphrase a higher order instrument; and are not well aligned with current significant resource management issues. There is also no guidance on competing policy direction between the Water Plan and the Waste Plan.

52. Further, the operative regional plans do not contain the full suite of mandatory policies that are required to be included in regional plans by the NPSFM. While the mandatory policies have been included as per the NSPFM 2020, the additional amendments to the NPSFM made in February 2023 (particularly to the policy on natural inland wetlands) have not been incorporated, and no further changes have been made to the rest of the policy framework to implement the NPSFM requirements (including in relation to those policies).

4.2. Issues with the status quo

53. The following sections outline four overarching issues with the current plans in more detail:

a. Additional direction in needed to implement the pORPS;

b. The plans do not adequately provide for the integrated management of natural resources;

c. The plans do not adequately address Kāi Tahu cultural values and interests; and

d. The plans do not recognise the increasing impacts of climate change.

4.2.1. Additional direction is needed to implement the pORPS

54. The pORPS contains a comprehensive set of IM – Integrated management provisions. A gap analysis has been carried out to assess whether any additional IM objectives are required in the pLWRP to achieve the purpose of the RMA over and above those provisions contained in the pORPS, informed by reference to issues summarised above. This gap analysis is set out in Table 1 below.

55. A further assessment of how the pLWRP implements these provisions is set out in section 9 of Chapter 5 of this Report.

Table 1: Gap analysis of pORPS IM provisions

pORPS 2021 Provision(s)	Any gaps in pORPS provision
IM-P1 – Integrated approach to decision-making	This policy sets out how the objectives and policies in the pORPS are to be interpreted and applied to

pORPS 2021 Provision(s)	Any gaps in pORPS provision
Giving effect to the integrated package of objectives and policies in this RPS and other relevant statutory provisions requires decision-makers to: (1) consider all provisions relevant to an issue or decision and apply them purposively according to the terms in which they are expressed and) (2) if after (1) there is an irreconcilable conflict between any of the relevant RPS and/or statutory provisions which apply to an activity, only consider the activity if: (a) the activity is necessary to give effect to a relevant policy or statutory provision and not merely desirable, and (b) all options for the activity have been considered and evaluated, and (c) if possible, the chosen option will not breach any other relevant policy or statutory provision, and (d) if (c) is not possible, any breach is only to the extent required to give effect to the policy or statutory provision providing for the activity, and (3) if 2(d) applies, evaluate all relevant factors in a structured analysis to decide which of the conflicting policies or statutory provisions should prevail, or the extent to which any relevant policy or statutory provision should prevail, and (4) in the analysis under (1), (2) or the structured analysis under (3), assess the nature of the activity against the values inherent in the relevant policies or statutory provisions in the particular circumstances.	decision-making. This direction is required to be applied when considering how to give effect to the pORPS provisions in the development of the pLWRP. It is considered that there is no gap in this policy that is required to be addressed by the provisions in the pLWRP.
IM-P3 – Providing for mana whenua cultural values in achieving integrated management Recognise and provide for the relationship of Kāi Tahu with natural resources by: (1) enabling mana whenua to exercise rakatirataka and kaitiakitaka, (2) facilitating active participation of mana whenua in resource management processes and decision making, (3) incorporating mātauraka Māori in processes and decision-making, and (4) ensuring resource management provides for the connections of Kāi Tahu to wāhi tūpuna, wai māori (including awa [rivers] and roto [lakes] and wai tai (including te takutai moana [coastal marine area]) and mahika kai and habitats of taoka species.	This policy responds to the issue that the loss of water resources, and their quality, has resulted in material and cultural deprivation for Kāi Tahu ki Otago. This policy is high-level and does not explain what these requirements mean in the context of managing freshwater and land as the exercise of rakatirataka and kaitiakitaka may be different for different resources. This gap has been addressed in the pLWRP by IP-P2 and IP-P3, see section 9.2 of Chapter 5 of this report – assessment of pORPS – IM for more detail.
IM-P4 – Setting a strategic approach to ecosystem health Healthy and resilient ecosystems and ecosystem services are achieved by developing regional plans and district plans that:	This policy seeks to address many of the current issues with the management of resources in Otago, including adverse water quantity and water quality outcomes, that community well-being relies on the access and use of Otago's natural and physical resources, the current lack of integrated

pORPS 2021 Provision(s)	Any gaps in pORPS provision
(1) have particular regard to the intrinsic values of ecosystems, (2) take a long-term strategic approach that recognises ongoing environmental change, including the impacts of climate change, (3) recognise and provide for ecosystem complexity and interconnections, and (4) anticipate, or respond swiftly to, changes in activities, pressures, and trends.	management of resources in Otago, and the adverse effects of cumulative impacts on natural and physical resources. This policy is framed at a high level and leaves the pLWRP to carry out these matters and/or provide further specificity in the context of managing land and freshwater, including identifying a long-term strategic approach and specifying the relevant ecosystem interconnections. These gaps have been addressed in the pLWRP by IO-O1, IO-O3, IO-O4, IP-P4, IP-P16, IP-P17, IP-P18, IP-P20 and IP-P21, see section 9.2 of Chapter 5 of this report – assessment of pORPS – IM for more detail.
IM-P5 – Managing environmental interconnections Manage the use and development of interconnected natural and physical resources by recognising: (1) situations where the value and function of a natural or physical resource extends beyond the immediate, or directly adjacent, area of interest, (2) situations where effects of an activity extend to a different part of the environment, and (3) the impacts of management of one natural or physical resource on the values of another, or on the environment.	This policy seeks to address issues related to the current lack of integrated resource management in Otago and the adverse effects of cumulative impacts on natural and physical resources. This high-level policy does not set out the specific relationships or interconnections relevant for ki uta ki tai in the context of managing freshwater and land. The pLWRP could provide further specificity as to the types of connections to ensure that the freshwater issues discussed in section 3 of this report and summarised above are addressed. This gap has been addressed in the pLWRP by IO-O4 and IP-P4, see section 9.2 of Chapter 5 of this report – assessment of pORPS – IM for more detail.
IM-P6 – Managing uncertainties In resource management decision-making, manage uncertainties by using the best information available at the time, including scientific data and mātauraka Māori, and: (1) taking all practicable steps to reduce uncertainty, and (a) in the absence of complete and scientifically robust data, using information obtained from modelling, reliable partial data, and local knowledge, with preference for sources of information that provide the greatest level of certainty, and (b) avoiding unreasonable delays in making decisions because of uncertainty about the quality or quantity of the information available, and (2) adopting a precautionary approach, including through use of adaptive management, towards activities whose effects are uncertain, unknown, or a little understood, but potentially significantly adverse.	This policy seeks to address the issues related to the adverse effects on the environment and the current lack of integrated resource management in Otago by ensuring a precautionary and consistent approach to decision-making. There is not considered to be a gap to be filled by the pLWRP, however uncertainties concerning technical information in particular has been a historic issue in the management of resources in Otago. It is also underscored in cl1.6 of the NPSFM. Given its relevance to decision-making on resource consent applications in particular, it was considered appropriate to incorporate a similar policy in the pLWRP (IP-P17).
IM-P7 – Cross boundary management Coordinate the management of natural and physical resources and the environment across jurisdictional	This policy also seeks to address the issues related to the current lack of integrated management of resources in Otago and the adverse effects of

pORPS 2021 Provision(s)	Any gaps in pORPS provision
boundaries and, whenever possible, between overlapping or related agency responsibilities.	cumulative impacts on natural and physical resources. This policy is framed at a high level and does not provide any specificity as to the relevant jurisdictional boundaries or agency responsibilities or how these are to be addressed for the management of land and freshwater resources under a regional plan. This gap has been addressed in the pLWRP by IP-P5, see section 9.2 of Chapter 5 of this report – assessment of pORPS – IM for more detail.
IM-P8 – Effects of climate change Recognise and provide for the effects of climate change by: (1) identifying the effects of climate change in Otago, including from the perspectives of Kāi Tahu as mana whenua, (2) assessing how the effects are likely to change over time, and (3) taking into account those changes in resource management processes and decisions.	This policy responds to the issue that climate change is affecting Otago's natural and physical resources, and that these changes will continue for the foreseeable future. It also seeks to address the issues related to the lack of involvement or implementation of Kāi Tahu in resource management decision-making. This policy directs that the effects of climate change are to be recognised and provided for in the specified ways. However, the policy does not outline the Kāi Tahu perspectives on these effects, which is a gap for the pLWRP to fill to implement IM-P8. This gap has been addressed in the pLWRP by IO-O4, IP-P16 and APP9, see section 9.2 of Chapter 5 of this report – assessment of pORPS – IM for more detail.
IM-P10 – Climate change adaptation and climate change mitigation Identify and implement climate change adaptation and climate change mitigation methods for Otago that: (1) minimise the effects of climate change to existing activities and the wider environment, (3) provide Otago's communities, including Kāi Tahu, with the best chance to thrive, and (4) enhance environment, social, economic, and cultural resilience to the adverse effects of climate change, including by facilitation activities that reduce those effects, and (5) protects Otago's existing renewable electricity facilities and provides for the development of new renewable electricity generation and infrastructure.	This policy responds to the issue that climate change is affecting Otago's natural and physical resources, and that these changes will continue for the foreseeable future. It also seeks to address the issues related to the lack of involvement or implementation of Kāi Tahu in resource management decision-making. IM-P10 sets out a range of requirements when identifying and implementing climate change adaptation and mitigation measures in Otago. The policy leaves the decision of what activities are to be facilitated to reduce the adverse effects of climate change on community resilience to the subordinate planning documents. This gap has been addressed in the pLWRP by IO-O5, IP-P14 and IP-P16, see 9.2 of Chapter 5 of this report – assessment of pORPS – IM for more detail.
IM-P12 – Contravening limits for climate change mitigation and climate change adaptation If a proposed activity provides or will provide enduring regionally or nationally significant climate change mitigation or climate change adaptation with	As above for IM-P10. See section 9.2 of Chapter 5 of this report – assessment of pORPS – IM for more detail.

pORPS 2021 Provision(s)	Any gaps in pORPS provision
commensurate benefits for the well-being of people and communities and the wider environment, decision makers may allow non-compliance with limits set in, or resulting from, any policy or method of this RPS if they are satisfied that: (3) adverse effects on the environment are avoided, remedied, or mitigated so that they are minimised to the extent reasonably practicable, and any significant residual adverse effects are offset, or compensated for, and (5) the activity will not contravene a national policy statement or national environmental standard.	
IM-P13 – Managing cumulative effects In resource management decision-making, recognise and manage the impact of cumulative effects on the form, functioning and resilience of Otago's environment (including resilience to climate change) and the opportunities available for future generations.	This policy seeks to address issues related to the current lack of integrated resource management in Otago and the adverse effects of cumulative impacts on natural and physical resources. The pLWRP could provide further specificity as to the relevant parts of the environment impacted by activities managed under the pLWRP connections to ensure that the freshwater issues discussed in section 3 of this report and summarised above are addressed consistently. This gap has been addressed in the pLWRP by IP-P4, see section 79.2 of Chapter 5 of this report – assessment of pORPS – IM for more detail.
IM-P14 – Sustaining resource potential When preparing regional plans and district plans, sustainably manage opportunities for future generations by: (1) where necessary to achieve the objectives of this RPS, identifying limits beyond which the environment will be degraded, (2) requiring that activities are established in places, and carried out in ways, that are within those limits and are compatible with the natural capabilities and capacities of the resources they rely on, (3) regularly assessing and adjusting limits and the way activities are managed over time in light of the actual and potential environmental impacts, including those related to climate change, and (4) providing for activities that reduce, mitigate, or avoid adverse effects on the environment.	This policy addresses many of the current issues with the management of resources in Otago, including adverse water quantity and water quality outcomes, cultural deprivation for Kāi Tahu, and that community well-being relies on the access and use of Otago's natural and physical resources. IM-P14 sets out how regional plans are to sustainably manage opportunities for future generations. The gap left to be filled by the pLWRP is to identify the limits beyond which the environment will be degraded, where necessary, to achieve the objectives of the RPS. This gap has been addressed in the pLWRP by implementing the National Objectives Framework in the NPSFM, which requires setting limits on resource use to IP-P4. For more detail, see the discussion on IM-P14 in 9.2 of Chapter 5 of this report.
IM-M1 – Regional and district plans Local authorities must prepare or amend and maintain their regional and district plans to: (1) establish, by December 2030, policy frameworks designed to achieve the objectives for Otago set out in IM–O1 to IM–O4,	This method provides mandatory direction for ORC to include in its regional plan (the pLWRP) over and above the direction in the pORPS. See the discussion of IM-O1 to IM-O4 and policies above. The pLWRP must include these matters and this has been addressed in the pLWRP, see discussion in 9.2 of Chapter 5 of this report – assessment of pORPS – IM for more detail.

pORPS 2021 Provision(s)	Any gaps in pORPS provision
(2) include provisions to manage the effects, resources, and communities identified in accordance with IM-M3, (3) provide for activities that support climate change adaptation and climate change mitigation in accordance with IM-P10, (4) ensure cumulative effects of activities on natural and physical resources are accounted for in resource management decisions by recognising and managing such effects, including: (a) the same effect occurring multiple times, (b) different effects occurring at the same time, (c) different effects occurring multiple times, (d) one effect leading to different effects occurring over time, (e) different effects occurring sequentially over time, (f) effects occurring in the same place, (g) effects occurring in different places, (h) effects that are spatially or temporally distant from their cause or causes, and, (i) more than minor cumulative effects resulting from minor or transitory effects, (5) adopt a ki uta ki tai approach to resource management by establishing policy and implementation frameworks that treat Otago's environments as an integrated system, including collaboration between local authorities to achieve consistent management of resources or effects that cross jurisdictional boundaries, and (6) establish clear thresholds for, and limits on, activities that have the potential to adversely affect healthy ecosystem services and intrinsic values.	
IM-M2 – Relationships Local authorities must: (1) partner with Kāi Tahu to ensure mana whenua involvement in resource management processes and decision-making, (2) work together and with other agencies (including local authorities in neighbouring regions) to enable consistent implementation of the objectives, policies and methods of this RPS where appropriate, and (3) consult with Otago's communities to ensure policy frameworks adequately respond to the diverse facets of environmental, social, cultural, and economic well-being.	See discussion for IM-P3 and IM-P7 above.

pORPS 2021 Provision(s)	Any gaps in pORPS provision
IM-M3 – Identification of climate change impacts and community guidance Local authorities must: (1) identify the specific types and locations of the effects of climate change in Otago by undertaking a climate change risk assessment, including an assessment that incorporates a Kāi Tahu approach to climate change risk identification and evaluation, (1A) identify natural and built resources vital to environmental (including indigenous biodiversity and ecosystems) and community resilience and well-being, (1B) identify vulnerable resources and communities and develop adaptation pathways for them where possible, and (2) develop guidance to support communities to be prepared and resilient.	See discussion for IM-O4 and IM-P8 above.
IM-M5 – Other methods	IM-M5 sets out a range of other methods local authorities should undertake to assist with implementing the ORPS. These methods are not considered relevant to the pLWRP.

4.2.2. Inadequate provision for integrated management of natural resources

56. The Water and Waste plans do not adequately provide for the integrated management of natural resources. A fragmented or siloed approach to managing natural and physical resources can lead to inefficiencies by treating similar activities or effects differently. A fragmented approach also fails to recognise the connections or impacts that one activity or effect has on another part of the environment. Fragmented management does not provide for Kāi Tahu cultural values, particularly the philosophy of holistic resource management (or ki uta ki tai).

57. The Water Plan and Waste Plan contain limited recognition of integrated management. The Water Plan focuses primarily on water and is restricted to recognising relationships between the hydrological characteristics of water resources or the use of water.[11] The Water Plan contains little direction on managing the land uses that contribute to freshwater issues, particularly for water quality and ecosystem health. There is limited recognition of the relationships between fresh and coastal water, and ground and surface water, and the management of land uses that affect freshwater and coastal issues (particular in terms of water quality and ecosystem health).

58. There is also a lack of integration between the full suite of regional plans in Otago. For example, the policy direction for managing fresh water under the Water Plan and coastal water under the Coast Plan do not always align, despite their clear physical connections. These divisions in the management of the environment do not recognise that all water, in rivers, underground, in the air and in the ocean is connected, and what occurs in the headwaters and on land will have an impact in the ocean. This lack of holistic freshwater

[11] Policies 6.4.0, 6.4.0A, 6.4.0B, and 6.0.4C of the Water Plan.

management also makes it difficult to understand and address the cumulative effects of different activities and decisions on cultural values.

4.2.3. Inadequate recognition of Kāi Tahu cultural values and interests

59. The Water and Waste plans do not adequately address Kāi Tahu cultural values and interests. Te Tiriti o Waitangi establishes a partnership between Kāi Tahu and the Crown. Part 2 of the RMA requires that the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu, and other taoka, is recognised and provided for and that the principles of the Treaty of Waitangi are taken into account.

60. The loss of water resources, and their quality, has resulted in material and cultural deprivation for Kāi Tahu ki Otago. The drainage of wetlands, water abstraction, degraded water quality, barriers to fish passage and changes to flow regimes as a result of damming have had significant negative impacts on Kāi Tahu. These activities negatively impact the mauri of the water and the habitats and species it supports, therefore also degrading mahika kai and taoka species and places.

61. Mahika kai is the gathering of foods and other resources, the places where they are gathered, and the practices used in doing so. Mahika kai is an intrinsic part of Kāi Tahu identity and economic well-being. Kāi Tahu fishing rights were explicitly protected by the Treaty of Waitangi. Not only was the right to engage in mahika kai activity confirmed, so too was the expectation that such activity will continue to be successful as measured by reference to past practice. However, as described in evidence provided to the Waitangi Tribunal in the Ngāi Tahu claim, there has been a dramatic loss of mahika kai resources and places of procurement since the Treaty was signed.

62. This loss is greater than the loss of kai. It is a loss of Kāi Tahu culture, as it affects the intergenerational transfer of mātauraka handed down from tūpuna over hundreds of years. It represents a significant loss for mana whenua and a diminishing of rakatirataka and of mana. Mahika kai continues to be degraded through the effects of land and water use activities on freshwater habitats.

63. Negative changes to the environment have meant that Kāi Tahu have had to adapt and change their use of the environment. As traditional mahika kai places and species have declined, in some instances mahika kai must now be carried out in artificial habitats such as reservoirs, and whānau have had to switch to exotic species such as trout and salmon. The mātauraka associated with traditional mahika kai species and places cannot be passed on, and the intergenerational transfer of knowledge that has occurred for over 800 years is broken. Place names that carry tribal history are no longer reflective of their places – for example no one would now claim that the Waiareka is ‘sweet water’ to drink.

64. Kāi Tahu spiritual and cultural beliefs, values, and uses are identified in Schedule 1D of the Water Plan and referred to at a high-level in the current provisions. There is limited policy recognition of Kāi Tahu’s relationship with the Otago region and its resources.

65. The well-being of mahika kai and taoka, and protection of other cultural values is rarely given effect to in environmental policy or decision-making processes under the operative regional plans and these considerations are often compromised in favour of other values, including economic values. The mana of mana whenua and of the water is not recognised because water quality and quantity have been allowed to be degraded. Resource management in Otago has failed to meet its obligation to recognise Kāi Tahu values and provide for the

relationship of Kāi Tahu with the water bodies within their rohe. The understanding of cultural values by many is still developing and, as a result, Kāi Tahu values and interests are often not well represented in plans and decision-making.

4.2.4. Inadequate recognition of the impacts of climate change

66. The Water and Waste Plans do not recognise the increasing impacts of climate change. Section 7(i) of the RMA requires that people exercising functions, including councils, must have particular regard to the effects of climate change. Otago's climate is changing, and will continue to change for the foreseeable future, with impacts on the environment, the economy and cultural and social wellbeing. The rate of future climate change depends on how fast greenhouse gas concentrations increase. These changes are expected to result in the following (Tonkin & Taylor, 2021):

a. Temperatures are expected to increase across Otago, and by 2090, Otago is projected to have from 4 to 25 extra days per year where maximum temperatures exceed 25˚C, with around 13 to 45 fewer frosts per year (and consequently less snow). Precipitation overall will increase slightly (by up to 10%), more so in the western part of the region, with less precipitation in central and eastern Otago.

b. Average annual flows across the region will increase, apart from Taiari and North Otago, and flooding will be more severe – the mean annual flood will increase by 100% in some locations by the end of the century (Tonkin & Taylor, 2021). Increased intensity of flooding would result in an increase in sediment, which will change the physical composition of freshwater and marine waters and, for example, may reduce light availability or smother fragile habitats. Warmer temperatures could also reduce oxygen and cause stratification in shallow bays (resulting in water quality impacts).

c. Rainfall and temperature changes may result in drier soils, changes to river flow (low flow and floods), and increased slips/landslides.

d. Central Otago is likely to see more varied precipitation, leading to increased flooding and reduced water reliability. This will be compounded by stronger winds, increased temperatures and longer dry periods, which may affect the number and types of crops and animals that the land can sustain, and the potential for renewable electricity generation.

e. On the coast, low lying areas like South Dunedin are at risk of inundation from rising sea levels. This will also exacerbate coastal erosion.

f. By 2090, the time spent in drought ranges from minimal change through to more than double, depending on the climate model and emissions scenario considered. More frequent droughts are likely to lead to water shortages, increased demand for irrigation and increased risk of wildfires.

g. Reduced snowfalls may affect water availability since snow acts as a storage mechanism until the water is required in summer. As a result, river ecosystems could be altered through reduced flows during drought periods with associated declining water quality, reduced food resources, and availability of habitats. This would affect ecosystems for key species, such as river nesting birds and endemic freshwater fish species. Lakes could be subject to temperature increases, affecting their health (for example, as a result of increased algal blooms).

h. Wetland plant species and wetland habitats, and other species reliant on wetlands (including threatened bird species) are at risk of being negatively impacted. There are also likely to be cascading impacts on surrounding environments and ecosystems from hydrological changes (e.g. increased flood risk/changing water flows due to wetland loss). Coastal wetlands are particularly at risk due to salinisation from sea level rise and coastal flooding. Human adaptation to climate change, such as building or expanding dams or flood protection schemes, may give rise to adverse impacts on ecosystems, in addition to those imposed by climate change itself, and may also exacerbate the original risk.

i. Groundwater impacts will include coastal aquifers being affected by salinisation, and reduced rainfall in some areas will affect groundwater recharge, flow and surface water discharges, with potential adverse impacts on ecosystems and species dependent on groundwater.

67. Climate change will also reduce habitat and distributions for some species and affect habitat quality. These effects may also accumulate; for example, a native species may have worse and less habitat and its pest/predator's distribution and population may increase due to climate change effects. However, in some cases, the reverse may occur, and native species may gain an advantage over introduced species (e.g. trout are near thermal limits in some areas).

68. Climate change is an issue that will affect all of Otago, although likely in quite different ways. The complex and all-encompassing effects of climate change are pertinent to environmental management of all activities throughout the region. It is, therefore, important for the pLWRP to state how the effects of climate change will be managed and how planning for climate change should occur.

5. Objectives

69. 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 relevant for this topic are:

a. All of the objectives in the IM – Integrated management chapter, and

b. All of the environmental outcomes included as objectives in:

i. FMU1 – Clutha Mata-au freshwater management unit,

ii. FMU2 – Taiari freshwater management unit,

iii. FMU3 – North Otago freshwater management unit,

iv. FMU4 – Dunedin & Coast freshwater management unit, and

v. FMU5 – Catlins freshwater management unit.

6. Subtopic: Plan integration and implementation

6.1. Introduction

70. The purpose of a regional plan is to assist a regional council to carry out any of its functions in order to achieve the purpose of the RMA.[12] One function of regional councils under Section 30 of the RMA is to establish, implement and review objectives, policies, and methods to achieve integrated management of the natural and physical resources of the region.[13]

71. This sub-topic relates to the policies in the IM chapter that provide for plan integration and implementation, being:

a. IP-P1 – Plan implementation;

b. IP-P4 – Integrated approach,

c. IP-P6 – Decision-making on all applications,

d. IP-P22 – Managing uncertainty, and

e. IP-P23 – Cross boundary matters.

6.2. Issues

72. There are no additional issues to those described in section 3 of this chapter.

6.3. Status quo policy context (including operative plan provisions)

73. The status quo for this topic is described in section 4.1 of this chapter.

6.4. Objectives

74. The objectives for this option are those described in section 5 of this chapter.

6.5. Discounted options

75. The status quo has been discounted as a reasonably practicable option given the issues identified in section 4.2 of this chapter.

6.6. Reasonably practicable options

76. Three reasonably practicable options were identified to achieve the objectives:

a. Option 1: Contextual or topic-based direction only.

b. Option 2: Plan-wide direction – clause 3 version

c. Option 3: Plan-wide direction – pLWRP (preferred option)

[12] Section 63(1), RMA.

[13] Section 30(1)(a), RMA.

77. Standard 3 – Regional Plan Structure in the National Planning Standards requires a section called 'How the plan works' to be included in Part 1 – Introduction and general provisions. It is optional to include subsections describing the plan's general approach and addressing cross-boundary matters. This information was considered to be important for plan users, particularly given the significant change in structure from the existing Water and Waste Plans to the pLWRP. For this reason, all options described below include these sections.

6.6.1. Option 1: Contextual or topic-based direction only

78. This option includes provisions addressing plan integration and implementation in two ways:

    a. For the relationship between different parts of the plan and addressing cross-boundary matters, relying on the context information in the 'How the plan works' section of the pLWRP, and

    b. For decision-making on all applications and managing uncertainty, relying on policy direction included in topic chapters.

79. This option enables direction on climate change effects, achievement of environmental outcomes, and consideration of mana whenua environmental indicators to be tailored to each topic, based on the key activities managed by each topic. This option is likely to result in some areas of duplication, given the direction is likely to be similar for a number of topics, particularly where they relate to activities with similar impacts, such as discharges of contaminants to water, or to land where they may enter water. This duplication in topic chapters may be inconsistent with the National Planning Standards, given provisions that apply to more than one topic must be located in the relevant 'Domain' rather than being in the topic or area-specific chapters.

80. There will be activities managed under the pLWRP for which there is no topic-based direction, including activities that are infrequently undertaken or activities which are not currently occurring in Otago. Under this option, there would potentially be a gap in direction for the management of these activities in the pWLRP, meaning decision-makers on resource consent applications would be required to turn their mind to the direction in the pORPS instead.

6.6.2. Option 2: Clause 3 version

81. This option is the version of IP-P1, IP-P4, IP-P6 and IP-P22 included in the clause 3 version of the pLWRP. It does not include IP-P8 which was introduced post-clause 3 consultation. The purpose of these provisions was to:

    a. Set out the relationships between the various parts of the pLWRP.

       Policy IP-P1 states that the provisions in the IM chapter and FMU environmental outcomes provide the strategic direction for the plan. This includes developing other chapters in the plan and for the subsequent implementation and interpretation of the plan. It also clarifies that the provisions in the topic chapters apply everywhere, unless expressly provided for otherwise in the FMU chapter. Finally, IP-P1 clarifies that the provisions in FMU1 – Clutha/Mata-au FMU prevail over the rohe chapters (CAT1 to CAT5) unless provisions within those rohe chapters specifically provide otherwise. This policy is important for clarifying how the plan is to be interpreted and implemented.

b. Require an integrated approach to decision-making by recognising and providing for the connections between the different parts of the physical environment.

Policy IP-P4 gives effect to clause 3.5 of the NPSFM, which in turn reflects the regional council function set out in s30(1)(a) of the RMA to establish and implement objectives, policies and methods to achieve integrated management of the natural and physical resources of the region. It assists with giving effect to the IM chapter of the PORPS, which applies to all resource management in Otago. IP-P4 in the pLWRP requires all decision-making to recognise and provide for integrated management that avoids, remedies, or mitigates adverse effects (including cumulative effects) on the health and well-being of water bodies, freshwater ecosystems and receiving environments.

c. Require that all decision-making on resource consent applications must apply the hierarchy of obligations set out in LF-WAI-P1 of the PORPS, ensure the activity is contributes to achieving the environmental outcomes, and take into account the effects of climate change.

Policy IP-P6 seeks to ensure that a consistent framework is used when making decisions on resource consent applications, and it applies to all activities that require consent under the plan. It also implements the direction in the LF-WAI and LF-FW sections of the PORPS.

d. Give effect to clause 3.6 of the NPSFM regarding managing uncertainty in decision-making.

Policy IP-P22 also implements the direction in the IM chapter of the PORPS. This policy supports using the best information available and not unnecessarily delaying decision-making in situations where there are information gaps.

6.6.3. Option 3: pLWRP (preferred option)

82. A range of feedback was received on the four policies included in Option 1 (IP-P1, IP-P4, IP-P6, and IP-P22) during clause 3 consultation (described below). In summary:

a. Minor amendments were made to IP-P1 to clarify its application and the cross-references to other parts of the plan, and

b. An amendment was made to IP-P4(3) to replace “connections with” water bodies with “contribution to the values of connected water bodies” to clarify the relationship between tributaries and connected water bodies, and

c. Clause (4) of IP-P4 was replaced in full as it did not make grammatical sense or provide clear direction in managing the effects of resource use, and

d. Amendments were made to IP-P6 to remove the requirement for all decision-making on resource consent applications to apply the hierarchy of obligations in the pOPRS. Instead, the requirement to consider the environmental outcomes was shifted to clause (1). An amendment was made to replace that the activity “contributes to”, with that the activity is “consistent with” achieving the relevant environmental outcomes, and

e. IP-P6(2) was amended to add a requirement to consider the extent to which the activity contributes to achieving the mana whenua aspirations in APP9, and

f. The requirement to consider the effects of climate change in IP-P6(3) was strengthened from "take into account" to "have particular regard to".

83. The biggest change as a result of clause 3 feedback was the introduction of IP-P23 (Cross-boundary matters). This was in response to a request from a clause 3 party. There are two particularly notable examples of cross-boundary matters in Otago:

a. The catchment of the Waitaki River is predominantly in Canterbury but does incorporate part of Otago, and

b. The Mataura Water Conservation Order applies predominantly in Southland but parts of the upper reaches of the Mataura and Mokoreta Rivers which are subject to the water conservation order are in Otago, and

c. Activities near Kingston, in Otago, can impact groundwater quality in the upper Mataura groundwater zones, in Southland.

84. In addition to those specific examples, there may be other circumstances where the effects of an activity cross jurisdictional boundaries. Although ORC cannot formally manage effects outside its jurisdiction, integrated management requires considering those effects and working with other agencies as required.

6.7. Clause 3 consultation feedback

85. There was general support from clause 3 parties on IP-P1 – Plan implementation (then IP-P3). Kāi Tahu ki Otago sought that the provisions in the MW, LF and FMU sections of the pLWRP be clearly recognised as part of the strategic direction. Part of this feedback was addressed by the combining of the MW, LF and IM sections of the pLWRP, and amendments were made to IP-P1 to ensure the objectives in the Area-specific matters (being the FMU sections) are part of the strategic direction.

86. There was general support for policy IP-P4 from clause 3 parties, including one party who sought to retain the provision without amendment. The amendments sought and responses to those requests are:

a. Include an additional clause requiring decision-makers to consider how land-based primary production, including supporting activities, interact with freshwater management at a catchment level. No change was made as it was considered unclear what decision-makers would need to do to implement this clause.

b. Include reference to the environment in clause (1) to recognise that people and communities are part of the definition of 'environment'. This amendment was not made because the broad definition of 'environment' also includes physical elements such as structures, which did not accord with the intent of the clause.

c. Amendments to more clearly provide for a whole catchment approach and for effects on freshwater ecosystems and habitats of indigenous species. Amendments were made to clarify clauses (3) in relation to the connections between tributaries and connected water bodies and to replace (4) with clearer direction on managing the impacts of resource use on water.

d. Request to replace "the health of freshwater and soil" in clause (4) with "land, water, and ecosystems". This amendment was made indirectly by the replacement of (4) in its entirety.

e. Replace clause (4) with wording that more closely aligns with clause 3.5(1)(c) of the NPSFM. This amendment was made.

f. Delete clause (3) on the basis that specific recognition of the connections between tributaries and other water bodies is unnecessary as tributaries are water bodies in their own right. No amendment was made because the connections between these water bodies has historically been poorly managed in Otago.

g. Include an additional clause requiring safeguarding the life-supporting capacity of the region's land and soils. This amendment was not made because it is an outcome rather than an action, and is already included in the objectives.

h. Include an additional clause regarding the effects of climate change on the sustainable management of land and water. This amendment was not made because it was considered to be addressed by other policies.

6.7.1. IP-P6 (then IP-P5) – Decision-making on all applications

87. There was mixed feedback on IP-P6 – Decision-making on all applications (then IP-P5):

a. One party considered that the policy did not provide for the effects of activities on climate change, and that it should be deleted. Another party considered that the direction for dealing with the effects of climate change needed to be developed further, and be made stronger in accordance with Section 7(i) of the RMA. As a result of this feedback, some changes were made to IO-O5 (then IO-O3) to provide more specificity on climate change, and managing the effects of climate change.

b. One party sought that decision making should also reflect the principles of Te Mana o te Wai set out in the NPSFM. Another party sought that alongside Te Mana o te Wai, the policy provide clear direction that environmental outcomes are critical factors to all decision making. One party sought that the policy be reviewed due to the signalled changes to the interpretation of Te Mana o te Wai by central government. A change was made to clarify the application of environmental outcomes, while IO-O1 describes the importance of Te Mana o te Wai.

c. One party noted that while the policy is generally appropriate, not all consented activities would necessarily contribute to achieving environmental outcomes, but rather some may be neutral. A change was made to reflect this sentiment, such that activities are consistent with (rather than contribute to) achieving the relevant environmental outcomes.

d. One party considered the policy was unnecessary, as section 104 of the RMA sets out the matters that decision makers must have regard to. No change was made, given the importance of this policy in achieving the environmental outcomes sought for FMUs and rohe.

e. One party sought that specific direction be included in IP-P6 regarding achieving a net biodiversity gain of 10% for new developments, and that proposed activities affecting land or water can be sustainably managed in a post-carbon environment, and are consistent with the national greenhouse gas emissions reduction target. Another party sought that the policy include a requirement to consider how land-based primary production would interact with freshwater management at a catchment level. These changes were not adopted, as it is either not clear what they require from

decision makes (biodiversity gains the primary production), or are already addressed (greenhouse gas emissions are a part of managing effects of climate change).

6.7.2.IP-P22 (then IP-P2) – Managing uncertainty

88. There was mixed feedback on IP-P22 - Managing uncertainty (then IP-P2):

a. One party considered that mātauraka and tikaka should be recognised and valued as approaches to managing uncertainty. As a result of this feedback, these additions were made to IP-P22(3).

b. One party sought to delete the policy on the basis that it is not necessary to replicate the wording in NPSFM. However, no changes were made in response as it is considered that this policy is broader than clause 1.16 of the NPSFM and also implements IM-P6 in the PORPS.

c. One party supported the policy in its entirety on the basis that it gives effect to the NPSFM And provides clear and useful direction on the use of the precautionary principle.

d. One party opposed the policy and sought amendments so that a precautionary approach was only used where there was a higher degree of certainty as to the effects (i.e., where effects were likely to be significantly adverse.) No amendments were made on the basis that the requested change did not implement IM-P6 in the PORPS.

e. Three parties supported the policy with minor amendments to clarify or add other types of information sources or approaches. No amendments were made as it was considered that the policy did not otherwise restrict or prevent alternative information sources being used.

89. In addition to the feedback above, one party requested more explicit guidance for managing cross-boundary effects of activities in the plan and providing for downstream receiving environments, through a policy in the IM chapter. The party considered that this would assist with implementing the objectives relating to integrated management.

6.8. Clause 4A consultation feedback

90. There was no specific clause 4A feedback received on IP-P1 or IP-P22.

6.8.1.IP-P4 – Integrated approach

91. In relation to IP-P4, iwi authorities sought to amend clause (4) of the policy in the following way:

> *the integrated management of fresh water, and land use and development, that avoids, remedies, or mitigates adverse effects, including cumulative effects, on the health and well-being of water bodies, freshwater ecosystems, habitats of freshwater-dependent indigenous species and receiving environments including estuaries and coastal waters.*

92. Regarding the first change sought, no amendment was made because "the health and well-being of water bodies and freshwater ecosystems" is considered to include the habitats of freshwater-dependent indigenous species. There is a risk that including sub-categories of

habitats may unintentionally narrow the application of the clause or suggest that habitats of other species are not within the scope of the clause.

93. Regarding the second change sought, the term 'receiving environment' is defined in the NPSFM as (emphasis added):

> *includes, <u>but is not limited to,</u> any water body (such as a river, lakes, wetland or aquifer) and the coastal marine area (including estuaries).*[14]

94. Estuaries and coastal waters are therefore included in the definition of 'receiving environment' and so the additional wording sought is not necessary. The term 'receiving environment' in this clause is a defined term but was not italicised. An amendment was made to italicise the term, so as to clearly link back to the definition which includes the matters sought by iwi authorities.

95. Also in relation to clause (4), iwi authorities sought to replace "avoids, remedies, or mitigates" with clearer strategic direction. No amendment was made in response. The use of the words 'avoids, remedies, or mitigates' is deliberately broad because there are other policies in the LWRP that manage particular adverse effects in particular specific ways (e.g. IP-P9, IP-P10, WET-P3). This policy should not override those more specific policies by including something more directive.

6.8.2. IP-P23 – Cross-boundary matters

96. In relation to IP-P23 (then IP-P5), iwi authorities sought to remove "where practicable" from clause (2) and to move the policy below the policies on good environmental practice and over-allocation. Both amendments were made as requested. The first amendment was considered to give better effect to IM-M1(5) of the pORPS, which requires local authorities, in their plans, to adopt a ki uta ki tai approach to resource management by establishing policy and implementation frameworks that treat Otago's environments as an integrated system. The second amendment was considered a better fit in the order of policies.

6.8.3. IP-P16 – Decision-making on all applications

97. In relation to IP-P6, mana whenua representatives did not seek specific changes but noted the connection made in this policy to APP8 - Mana whenua environmental indicators. This connection forms part of the request by mana whenua representatives to discuss further the role of this appendix and its application within the plan, as set out in more detail in section 7 below. Changes to IP-P16 in response to clause 4A feedback are discussed in section 7.8 below.

6.9. Effectiveness and efficiency assessment

98. Table 2 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in each option.

[14] Clause1.4, NPSFM.

Table 2: Benefits and costs for Plan integration and implementation

	BENEFITS	COSTS
Option 1	▪ This approach allows direction to be tailored to specific topics or activities. ▪ The pLWRP may appear more streamlined without these provisions in the IM chapter. ▪ There will not be duplication between the contextual information in the plan and its policies.	▪ As the direction for decision-makers on managing uncertainty and achieving environmental outcomes is likely to be similar for different topics, there may be administrative costs for ORC and plan users if there is duplication across the plan. ▪ Decision-makers on consent applications are required to have regard to any relevant provisions of a plan or proposed plan under s104. "Provisions" are generally understood to be the objectives, policies, rules, and methods of a plan, not any supporting or contextual information, which has lower weighting in decision-making than provisions. There is a risk that the plan is not implemented as intended if the contextual information is considered to be overridden by other interpretations of the plan. ▪ For the same reasons as above, including direction on addressing cross-boundary matters as contextual information only may mean there is less certainty about what is considered in decision-making and potential for the information to be overridden by other provisions in the plan.
Option 2	▪ Policy guidance that explicitly sets out how the pLWRP is to be implemented will result in a range of social and economic benefits by increasing the certainty in how the pLWRP provisions in the chapters apply and which prevail. ▪ This option is expected to result in a more integrated approach to resource management across Otago, which will have a range of environmental benefits as interconnections and interdependencies are better recognised. ▪ Managing resources in a holistic, integrated way, consistent with ki uta ki tai, will better recognise Kāi Tahu cultural values and assist with protecting taoka and providing for customary use. ▪ Clearer guidance around management of cumulative effects, interconnectedness of resources and use of imperfect information is also expected to ensure a	▪ Applying the hierarchy of obligations in the decision-making on each resource consent application may result in costs for applicants to outline how the hierarchy has been applied in their applications and again for decision-makers to consider that information when making their decisions. ▪ If activities are inconsistent with the hierarchy of obligations, there will be costs to applicants if their applications are declined. ▪ At the time of writing, the Resource Management (Freshwater and Other Matters) Bill 2024 was being considered by the Primary Production Select Committee. If enacted, the Bill would remove consideration of the hierarchy of obligations from resource consent decision-making. This option would retain that approach, making the plan inconsistent with higher order direction

	BENEFITS	COSTS
	more straightforward, transparent planning system which will likely have social and economic benefits, and better environmental outcomes. ▪ Adopting a precautionary approach where effects are uncertain or unknown but potentially significantly adverse will likely result in environmental benefits and explicitly referencing mātauraka and tikaka will also provide cultural benefits. ▪ Implementing Option 1 will give effect to Te Mana o te Wai and prioritise the health and well-being of water bodies and freshwater ecosystems in decision-making. This is expected to result in improvements to the health and well-being of water bodies and ecosystems. This also has cultural benefits for the well-being of mana whenua, including cultural identity and reconnecting people to Otago's water bodies. ▪ Improved environmental health and prioritising the long-term health of the environment over human needs is likely to support recreational activities that rely on the natural environment, for example kayaking or fishing.	and continuing to impose costs on resource users not faced in other reigons. ▪ There may be social or economic implications for resource users associated with taking a precautionary approach, as additional mitigation or adaptative management may be required for activities to be carried out, and/or some activities may not be able to be carried out in the absence of additional information. ▪ There will likely be costs for ORC and plan users associated with obtaining information or evidence on the effects of activities on receiving environments and the interactions between land, freshwater, and coastal water etc. ▪ The delay in achieving environmental outcomes (potentially for decades) may result in continued adverse effects on recreation in the interim, for example where water quantity is not sufficient to support activities such as kayaking or where degraded water quality prevents opportunities for fishing. Some of the benefits of Option 1 will be delivered in the long-term. In the short-term there are likely to be continued costs to mana whenua as a result of degraded freshwater in some areas, for example by restricting mahika kai practices and a range of other social and economic activities centred around freshwater and negatively affecting the mauri of water bodies. This is turn will affect the ability of Kāi Tahu to exercise their role as kaitiaki. ▪ It is anticipated that any response to the effects of climate change, other than a 'do nothing' response, will result in increased costs for councils and the community (in that there is the need to navigate new regulation, including assessing impact and applying for consents where necessary). These costs can, however, be moderated by adopting an integrated approach.
Option 3 (preferred option)	▪ The benefits listed above for Option 1 will also apply to Option 2. ▪ There will be reduced costs for consent applicants compared to Option 2 due to the removal of the requirement to apply	▪ The costs listed above for Option 1 will also apply to Option 2, other than those relating to applying the hierarchy of obligations in consent decision-making. ▪ The policy on cross-boundary matters may result in a range of costs for ORC (including time, money, and resources),

	BENEFITS	COSTS
	the hierarchy of obligations in consent decision-making. ▪ The amendments to IP-P16 will also result in cultural benefits by requiring consideration of the extent to which an activity is consistent with mana whenua environmental indicators as set out in APP8. ▪ In addition, introducing a policy on cross-boundary matters as part of Option 2 is expected to result in a range of benefits, including improved environmental outcomes associated with activities that occur on or near jurisdictional boundaries. ▪ There will likely also be cost-savings for both applicants and ORC (as consent authority) due to any joint processes for resource consent applications and hearings where consent is required from another local authority (i.e., one hearing compared to two). ▪ Improved cross-boundary and inter-agency management is also expected to improve public confidence in ORC (and adjacent local authorities) and its perception.	related to liaising with and sharing information with other local authorities.

99. Table 3 below assesses the effectiveness and efficiency of the proposed provisions in achieving the objectives.

Table 3: Effectiveness and efficiency assessment – Plan integration and implementation

	Effectiveness
Option 1	This option is considered the least effective of the three options considered because of the potential for duplication across the plan (and resulting inconsistencies in decision-making, which can affect the extent to which objectives are achieved) as well as the risk that contextual information is given less weight in decision-making than plan provisions. Not every activity managed by the pLWRP has topic-specific direction. In these instances, it is not clear that decision-making on consent applications for these activities would need to consider the achievement of the FMU environmental outcomes, which are key objectives of the plan. If the plan is interpreted and implemented in a way that is inconsistent with how it was intended, there may be impacts on the ability of policies, rules, and methods to achieve the objectives.
Option 2	The policies in Option 1 outline specific actions to be taken to achieve the objectives. Including policy direction on the relationships between different parts of the plan means that there is clarity about how the plan is to be interpreted and implemented in practice, assisting to achieve the objectives. Specifying common matters to be considered by all decision-making on consent applications, including achievement of the FMU environmental outcomes, ensures there is consistency in decision-making with regard to making progress

	towards achieving the plan's objectives. Applying the hierarchy of obligations in all consent decision-making is an effective way to ensure IO-O1 – Te Mana o te Wai is achieved. Similarly, managing uncertainty in a consistent way that aligns with the requirements in the pORPS and NPSFM may assist with achieving objectives. Collectively, the provisions are considered to be effective in achieving the objectives.
Option 3 (preferred option)	Option 2 will have the same effectiveness considerations as Option 1 (set out above). Option 2 is considered to be effective at achieving the objectives of the pLWRP as it also requires the extent to which the activity is consistent with mana whenua environmental indicators to be considered in decision-making which assists with achieving IO-O2 – Relationship of Kāi Tahu to freshwater, and provides direction on managing cross-boundary matters in decision-making which will assist with achieving IO-O4 – Ki uta ki tai/integrated management. Removing the application of the hierarchy of obligations is unlikely to prevent IO-O1 from being achieved because the plan itself is designed to implement Te Mana o te Wai, without each consent application needing to be separtately assessed. Overall, this option is considered to be the most effective of the options considered.
	Efficiency
Option 1	This option is likely to have higher administration costs than the other options due to the potential for duplication and inconsistency in plan interpretation and implementation. There are clearer ways of ensuring the plan is administered as attended, which would likely result in lower costs. This option is not considered to be efficient.
Option 2	Including provisions on plan interpretation rather than relying on contextual information is likely to result in lower administrative costs because the provisions are clearer and more certain. Requiring some direction to be considered in all decision-making on resource consent applications ensures that all activities are subject to consistent direction, rather than some activities being unintentionally excluded. Requiring decision-makers to ensure that an activity is consistent with achieving the FMU environmental outcomes, consider the extent to which an activity is consistent with the mana whenua environmental indicators, and have regard to the effects of climate change ensures that all decision-making under the plan is working towards common goals, particularly by focusing on the achievement of environmental outcomes which are a core component of the National Objectives Framework in the NPSFM. However, applying the hierarchy of obligations in all consent decision-making may result in additional costs to users that are not matched by benefits to the environment. Additional costs arising from implementing Option 2 are largely in the form of requiring certain types of information and/or implementing a precautionary approach, and administrative costs of implementation. This option is considered to be an efficient way of achieving the objectives.
Option 3 (preferred option)	Option 3 will have the same efficiency considerations as Option 2 (set out above) but is considered to be a more efficient way of achieving the objectives compared to Options 1 and 2. Although ORC will likely incur increased costs, the addition of policy direction on managing cross-boundary issues will better enable these activities and effects to be managed and promote a coordinated response between ORC and other local authorities, which will increase the efficiency in implementing the objectives. Removing the requirement to apply the hierarchy of obligations in consent decision-making lowers the costs of achieving IO-O1 without affecting the ability of the objective to be achieved.

100. 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. In this case, and in the knowledge that there

is not full and fully certain information on the matters in this chapter, there is sufficient and sufficiently certain information on which to decide on the proposed provisions. The relevant provisions in the IM – Integrated management chapter are intentionally pitched at a high level. In some cases, these provisions direct what information should be considered in certain circumstances and require the coordination of managing resources and sharing information. These directions will in turn improve the information on which future resource management decisions are based. The risks associated with not acting in the manner proposed is that there is limited specific guidance on how integrated management is to be achieved, which undermines the cohesion of the pLWRP.

6.10. Conclusion

101. The effectiveness and efficiency assessments have shown that overall, Option 2 is the most efficient and effective way to achieve the objectives of the pLWRP, primarily due to the additional policy direction on the management of cross-boundary matters.

7. Relationship of Kāi Tahu to water

7.1. Introduction

102. Kāi Tahu are takata whenua of the Otago region. Te Tiriti o Waitangi establishes a partnership between Kāi Tahu and the Crown. Section 8 of the RMA requires that parties involved in managing natural and physical resources under the RMA take into account the principles of Te Tiriti o Waitangi (the Treaty of Waitangi). The relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu, and other taoka is also identified as a matter of national importance in section 6 and required to be recognised and provided for in the pLWRP. Particular regard under section 7(a) must also be given to kaitiakitaka (which is also one of the principles of Te Mana o te Wai).

103. The strategic policies seek to recognise this partnership, the Treaty principles, and set out general considerations for the incorporation of Kāi Tahu values and interests into resource management planning, consenting, implementation, and monitoring processes.

104. This topic addresses three over-arching provisions in the pLWRP which were prepared to give effect to IO-O2 – Relationship of Kāi Tahu to freshwater:

a. IP-P2 – Rakatirataka and kaitiakitaka

b. IP-P3 – Kā honoka ki te wai

c. APP8 – Mana whenua environmental indicators

7.2. Issues

105. There are no additional issues to those described in section 3 above.

7.3. Status quo policy context (including operative plan provisions)

106. The status quo for this topic is described in section 4.1 above.

7.4. Objectives

107. The objectives for this option are those described in section 5 above.

7.5. Discounted options

108. The status quo has been discounted as a reasonably practicable option given the issues identified in section 4.2 above.

7.6. Reasonably practicable options

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

a. **Option 1:** Clause 3 version

b. **Option 2**: pLWRP (preferred option)

7.6.1. Option 1: clause 3 version

110. Option 1 is two policies and an associated appendix as they were included in the draft LWRP for clause 3 consultation. The two policies (MW-P1 – Rakatirataka and kaitiakitaka (now IP-P2) and MW-P2 – Supporting Kāi Tahu hauora (now IP-P3)) read:

MW-P1 – Rakatirataka and kaitiakitaka

Recognise Kāi Tahu rakatirataka and enable the exercise of kaitiakitaka in respect of freshwater by:

(1) facilitating partnership with mana whenua in freshwater management, including policy development, implementation and monitoring;

(2) providing for the active involvement of Kāi Tahu in policy and resource consent decision-making processes;

(3) facilitating engagement with Kāi Tahu in resource consent processes to ensure that mana whenua freshwater values are provided for;

(4) actively pursuing opportunities for;

(a) delegation or transfer of functions to Kāi Tahu; and

(b) partnership or joint management arrangements.

(5) taking into account iwi management plans when making resource management decisions;

(6) working with Kāi Tahu to incorporate mātauraka in decision-making processes and monitoring programmes;and

(7) supporting mana whenua initiatives that contribute to maintaining or improving the health and well-being of water bodies.

MW-P2 – Supporting Kāi Tahu hauora

Land and freshwater are managed to support Kāi Tahu hauora by:

(1) recognising that Kāi Tahu hold an ancestral and enduring relationship with wai māori within their takiwā;

(2) ensuring the interconnections between land and water are managed in a holistic and integrated way;

(3) ensuring activities are undertaken in a way that safeguards the mauri and life-supporting capacity of water bodies and contributes to achievement of mana whenua freshwater outcomes as described in APP[8];

(4) enabling mahika kai and other customary practices associated with water bodies; and

(5) recognising and providing for the economic, cultural and social aspirations of mana whenua as land and water users.

111. The policies were accompanied by what is described in the policy above as "APP8 – Mana whenua environmental indicators" – an appendix setting out criteria for mana whenua freshwater outcomes. These provisions were drafted by representatives for Kāi Tahu ki Otago to respond to the direction in the pORPS, particularly policy *LF-WAI-P2 – Mana whakahaere* and the policies in the *MW – Mana whenua* chapter. They were drafted alongside, and assist with achieving, the objective (then MW-O1, now IO-O2).

112. As described by Kāi Tahu representatives, the intent of APP[8] was to set out the primary considerations for determining whether an activity will contribute to achieving the freshwater outcomes for wāhi tūpuna, taoka species and mahika kai. This was developed to replace general references to "Kāi Tahu values" in the Water and Waste Plan, which were considered by Kāi Tahu and plan users to be uncertain and unclear.

7.6.2. Option 2: pLWRP (preferred option)

113. In their feedback on Option 1, concerns were raised by a number of clause 3 parties about the content of the appendix (then APP[8]), its relationship with the rest of the plan, and its implications for resource use. Through clause 4A consultation, iwi authorities also sought further discussion with ORC on these matters. As a result of this feedback:

a. The definition of Māori freshwater values was amended to capture mahika kai, taoka species and wāhi tūpuna;

b. IP-P2 (previously MW-P1) remains largely unchanged from Option 1, with some additional detail added in IP-P2(2) such that active involvement of Kāi Tahu include the appointment of independent commissioners approved or nominated by Kāi Tahu on hearing panels for consents and plans where Kāi Tahu values may be affected.

c. IP-P3 (previously MW-P2) has had several updates. In summary:

i. The chapeau was reframed to support the Kāi Tahu relationship with freshwater, rather than Kāi Tahu hauora;

ii. The inextricable link of the health of mana wheua to the health and mana of the wai was included in clause 4 of IP-P3;

iii. Clause 2 of IP-P3 was expanded to recognise the interconnectivity of whenua, wai, ecosystems and takata, rather than the requiring that the interconnections between whenua and wai are managed in a holisitic and integrated way;

iv. Amendments were made to clause 3 of IP-P3 to more closely align it with Te Mana o te Wai, and require that activities support restoration of mauri,

including as measured by the indicators in the appendix. This change clarifies the purpose of the appendix;

v. Compared to MW-P2, a new clause was added setting out the importance of achieving the environmental outcomes for Māori freshwater values;

vi. An amendment was made to what was clause 4 of MW-P2 such that the policy direction applies to mahika kai and other customary practices, regardless of whether they are associated with water bodies.

d. Amendments were made to the appendix to clarify its relationship with different parts of the plan, including the relevant envinromental outcomes and IP-P2, and how it works alongside IP-P3. In relation to tables within the appendix (access, water quality, flow/level, river morphology, ecosystem integrity, indigenous vegetation, species populations), the descriptions from the tables have been inserted as text, the tables removed, and minor amendmentsmade to improve clarity.

7.7. Clause 3 consultation feedback

7.7.1. MW-P1 – Rakatirataka and kaitiakitaka

114. Two parties supported the policy and sought its retention without amendment.

115. These amendments reflect additional feedback received from rūnaka and to better implement LF-WAI-O1 and LF-WAI-P2 in the pORPS. All of the amendments sought were made for these reasons.

116. Three primary sector parties raised concerns with the content of policy MW-P1. Two of these parties opposed the use of the term ‘rakatirataka’. Those parties considered that the NPSFM2020 does not provide for rakatirataka in relation to freshwater management and the use of ‘kaitiakitaka’ would be better suited to provide for a consistent and appropriate approach to freshwater management. The parties considered that use of ‘kaitiakitaka’ would provide for the concept of governance without deferring self-determination. As a result, the parties sought to remove all references to rakatirataka from the policies.

117. No changes to the use of ‘rakatirataka’ were made in response to this feedback. Rakatirataka is explained in the MW chapter as referring to the exercise of mana or authority to give effect to Kāi Tahu cultural and traditions (s6(e), RMA). The authority of tangata whenua forms part of the principle of mana whakahaere, as set out in clause 1.3 of the NPSFM, which is incorporated in the wider concept of Te Mana o te Wai.

118. Two of these parties were concerned about the requirement to actively involve tangata whenua in resource consent decision-making. One party considered that involvement in consenting processes leads to inefficiencies and costs to consent applicants, including in relation to interpretation of the plan. They noted that the NPSFM refers only to delegations under s33 of the RMA and that under s34A(2)(b) Council cannot delegate the power to make a decision on an application for a resource consent. The party was concerned that ‘active involvement’ as proposed, while not being a delegation of the power to make a decision on a resource consent, would result in a similar effect. The other party was also concerned about this point, particularly that clause (2) was seeking to redefine the role of ORC or the decision-making considerations under s104 of the RMA. The amendments sought were to

delete clause (2) from MW-P1 and remove the reference to resource consent processes in (3).

119. To address these concerns, amendments were made to clause (2) to clarify that the requirement is to provide opportunities for active involvement, including by appointing independent commissioners approved or nominated by Kāi Tahu on hearing panels for resource consent applications, plan changes, or plans where Kāi Tahu values may be affected. This is consistent with MW-M4 of the pORPS, which identifies the use of commissioners as a way of facilitating Kāi Tahu involvement in resource management alongside fostering the development of mana whenua capacity to participate, joint management agreements and transfers of functions, and entering into a Mana Whakahono a Rohe.

120. One of these parties was also concerned about the inclusion of 'freshwater values' in clause (3), seeking that policy was narrowed and specific rules to ensure that there is a level of detail at the consenting stage that reflects the importance of the geographical area. The party noted that freshwater values will need to go through an adequate s32 assessment, and reserved its right to comment on these further with an assessment on the cost to implement them. No amendments were made in response because the clause was not considered to impose any particular geographic area, allowing that decision to be made in the individual circumstances.

121. One party sought amendments to clause (4) to include reference to mana whakahono a rohe or iwi participation arrangements. An amendment was made to this effect.

122. One party sought amendments to clause (4) to qualify the use of delegations or transfers of functions with 'where appropriate'. No amendments were made in response. The use of delegations or transfers is discretionary and therefore require consideration about when or if they occur, which would necessarily include consideration of appropriateness.

123. One of these parties was concerned about the requirement in clause (5) to take into account iwi management plans when making resource management decisions. The party notes that iwi management plans are a non-regulatory tool and may have a similar importance to catchment management plans, where communities work together to identify and define issues. The party did not consider it appropriate to refer to iwi management plans unless it is clear that they are going to be utilised through a non-regulatory process.

124. No amendments were made in response to this feedback. Iwi management plans are not strictly 'non-regulatory' as section 66(2A) requires regional plans to take into account any relevant planning document recognised by an iwi, and section 104(1)(c) allows a consent authority to have regard to any other matter considered relevant and reasonably necessary (which, in relation to Māori freshwater values, may be an iwi management plan). Further, policy MW-P2(8) of the pORPS requires local authorities to take into account iwi management plans when making resource management decisions.

7.7.2. MW-P2 – Supporting Kāi Tahu hauora

125. When the draft LWRP was circulated for consultation under clause 3 of Schedule 1 of the RMA, the MW – Mana whenua chapter contained a note to readers that stated that the content of the chapter was being reviewed by rūnaka representatives and there may be refinement of the content to come. That refinement was provided through the feedback

from iwi authorities during the clause 3 consultation period. The following amendments were sought:

MW-P2 – ~~Supporting Kāi Tahu kauora~~ Kā honoka ki te wai

Land and freshwater are managed to support the Kāi Tahu relationship with freshwater ~~hauora~~ by:

(1) recognising that Kāi Tahu hold an ancestral and enduring relationship with freshwater ~~wai māori~~ within their takiwā and mana of mana whenua is inextricably linked to the health and mana of the wai; and

(2) ~~ensuring the interconnections between land and water are managed in a holistic and integrated way~~ recognising the interconnectivity of whenua, wai, ecosystems and takata, ki uta ki tai, and managing catchments in a holistic and integrated way; and

(3) ensuring activities are undertaken in a way that ~~safeguards~~ protects the mauri and life-supporting capacity of water bodies and freshwater ecosystems and restores the mauri where it is degraded; and contributes to achievement of mana whenua freshwater outcomes as described in APP[8]; and

(4) enabling mahika kai and other customary practices ~~associated with water bodies~~; and

(5) recognising and providing for the economic, cultural and social aspirations of mana whenua as land and water users.

126. Five parties provided feedback on this policy. One sought to retain it without amendment, stating that cultural indicators are an important and useful part of water quality monitoring and should be used to complement western scientific monitoring.

127. One party considered that clause (1) was inaccurate, on the basis that many farmers in Otago had ownership of water from the 1900s until it was nationalised and therefore it cannot be said that Kai Tahu have an enduring relationship with water when it was owned by others, including farmers, for the greater part of a century. No amendment was made in response to this feedback because the relationship of others with water does not prevent Kāi Tahu from continuing to have a relationship with water. Additionally, this relationship must be recognised and provided for as a matter of national importance in accordance with section 6(e) of the RMA.

128. One party sought an amendment to clarify that the matters in (5) could not supersede the other parts of this policy. No amendment was made because all of the clauses in this policy are joined by "and' – that is, that must be implemented at the same time, and one cannot override another.

129. One party noted that while the policy does not specifically refer to property access, it would not be appropriate to require landowners to provide for public access on to private property as a condition of granting consent (or getting affected party approvals). The party stated it would support a policy that enables mahika kai in ways that explicitly do not override property rights. No amendment was made because the policy does not require access to be given to Kāi Tahu as a condition of consent, and the type of condition described would not be lawful unless either the applicant offered it or the access related to public land.

7.7.3. APP[8] – Mana whenua aspirations for land and fresh water

130. One party sought to replace general references to Kāi Tahu values throughout the draft LWRP with reference to the matters in APP[8].

131. One party considered it was unclear how the mana whenua freshwater outcomes as set out in APP[8] interacted with the long-term visions set out in the pORPS.[15] The party stated that if the intention is to achieve the outcomes within the same timeframes as the long-term visions, that would be strongly opposed as it would be unreasonable.

132. A number of parties were concerned about the role of APP[8] within the plan. In particular:

a. One party stated that is was not clear how the content would be utilised in practice within the plan, how realistic the content is, or how it fits with other plan provisions;

b. One party was concerned that the outcomes described in the appendix were very broad and far reaching and could have large implications for resource users if implemented as drafted (including not being able to grant consents in some catchments).

c. One party stated that the criteria for mana whenua freshwater outcomes must be considered by any s32 analysis.

d. One party interpreted the content as requiring all water in lakes and rivers to be drinkable and opposed that requirement.

e. One party described the content of the appendix as setting targets and considered that they may be interpreted as target attribute states using alternative criteria under the NPSFM.

f. One party sought amendments to the matters listed under 'River morphology' to clarify clause (3) and include two additional clauses on retaining natural connections between rivers and their floodplains, and allowing sediment to move naturally through river systems.

133. In response to this feedback, it was agreed that there was uncertainty about how the matters in the appendix related to other provisions in the plan (particularly the environmental outcomes for FMUs) and what it required of applicants and decision-makers. From previous engagement with Kāi Tahu, it was understood that the matters set out in APP[8] were designed to be a 'yard stick' for determining the extent to which a proposal contributes to achieving mana whenua freshwater outcomes. They are intended to provide clarity for resource users and decision-makers about Kāi Tahu values, so that that can be taken into account during consent processes. They were not intended to replace or override the long-term visions in the LF-FW – Freshwater chapter in the pORPS or the environmental outcomes set out in the FMU chapters of the plan.

134. Rather than make amendments immediately, it was agreed between Kāi Tahu and ORC that the role of this appendix and its application throughout the plan would be discussed in more detail during the clause 4A consultation.

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

7.8. Clause 4A consultation feedback

135. Representatives stated that the role of the appendix in referring to mana whenua values and the connection of the appendix to the environmental outcomes set out in the Area-specific Matters chapter needed to be made clearer. Representatives noted that:

a. The appendix was developed by Aukaha following whānau engagement and is part of the approach to achieving the environmental outcomes set out in the Area-specific Matters chapter.

b. The appendix is intended to provide greater clarity to Plan users as to what is meant by "Māori freshwater values" as referred to in the NPSFM. In policies and matters for discretion the appropriate approach in most cases will be to refer to the appendix rather than to include general reference to Kāi Tahu values.

c. The expectation is not that every activity will ensure that the states described in the appendix are achieved, but that they will make a positive rather than a negative contribution towards these.

136. Representatives requested the opportunity to work with ORC to ensure this approach is expressed clearly in the relevant parts of the plan. In response, ORC staff and mana whenua representatives meet on a number of occasions to discuss:

a. The relationship between the content of the appendix and the environmental outcomes in the FMU chapters, particularly for Māori freshwater values,

b. Whether the content of the appendix could be considered 'alternative criteria' for assessing the achievement of environmental outcomes in accordance with clause 3.10(1)(d), and

c. How the content of the appendix should be applied throughout the rest of the plan.

137. As a result of these discussions, the following changes were made:

a. The definition of Māori freshwater values has been amended to specifically refer to the values of mahika kai, taoka species and wāhi tūpuna, rather than relying on the definition in the NPSFM. This amendment improves the connection between the appendix and the environmental outcomes (objectives) in the FMU chapters, which specifically refer to mahika kai, taoka species and wāhi tūpuna.

b. The reference to the appendix in matters of control or restricted discretion in rules throughout the plan has been amended to require consideration of the extent to which the activity is consistent with the matters in the appendix, rather than consideration of the extent to which the activity contributes to achieving the aspirations in the appendix. This change in wording acknowledges that it may not be practical for every activity to positively contribute towards the states described in the appendix.

c. The use of the appendix as 'alternative criteria' for assessing the achievement of environmental outcomes was not able to be settled prior to the notification of the pLWRP, and mana whenua were still considering whether the appendix was intended to be used in that way. Should the appendix be intended to be used as 'alternative criteria', this may be sought through a submission from mana whenua on the pLWRP.

7.9. Effectiveness and efficiency assessment

138. Table 4 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in each option.

Table 4: Benefits and costs for Relationship of Kāi Tahu with freshwater

	BENEFITS	COSTS
Option 1	▪ Policies may better facilitate Kāi Tahu involvement in resource management than the status quo and enhances cultural expression for Kāi Tahu and strengthens Kāi Tahu's relationship with freshwater. ▪ Provisions are expected to better recognise and provide for the relationship of Kāi Tahu with natural resources. ▪ Clearer expression of the role of mana whenua in freshwater management will assist with exercising kaitiakitaka, manaakitaka and rakatirataka. ▪ Facilitating partnership with Kāi Tahu in freshwater management and providing for active involvement in policy and resource consent decision-making will improve Kāi Tahu's level of engagement with and involvement in decision-making, helping to achieve better outcomes for Kāi Tahu. ▪ Managing interconnections between land and water in a holistic, integrated way, consistent with ki uta ki tai, will better recognise Kāi Tahu cultural values and assist with protecting taoka and providing for customary use. It will also likely result in improved environmental outcomes. ▪ Kāi Tahu values tend to have a strong basis in ecosystem health, so better provision for such values may have wider environmental and social benefits. ▪ Ensuring activities are undertaken in a way that safeguards mauri and the life-supporting capacity of water bodies will likely result in environmental improvements including an improvement in the health and well-being of waterbodies and Māori freshwater values. ▪ A sustainable long-term approach to the use and management of natural and physical resources has the potential to improve economic growth and	▪ Engaging in a partnership relationship and being actively involved in freshwater management decision-making processes is likely to result in additional resourcing costs (time, cost, personnel) for Kāi Tahu. The reference to the APP[8] may reduce these costs by ensuring Kāi Tahu values will be considered even without direct Kāi Tahu involvement. ▪ The Ministry for the Environment (MfE) estimates that the cost of involving mana whenua in monitoring programmes for freshwater may be between $30,000 and $50,000 per year (Ministry for the Environment, 2020, p. 183). The monitoring requirements in Option 1, including incorporating matauraka in monitoring, are unlikely to be implemented immediately and it is expected that there would be additional costs in the early stages to engage with mana whenua in setting up the monitoring programme initially. ▪ Ensuring activities are undertaken in a way that safeguards mauri and contributes to Kāi Tahu values may limit some economic activities or result in additional costs for plan users carrying out activities. Such costs could include mitigation costs associated with addressing potential impacts on mauri and life-supporting capacity and/or additional costs during the resource consent process associated with Kāi Tahu involvement.

	BENEFITS	COSTS
	employment opportunities throughout the region.	
Option 2 (preferred option)	▪ The benefits listed above for Option 1 will also apply to Option 2. ▪ The amendments in IP-P3(2) recognise that the breadth of interconnections extends beyond whenua and wai to also captures ecosystems and takata. ▪ The amendments in IP-P3(3) ensure the direction better aligns with Te Mana o te Wai, with regards to the health and well-being of water bodies and freshwater ecosystems. ▪ The amendments to the use of the appendix in consent processes will continue to provide cultural benefits as identified for Option 1, while also providing clarity for applicants, particularly for activities that are unlikely to make a positive contribution to achieving the outcomes in the appendix.	▪ The costs listed above for Option 1 will also apply to Option 2. ▪ Ensuring activities are undertaken in a way that supports the relationship of Kāi Tahu with freshwater and the restoration of mauri may limit some economic activities or result in additional costs for plan users carrying out activities, as described in relation to Option 1.

139. Table 5 below assesses the effectiveness and efficiency of the proposed provisions in achieving the objectives.

Table 5: Effectiveness and efficiency assessment – Relationship of Kāi Tahu with freshwater

	Effectiveness
Option 1	Providing for cultural values and working in partnership with Kāi Tahu alongside the more environmental-focused provisions will assist with embracing ki uta ki tai as required by IO-O2 and the package of provisions is considered to be effective at achieving the objectives in the pLWRP.
Option 2 (preferred option)	Option 2 wil have the same effectiveness consideration as Option 1 (set out above). Option 2 is considered to be more effective at achieving the objectives of the pLWRP as it provides greater clarity regarding Māori freshwater values, and the role of the associated appendix, which improve the ability of the pLWRP to give effect to IO-O2.
	Efficiency
Option 1	Implementation of Option 1 will result in a wide range of costs and benefits primarily for Kāi Tahu, as well as related implementation and flow on costs/benefits for the wider community. While some of the implementation costs can be quantified, the benefits of this option are much more difficult to quantify as they are mostly environmental, cultural and social. This option may constrain some uses of land or water across the region, however, this accord with the direction in Objective 1 of the NPSFM to prioritise, first, the health and wellbeing of water bodies; second, the health needs of people; and third, the ability to provide for the social, economic and cultural wellbeing of people and communities. It is considered that Option 1 will be efficient at achieving the objectives of the pLWRP

Option 2 (preferred option)	Option 2 will have the same efficiency considerations as Option 1 (set out above), and in addition Option 2 is considered to be a more efficient way of achieving the objectives compared to Option 1. The amended policy direction and clarification of the role of the addendum will better enable the relationship of Kāi Tahu with freshwater to be managed, which will increase the efficiency in implementing the objectives.

7.10. Risk of acting or not acting

140. 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 uncertain information associated with the implementation of Option 2. However, as discussed above, the status quo results in considerable uncertainty with respect to the phrase 'Kāi Tahu values', and how those values are managed through the resource consent process. Accordingly, the risk of acting is considered to be minimal compared to the status quo.

7.11. Conclusion

141. The effectiveness and efficiency assessments have shown that overall, Option 2 is a more effective and efficient way to implement the objectives of the pLWRP.

8. Environmental practice and resource use

8.1. Introduction

142. In order to achieve the objectives of the pLWRP, and to manage the cumulative effects of individual activities across the region, it is important that there is clarity about the expectations of all resource use, including where there may be over-allocation. Renewable electricity generation has an important role to play in supporting New Zealand's transition to a low carbon economy. Additionally, there is specific direction in the NPSREG that applies to the management of renewable electricity generation.

143. This sub-topic relates to the policies in the IM chapter that address environmental practice and resource use, being:

a. IP-P5 – Facilitating transition,

b. IP-P7 – Good environmental practice,

c. IP-P8 – Over-allocation, and

d. IP-P17 – Renewable electricity generation.

8.2. Issues

144. There are no additional issues to those described in section 3 above.

8.3. Status quo policy context (including operative plan provisions)

145. The status quo for this topic is described in section 4.1 above.

8.4. Objectives

146. The objectives for this option are those described in section 5 above.

8.5. Discounted options

147. The status quo has been discounted as a reasonably practicable option given the issues identified in section 4.2 above.

8.6. Reasonably practicable options

148. Three reasonably practicable options were identified to achieve the objectives:

a. **Option 1:** Topic-based direction

b. **Option 2:** Plan-wide and topic-based direction – clause 3 version

c. **Option 3:** Plan-wide and topic-based direction – pLWRP (preferred option)

8.6.1. Option 1: Topic-based direction

149. This option includes provisions addressing environmental practice and the use of resources in the topic chapters, rather than in the IM chapter.

150. This option enables the direction on environmental practices and the use of resources to be tailored to each topic, based on the key activities managed by each topic. The direction provided in the topic chapters will be similar to that described for Options 2 and 3, including:

a. Managing activities in a way that is consistent with the concept of Te Mana o te Wai,

b. How efficient resource use will be achieved for the specific activities managed by the topic,

c. Any transitional provisions that will facilitate the efficient and effective implementation of Te Mana o te Wai,

d. How over-allocation will be avoided, and phased out where it exists,

e. How renewable electricity generation is recognised and provided for.

151. This option is likely to result in some areas of duplication, given the direction on environmental practices and resource use is likely to be similar for a number of topics, particularly where they relate to activities with similar impacts, such as discharges of contaminants to water, or to land where they may enter water. This duplication in topic chapters may be inconsistent with the National Planning Standards, given provisions that apply to more than one topic must be located in the relevant 'Domain' rather than being in the topic or area-specific chapters.

152. There will be activities managed under the pLWRP for which there is no topic-based direction, including activities that are infrequently undertaken or activities which are not currently occurring in Otago. Under this option, there would potentially be a gap in direction for the management of these activities in the pWLRP, meaning decision-makers on resource consent applications would be required to turn their mind to the direction in the pORPS instead.

8.6.2. Option 2: Plan-wide and topic-based direction – clause 3 version

153. This option would adopt a combination of topic-based direction (for activities where there is specific direction required) and plan-wide direction (to ensure consistency in the management of all activities and to provide for the management of activities where there is no topic-based direction). This option is the version of these policies as set out in the clause 3 version of the draft LWRP. In this version, formerly LF-P16 (now IP-P7) requires that all activities managed under the plan are carried out:

a. In accordance with the concept of Te Mana o te Wai as expressed in LF-WAI-O1, LF-WAI-P1, LF-WAI-P2, and LF-WAI-P3 of the pORPS, and

b. Within limits and in accordance with any relevant environmental flows and levels, and

c. Using practices that optimise efficient resource use, safeguard the life-supporting capacity of the region's land and soils, and contribute to maintain or, if degraded, improving the health of water bodies and freshwater ecosystems.

154. Improving the health and well-being of Otago's fresh water will take time, which is acknowledged in the timeframes set for achieving the long-term visions[16]. Policy IP-P4 (now IP-P5) seeks to facilitate effective and efficient implementation of Te Mana o te Wai now and in the future by:

a. recognising changes to practices and activities will need to continue beyond the life of this plan,

b. enabling innovation and the development of new practices,

c. minimising the adverse impacts on people and communities where practicable, and

d. recognising the level of existing investment in environmental actions that have occurred in the past ten years.

155. This policy responds to policy LF-FW-P6A of the pORPS, which requires providing for ambitious and reasonable transitions in the use of land and water to achieve the long-term visions by recognising that changes to practice and activities will need to occur over time, managing the adverse impacts on communities (including by phasing implementation and building on actions undertaken by community groups), and enabling innovation and the development of new practices.

156. Policy 11 of the NPSFM requires that all existing over-allocation is phased out and future over-allocation is avoided. Policy IP-P8 implements this direction and contains additional matters to take into consideration when phasing out existing, or avoiding future, over-allocation:

a. Providing for the needs of present and future generations,

b. Recognising the investment of existing uses and providing for new opportunities,

c. Allocating and uses resources efficiently, including providing for re-allocation where necessary,

[16] LF-FW – Fresh water Chapter of the pORPS.

d. When considering reductions in actual resource use, prioritising reductions for uses that are within the third priority in the hierarchy of obligations set out in LF-WAI-P1 of the pORPS.

157. Otago has significant renewable electricity generation resources, including some that are nationally and/or regionally significant. This option includes policy LF-P19 (now IP-P17), which seeks to recognise and provide for the national and regional benefits of renewable electricity generation by:

a. Maintaining the generation capacity and operational flexibility of existing schemes,

b. During times of low flow, giving priority to the use of water for renewable electricity generation ahead of other uses (except ecological flows and drinking water supply),

c. Enabling the operation and maintenance of renewable generation activities where their effects are minimised,

d. Providing for the development of new renewable electricity generation activities where any take is non-consumptive, and

e. Managing activities to avoid reverse sensitivity effects.

158. This policy assists with implementing the EIT – Energy, infrastructure and transport chapter of the pORPS as well as the NPSREG. It provides the overarching framework for managing these activities, which is then implemented primarily through the DAM and EFL chapters of the pLWRP.

8.6.3. Option 3: Plan-wide and topic-based direction – pLWRP (preferred option)

159. Option 3 adopts the provisions in Option 2 with amendments made in response to clause 3 feedback, as described below.

8.7. Clause 3 consultation feedback

8.7.1. LF-P16 (now IP-P7) – Good environmental practice

160. One party supported the policy and sought to retain it without amendments.

161. One party supported the use of good environmental practice, but was concerned that the policy may set unachievable requirements. No specific amendments were requested, and so none were made as it was unclear which part of the policy the party considered to be an issue.

162. One party was concerned about the reference to Te Mana o te Wai as expressed in the pORPS as, at the time, decisions on the provisions had not been made by ORC. Similarly, another noted the Government's intention to review the NPSFM and the concept of Te Mana o te Wai. Both sought to remove references to Te Mana o te Wai from the policy. Amendments were made to refer to the concept of Te Mana o te Wai (which is defined in the pLWRP as the concept described in clause 1.3 of the NPSFM and in an objective developed under clause 3.2 of the NSPFM and included in the pORPS). Reference to the concept was not deleted entirely because, at the time, implementing Te Mana o te Wai was still a requirement of the NPSFM and of the pORPS.

163. One party sought to delete reference to Te Mana o te Wai on the basis that not all activities under the plan have relevance to the concept (such as air discharges). No amendments were made in response to this because the pLWRP does not manage discharges to air and the objective of the NPSFM makes it clear that Te Mana o te Wai applies to all decision-making affecting freshwater.

164. A number of parties sought minor amendments to clarify the wording in clause (3):

a. One party considered the reference to 'maintaining' should be replaced with 'protecting',

b. One party sought to include reference to 'well-being' in clause (3)(c) and another sought top include reference to 'ecosystem health', both for consistency with the language of the NPSFM,

c. One party sought to include reference to coastal ecosystems (in addition to freshwater ecosystems),

165. One party sought the inclusion of a new clause (4) requiring that activities are undertaken in a manner that enables people and communities to provide for their social, economic, and cultural well-being and their health and safety. This amendment was made because it was considered to assist with giving effect to Policy 15 in the NSPFM.

8.7.2. IP-P4 (now IP-P5) – Facilitating transition

166. One party supported the policy, noting that the paradigm shift of implementing Te Mana o te Wai would take considerable time and investment. The party supported the recognition of existing investment that has been made and did not seek any amendments. This party, and another, sought that this recognition be included in other (unspecified) provisions across the plan. As this policy applies to all activities undertaken under the plan, it was not considered necessary to refer to it in other provisions.

167. One party stated that timeframes to achieve the plan's objectives need to be practical and achievable, and sought amendments to the policy to that effect. No amendments were made because the timeframes are already set in the pORPS (in the long-term visions)[17].

168. One party sought an amendment to clause (2) so that innovation and development of new practices was linked to the health and well-being of water bodies. The same party sought to delete clause (3) on the basis that minimising adverse effects on people arising from giving effect to Te Mana o te Wai was not an appropriate test. These amendments were not made, the first because clause (1) already refers to Te Mana o te Wai and the second because the clause is qualified by "where practicable" and it was a clear policy choice by ORC to minimise adverse impacts on people and communities where that was practicable, which is consistent with Policy 15 of the NPSFM.

169. Two parties considered that improving existing practices should form part of the transition process, not only developing new practices and sought amendments to this effect to clause (2). The amendment was made for these reasons, and because improving existing practices is consistent with the approach taken to managing activities across the pLWRP.

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

170. One party supported having a transition process, but considered that any process needed to have a mechanism to avoid all of the required work being delayed until the end of the transition period, thereby delaying action. The party noted this was a particular concern in Otago after the experience with deemed permits. To prevent this from occurring in the future, the party sought to include two new clauses in this policy:

    a. Unless there are exceptional circumstances, strongly discouraging transition processes that rely on proportionally large amounts of progress towards the end of the transition timeframe; and

    b. requiring annual, public reporting on all transition process within this plan, including an assessment of progress to date, the likelihood of achieving the intended outcomes by the relevant date, and actions required to ensure that the transition will be complete by the relevant date.

171. The first additional clause was not included because in some cases, scaling up of transitions over time is required. Specific cases of this are:

    a. Section 2.7 [Option 2: 2-stage approach within Topic: Managing over-allocation] of Chapter 13 of the report relating to EFL describes that a 2-stage approach is being taken to phase out over-allocation with two pathways for the implementation of the second stage. This approach will implement stepped requirements to implement environmental flows, levels and take limits by specified time frames. This approach is necessary in some cases due to the complexity of catchment hydrology and current allocation regimes, and to acknowledge the transition phase required to replace existing consents so that the long term take limits can be achieved.

    b. Section 1.5.1 [under the heading 'Review of existing framework and gap analysis'] of Chapter 14 of the report relating to FF describes that where changes in on-farm practies are not sufficient to achieve the target attribute states, more stringent management, includings changes in land use will be needed in the long. This more stringent policy direction and rule framework is not included in the pLWRP, but the signalling of this pathway is considered useful as a means to limit further intensification in the short term, to help resource users avoid investing in activities that may be further constrained in the future.

172. The second additional clause was not included because it would commit ORC to additional work (and therefore resourcing) that has not been discussed or funded as part of its financial planning under the Local Government Act 2002.

173. Three parties supported the policy but sought to include additional clauses:

    a. One party sought to recognise the lag time between implementing actions and seeing a measurable improvement in water bodies. This amendment was made because it was considered to be a sensible inclusion, reflecting the practicality of implementing change on the ground.

    b. One party sought two additional clauses: one to promote land use change that implements Te Mana o te Wai and enables a transition to lower emissions land use and one to consider how land-based primary production interacts with freshwater management at a catchment level. The first clause was included because it would assist with achieving the objectives of the plan (particularly for the health and well-being of water, and in relation to climate change). The second clause was not included

because it was unclear what it would require from resource users, who are the primary implementers of this policy.

c. One party sought a commitment to national and international emissions reduction targets, and actively promoting and incentivising low carbon practices. The clause included above with regard to land use change was considered to have a similar effect. Reference to emissions reductions targets was not considered to be necessary because there is already a commitment set out in IO-O5.

8.7.3.LF-P18 (now IP-P8) – Over-allocation

174. Five parties considered it was unclear whether the actions listed in the clauses were intended to occur at the same time as avoiding or phasing out over-allocation, or whether the policy was setting up a 'trade-off' situation between these matters. All of them opposed the second interpretation. One of these parties sought to replace "while" at the end of the chapeau with "in a way that", to clarify the role of the clauses. This amendment was made to address the lack of clarity in the drafting.

175. A number of parties raised concerns with clause (1) regarding providing for the needs of present and future generations:

a. One party sought to "recognise" the needs of present and future generations because "providing for" them signals an active responsibility which may then negatively impact on the health and well-being of the freshwater and freshwater ecosystem. This amendment was made for the reasons provided by the party.

b. One party sought amendments which provide for urban growth and development in accordance with the NPSUD. This amendment has not been included directly as it is already encompassed in 'needs'.

176. Three parties considered that the reference to the hierarchy of obligations in clause (4) was unnecessary given the changes signalled by the Government to amend this concept. No changes were made because, at the time of writing, the NPSFM and its expression of the hierarchy was still in effect. Another party noted their opposition to food production being considered 'third priority' in the hierarchy of obligations and stated that providing for the social, economic, and cultural well-being of communities (third priority) is fundamental to achieving the first two priorities. No amendments were made because this interpretation of the hierarchy is not consistent with Council's understanding.

177. One party sought to include an additional clause focused on at least maintaining renewable electricity generation capacity, storage and operational flexibility. No change was made because a separate policy already includes this direction.

178. One party sought to include multiple additional clauses that recognise the particular productive capacity needs of highly productive land and enable land use change to lower emission land use. No changes were made regarding these recommendations as this policy is designed to be general and not 'pre-empt' decisions made in communities about how to resolve over-allocation. Other recommendations are already included in a separate policy.

179. One party sought amendments to recognise that providing for the social, economic and cultural well-being of communities is fundamental to achieving clauses (1) and (2). No changes have been made as clause (4) applies at the same time as clauses (1) and (2).

8.7.4.LF-P19 (now IP-P17) – Renewable electricity generation

180. There was general support for policy LF-P19 from clause 3 parties. One party supported the policy in full and sought no amendments. One party supported the policy but considered that the exceptions need to be broadened to prevent unacceptable animal welfare and economic loss. No changes have been made as this is not consistent with Te Mana o te Wai and is not relevant for a policy about renewable electricity generation.

181. Two parties were concerned with the overall direction implied in this policy. One party was concerned that the direction implies that water for renewable electricity generation activities does not need to be within limits, as the activities are provided for, and generation capacity is to be maintained. Similarly, another party was concerned that the NPSREG direction overrides NPSFM protections throughout the policy. No changes have been made as they were deemed unnecessary as they are covered by other provisions and EFL. Minor changes were made to the wording to clarify its intent, including to clarify that a take must be non-consumptive or comply with environmental flows, levels, and limits.

182. One party requested amendments to clause (1) for increasing the generation capacity and storage. This change has been implemented as it is consistent with the NPSREG and clarifies that this clause applies to the overall capacity and flexibility of existing schemes, rather than component parts.

183. One party requested amendments to clause (2) to remove 'except ecological flows and drinking water supply'. This change has not been implemented as it does not give effect to Te Mana o te Wai. Similarly, another party sought changes to clause (2) to clarify its intent that renewable electricity generation use is only prioritised above other uses that fall within the third category of Te Mana o te Wai hierarchy. Changes have been made that clarify that priority is given to renewable electricity generation ahead of other uses.

184. Two parties found the term 'minimised' in clause (3) unclear and too open ended. One party sought amendments to replace the term 'minimised' with 'managed' while another party sought amendments to replace the term 'minimised' with 'no more than minor' as it is more widely used for effects management. An amendment was made to use the term 'managed'. This was considered to better recognise that there are a range of different ways adverse effects are managed under the pLWRP and it would not be appropriate for this policy to override those more specific and directive policies, particularly those originating in the NPSFM (such as the loss of river extent and values).

185. One party sought to include 'refurbishment and minor upgrading' in clause (3). The term 'refurbishment' does not appear in the NPSREG and it is unclear what this refers to. It is considered that refurbishment is, in part, already provided for through 'minor upgrading'.

186. One party proposed amendments to avoid damaging cumulative effects and to meet environmental flow conditions. No changes were made as it was considered unclear how damaging cumulative effects would be assessed and because the provisions of the EFL chapter already set out the requirements to comply with environmental flows, levels, and limits.

187. Four parties sought changes to clause (4):

    a. One party sought clause (4) to be deleted in full, as it appears to be too enabling for any new proposed development.

b. One party sought amendments to enable additional renewable power generation that meets both the definition of non-consumptive and doesn't require a dam.

c. One party considered that the use of water for non-consumptive renewable electricity generation should still be subject to constraints to ensure that the use does not undermine other protections.

188. Similar feedback was received more generally on the approach to renewable electricity generation in the plan, as discussed in section 9 [new in-stream dams] of Chapter 11 (DAM) and section 3.10 [Topic : Takes for renewable electricity generation] of Chapter 13 (EFL) of this report. Changes have been made to clause (4) to add subclauses (a) and (b) so that it is clear that new activities can only be provided for if they are either non-consumptive or comply with environmental flows, levels, and limits.

8.8. Clause 4A consultation feedback

189. Feedback was received on IP-P7 seeking the following changes:

(3) using practices that, to the extent reasonably practicable:

(a) to the extent reasonably practicable, optimise efficient resource use; and

(b) safeguard the life-supporting capacity of the region's land and soils; and

(c) contribute to maintaining or, if degraded, improving the health and well-being of water bodies, and freshwater and coastal water ecosystems …

190. An amendment was made in response 'to the extent reasonably practicable' from clause (3) is appropriate if coupled with an additional amendment: "using practices that are designed to: …" This will ensure that the focus of the policy is appropriately on the way practices are designed, rather than on each individual practice's use on the ground.

191. Policy 11 of the NPSFM requires fresh water to be used efficiently and is not qualified in the way sought by mana whenua. Staff do not consider this amendment appropriately gives effect to the NPSFM.

192. Feedback was received on IP-P6 seeking the following changes:

a. Amendments to clauses (2) and (5) so that they clearly refer to the environmental outcomes in the area-specific chapters, and

b. Delete or amend clause (3), on the basis that "minimising the adverse impacts of change" is not always the appropriate test – it must be weighed up with the importance and urgency of the change required.

193. In relation to (a), amendments were made to clarify that the reference to the "outcomes sought by this plan" was a reference to the long-term visions[18] and the environmental outcomes.

194. In relation to (b), it was noted that the clause was already qualified by "where practicable", which is consistent with the concern raised. For clarity, this phrase was moved from the end to the start of the clause.

[18] LF-FW – Fresh water Chapter of the pORPS.

195. Feedback was received on IP-P8(3) seeking to replace "where necessary" with "where consistent with achieving the environmental outcomes." In response, the amendment was made as it was considered to be a helpful clarification.

8.9. Effectiveness and efficiency assessment

196. Table 6 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in each option.

Table 6: Benefits and costs for Environmental practice

	BENEFITS	COSTS
Option 1	▪ Implementing Option 1 will give effect to Te Mana o te Wai. This is expected to result in improvements to the health and well-being of water bodies and ecosystems. This also has cultural benefits for the social and economic wellbeing of mana whenua, including cultural identity, reconnecting people to Otago's water bodies and engaging in social and economic activities such as mahika kai harvesting. ▪ This option will provide tailored policy direction for each topic in relation to environmental practice and resource use, which will provide certainty and clear direction for all activities managed by the pLWRP.	▪ Requiring activities to be undertaken in accordance with the concept of Te Mana o te Wai, including implementing good environmental practices and complying with resource use limits, may result in costs for resource users. ▪ Option 1 may result in some inconsistency in provisions across the Topic chapters, where the direction on environmental practice and resource use differs, despite the effects of activities managed across different chapters being similar. This is likely to result in uncertainty for consent applicants, particularly where the activities proposed to be undertaken are managed across multiple topic chapters. ▪ Developing topic-based direction for every activity managed under the pLWRP would increase the administration costs of preparing the plan and potentially lead to significant duplication across the plan. ▪ There may be no direction for managing some types of activities, increasing uncertainty in consent decision-making and potentially increasing users' costs.
Option 2	▪ This option provides clear direction on phasing out existing over-allocation and avoiding future over-allocation, which the Water Plan does not contain. This will have benefits for the health and well-being of water bodies and freshwater ecosystems, as well as benefits arising from avoiding the costs of improving the health and well-being of water bodies if current over-allocation is allowed to continue and/or new over-allocation is not prevented from occurring. ▪ Implementing Option 2 will give effect to Te Mana o te Wai and prioritise the health and well-being of water bodies and	▪ Requiring activities to be undertaken in accordance with the concept of Te Mana o te Wai, within limits and in accordance with environmental flows and levels, and using practices that benefit the environment may result in costs for resource users. The quantum of costs will vary depending on how far an existing practice is currently is from complying with these requirements. If an activity is already implementing these requirements, there are not likely to be any additional costs. If an activity is not, the costs associated with implementation will vary depending on how much change is required and the types of changes

	BENEFITS	COSTS
	freshwater ecosystems in decision-making. This is expected to result in improvements to the health and well-being of water bodies and ecosystems. This also has cultural benefits for the social and economic wellbeing of mana whenua, including cultural identity, reconnecting people to Otago's water bodies and participating in social and economic activities such as mahika kai harvesting. ▪ When resource users are operating within environmental limits, their "social licence" to operate may be improved. ▪ Implementation of Option 2 through the is likely to provide employment opportunities, particularly in rural communities, to undertake the actions required to achieve the environmental outcomes sought. For example, riparian planting, fencing of waterways and farm advisory services. ▪ Over time, there will be increased certainty for consent applicants and ORC staff assessing applications due to the introduction of limits on resource use and clear objectives for freshwater health.	chosen to be adopted by the resource user. ▪ Including a policy on over-allocation does not change the existing[19] potential for economic costs on large water users within over-allocated catchments as this over allocation is phased out, or the potential reduced availability of water and any flow-on effects for production, reduced future development potential or land use changes.
Option 3 – preferred option	▪ The benefits listed above for Option 2 will also apply to Option 3. ▪ The amendments to IP-P6 recognises the ability for people and communities to provide for their social, economic and cultural well-being, as per the third priority under Te Mana o te Wai. ▪ Option 2 provides an alternative pathway for new renewable electricity generation activities where they are not non-consumptive, but will comply with the relevant flows, levels and take limits. This addition will have environmental benefits, while also supporting community well-being through increased security of electricity supply.	▪ The costs listed above for Option 2 will also apply to Option 3. ▪ The acknowledgement of lag times between implementing actions and measurable changes in water bodies in IP-P5 acknowledges that there will continue to be some environmental costs, even after positive actions have been undertaken. This cost would exist under Option 2 as well, but is explicitly recognised by IP-P5(6).

[19] The requirement to phase out existing over-allocation and avoid future new over-allocation has been included in the NPSFM since 2014, but has not been fully implemented by the Water Plan.

197. Table 7 below assesses the effectiveness and efficiency of the proposed provisions in achieving the objectives.

Table 7: Effectiveness and efficiency assessment – Environmental practice

	Effectiveness
Option 1	The policies in Option 1 will provide clear expectations around how resources will be used at a topic specific. This package is considered to be effective at achieving the objectives in the pLWRP.
Option 2	The policies in Option 2 provide clear expectations around how resources will be used in a manner that ensures the objectives of the pLWRP can be achieved. This package is considered to be effective at achieving the objectives in the pLWRP.
Option 3 (preferred option)	Option 3 have the same effectiveness consideration as Option 2 (set out above). Option 2 is considered to be more effective at achieving the objectives of the pLWRP as it provides some additional detail around providing for all well-beings captured by Te Mana o te Wai, acknowledging the time required to see measurable changes in water bodies, and providing some additional direction for renewable electricity generation.
	Efficiency
Option 1	Option 1 is considered to be an efficient way of achieving the objectives of the pLWRP. However, it is compared to be less efficient than Options 2 or 3, given there is likely to be duplication in the provisions between topics. This duplication, alongside any possible conflict is resolved by having the direction in the IM chapter, as per Options 2 and 3.
Option 2	Ensuring environmental practice and resource use is appropriate, as guided by the provisions of Option 2 will have environmental and cultural benefits, with some social and economic benefits associated with achieving the environmental benefits. Option 2 also provides certainty to resource users, particularly in the consenting space, with clear limits on resource use and the objectives for freshwater health. There will be costs associated with the implementation of Option 2, particularly where activities are not currently implementing the practices required by the pLWRP provisions. The benefits of implementing Option 2 are considered to outweigh the costs and Option 2 is considered to be an efficient way of achieving the objectives.
Option 3 (preferred option)	Option 3 will have the same efficiency considerations as Option 2 (set out above), and in addition Option 3 is considered to be a more efficient way of achieving the objectives compared to Option 2, due to the additional certainty as a result of implementing the feedback received from Clause 3 parties.

8.10. Risk of acting or not cting

198. 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.

199. The risk of not acting is that there remains uncertainty about how the requirements of the NPSFM to phase out over-allocation (which have been included in the NPSFM since its 2014 iteration) are implemented in Otago, as the Water Plan does not explicitly require this or set out a pathway for achieving it. The increasing pressure on water resources will not be adequately managed leading to further overallocation and existing over allocation will continue resulting in the continued decline in freshwater ecosystem health. Although there is some uncertain information associated with the implementation of Option 3 of the pLWRP provisions, particularly around the costs to existing resource users and consent holders in

hasing out over-allocation, the risk of acting is considered to be minimal compared to the status quo.

8.11. Conclusion

200. The effectiveness and efficiency assessments have shown that overall, Option 3 is a more effective and efficient way to implement the objectives of the pLWRP.

9. Natural form and character

9.1. Introduction

201. Section 6(a) of the RMA requires recognising and providing for the preservation of the natural character of wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development, as a matter of national importance.

202. Clause 3.24 of the NPSFMsets out direction on the management of the loss of extent or values of rivers. It requires the specified policy (or words to the same effect) to be included in a regional plan which sets out that the loss of river extent and values is avoided, unless there is a functional need for the activity in that location and the effects are managed by applying the effects management hierarchy. Clause 3.24(3) provides a consenting pathway for particular activities that would result in the loss of extent or values of a river and clarity on how effects are to be managed.

203. Natural form and character is also a value listed in Appendix 1B of the NPSFM that must be considered when identifying values in FMUs. IO-O3 in the pLWRP sets out the long-term visions[20] and environmental outcomes for Otago. This includes that for natural form and character, freshwater bodies and their riparian margins behave in a way that reflects their natural form and character to the extent reasonably practicable and supports the natural form and character of connected receiving environments. This value was identified in all of Otago's FMUs and rohe.

204. This sub-topic relates to the policies in the IM chapter of the pLWRP that seek to implement this direction, being:

a. IP-P9 – Natural character, form and function and instream values,

b. IP-P10 – Applications relating to values and extent of rivers and natural lakes,

c. APP10 – Principles for aquatic offsetting, and

d. APP11 – Principles for aquatic compensation.

9.2. Issues

205. There are no additional issues to those described in section 3 above.

[20] LF-FW – Fresh water Chapter of the pORPS.

9.3. Status quo policy context (including operative plan provisions)

206. The status quo for this topic is described in section 4.1 above.

9.4. Objectives

207. The objectives for this option are those described in section 5 above.

9.5. Discounted options

208. The option of having no specific policies in the pLWRP for managing natural form and character was discounted because it was not considered to give effect to:

a. Section 6(a) of the RMA, which requires recognising and providing for the preservation of the natural character of wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development, or

b. The requirement in clause 3.24 of the NPSFM to include the policy specified in clause 3.24(1) relating to the loss of values of rivers which is defined[21] as including any value identified under the NOF process (which, in Otago, includes the value for 'natural form and character' which has been identified in all FMUs and rohe), or

c. Policy LF-FW-P13 of the pORPS which sets out how the natural character and instream values of lakes and rivers are to be preserved.

209. While the current RPW framework has some policy direction for managing natural form and character the status quo has also been discounted as a reasonably practicable option given the issues identified in section 4.2 above.

9.6. Reasonably practicable options

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

a. **Option 1:** implement the NPSFM

b. **Option 2:** expand NPSFM direction to include natural lakes (preferred option)

211. These options are discussed in more detail below.

9.6.1. Option 1: implement the NPSFM

212. Option 1 is to implement the above direction in the RMA in relation to natural character along with the NPSFM direction in relation to avoiding the loss of extent or values of a river.

213. To implement the RMA direction, this option includes policy direction on the protection of natural character of water bodies from inappropriate use and development. This direction sets out that this protection will be achieved in a number of ways, including by:

a. maintaining ecological processes for ecosystems and indigenous species;

b. providing sufficient flow and water quality to support the life cycles and habitats of indigenous species;

[21] See clause 3.21(1), NPSFM for the definition of 'loss of value'.

c. ensuring the natural movement, connections, and flow variability of water bodies, and that flows and levels contribute to maintaining or improving water quality;

d. preventing modification that would permanently reduce the extent of braiding of a river; and

e. maintaining or enhancing riparian margins.

214. For this Option, the pLWRP would also include the relevant policy direction in clause 3.24 of the NPSFM to avoid the loss of extent or values for rivers, along with the NPSFM requirements in relation to consent applications for activities that would result such losses.

9.6.2. Option 2: expand NPSFM direction to include natural lakes (preferred option)

215. Option 2 implements the RMA direction on the protection of natural character in the same way as Option 1 above. Option 2 would also include the NPSFM policy direction on avoiding the loss of extent or values of rivers, but would expand this direction to apply to natural lakes as well.

216. 'Natural lake' is defined in the pLWRP as a lake that is not a controlled lake (i.e. Lakes Hāwea, Dunstan, Falls Dam) or an off-stream artificial lake (i.e. a storage pond). Natural lakes are managed more conservatively under the pLWRP (for example, in relation to water quantity and damming) than other types of lakes, reflecting their generally unmodified nature and high values. Some natural lakes are already protected by WCOs or other statutes (i.e. Lake Wānaka Preservation Act), or are protected because they are identified as outstanding water bodies.

217. The NPSFM (and Option 1 above) provide a consent pathway for activities that do affect the loss of extent or values of a river. Adopting this approach for natural lakes is consistent with the approach to managing the levels and take limits of these lakes in the pLWRP, which is to generally only allow small takes, to protect their values. If this approach is not adopted, additional direction will likely be required on managing natural lakes.

218. This direction is set out in IP-P9 (natural character, form and function and instream values) and IP-P19 (applications relating to values and extent of rivers and natural lakes).

9.7. Clause 3 consultation feedback

219. There was overarching support of the policies related to natural form and character from the clause 3 parties and the majority of the feedback recognised that these policies were a mandatory requirement of implementing the RMA and NPSFM, subject to a number of minor requested amendments.

220. Some parties supported applying the same approach to natural lakes given the significance of Otago's natural lakes. They considered it is more consistent and efficient to treat rivers and lakes in the same way.

221. One party also sought that the policy also apply to natural wetlands. No changes were made (or considered to be necessary) in response to this feedback as policies relating to wetlands are in the WET chapter of the pLWRP, including (as required by the NPSFM) a policy on managing the loss or extent of natural inland wetlands.

222. Some parties considered that only the NPSFM direction (i.e. for rivers) should be implemented, with a separate approach for natural lakes. These parties have not specified

what an alternative approach for natural lakes would look like and no changes were made to the policies in response.

223. In relation to the policy direction on natural form and character, Kāi Tahu ki Otago sought that the policy explicitly refer to wetlands and to the contribution of natural processes to ecosystem health. This feedback was included in the amendments to the policy (now IM-P9).

224. One party opposed the policy direction on natural character and sought that it be deleted. This feedback stated that the NPSFM sets out the matters contributing to the natural form and character of an FMU and the policy is not necessary given that content and the view that Otago's waterbodies are highly modified. The NPSFM only describes what a value for natural form and character would look like, but it does not contain any specific policy direction for achieving this. It was considered that deleting this policy would leave a significant gap in setting out how the environmental outcome for this value would be achieved and would not be consistent with the pORPS or implement the objectives of the pLWRP.

9.8. Clause 4A consultation feedback

225. The feedback provided by iwi authorities was to consider restructuring IP-P9 so that clause (1) was moved below the clauses describing what needed to occur to protect the values.

226. Clause (1) implements clause 3.24 of the NPSFM, which is the primary way the NPSFM manages effects on the values of rivers. It is considered more appropriate and more visible for this clause to be the first in the policy. No change was made to the provision for this reason.

9.9. Effectiveness and efficiency assessment

227. Table 8 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in each option.

Table 8: Benefits and costs for Natural form and character

	BENEFITS	COSTS
Option 1	▪ Environmental benefits include improved water quality in downstream receiving environments, benefits for biodiversity and ecosystem health, and. These benefits can be difficult to quantify in financial terms and can be highly site-specific. ▪ Rivers are regarded as a highly valued taonga to Māori. Restricting activities that affect the natural patterns of rivers will help support mauri. Restricting the loss of extent of rivers should also help ensure that access to rivers is maintained for mahika kai and can assist with supporting Hauora and the cultural, social and economic weelbing of Kāi Tahu.	▪ Restrictions on activities that result in loss of values may mean some activities cannot occur which could result in economic and social costs. ▪ Implementing the effects management hierarchy will likely result in increased costs for applicants. These costs are difficult to quantify as they will depend on design, land topography, ecological values present. ▪ The exception / consenting pathway for activities that will result in river loss means that some river loss may still occur, which may result in environmental, cultural and social cost. ▪ This option will mean there will be a policy gap in the management of natural lakes, which will result in uncertainty and

	BENEFITS	COSTS
	▪ Protecting the natural form and character of waterbodies will help support river habitat and freshwater ecosystems, and in turn a range of freshwater biodiversity and species, which will result in environmental benefits. The protection of river habitat will also support human use values. ▪ Preventing river loss will preserve natural capital and retain river capacity that can contribute to natural flood attenuation, stormwater management and other ecosystem services. ▪ There continues to be a consenting pathway provided in the policy framework, which has a high threshold for exemptions. This will enable some activities to occur, which ensures that there will not be significant impacts on people and communities (Harrison Grierson, 2020) ▪ Social (and some economic) benefits enjoyed by the wider community are likely to include amenity, the use of rivers for recreation and river transport, resilience to natural hazard risk, reduced pressure on stormwater infrastructure and opportunities for people to be better connected to the natural environment These benefits can be difficult to quantify in financial terms, and can be highly site-specific.	potential inconsistent approaches being applied at the consenting stage.
Option 2 (preferred option)	▪ The benefits listed above will also be expanded to apply to natural lakes. ▪ In addition, there will be policy direction in the management of natural lakes, which will increase certainty and consistency in the management approach to natural lakes compared to Option 1.	▪ The costs listed above will also apply to natural lakes.

228. Table 9 below assesses the effectiveness and efficiency of the proposed provisions in achieving the objectives.

Table 9: Effectiveness and efficiency assessment – Natural form and character

	Effectiveness
Option 1	Option 1 will be effective at achieving the objectives in relation to natural form and character and avoiding the loss of values or extent of rivers. However, it does not include specific protection and direction for the management of natural lakes. This means there is

	some uncertainty about how effective Option 1 will be in relation to the protection of the values of natural lakes.
Option 2 (preferred option)	Due to the values associated with natural lakes, it is considered that specific policy direction is required to protect the values of natural lakes, and that this direction should not be less stringent than for rivers. Natural lakes with the highest values have been identified as outstanding water bodies and are therefore subject to more stringent policy direction to protect their values. Option 2 is consistent with this approach and is more effective at achieving the objectives (and implementing section 6 and the NPSFM) compared to Option 1.
	Efficiency
Option 1	Option 1 will be efficient in relation to rivers as it implements the NPSFM requirements. However, it does not provide specific direction in relation to the management of the values of natural lakes, which means that these water bodies will be treated differently in the pLWRP despite having similar values as rivers and is considered to be less efficient than Option 2 in this regard.
Option 2 (preferred option)	Option 2 builds on Option 1 by providing clear policy direction for the management of natural lakes. Adopting a consistent approach to managing adverse effects for rivers and natural lakes will also reduce the potential for inefficiencies in implementation. This approach is also consistent with the approach to managing natural lakes in other parts of the pLWRP (e.g. managing the levels and take limits of natural lakes is more stringent compared to other lakes). Option 2 is considered to be more efficient at achieving the objectives compared to Option 1.

229. 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 some uncertainty because overall the benefits of maintaining natural environments are difficult to quantify and costs will vary with design decisions. In this case, the relevant provisions in the IM – Integrated management chapter (IP-P9 and IP-P10) directly respond to the requirements in section 6 of the RMA, along with mandatory direction in the NPSFM. The risks associated with not acting in the manner proposed is that there is limited specific guidance on how the natural form and character of waterbodies is to be protected. The risk of not acting is that the gradual loss of river habitat is expected to continue, and the objectives are not achieved through the lack of a specific supporting policy direction. Further, Option 2 would ensure that natural lakes are managed in a manner consistent with rivers. Overall, the information supporting Option 2 is suitably certain and sufficient that there is a minimal risk of acting compared to the status quo.

9.10. Conclusion

230. The effectiveness and efficiency assessments have shown that overall, Option 2 is the most efficient and effective way to achieve the objectives of the pLWRP and to implement the RMA and the NPSFM.

10. Outstanding water bodies

10.1. Introduction

231. Protecting the significant values of outstanding water bodies is required by Policy 8 of the NSFM 2020. Identifying and protecting the significant and outstanding values of outstanding water bodies is also required by LF-FW-P11 and LF-FW-P12 in the pORPS 2021. Provisions implementing this direction are primarily included in the IM – Integrated management chapter of the pLWRP. The scope of issues covered in this section of the report will be focussed on issues specific to outstanding water bodies. Refer to section 2 of this report for an evaluation of the broader issues regarding freshwater.

232. As defined in the NPSFM, an outstanding water body is a water body, or part of a water body, that has been identified in a regional policy statement, a regional plan, or a water conservation order as having one or more outstanding values. The NPSFM also sets out the requirements for councils to identify OWBs and protect their significant values:

a. Clause 3.8(3)(d): Every regional council must identify any outstanding water bodies (if present) within each FMU.

b. Policy 8: The significant values of outstanding water bodies are protected.

233. The NPSFM does not provide direction on what these significant values are or how they are to be protected. Therefore, the regional council must determine these values in the context of their own regions, as well as identify how to protect them. This is particularly relevant for Otago due to the diversity and high values of water bodies across the region, compared to the rest of the country. Policy LF-FW-P11 and APP1 of the pORPS set out the criteria for identifying outstanding water bodies and there is direction in LF-FW-P12 to identify OWBs and their significant and outstanding values in the relevant regional plans, and to protect those values.

234. The provisions evaluated in this section are:

a. Policy IP-P11 – Outstanding water bodies;

b. Policy IP-P12 – Improved information on outstanding water bodies;

c. Any conditions of permitted activity rules or matters of control or restricted discretion relating to OWBs;

d. SCHED1 – Outstanding water bodies; and

e. MAP [OWB] – Outstanding water bodies

10.2. Issues

235. In addition to the issues described in section 3 of this chapter, the experts commissioned to identify Otago's outstanding water bodies were also asked to outline the key threats to the values of these water bodies. They identified the threats in the following categories::

a. Threats to recreation values,

b. Threats to ecological values, and

c. Threats to physical, landscape, and natural character values.

236. The sections below describe these issues in more detail.

237. Additional issues with the status quo policy context that the outstanding water bodies provisions in the pLWRP seek to address are outlined in 'Status quo policy context (including operative plan provisions)' section below.

10.2.1. Threats to recreation values

238. Recreation values can arise from a number of activities, including white water kayaking, jet boating, rafting, angling, whitebaiting, and packrafting. The threats to these activities are different as they occur at different times, places, and ways. Key threats to these activities, and recreation values more generally, are described by (Greenaway & Hughey, 2024)as including :

a. In-stream structures.

b. Low flows.

c. Poor water quality and biosecurity risks (such as the presence of invasive species like didymo).

d. Road construction or river protection works adjacent to water bodies.

e. Floods that affect river channel form.

f. Access restrictions.

g. Conflicts with other activities, including commercial operators and nearby residents.

h. Low flows, which impact white water kayaking

10.2.2. Threats to ecological values

239. Ecological values may arise in relation to a range of species, including fish, birds, and plants. Like recreation values, different species can be impacted by different activities however there is some commonality across all species (such as water quality). Key threats are described by (Allibone R. , 2024), (Doheny, 2024), and (O'Connell-Milne, 2024) as including:

a. Natural and man-made fish passage barriers (noting that these can also be beneficial when they prevent incursions by species that would otherwise predate on indigenous species).

b. Drought and flood events.

c. Poor water quality.

d. Presence of introduced species (including fish, mammals, and plants).

e. Physical modifications, including river and stream crossings.

f. Water abstractions, because of the impact on flows as well as the potential for entrainment.

g. Human over-extraction.

h. Drainage of wetlands.

10.2.3. Threats to physical, landscape, and natural character values

240. The threats to these values are often the same, therefore they are described together in this section. Key threats are described by (Boffa Miskell Limited, 2024b) as including:

a. General channel shape realignment.

b. Erosion and flood protection structures, including permeable groynes, rock groynes, gabion baskets, riverbank rock lining, and gradient control structures and weirs.

c. Channel maintenance and realignment.

d. Flow reduction and water abstraction.

e. Invasive species.

f. Water quality.

g. Vegetation on banks.

h. Drainage of wetlands.

10.3. Status quo policy context (including operative plan provisions)

241. In addition to the provisions described in section 4 of this chapter, there are two further issues with the planning framework in relation to this topic:

a. The Water Plan does not give effect to the NSPFM, and

b. The Water Plan does not have regard to or give effect to the pORPS.

10.3.1. The Water Plan does not give effect to the NSPFM

242. The Water Plan does not identify or manage outstanding water bodies as defined in the NPSFM. Rather, the plan refers to 'outstanding natural features and landscapes associated with lakes and rivers,' which responds to the direction in s6(b) of the RMA but does not address the other values that an outstanding water body may be identified as having per the definition in the NPSFM. The provisions that address these outstanding natural features and landscapes are:

a. Issue 5.2.1 – Recognises that the use and development of Otago's water resources, lakes and rivers may have the potential to adversely affect outstanding natural features and landscapes.

b. Policy 5.4.1 – Identifies natural and human use values supported by Otago's lakes and rivers, as expressed in Schedule 1.

c. Policy 5.4.2 – For activities involving surface water, groundwater or the bed or margin of any lake or rivers, priority must be given to remedying or mitigating adverse effects on natural values identified in Schedule 1A (amongst other requirements).

d. Policy 5.4.5 – Recognises the Water Conservation (Kawerau) Order 1997.

e. Policy 5.4.5A – Recognises the Water Conservation (Mataura River) Order 1997.

f. Anticipated environmental result 5.5.2 – Outstanding natural features and landscapes associated with lakes and rivers are protected from inappropriate use and development of water and land resources.

g. Schedule 1A – Identifies some of the natural values of Otago's lakes and rivers.

h. A permitted activity condition in the BED chapter for the erection or placement of a structure includes a condition regarding a lake or river identified in Schedule 1A as being an "outstanding natural feature or landscape."

243. The Water Plan highlights that Part 4 of the RMA provides for water conservation orders to be made where there are waters of outstanding amenity or intrinsic value, and that there are two in place which are wholly or partly in Otago: the Water Conservation (Kawarau) Order 1997 and the Water Conservation (Mataura River) Order 1997.

244. Chapter 5 of the Water Plan provides for the natural and human use values supported by Otago's lakes and rivers and their margins. Some of these particular values are identified in Schedule 1 and separated according to categories:

a. Schedule 1A (Ecosystem values, outstanding natural features and landscapes, significant habitat of indigenous fauna and significant indigenous vegetation and the degree of development/degree of naturalness);

b. Schedule 1B (Water supply values);

c. Schedule 1C (Registered historic places); and

d. Schedule 1D (Spiritual and cultural beliefs, values and uses of significance to Kāi Tahu).

245. Schedule 1 does not specifically identify all natural character, amenity, existing lawful uses, or heritage values as it is considered that every lake and river contains these values to some degree, and most are, or have been, used for economic, cultural and social benefit in some way.

246. The values identified in Schedule 1A are considered to have "considerable intrinsic worth," while the values in Schedule 1B, Schedule 1C, and other values in Chapter 5 (such as natural character and amenity) are considered human use values which "involve those elements which involve either active or passive human use of water resources."[22]

247. While the policies reference Schedule 1A and natural and human use values, there is little connection to the rules, aside from a permitted activity rule (Rule 13.2.1.1) in the BED chapter:

13.2.1.1 - The erection or placement of any fence, pipe, line or cable over the bed of a lake or river, or a Regionally Significant Wetland, is a permitted activity, providing:

(a) The fence, pipe, line or cable does not cross a lake or river identified in Schedule 1A as being an "Outstanding natural feature or landscape" unless it is attached to an existing lawfully established support structure; and …

10.3.2. The Water Plan does not give effect to or have regard to the pORPS

248. The pORPS has been developed to give effect to the requirements of the NPSFM which, as mentioned above, includes the identification of OWBs and the protection of their significant

[22] Water Plan, pg. 5-3.

values. Therefore, the pORPS sets out the following provisions for the identification and protection of OWB:

a. LF-FW-O8 – Fresh water-requires that the significant and outstanding values of Otago's OWBs are identified and protected.

b. LF-FW-P11 – Identifying outstanding water bodies-identifies several outstanding water bodies in Otago (those that are protected by an existing water conservation order or by the Lake Wānaka Preservation Act 1973) as well as providing direction for the identification of other OWBs in accordance with APP1.

c. LF-FW-P12 – Protecting outstanding water bodies- requires that the significant and outstanding values of outstanding water bodies are identified in the relevant regional and district plans, and protected.

d. LF-FW-M5 – Outstanding water bodies- outlines the actions to be taken by ORC, including:

    i. Undertaking a review, in partnership with Kāi Tahu, based on existing information and developing a list of water bodies likely to contain outstanding values (including those water bodies listed in LF-FW-P11);

    ii. Identifying the outstanding values of those water bodies (if any) in accordance with APP1;

    iii. Consulting with the public during the identification process;

    iv. Mapping outstanding water bodies and identifying their outstanding and significant values in the relevant regional plan(s); and

    v. Including provisions in regional plans that protect the significant and outstanding values of outstanding water bodies.

e. APP1 – Criteria for identifying outstanding water bodies - lists the values and sub-values which may be considered outstanding: ecology; landscape; natural character; recreation; and physical.

249. As discussed earlier, the Water Plan does not refer explicitly to outstanding water bodies and therefore does not identify or seek to protect them, but it does refer to 'outstanding natural features and landscapes associated with lakes and rivers.' This is not an equivalent term, as the Water Plan is referring to those areas that have been identified (through a unique process) as an outstanding natural feature and landscape (ONFs and ONLs) which is then associated with lakes and/or rivers. This is only one type of value and does not reflect the range of values a water body may have that may be outstanding, such as their ecological or recreational value.

250. Policy 8 of the NPSFM requires that the significant values of outstanding water bodies are protected, however it does not provide direction on how these values are to be protected. The pORPS has expanded on the direction provided in the NPSFM, by providing criteria by which OWBs can be identified and policies regarding their protection. However, there is still discretion for the pLWRP to manage activities within or affecting outstanding water bodies as appropriate.

251. Some water bodies which are outstanding water bodies due to being protected by a water conservation order are recognised in the Water Plan, however these are water bodies which

already have their own protection measures set out in the relevant water conservation order. For example:

a. the Water Conservation (Kawerau) Order 1997 is recognised in Policy 5.4.5; and

b. the Water Conservation (Mataura River) Order 1997 is recognised in Policy 5.4.5A

10.4. Objectives

252. The objectives for this option are those described in section 5 above.

10.5. Overview of sub-topics for outstanding water bodies

253. There are two aspects to the provisions for outstanding water bodies in the pLWRP: firstly, the process undertaken to identify outstanding water bodies and, secondly, the specific approach to managing those identified outstanding water bodies. Different options were developed for these two sub-topics, and therefore, they are addressed separately in this part of the report.

10.6. Sub-topic: identifying outstanding water bodies

10.6.1. Discounted options

254. The process to identify outstanding water bodies was iterative. An original assessment was undertaken in April 2023, followed by three further reassessments. Each reassessment refined the previous assessment or reassessment and replaced it as an option. As a result, there are three discounted options:

a. **Discounted option 1:** Original assessment (April 2023);

b. **Discounted option 2:** First reassessment (mid-2023);

c. **Discounted option 3:** Second reassessment (late 2023);

255. These options and the reasons they were discounted are discussed below. They provide a foundation for the preferred option and therefore should be read alongside that option.

256. The third round of reassessment (June 2024) contains the most up to date and accurate assessments, and is therefore the only reasonably practicable option.

10.6.1.1. Discounted option 1: Original assessment (April 2023)

257. In early 2023, ORC commissioned a project to identify outstanding water bodies using the criteria set out in the notified version of the PORPS (set out above). Draft reports were delivered in April 2023.

258. In accordance with the notified version of Policy LF-FW-P11 in the pORPS, all water bodies that fell within an area identified as an outstanding natural landscape or outstanding natural feature by a territorial authority automatically qualified as an outstanding water bodies for landscape reasons. As a result, a large number of water bodies were identified as candidates for being outstanding, particularly for the landscape and natural character values, as shown in Table 10 (Boffa Miskell Limited, 2023). An overall summary is not included because the same water bodies were often identified multiple times for multiple values – for example,

Whakatipu-Waimāori/Lake Wakatipu was identified as having outstanding ecological, landscape, and recreation values and therefore appears in the numbers in each of those columns.

Table 10: Overall numbers of OWB's identified for each value (APP1 criteria as notified) (Boffa Miskell Limited, 2023).

Assessment	Ecology	Landscape	Natural character	Recreation	Physical
Original assessment	49*	824*	634*	46	35

* In addition to unnamed tributaries or tarns

259. At the time the assessment occurred, submitters on the pORPS were also raising concern with Policy LF-FW-P11 and whether it was appropriate to assume that a water body had outstanding values in and of itself by virtue of being included in a wider area deemed to have outstanding value. The large number of water bodies identified for landscape value emphasised these concerns. It was not clear that there was sufficient justification to demonstrate that all of those water bodies were outstanding in their own right.

10.6.1.2. Discounted option 2: First reassessment (mid-2023)

260. This option adopts the identification that occurred under Option 1 with some amendments. To address the concerns raised by submitters on the pORPS about the suitability of Policy LF-FW-P11, amendments were recommended by ORC planning witnesses to this policy and the criteria in for identifying outstanding water bodies in APP1. The changes were, in summary:

a. To remove the clause in LF-FW-P11 stating that any water body identified as being wholly or partly within an outstanding natural feature or landscape was to be considered an outstanding water body, and instead relying on an assessment of the landscape value(s) of water bodies under APP1; and

b. A range of amendments to APP1 (shown below).

261. The amendments to APP1 are shown in Table 11 below, with the recommended changes shown in strike-out and underline. The reasons for the amendments are set out in the relevant Reply Report for the PORPS (Boyd,).

Table 11: Planning recommendations for amendments to APP1

Values	Description	Example sub-values
~~Cultural and spiritual~~	~~A *water body* which has outstanding cultural and spiritual values.~~	~~Wāhi tapu, wāhi taoka, wai tapu, rohe boundary, battle sites, pa, kāika, tauraka waka, mahika kai, pa tuna; and acknowledged in korero tuku iho, pepeha, whakatauki or waiata~~
Ecology	A *water body* which has outstanding ecological value as a habitat for: • Native birds • Native fish	Native birds, native fish, native plants, aquatic macroinvertebrates

Values	Description	Example sub-values
	~~• Salmonid fish~~ • Other aquatic species	
Landscape	A *water body* that: (1) is an essential ~~which forms a key~~ component of a landscape or natural feature that is "conspicuous, eminent, remarkable or iconic" within the region, and ~~or is critical to an outstanding natural feature~~. (2) has at least high landscape, wild and/or scenic values that contain distinctive qualities which are outstanding in the context of the region.	Scenic, association, natural characteristics (includes hydrological, ecological and geological features)
Natural character	A *water body* with high naturalness that: (1) exhibits a~~n exceptional~~ combination of natural processes, natural patterns and natural elements ~~with low levels of modification to its form, ecosystems and the surrounding landscape~~ that is exceptional in the context of the region, and (2) has little to no human modification to its form, ecosystems, and the surrounding landscape.	Natural characteristics (includes hydrological, ecological and geological features)
Recreation	A *water body* which is recognised as providing an outstanding recreational experience for an activity which is directly related to the *water*.	Angling, fishing, kayaking, rafting, jetboating
Physical	A *water body* which has an outstanding geomorphological, geological or hydrological feature which is dependent on the *water body's* condition and functioning~~.~~	Science

262. These amendments were discussed with the experts involved in the outstanding water body identification project. As there were no amendments recommended to the recreation or physical criteria, no further assessments were considered necessary. Although one amendment was made to the ecology criterion, this was consistent with the approach adopted in the identification assessments, which was based on applying Policies 9 and 10 of the NPSFM (which describe the relationship between managing trout and salmon and indigenous species) to the identification process.

263. The most significant changes to the identification criteria were, as discussed, in relation to the landscape criteria. There were also minor changes to the natural character criteria. ORC and the experts working to identify Otago's outstanding water bodies agreed to revisit the original assessments for these two values and apply the amended criteria above rather than the notified criteria.

264. The revised assessment resulted in a significant reduction in the number of outstanding water bodies identified based upon landscape values (from over 800 down to 61), and a slight reduction in the number of outstanding water bodies identified based on natural

character values (from more than 634 to more than 617), as shown in . As discussed previously, an overall summary is not included because the same water bodies were often identified multiple times for multiple values.

Table 12: Outstanding water bodies identified after first reassessment

Assessment	Ecology	Landscape	Natural character	Recreation	Physical
Original assessment	49*	824*	634*	46	35
First reassessment	49*	61	617*	46	35

* In addition to unnamed tributaries or tarns

265. Progressing with the revised assessments under Option 2 resulted in Option 1 (the original assessments) being discounted, on the basis that Option 2 was a more accurate representation of the landscape values (in particular) of the OWBs identified.

10.6.1.3. Discounted option 3: Second reassessment (late 2023)

266. This option adopts the identification that occurred under Option 2 with some amendments.

267. As outlined in Chapter 4 of this report, public engagement on draft proposals for the content of the pLWRP occurred between July and October 2023. This included the full list of outstanding water bodies identified in Option 2. A range of feedback was received on the outstanding water bodies identified. As a result, a series of questions were put to the experts who undertook the assessments, including suggestions of additional areas or water bodies.

268. The responses from the experts resulted in:

a. Removal of some water bodies previously identified as being an outstanding water body, or part of an outstanding water body; and

b. Inclusion of two additional outstanding water bodies.

269. The same criteria outlined in Option 2 were applied, however additional information provided by the public was incorporated into the assessments, resulting in the amendments to outstanding water bodies. This information was provided to the experts who, in some cases, made adjustments to their assessments in response, resulting in a change to the number of outstanding water bodies identified (see Table 13)

Table 13: Outstanding water bodies identified after second reassessment

Assessment	Ecology	Landscape	Natural character	Recreation	Physical
Original assessment	49*	824*	634*	46	35
First reassessment	49*	61	617*	46	35
Second reassessment	52*	61	617*	48	32

* In addition to unnamed tributaries or tarns

270. Progressing with the revised assessments under Option 3 resulted in Option 2 being discounted, on the basis that Option 3 included more accurate and robust assessments.

10.6.2. Reasonably practicable option: Third reassessment (June 2024)

271. The hearing panel for the pORPS made its recommendations to ORC in March 2024, largely accepting the amendments recommended by ORC's planning witness but also making additional changes to the criteria for identifying outstanding water bodies in APP1. Around this time, a further review of the list of outstanding water bodies was undertaken against the criteria in APP1 and informed by relevant case law.

272. Revised reports were received in July 2024, prior to consultation on the draft LWRP occurring under clause 4A of Schedule 1 of the RMA. Table 14 below summarises the changes in overall numbers of water bodies identified.

Table 14: Outstanding water bodies identified after third reassessment

Assessment	Ecology	Landscape	Natural character	Recreation	Physical
Original assessment	49*	824*	634*	46	35
First reassessment	49*	61	617*	46	35
Second reassessment	52*	61	617*	48	32
Third reassessment	42*	61	70*	27	32

* In addition to unnamed tributaries or tarns

10.6.3. Clause 3 consultation feedback

273. There was relatively limited feedback on outstanding water bodies provided during consultation under clause 3 of Schedule 1 of the RMA. Table 15 below outlines the feedback received and the response to that feedback.

Table 15: Clause 3 feedback on identifying outstanding water bodies

Feedback	Response
Opposition to the lack of identification of īnanga spawning sites.	No changes made. The identification of outstanding ecological values considered inanga spawning areas and some are included on the basis that their values are outstanding (for example, Waihora/Lake Waihola and tributaries). Others did not meet the threshold to be considered outstanding and are therefore not identified as outstanding water bodies.
There has been insufficient consideration given to the aesthetic and amenity values when identifying outstanding water bodies. The identification criteria should be expanded.	No changes made. Identification has occurred using the criteria set out in APP1 of the pORPS. As set out in (Boffa Miskell Limited, 2024b), identification of landscape values has occurred in line with best practice guidance, currently contained in Te Tangi a te Manu. That guidance states that landscapes have three overlapping dimensions: Physical: the physical environment – its collective natural and built components and processes Associative: the meanings and values we associate with places Perceptual: how we perceive and experience places The associative and perceptual elements incorporate aesthetic and amenity values as sought by the party.
Opposition to the removal of a number of previously identified outstanding water bodies: • Von Valley Wetland • Fortification Creek Wetland • Te Paruparu a te Kaunia • Swampy Summit Swamp • Sutton Lake • Mauka Atua • Patearoa • Upper Taiari • Waikōuaiti Estuary • Papanui Inlet • Tahakopa River Bog and estuaries	These water bodies were left out of the schedule in error and have been re-included.
The following water bodies were not identified as outstanding water bodies:	The following water bodies were identified as outstanding water bodies: • Roaring Lion Creek – included in the Nevis River OWB identified for outstanding ecological values.

Feedback	Response
• Roaring Lion Creek (Dunstan) • Cardrona and Lindis River (Dunstan rohe) • Ida Burn (Manuherekia) • Thompson Creek (Manuherekia) • Upper Waitahuna (Lower Clutha rohe) • Tuapeka (Lower Clutha rohe) • Glenomaru (Lower Clutha rohe) • Little Glenomaru (Lower Clutha rohe) • Puerua (Lower Clutha rohe)	• Lindis River – portion upstream of Station Creek has outstanding landscape values. • Cardrona River has outstanding landscape values. • Ida Burn has outstanding landscape values (at Poolburn Gorge). Thomson's Creek, Upper Waitahuna, Tuapeka, Glenomaru, Little GLenomaru, and Puerua Rivers were not considered to meet the criteria in APP1 of the pORPS.
Opposition to the identification of the Clutha River/Mata-au on the basis of being a natural feature/landscape. Request for the modification of the river to be noted in the plan, along with a clarification that the artificial lakes created by the Scheme are not "natural features".	No changes made. Section 2 of the RMA defines "water body" as "fresh water or geothermal water in a river, lake, stream, pond, wetland, or aquifer" and "lake" as "a body of fresh water which is entirely or nearly surrounded by land." An artificially created lake is not excluded from being identified as an outstanding water body on the basis of not being "natural" because it is still within the definition of a "lake" (and therefore a "water body"). Lake Dunstan has been identified for its landscape values and the description of its values include recognition of the modification of the area due to the Clyde Dam. The stretch of the Clutha River/Mata-tau containing Lake Roxburgh has not been identified as an outstanding water body.
Concern that Deep Stream reservoir has been identified as an outstanding water body on the basis of an old 'stream' line on the mapping, however the stream is no longer in place (due to the construction and operation of the reservoir).	This was a mapping error – the reservoir is not identified as an outstanding water body. Amendments have been made to the mapping to remove the portion of the line that extends into the reservoir.
Lake Wakatipu entry should record that it is a national significant sports fishery in the Otago Sports Fish and Game Management Plan.	Amendments made to recognise this water body is nationally significant for angling and has previously been assessed as having outstanding fishery values. Specific reference to the Otago Sports Fish and Game Management Plan was not considered necessary.
The Hunter River, both up and downstream of the branches should also be identified as outstanding as it is a nationally significant sports fishery in the Otago Sports Fish and Game Management Plan.	Amendments made to recognise this water body is nationally significant, and has outstanding value, for angling. Hunter River is recorded in (Greenaway & Hughey, 2024) as having nationally significant fishery values but was not considered to meet the threshold for being outstanding. Specific reference to the Otago Sports Fish and Game Management Plan was not considered necessary.

Feedback	Response
The three significant Otago fisheries on hydro-electric generation lakes should be identified as outstanding: Lakes Onslow, Dunstan and Hawea. Of these, Dunstan and Hawea are nationally significant fisheries. Lake Onslow is regionally significant but widely viewed by the angling community as outstanding for its high catch rate.	Amendments made to include Lake Hāwea due to its nationally significant angling values. Lake Dunstan is recorded in (Greenaway & Hughey, 2024) as having nationally significant values for angling, however this was not considered to meet the threshold of being outstanding. Similarly, Lake Onslow is recorded as having regionally significant angling values and therefore did not meet the threshold for being considered outstanding.
Since the development of the Otago Sports Fish and Game Management Plan, the Dingle Burn, Wilkin River, Young River and upper Pomahaka (upstream of the Hukarere Station Bridge on Hukarere Station Road) have been formally recognised for their backcountry characteristics and have become designated waters. This designation comes with specific rules designed to protect their outstanding characteristics. While they are not listed as nationally significant in the Otago Sports Fish and Game Management Plan, they should be categorised as outstanding.	Wilkin River downstream of Newland Stream is recorded in (Greenaway & Hughey, 2024) as having outstanding recreation value for jetboating and is therefore included as an outstanding water body. The Wilkin River both upstream and downstream of Newland Stream (including North and South Branches) are recorded as having regionally significant angling values. The Wilkin River downstream of Newland Stream is identified as having outstanding recreation values for jetboating and is therefore an outstanding water body. Dingle Burn, Young River, and Poumāhaka River are recorded in (Greenaway & Hughey, 2024) as having regionally significant angling values but did not meet the threshold for being considered outstanding.
The upper Manuherekia (above Falls Dam) and Dunstan Creek (above Loop Road) should be recognised as outstanding fisheries for the backcountry characteristics.	No amendments made. Dunstan Creek (upstream of St Bathans) is recorded in (Greenaway & Hughey, 2024) as having regional fishery values but did not meet the threshold for being considered outstanding.
Lake Tuakitoto entry should recognise the categorisation in the Otago Sports Fish and Game Management Plan as being regionally significant waterfowl habitat.	No amendments made. The description of this water body already states that it is a “regionally and nationally important habitat for waterfowl, waders and swamp birds.”
The Waihola/Waipori wetland/lake complexes entry should recognise their categorisation in the Otago Sports Fish and Game Management Plan as being nationally important waterfowl habitat.	Amendment made.
Based on F&G staff experience, a small number of water bodies should be identified as outstanding on the grounds	These water bodies were assessed by (Greenaway & Hughey, 2024) and not considered to meet the threshold for being considered outstanding.

Feedback	Response
of game bird hunting opportunities: Lake Tuakitoto, Waihola/Waipori, the Lower Clutha and Lake Dunstan.	
Request for Lake Onslow and the associated wetland complexes to be identified as an outstanding water body.	No changes made. Lake Onslow is discussed in Allibone (2024) and was not considered to meet the threshold for being 'outstanding' for its ecological values.
Request for upper Trotters Creek to be identified as an outstanding water body.	No changes made. Trotters Creek is discussed in Allibone (2024) and was not considered to meet the threshold for being 'outstanding' for its ecological values.
Support for the identification of Māori Creek and Bickerstaffe Creek (Manuherekia rohe) as outstanding water bodies.	Support for Bickerstaffe Creek noted. Māori Creek was removed from SCHED1 as a result of the third reassessments undertaken in June 2024 because it was not considered to meet the threshold for being considered outstanding.
Support for grouping the Waipōuri wetland complex with its tributaries.	Support noted.

10.6.4. Clause 4A consultation feedback

274. No clause 4A feedback was received on outstanding water bodies.

10.6.5. Effectiveness and efficiency assessment

275. Table 16 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the reasonably practicable option above (Third reassessment (June 2024)).

Table 16: Benefits and costs for identifying outstanding water bodies

BENEFITS	COSTS
▪ Ensures ORC is fulfilling its obligations to implement the NPSFM and the pORPS 2021. ▪ Reduces costs for resource users and members of the community who may otherwise face the costs of identifying whether a water body has outstanding values on an ad hoc basis. ▪ May reduce the administrative costs of complying with the NPSFM and pORPS by assisting plan users to understand where these water bodies are and the values they hold. ▪ Ensures a regionally consistent approach to identification has been taken, rather than ad hoc assessments as/when activities occur in water bodies that may be considered outstanding. ▪ Assists with developing clear and certain plan provisions for managing these water bodies.	▪ There has been a cost to ratepayers to gather information and undertake the assessments required to identify outstanding water bodies. ▪ Exact boundaries of outstanding water bodies, or the extent and type of values they hold, may change over time. Including this information in a regulatory document such as the pLWRP makes it more difficult and costly to update this information in the future due to the need for a formal plan change in accordance with the RMA. ▪ As the identification process has been desk-based, there may be inaccurate or incomplete information. This may result in additional costs for resource users or members of the public if there is a need to confirm the existing information.

276. Table 17 below assesses the effectiveness and efficiency of the reasonably practicable option for identifying outstanding water bodies in achieving the objectives.

Table 17: Effectiveness and efficiency assessment for identifying outstanding water bodies

Effectiveness	In order to achieve the objectives listed in section 5 of this Chapter., the significant and outstanding values of outstanding water bodies need to be protected. Identifying these water bodies and their values in the pLWRP will ensure that any provisions for managing them can be applied in a clear and certain way. For this reason, the reasonably practicable option is considered effective.
Efficiency	The reasonably practicable option is considered to have allocative and productive efficiency because the costs are incurred by ORC on behalf of all members of the public and users of resources in Otago, rather than on an individual, ad hoc basis. This reflects that their values are experienced by many people, not only those undertaking activities in or near the water bodies. However, dynamic efficiency may be low due to the cost and time involved in updating the pLWRP to reflect updated information in the future.

10.6.6. Risk of acting or not acting

277. 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. The identification process has been based on desktop investigations rather than on-ground investigations. This means there is an element of uncertainty about the extent to which the mapped extents align with the values identified. This risk will always be present when mapping values, as there is often not a clear delineation between where the presence or significance of a value changes. This is particularly the case for ecological values, given that species move along or through water bodies, and between water bodies. Uncertainties associated with the mapping can be addressed through the provisions of the pLWRP, as discussed below.

278. The risk of not acting includes that ORC would not be fulfilling its obligations under the NPSFM or the pORPS, and that the water bodies identified as outstanding would not necessarily have those values protected. For the reasons discussed above, the risk of acting is considered to be low.

10.6.7. Conclusion

279. Only one reasonably practicable option was identified. However, the assessments above have shown that this option is an effective and efficient way of achieving the objectives of the pLWRP. In comparison to the discounted options described previously, it is considered that this is the most appropriate option to implement the objectives.

10.7. Sub-topic: managing outstanding water bodies

280. The second aspect to the provisions for outstanding water bodies is the specific approach to managing those identified outstanding water bodies.

10.7.1. Discounted options

281. The status quo has been discounted as a reasonably practicable option for managing outstanding water bodies given the issues identified in section 10.3 above.

10.7.2. Reasonably practicable options

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

a. **Option 1:** All activities affecting outstanding water bodies require resource consent

b. **Option 2:** Only activities likely to have more than minor adverse effects require resource consent (pLWRP)

10.7.2.1. Option 1: All activities affecting outstanding water bodies require resource consent

283. As notified, Policy LF-FW-P12 of the pORPS required protecting the significant and outstanding values of outstanding water bodies by avoiding all adverse effects on those values. Most permitted activities have some level of adverse effects, even if they are generally minor. Therefore, Option 1 considered for the pLWRP was to require resource consent for all activities occurring within outstanding water bodies. This would be

implemented by placing a standard condition on all permitted activities in the pLWRP preventing them from occurring within outstanding water bodies.

10.7.2.2. Option 2: Only activities likely to have more than minor adverse effects require resource consent (preferred option)

284. In response to submissions opposing the stringent approach to managing outstanding water bodies in the pORPS, the hearing panel recommended amendments to LF-FW-P12 to remove the requirement to avoid all adverse effects on the significant and outstanding values of outstanding water bodies. This recommendation was accepted by the Council when it made final decisions on the pORPS in March 2024.

285. Option 2 recognises that a range of permitted and consented activities are already occurring within the water bodies identified as outstanding water bodies, that have not affected their outstanding values to such an extent that they are no longer outstanding. It also recognises that, across the board, activities are generally being managed more stringently under the pLWRP than the Water Plan in order to achieve the environmental outcomes for the region's FMUs and rohe.

286. There is no OWB-specific chapter in the pLWRP. Rather, there are a range of provisions across the plan that work together to manage outstanding water bodies. The relevant provisions are:

a. Policy IP-P11 – Outstanding water bodies**:** This policy requires protecting the significant and outstanding values of the region's outstanding water bodies from inappropriate use and development by:

i. implementing any restrictions and prohibitions set out in a relevant water conservation order or the Lake Wānaka Preservation Act 1973;

ii. providing for activities that would have no more than minor adverse effects on the values of the outstanding water body;

iii. enabling activities that would enhance or restore the values of the outstanding water body;

iv. for nationally and regionally significant infrastructure, avoiding (as a first priority) locating within an outstanding water bodies; and

v. avoiding adverse effects that would result in the permanent loss of the values of the outstanding water body.

b. Policy IP-P12 – Improved information on outstanding water bodies**:** This policy allows consent applicants to provide more specific information on outstanding water bodies when applying for a consent, that the decision-maker must then take into account.

c. SCHED1 – Outstanding water bodies: This schedule sets out the identified outstanding water bodies as well a description of their values and characteristics.

d. MAP[OWB] - Outstanding water bodies

287. Conditions in the following permitted activity rules which exclude that activity from taking place in an outstanding water body, meaning that the activity requires resource consent:

a. BED-R4-PER1**:** Placement of a new single span bridge in an outstanding water body with outstanding landscape values.

b. BED-R5-PER1**:** Placement of a new ford in an outstanding water body.

c. BED-R15-PER1: Suction dredge mining in an outstanding water body with outstanding ecological values.

d. WET-R5-PER1: Construction, use, and maintenance of a constructed wetland (including any associated take, use, damming or diversion of water, use or disturbance of the bed or of land, or discharge of water) in an outstanding water body.

e. As a matter of control or restricted discretion on the following controlled and restricted discretionary activities:

i. FMU1-R1-CON1: Maintenance of the Clutha hydro-electric generation scheme.

288. Policy IP-P10 provides direction to decision-makers on resource consent applications. It outlines activities that should be enabled or otherwise provided for, and how effects should be managed to protect the significant and outstanding values of outstanding water bodies. To recognise that the identification process did not include ground-truthing in most cases, IP-P20 provides an avenue for providing additional information about the presence or absence of particular values and the extent of outstanding water bodies. This means that, if it is demonstrated that an outstanding water body, or part of an outstanding water body, does not have the outstanding value identified through the development of the pLWRP, that can be considered in decision-making. Conversely, if it is demonstrated that a water body or part of a water body not identified does have outstanding values, that can also be considered by decision-makers.

289. There are already many activities occurring within or near outstanding water bodies, and the assessments undertaken of those water bodies still resulted in some of their values being considered 'outstanding'. This indicates that the scale and intensity of existing activities are not having significant impacts on the values of these water bodies. For consented activities, occurring within an outstanding water body may mean there is additional scrutiny of the management of adverse effects during any future replacement consent process.

290. Across the plan, permitted activity thresholds have been set to give effect to Te Mana o te Wai; that is, to prioritise, first, the health and well-being of water bodies. In most cases, it was considered that those thresholds were conservative enough to protect the values of outstanding water bodies. As a result, most permitted activities in the pLWRP are not restricted from occurring within outstanding water bodies.

291. There are limited exceptions:

a. The OWB identification reports include information on the key threats to the values and, in relation to landscapes, include the placement of new structures.[23] For this reason, rule BED-R4-PER1 permitting the placement of single span bridges does not permit these within outstanding water bodies that have been identified as having outstanding landscape values.

b. The placement of new fords is not permitted within any outstanding water bodies. This is because fords have the potential to impact on all of the types of values identified within outstanding water bodies.

[23] See (Greenaway & Hughey, 2024), (Allibone R. , 2024), (Doheny, 2024), O'Connell-Mile (2024), (Boffa Miskell Limited, 2024b).

c. Suction dredge mining is not permitted in outstanding water bodies that have been identified as having outstanding ecological values as careful consideration of the best way to undertake the activity is required than can occur through a permitted activity.

292. Broadly, the approach to protecting the values of outstanding water bodies is implemented by applying the direction in IP-P10 and IP-P20 during decision-making on resource consent applications and, in limited circumstances, by the restriction of particular activities within outstanding water bodies.

10.7.3. Clause 3 consultation feedback

293. Specific feedback on the two policies for outstanding water bodies was received from a number of parties. Table 18 below summarises the feedback received and the response to that feedback.

Table 18: Clause 3 feedback on managing outstanding water bodies

Feedback	Response
Policy IP-P11 – Outstanding water bodies	
Policy should require "avoiding activities that have more than minor effects" on the significant and outstanding values of outstanding water bodies, rather than "providing for activities with no material adverse effects."	Amended "no material adverse effects" to "no more than minor adverse effects" for the reasons stated by the party. No change from "providing for" to "avoiding" as it was considered that this may lead to an overly conservative approach.
Policy is counter-intuitive because most of the clauses describe exceptions to the direction rather than ways of protecting values.	No changes. The clauses outline what is considered to be an 'appropriate' use, with the final clause setting out the 'backstop' for any activities not otherwise managed by the clauses above.
Policy should be narrowed so that it requires avoiding more than minor adverse effects and enabling enhancement/restoration activities.	No changes. The amendments sought were significantly more stringent than the direction in the NPSFM and pORPS and there was not considered to be justification for this.
Policy IP-P22 – Improved information on outstanding water bodies	
Oppose the policy as it is unnecessary. Information to be considered when determining an application for resource consent is set out in Schedule 4 of the RMA.	No changes. This policy allows resource users and others to provide site-specific information about the values present (or not) in water bodies, and to have that information considered in resource consent processing.

10.7.4. Clause 4A consultation feedback

294. No feedback was received on outstanding water bodies.

10.7.5. Effectiveness and efficiency assessment

295. Table 19 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing Options 1 and 2.

Table 19: Benefits and costs of managing outstanding water bodies

	BENEFITS	COSTS
Option 1	▪ Ensures ORC is fulfilling its obligations under the NPSFM and pORPS. ▪ Allows for consideration of the effects of every activity on the values of outstanding water bodies. ▪ Improved information on the activities occurring, allowing for better management of cumulative effects on the water bodies. ▪ Likely to result in a high level of protection for these water bodies, preserving current and future opportunities for individual (for example for tourism or recreation activities).	▪ Additional costs for resource users as a result of applying for resource consent for their activities, particularly where uses are currently permitted. Due to a lack of information on permitted activities, the costs are unable to be quantified but may be significant cumulatively. Initial deposit fees for resource consent applications ranges from $200 to $3,000. ▪ Additional costs for ORC to process additional resource consents (noting that most costs for consent processing are cost-recoverable and therefore tie into the previous point). ▪ Additional costs for resource users if they are required to implement additional mitigations in order to manage their effects on outstanding water bodies. It is not possible to quantify this cost due to the wide range of potential mitigation options that could be employed in different circumstances. ▪ Some users may choose to cease or scale back their activities, potentially resulting in impacts on their economic well-being. ▪ Additional restrictions on activities occurring in or near OWBs may foreclose some future uses, including for economic development.
Option 2 (Preferred option)	▪ Ensures ORC is fulfilling its obligations under the NPSFM and pORPS. ▪ Allows activities with no more than minor effects to occur (both existing and new), including those which assist with enhancing or restoring the values of the water body. ▪ Ensures that the costs of protecting these water bodies fall on those using them in a way that is most likely to adversely affect their values.	▪ Additional costs for resource users as a result of applying for resource consent, but less than those identified in Option 1 as most permitted activities in the pLWRP can still occur within outstanding water bodies. ▪ Additional costs for ORC to process additional resource consents (noting that most costs for consent processing are cost-recoverable and therefore tie into the previous point). ▪ Additional costs for resource users if they are required to implement

	BENEFITS	COSTS
	▪ Still likely to result in protection for these water bodies, preserving current and future opportunities for individual (for example for tourism or recreation activities), but potentially to a lesser extent than Option 1.	additional mitigations in order to manage their effects on outstanding water bodies. It is not possible to quantify this cost due to the wide range of potential mitigation options that could be employed in different circumstances. The scale of this cost may be less than in Option 2 depending on whether permitted activity conditions in the pLWRP are being implemented already or require additional investments by resource users.

296. Table 20 below assesses the effectiveness and efficiency of the options identified at achieving the objectives.

Table 20: Effectiveness and efficiency assessment for managing outstanding water bodies

Effectiveness	
Option 1	Option 1 is likely to be effective at achieving the relevant objectives in the pLWRP, implementing the NPSFM and achieving the purpose of the RMA. Option 1 will ensure that every activity within ORC's jurisdiction to manage that has a potential impact on water quality of source water bodies for registered drinking water supplies would be subject to scrutiny through a resource consent process, including an examination of how each activity contributes to achieving the objectives of the plan. The policy direction and relevant rule conditions ensure that Te Mana o te Wai is implemented by, first requiring the health of freshwater and ecosystems to be provided for and then making sure the health needs of people (such as drinking water) are providing for any other activity that contributes to people and communities social, economic and cultural well-being. Option 1 outlines clear expectations for managing new and existing activities in comparison with the status quo. Providing a permitted activity pathway for some off-stream damming activities presents a degree of risk for achieving the objectives, particularly with regard to potential cumulative effects. However, given the breadth of the permitted activity conditions, and the controls in the EFL chapter for managing any associated take and use of water, this risk is considered relatively low. Option 1 responds to direction from the community and mana whenua, as expressed in the environmental outcomes and long-term visions[24] for Otago. It also addresses concerns from the community and stakeholders by removing duplication of administrative requirements for dams under the Building Act and RMA, reducing plan complexity, and improving the clarity of policies and rules. Impacts of Option 1 will largely be borne by applicants for new dams seeking to locate these activities in sensitive areas, or existing dam owners who need to obtain resource consent or make changes to their operations to comply with the

[24] LF-FW – Fresh water Chapter of the pORPS.

	permitted activity conditions, particularly the state of repair of dams. This is considered to be equitable given the higher environmental risks associated with these activities.
Option 2 (preferred option)	Option 2 may be less effective than Option 1 in achieving the objectives of the pLWRP because some activities would be permitted and therefore not actively monitored by ORC or managed through activity-specific consideration (as occurs through a resource consent process). However, Option 2 is still considered effective because it permits activities that are likely to have no more than minor adverse effects on the significant and outstanding values of outstanding water bodies. Activities with the potential for more significant adverse effects (i.e. because they do not comply with a permitted activity condition, or because there is no permitted activity rule) will be subject to additional scrutiny through the resource consent process.
Efficiency	
Option 1	The efficiency of Option 1 is considered to be low. All resource users are likely to face additional costs, particularly currently permitted activities that would require consent under this option. It is unknown how many existing permitted activities are occurring in outstanding water bodies. In comparison, the benefits would likely be mostly experienced across society as people within and outside Otago (and New Zealand) benefits from the use of Otago's outstanding water bodies.
Option 2 (preferred option)	Option 2 is considered to be efficient, and considerably more efficient than Option 1, for two main reasons: there are likely to be lower costs overall due to the targeted management framework in the pLWRP and those additional costs that are incurred will be primarily incurred by those undertaking activities most likely to result in more than minor adverse effects on the significant and outstanding values of outstanding water bodies. Like Option 1, the benefits are expected to be mostly experienced across society broadly.

10.7.6. Risk of acting or not acting

297. 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 discussed previously in relation to identifying outstanding water bodies, there is some uncertainty about the extent to which the mapped extents align with the values identified. The risk of acting is considered to be low, because policy IP-O20 addresses the uncertainty by providing an avenue for participants in resource consent processes to provide more specific information about the values and extent of an outstanding water body. This allows decision-makers to consider that information when interpreting the maps and applying the pLWRP provisions, assisting to mitigate the uncertainty. The risk of acting is therefore considered to be low.

10.7.7. Conclusion

298. Option 1 is considered to be more effective at achieving the objectives of the pLWRP, however it also imposes significantly more costs on users because it would require a large number of resource consents for activities that may have little to no impact on the values of an outstanding water body . For this reason, it is considered less efficient than Option 2 which distributes the costs more appropriately. Option 2 is still considered to be both efficient and effective, and is therefore considered to be the most appropriate option to achieve the objectives of the plan.

11. Threatened species

11.1. Introduction

299. This section of the report focuses on the management of threatened species as a key aspect of indigenous biodiversity. The identification and protection of threatened species and their habitats are requirements under the NPSFM[25], and are outcomes sought by the objectives of the IM – Integrated management chapter of the pLWRP and the environmental outcomes in the plan's FMU chapters. The establishment, implementation, and review of objectives, policies, and methods for maintaining indigenous biodiversity is a specific function of a regional council, for the purpose of giving effect to the RMA in its region[26]. The management of indigenous biodiversity is guided across the terrestrial, freshwater, and coastal/marine environments by three separate pieces of national direction: the NPSIB, NPSFM and NZCPS. However, indigenous biodiversity (including species and ecosystems) is described both within and across these domains and can benefit from a holistic approach (Gladstone-Gallagher, et al., 2022).

300. As this is a plan-wide topic and the topic of threatened species does not have a specific chapter in the pLWRP, provisions relating to the management of threatened species and their habitat are woven throughout the plan including each FMU chapter.

301. The relevant provisions evaluated in this section are:

a. IP-P13 – threatened species

b. APP6 – Threatened freshwater-dependent species

c. MAP[TS] –Threatened species habitat

d. Rules throughout the plan related to threatened species and their habitats.

302. A substantial suite of provisions in the pLWRP relate to the habitats of threatened species. These provisions are in seven chapters of the pLWRP (BED – Beds of lakes and rivers, DAM – Damming, EARTH – Earthworks and bores, EFL – Environmental flows, levels and allocation, OTH – Other discharges, FF – Farming and Forestry, and WET – Wetlands).

11.1.1. Definition of threatened species

303. Threatened species are those assessed by experts as being at the greatest known risk of extinction. The NPSFM defines threatened species in this context as any indigenous species that relies on water bodies for at least part of its life cycle; and meets the criteria for nationally critical, nationally endangered, or nationally vulnerable in the New Zealand Threat Classification System (NZTCS) Manual (Townsend, et al., 2007)[27]. This explicitly limits the focus from all threatened species to those that meet the criteria for those three statuses and are reliant on water bodies. Species excluded by this definition include everything that does not rely on water bodies for part of their life cycle and those that meet criteria at lower

[25] NPSFM Policy 9, and NOF requirements for threatened species.

[26] Section 30 (1) (ga).

[27] See 1.4 Interpretation of the NPSFM 2020, and see 1.8 for links to the NZTCS Manual

extinction risks (e.g., Threatened – Nationally increasing, Data Deficient, and At Risk – Declining).

304. Importantly, this definition refers to a particular subset of all threatened species in Aotearoa New Zealand, i.e., threatened freshwater-dependent species (Storey, et al., 2018; Whately, 2020; Champion, Elcock, & Moss, 2021; Thorsen, 2022), and can create confusion with all threatened species (as defined through the NZTCS). The NPSFM definition excludes all threatened species that are not reliant on water bodies for part of their lifecycle, so should only be applied within the context of freshwater management (i.e., the threatened species of New Zealand include species that meet the NPSFM definition and many, many others).

305. Additionally, the NPSFM definition excludes a new status within the threatened category (Nationally Increasing), adapted into the New Zealand Threat Classification System through a supplement (Rolfe, Makan, & Tait, 2021), an amendment (Michel, 2021), and – since July 2024 – through formal changes to the NZTCS Manual (Rolfe, et al., 2022; Michel, Rolfe, & Hitchmough, 2022), but not yet through formal changes to the NPSFM definition.

306. To provide clarity, the pLWRP adopted the NPSFM definition of threatened species and added a definition (threatened freshwater-dependent species) to refer to a particular subset of threatened species with strong reliance on water bodies. For more information, see the Options section below.

11.1.2. Threatened species as a component of indigenous biodiversity

307. Threatened species are a component of indigenous biological diversity. Biological diversity (herein biodiversity) encompasses the whole variety of plants, animals, fungi, micro-organisms, the genes they contain, and the ecosystems they create. As a temperate land mass, Aotearoa New Zealand has fewer plant and animal species than more tropical lands. But as in many isolated islands, a high proportion of these are found nowhere else. The indigenous biodiversity of Aotearoa New Zealand is unique and irreplaceable.

308. Species of indigenous flora and fauna rely on Otago's freshwater ecosystems to complete their life cycles. Many species are endemic to Otago, and the region is a national stronghold for other species. Otago's biodiversity is diverse and unique, but also vulnerable to changes made in the environment.

309. The diversity and abundance of life in Otago's rivers, lakes, wetlands and coast are crucial indicators of the health and wellbeing of these aquatic ecosystems. The decline of indigenous species indicates fundamental challenges facing the region's freshwater environments, and current management strategies are failing to halt or reverse that decline (Ministry for the Environment, 2020). Continued loss of biodiversity, culminating in extinction at various scales (local, regional, national, global), is an expected outcome if threatened species are not maintained (Department of Conservation, 2020).

11.2. Issues

310. In addition to the issues described in section 3 of this chapter of the s32 report, the resource management issues that relate specifically to freshwater-dependent threatened species and that the pLWRP seeks to address are:

a. Species are threatened with extinction, and biodiversity is being lost,

b. A different approach is needed for the achievement of threatened species environmental outcomes,

c. Data deficiencies and incomplete information, and

d. Kāi Tahu value indigenous species as taoka, including threatened species.

311. These are explained in more detail in the sections immediately below.

312. Additional issues with the status quo policy context that the provisions for managing treathened species in the pLWRP seek to address are outlined in 'Status quo policy context (including operative plan provisions)' sections below, and particularly in section 11.3.6.

11.2.1. Species are threatened with extinction, and biodiversity is being lost

313. Reversing the loss of biodiversity – in the face of the global biodiversity crisis – referred to as "bending the curve" (Díaz, et al., 2019; Mace, et al., 2018; Department of Conservation, 2020). To bend the curve of global freshwater biodiversity loss, researchers have prepared a Global Emergency Recovery Plan that identifies priority actions including accelerating the implementation of environmental flows, improving water quality, protecting and restoring critical habitats and conditions, managing exploitation of freshwater ecosystem resources (e.g., harvesting species, exploitation of riverine aggregates), preventing and controlling non-native species invasions, as well as safeguarding and restoring river connectivity (Tickner, et al., 2020). Although focused globally, the emergency recovery plan encourages actions relevant to New Zealand's international biodiversity commitments (Department of Conservation, 2019) including indirect policy drivers such as visions established by the United Nations Convention on Biological Diversity, Aichi Biodiversity Targets, and Sustainable Development Goals (Department of Conservation, 2020). New Zealand and Otago are not immune to the loss of biodiversity or the global biodiversity crisis.

314. Otago's freshwater environments host remarkable biodiversity including unique ecosystems and species. Despite this, Otago's indigenous biodiversity has declined since the arrival of humans and remains under pressure from introduced physical changes to the environment, exploitation of species or resources in their habitats, pollution, introduced and invasive species, amongst other direct drivers of biodiversity loss (Wildlands, 2017; Díaz, et al., 2019; Department of Conservation, 2020; Wildlands, 2020a; Wildlands, 2020b; Wildlands, 2021a; Wildlands, 2021b). These pressures are often a result of converting undeveloped lands to cities and towns, farm and plantation forests, changing the natural form and function and flow regimes of waterways, and introducing new species intentionally or accidentally. Collectively, these changes put indigenous species at risk, reduce the ecosystem services (e.g., flood water retention or sustaining river flows during dry periods) people receive from nature, and affect people's way of life and connection to water (Ministry for the Environment & Stats NZ, 2020; Ministry for the Environment & Stats NZ, 2023).

315. Biodiversity losses can be expected to continue, and possibly escalate, without urgent coordinated action to reverse the declines (Darwall, et al., 2018). To protect Otago's threatened species and indigenous biodiversity, these threats need to be managed effectively, particularly as the likelihood of extinction for threatened species is likely to be exacerbated by climate change impacts (Ministry for the Environment & Stats NZ, 2020; Ministry for the Environment & Stats NZ, 2023).

316. Examples of threatened species whose predicted and ongoing population trends are declining in the Otago region include birds (e.g., Australasian bittern and whio), bats (e.g., long-tailed bat), plants (e.g., *Carex capillacea*, *Euchiton ensifer*, *Gratiola concinna*, and *Myosurus minimus* subsp. *novae-zelandiae*), and fish (e.g., dusky galaxias, Taieri flathead galaxias, Central Otago roundhead galaxias, Clutha flathead galaxias, Manuherikia alpine galaxias, and Nevis galaxias[28]). Many other species – including those reliant on water bodies – in Otago meet the criteria for threatened species due to their total population size, the number and size of sub-populations, and/or their area of occupancy.

11.2.2. A different approach is needed for the achievement of threatened species environmental outcomes

317. Although regional plans typically manage for the health of ecosystems generally, they do not consistently provide for the needs of threatened species' populations and their habitats, which may necessitate a more particular management approach than that required to sustain indigenous aquatic life more generally (Ministry for the Environment, 2020; Khan & Augspurger, 2024).

318. In addition, regional plan provisions by themselves also are not always effective in providing for or creating the specific conditions needed for the presence, abundance, survival and recovery of threatened species. Where this is the case, tools such as action plans (provided for under Clause 3.15 of the NPSFM) can play a crucial role in the achievement of environmental outcomes for threatened species (Khan & Augspurger, 2024). The maintenance of indigenous biodiversity, a regional council function under the RMA, is also dependent on the involvement of others in the biodiversity system, and other pieces of conservation legislation. Te Mana o Te Taiao/ Aotearoa New Zealand Biodiversity Strategy 2020 refers to some of the people, organisations and agencies involved in the biodiversity system, as well as some key legislation relating to biodiversity management in New Zealand (Department of Conservation, 2020).

319. Factors affecting threatened species are controlled through the RMA and other pieces of legislation, and the maintenance of indigenous biodiversity is unlikely without everyone playing their part. This does not relieve regional councils of their function, and the explicit outcome sought by the RMA, instead encouraging a collaborative approach through the implementation of Te Mana o Te Taiao/ Aotearoa New Zealand Biodiversity Strategy 2020 Te Mana o Te Taiao/ Aotearoa New Zealand Biodiversity Strategy 2020. For an illustrative example of this, the regulatory impact assessment for the NPSFM considered support from DOC as critical to the management of freshwater in a manner that achieves outcomes for threatened freshwater-dependent species, and considered the achievement of those outcomes to be one of the purposes of the NPSIB during its drafting and consultation (Ministry for the Environment, 2020).

320. Therefore, a different approach is required to achieve environmental outcomes for threatened species, and to maintain indigenous biodiversity including in the freshwater environment of Otago. As a means to address this, the pLWRP includes two environmental

[28] For population trends, see Conservation status of New Zealand freshwater fishes (Dunn, et al., 2018), Regional conservation status of bats in Otago (Jarvie, Davidson-Watts, Dennis, Gower, & Pryde, 2023), Regional conservation status of indigenous vascular plants in Otago (Jarvie, et al., 2024), and Regional conservation status of birds in Otago (Jarvie, McKinlay, Palmer, Rawlence, & Thomas, 2024). There are likely to be examples of threatened invertebrate species that are declining in population in Otago, however this information is less easily available (Grainger, et al., 2018; Whately, 2020; Drinan, et al., 2020).

outcomes specifically for threatened species, aligned to the long-term visions of the pORPS 2021, whilst acknowledging that cooperation/coordination with others who have roles in the biodiversity system will facilitate the achievement of environmental outcomes in the pLWRP.

321. In addition to complexities in regulatory drivers, the knowledge, capability, and capacity required to achieve environmental outcomes for threatened species exists within and throughout the biodiversity system. Through cooperation and coordination between all parties, environmental outcomes can be achieved.

11.2.3. Data deficiencies and incomplete information

322. Knowledge on freshwater species and their habitats is incomplete. Threatened freshwater-dependent species now benefit from increased attention through the national policy direction, although what is now required is met with resistance from substantial information deficits that impede the achievement of functions by regional councils and fundamentally, the purpose of the RMA (Whately, 2020). A significant proportion of certain taxonomic groups are classified as data deficient in New Zealand, specifically, all macroalgae species (excluding charophytes) and over a quarter of known freshwater invertebrate species. The Data Deficient category is reserved for species where information is so lacking that an assessment of its threat category and status is not possible. Further, many species that rely on water bodies to complete their life cycle may also have the Data Poor qualifiers, indicating low confidence in the threat assessment. Data deficient and data poor species may not have been observed for many years, and could possibly be extinct (Townsend, et al., 2007).

323. Additionally, consistent with global biodiversity information shortfalls (Hortal, et al., 2015), there is limited information on species in New Zealand, or in Otago, including:

a. Many species in Otago have not been described and catalogued.

b. Knowledge about the geographic distribution of most species is incomplete.

c. Data on species abundance and population dynamics in space and time are often scarce.

d. Lack of knowledge on the tree of life, the evolution of species and their traits.

e. Lack of knowledge of species' traits and their ecological functions.

f. Lack of knowledge about the responses/tolerances of species to abiotic conditions.

g. Lack of knowledge on species' interactions and the effects of these interactions on individual survival and fitness.

324. Specifically in Otago, there is uncertainty on which species exist in the Otago region[29] (i.e., as complied in a biodiversity inventory[30]). (Thorsen, 2022) also discussed information deficiencies and potential errors or biases that impact the identification of the location of habitats of threatened and rare freshwater-dependent flora and fauna.

[29] See FMU summaries in pLWRP.

[30] For example, the Hawke's Bay Biodiveristy Inventory (Hashiba, Wade, & Hesketh, 2014).

11.2.4. Kāi Tahu value indigenous species as taoka, including threatened species

325. The primary resource management principle for Kāi Tahu is the protection of mauri. The mauri of water is a life-giving force that connects the environment from the mountains to the sea. Each water body is unique in identity and mauri and reflects the landscape and natural characteristics of the water bodies and their catchments. Water bodies with a healthy or strong mauri are characterised by good quality waters that flow with energy and life, sustain healthy ecosystems, and support mahika kai and other cultural activities.

326. Taoka species are treasured and closely connected to traditional Māori practices and knowledge. Taoka species vary among whānau, hapū, and iwi, this can be due to whakapapa connection and identified kaitiaki responsibilities. Taoka species names can also vary according to their life-cycle stage, iwi and hapū dialect, and within different regions. Protecting and maintaining the mauri of species and habitat is a critical function of kaitiakitaka. For Kāi Tahu, the protection of taoka species needs a holistic approach to their sustenance that recognises the importance of the interconnection between land, water, and other resources. It means a focus on the effects of activities on specific habitat sites, as well as the cumulative effects of activities on the entire system that supports and sustains the species and their habitats (Ellison, 2022).

327. The NPSFM requires that freshwater is managed in a way that gives effect to Te Mana o te Wai. Indigenous species including threatened species are taoka for Kāi Tahu. For threatened species, restoration of their habitats and recovery of their populations recognises and restores the mauri of these species and contributes to healthy ecosystems under the concept of Te Mana o te Wai.

11.3. Status quo policy context (including operative plan provisions)

328. Direction for the management of indigenous biodiversity and threatened species comes from:

a. Resource Management Act 1991,

b. National Policy Statement for Freshwater Management 2020,

c. National Policy Statement for Indigenous Biodiversity 2023,

d. Otago Regional Policy Statement 2019,

e. Proposed Otago Regional Policy Statement 2021, and

f. Regional Plan: Water for Otago.

329. These are explained in more detail below.

11.3.1. Resource Management Act 1991

330. The RMA has sought the management of biodiversity since its enactment in 1991, recognising that the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna is a matter of national importance and requiring all persons exercising functions and powers under the Act to have particular regard to the intrinsic

values of ecosystems[31]. However, from 2003, the establishment of objectives, policies, and methods to maintain indigenous biodiversity has become a specific function of regional councils[32]. This function also serves as an outcome – that indigenous biodiversity is maintained (Willis, 2014; Willis, 2017)[33]. This function is relevant to the management of threatened species as examples of past or predicted biodiversity loss.

11.3.2. National Policy Statement for Freshwater Management 2020

331. The NPSFM directs regional councils to protect the habitats of indigenous freshwater species[34], and pays particular attention to threatened species through their inclusion as a compulsory national value in the NOF process[35].

332. The NPSFM directs councils to provide for ecosystem health in all freshwater management units (FMUs), and to improve the integrated management of fresh water, which includes recognising the interactions between environments connected to water and managing cumulative effects. Despite this direction, freshwater management approaches for ecosystem health risk being fragmented and narrow and fail to promote restoration or manage threats to indigenous and threatened species (Ministry for the Environment, 2020). The NPSFM addresses this by providing, threatened species as a compulsory value separate from ecosystem health and recognising that an additional focus - above and beyond ecosystem health - is likely required to maintain or improve these values.

333. The threatened species value in the NPSFM recognises that the potential outlook for many threatened species will fundamentally change through management of all components of ecosystem health and prioritising the health and well-being of water bodies and freshwater ecosystems. However, the threatened species value also recognises that additional management of critical habitats and conditions may be needed to ensure the presence, abundance, survival, and recovery of threatened species[36], so that threatened species are not examples of biodiversity loss.

334. Although the NPSFM does not provide clear national direction about which species meet the threatened species definition in the NPSFM, it requires regional councils to follow the NOF process for compulsory values, including threatened species (Ministry for the Environment, 2020), by[37]:

a. identifying the locations of habitats of threatened species[38];

b. setting environmental outcome(s) for threatened species[39];

c. identifying how the outcome will be measured and achieved[40].

[31] RMA 1991, Section 6(c) and 7(d)

[32] RMA 1991, Section 30(1)(ga). Inserted, on 1 August 2003, by section 9(2) of the Resource Management Amendment Act 2003 (2003 No 23)

[33] See RMA 1991, Section 30(1)(ga).

[34] NPSFM 2020, Policy 9 - The habitats of indigenous freshwater species are protected.

[35] NPSFM 2020, 1.4 Interpretation NPSFM 2020, Appendix 1A – Compulsory values.

[36] NPSFM 2020, Appendix 1A – Compulsory values.

[37] NPSFM 2020, 1.4 Interpretation NPSFM 2020

[38] NPSFM 2020, Clause 3.8

[39] NPSFM 2020, Clause 3.9

[40] NPSFM 2020, Clause 3.10

11.3.3. National Policy Statement for Indigenous Biodiversity 2023

335. The overall objective of the NPSIB is to maintain indigenous biodiversity across Aotearoa New Zealand so that there is at least no overall loss in indigenous biodiversity[41].

336. While the NPSIB generally does not explicitly address freshwater environments, Clause 3.4 stipulates that local authorities must manage indigenous biodiversity and the effects on it from subdivision, use and development in an integrated way, which means recognising the interconnectedness of the whole environment and the interactions between the terrestrial environment, freshwater, and the coastal marine area.

337. The NPSIB does not extend its application to the freshwater environment, except explicit provisions for covering:

a. specified highly mobile fauna, including those that use water bodies for part of their life cycle; and

b. promoting restoration and increasing indigenous vegetation cover in natural inland wetlands; and

c. regional biodiversity strategies where they may address areas outside the terrestrial environment including water bodies; and

d. significant natural areas that contain natural inland wetlands.

338. The NPSIB 2023 also assists with further defining the meaning of "maintaining indigenous biodiversity", providing crucial guidance to regional councils for delivering their function. Under Clause 1.7 of the NPSIB, maintaining indigenous biodiversity requires:

a. the maintenance and at least no overall reduction of all the following:

i. size of populations of indigenous species; and

ii. indigenous species across their natural range; and

iii. the properties and functions of ecosystems and habitats used or occupied by indigenous biodiversity; and

iv. the full range and extent of ecosystems and habitats used or occupied by indigenous biodiversity; and

v. connectivity between, and buffering around, ecosystems used or occupied by indigenous biodiversity; and

vi. resilience and adaptability of ecosystems; and

b. where necessary, the restoration or enhancement of ecosystems and habitats[42].

339. Application of the guidance more holistically across terrestrial, freshwater, and coastal environments is likely to benefit all indigenous biodiversity, including freshwater indigenous biodiversity, as well as providing clear direction to regional councils for achieving their Section 30 functions.

340. There is a disaggregated approach for the management of indigenous freshwater biodiversity created through the limited application of the NPSIB in aquatic environments,

[41] NPSIB 2023, Clause 2.1(1)(a)

[42] See also Te Mana o Te Taiao/ Aotearoa New Zealand Biodiversity Strategy 2020 (Department of Conservation, 2020)

and limited direction for managing freshwater indigenous biodiversity in the NPSFM. The poor integration of approaches here creates uncertainty that must be traversed through regional planning processes whereas consistency between national direction instruments through a holistic approach could be more efficient and effective.

11.3.4. Otago Regional Policy Statement 2019

341. The RPS 2019 contains provisions relating to the maintenance of indigenous biodiversity, however as the RPS 2019 predated the gazetting of the NPSFM, there is no specific direction relating to the threatened species topic for the pLWRP. In general, the provisions facilitate the maintenance or enhancement (as far as practicable) of habitats of indigenous species and the safeguarding the life-supporting capacity of freshwater.

11.3.5. Proposed Otago Regional Policy Statement 2021

342. The pORPS 2021 contains visions for the region and for each FMU and rohe, including the following most relevant to the threatened species topic:

a. LF-FW-O1A(1) in each FMU and rohe in Otago and within timeframes specified in the long-term visions in LF-VM-O2 to LF-VM-O6: healthy freshwater and estuarine ecosystems support healthy populations of indigenous species (including non-diadromous galaxiids and Canterbury mudfish) and mahika kai that are safe for consumption.

343. This vision is achieved when healthy ecosystems support healthy populations of Indigenous species (i.e., they are naturally abundant, robust, resilient to disturbance, and—specifically for threatened species—recovering throughout their range).

344. The pORPS 2021 also contains policies that give direction for the maintenance of indigenous biodiversity and the threatened species topic in the LF – Land and freshwater chapter, and the ECO – ecosystems and indigenous biodiversity chapter. These provisions identify local authority responsibilities[43], and collectively tie together to describe the actions to achieve visions including maintaining indigenous biodiversity, protecting or preserving and sustaining habitats, and restoring habitats where degraded (to the extent practicable).

11.3.6. Regional Plan: Water for Otago (Water Plan)

345. The Water Plan contains objectives and policies related to the management of indigenous biodiversity but was developed prior to national direction so does not address the specific habitats and conditions needed to support the presence, abundance, survival, and recovery of threatened species. It more generally provides for the maintenance and enhancement of indigenous biodiversity and allows for consideration of threatened species as a component of indigenous biodiversity.

346. The Water Plan contains an objective (5.3.1) which seeks to maintain or enhance the natural and human use values, identified in Schedule 1A, that are supported by Otago's lakes and rivers. This objective not only seeks to avoid the loss or degradation of the specified values, but also provides for their enhancement. There is an accompanying set of policies (5.4.1,

[43] See ECO-M1, pRPS 2021.

5.4.2, 5.4.5, 5.4.8., 5.4.9, 5.4.11, 5.4.12, 5.4.13, 8.5.1) that give direction on achieving the objective.

347. Schedule 1A of the Water Plan identifies natural values that Otago's lakes and rivers support. These natural values include those for ecosystems, outstanding natural features and landscapes, areas of significant indigenous vegetation and significant habitat of indigenous fauna, and areas with a high degree of naturalness.

348. Importantly, Schedule 1A is not exhaustive but reflects the level of knowledge of individual water bodies during the development of the RPW and does not implement national policy direction relevant for the threatened species topic, nor has it been amended or incorporated any new knowledge through a Plan Change.

11.4. Objectives

349. 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:

   i. IO-O1 Te Mana o te Wai

   ii. IO-O3 Long-term visions and environmental outcomes, and

b. The following environmental outcomes included as objectives in FMU1 to 5:

   i. FMU1 to 5-O1 Ecosystem health

   ii. FMU1 to 5-O3 Threatened species (habitat)

   iii. FMU1 to 5-O4 Threatened species (recovery)

   iv. FMU1 to 5-O5 Mahika kai (condition)

   v. FMU1 to 5-O6 Mahika kai (access, harvest, and use)

   vi. FMU1 to 5-O7 Natural form and character

   vii. FMU1 to 5-O11 Taoka species

11.5. Overview of sub-topics for managing threatened species

350. Options for managing threatened species have been presented and assessed below on a sub-topic basis, with four sub-topics defined as follows:

a. Identifying threatened freshwater-dependent species; and

b. Identifying habitats of threatened species; and

c. Measuring the achievement of environmental outcomes; and

d. Managing activities that threatened species and their habitats.

11.6. Discounted options for the threatened species topic

11.6.1. Ecosystems and Indigenous Biodiversity chapter within the pLWRP, and a sub-topic on threatened species

351. During the development of the pLWRP, there was an option to include a specific chapter in the pLWRP on the topic of Ecosystems and Indigenous Biodiversity, and a sub-topic on threatened species within it (i.e., as provided for in the National Planning Standards (Ministry for the Environment, 2019). This option was also raised through feedback received from stakeholders during pre-notification consultation. However, this option was discounted early on because it creates inconsistencies with the wider structure of the plan, which is activity-based for the purposes of being user-friendly.

352. Instead, the provisions for the management of freshwater ecosystems and indigenous biodiversity, including threatened species, are interlaced into the provisions of various topic chapters throughout the plan. This approach recognises that threatened species issues exists across the entire region, that many human activities can have adverse effects on threatened species if not well managed, and that a holistic approach is needed to ensure the effective management of indigenous biodiversity more generally.

11.6.2. Give full effect to the NPSIB

353. The second discounted option, relevant to the threatened species topic, was for the pLWRP to give effect to the NPSIB, in addition to giving effect to the NPSFM to achieve outcomes sought by the RMA for freshwater and terrestrial biodiversity. While the NPSIB provides the pLWRP with an opportunity to broaden its scope to include terrestrial biodiversity management, thereby assisting ORC to carry out its functions for maintaining indigenous biodiversity both inside and outside the freshwater environment, the pLWRP will not be able to give full effect to the NPSIB due to limited time to incorporate this central government direction between the time of gazetting and the pLWRP notification timeframe. Opportunities to carry out this function exist through future planning processes (e.g., making or changing regional plans or regional policy statements) or through other mechanisms such as the regional biodiversity strategy (as guided by NPSIB 3.23).

354. While Clause 4.1 of the NPSIB requires local authorities to give effect to this National Policy Statement as soon as reasonably practicable[44], implementing requirements within will take time and will have significant implications on existing budgets, training needs, and work programmes. Furthermore, it is definitely useful and likely best for some of these actions, particularly the development of a regional biodiversity strategy under the NPSIB, to be finalised and adopted before any provisions that seek to manage terrestrial indigenous biodiversity be incorporated in the pLWRP, as such a strategy may aid in ensuring an effective and efficient approach towards consistently providing for the maintenance of indigenous biodiversity within and between the terrestrial, freshwater and coastal/marine domains.

[44] Specific timing requirements for specified actions required under the NPSIB are outlined in clauses 4.2 to 4.4.

11.7. Sub-topic: Identifying threatened freshwater-dependent species

355. This sub-topic covers the identification of threatened species in Otago, their threat status, and their reliance on water bodies. An investigation into the threatened freshwater-dependent species determined 140 candidate species (Thorsen, 2022), which were then reviewed and refined[45].

11.7.1. Discounted option

356. The status quo approach for identifying threatened freshwater-dependent species was discounted because of issues identified with the RPW, including that it doesn't implement the NPSFM requirements.

11.7.2. Reasonably practicable options

357. Two options were identified in a staff workshop to tabulate a list of threatened freshwater-dependent species for the pLWRP to meet NOF requirements.

358. The options were:

a. **Option 1:** A curated list of threatened species guided by an expert panel.

b. **Option 2:** List threatened species based on freshwater-dependence criteria (preferred option)**.**

11.7.2.1. Option 1: A curated list of threatened species guided by an expert panel

359. This option was to approach an expert panel to curate the list of candidate species. The panel would apply their expertise on the diversity and distribution of the freshwater fauna and flora of the Otago region, whilst cross-checking against observation records in electronic biodiversity databases. Expert knowledge would also be applied to review the freshwater-dependence criteria of species.

360. Panel expertise would be strengthened and show greater alignment with higher order documents by including tangata whenua and ncorporating mātauraka Māori knowledge on the species of Otago, and their reliance on water bodies.

11.7.2.2. Option 2: List species based on freshwater-dependence criteria (preferred option)

361. This option for identifying the threatened species for inclusion in the pLWRP sought to refine the list by including only species that met the most defensible freshwater-dependent criteria. Pragmatically, these criteria were determined as Criteria A, Criteria B, and Criteria D[46] – see Appendix 1 of this report. Species that only met one or more of Criteria C, E, and F were filtered out, as these criteria capture relationships between species and water bodies that are less obvious, or possibly less reliant.

[45] See freshwater-dependence criteria described in Appendix 1, and the freshwater-dependence of 140 species tabulated in Appendix 2. Further information about some species was sought from Dr Thorsen after the final edits to his report, which resulted in very minor discrepancies between the species in Appendix 2 and the species originally reported in his report.

[46] Species that meet Criteria A or B permanently inhabit freshwater habitats or use freshwater habitats for part of their lifecycle (e.g., feeding or breeding), or display adaptations or lifestyles specifically for freshwater habitats. Species that meet Criteria D have previously been listed as a freshwater or freshwater-dependent species in national assessments or in similar exercises.

362. Relying on Thorsen's freshwater-dependence assessment, ORC ecologists filtered the original list of 140 species based on the freshwater-dependence criteria and only those that met one or more of Criteria A, B or D were included in the proposed Plan. This option resulted in a list of 78 threatened species that rely on the water bodies of Otago – see Appendix 2 of this report for species that were included following this process – and were later defined as threatened-freshwater-dependent species to avoid confusion with all species that potentially meet the NPSFM definition.

11.7.3. Clause 3 consultation feedback

363. Through pre-notification consultation under Clause 3 of the First schedule of the RMA, feedback on the list of threatened species developed under option 2 was received from various parties including Kāi Tahu ki Otago, Forest and Bird, Federated Farmers, Dunedin City Council, Ministry for Primary Industries, Director-General of Conservation, and Environmental Defence Society.

364. The feedback received indicated general support, or support with minor amendments from multiple parties, some of whom noted the alignment between the proposed provisions and the requirements of the NPSFM for regional councils.

365. Some feedback expressed concern about certain threatened species that were not included on the list in the pLWRP. Specifically, Kāi Tahu ki Otago enquired about six threatened birds (ngutu-pare, takahē, kākā, kārearea, koekoeā, kea) that did not make the final list. The matter was resolved through further discussion between ORC staff and Aukaha, as it transpired that these species did not meet the requirements of the NPSFM definition, and the freshwater-dependence criteria selected.

11.7.4. Clause 4A consultation feedback

366. Feedback received through pre-notification consultation under Clause 4A, Pt 1 of the first schedule of the RMA sought to provide further policy support to support the recovery of species that are not threatened but are declining. Policy IP-P11 in the pLWRP provides focus towards species which meet NPSFM criteria for their threat status and reliance on water bodies. Policy support beyond that is not consistent with NPSFM requirements. The provisions of the plan, more generally, support the recovery of indigenous species that do not meet the NPSFM threatened species definition. As such, no amendments were made.

11.7.5. Effectiveness and efficiency assessment

367. Table 23 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the approaches above for sub-topic: Identifying threatened freshwater-dependent species.

Table 21: Benefits and costs for options to assess which threatened species should be focused on

	BENEFITS	COSTS
Option 1	• Investment now to work with experts could direct focus and efforts to	• Additional resource required for engagement with regional and

	BENEFITS	COSTS
	species at the greatest threat in the Otago region. • Greater certainty on the list of focal species. • Preventing the loss of threatened species and stopping the decline or progressing the recovery of a species now reduces the potential longer-term cost associated with the recovery of this species or biodiversity restoration in the future. • Community will benefit from better awareness about and knowledge of threatened species. This can result in communities taking ownership in looking after threatened species and the biodiversity in Otago. • The resulting certainty from this option has social and cultural benefits. Communities told us through engagement that they want the threatened species of Otago to be recovering. Taoka species (including threatened species) are highly valued by Kāi Tahu, and their identification through a robust process protects and restores the mauri of the wai. • Additional benefits could have been realised through this process, including data cleaning, identification of habitats, identification of threats, identification of activities that cause threats, and mechanisms for managing activities that threaten species (e.g., the use of consent conditions). • This process may yet prove useful for future planning processes or could be incorporated into plan implementation or the development of action plans.	national experts to curate the list of threatened species in the plan. • Working with experts to refine the list of species has the potential to identify more than 78 species. This could have the effect of option 1 having a more "watered down" focus than option 2, by requiring limited available resources to be spread across a wider group of threatened species (i.e., beyond those that are most threatened and most reliant on water bodies in Otago). • Working with experts to refine the list of species has the potential to identify less than 78 species. This may limit the effect given to NOF requirements and may not improve the situation for threatened species or halt the loss of biodiversity. • There may be implementation issues associated with option 1, with regional council lacking information, capabilities, and capacities. • The short-term economic costs associated with option 1 may to be bigger than the cost associated with option 2 as efforts to improve the persistence or recovery of a wider set of threatened species and the habitats and ecosystems they rely upon is likely to conflict with an increased number of instances with existing or proposed economic activities.
Option 2 (Preferred option)	• Under option 2 the threatened species included in the pLWRP are those at	• Because the list was not developed by an expert panel (including tangata whenua), there may be species on the

BENEFITS	COSTS
greatest threat of extinction, and most reliant on water bodies in Otago. • The pragmatic and slimline approach to determining the focal threatened species proposed under option 2 allows for time and resources to be invested in the development of future strategic direction for the management of threatened species and the gathering of more robust information on Otago threatened species, their habitats, and their threats. This can then inform further development of the planning framework for managing these values.	list that should not be there, or there may be species that are missed. • By focussing on a prioritised subset of the list of 140 threatened species the short-term economic costs for land holders and resource users associated with option 2 are likely to be less than the economic costs associated with option 1. • There may be implementation issues associated with option 2, with regional council lacking information, capabilities, and capacities. • There may be future long-term costs associated with the need to restore habitats and support the recovery of species that did not make the list created by following option 2, and the associated environmental and risk that some species (not on the list) continue to decline.

368. Table 24 below identifies and assesses the effectiveness and efficiency of the preferred approach in achieving the objectives.

Table 22: Effectiveness and efficiency of the preferred approach in achieving the objectives.

	Effectiveness
Option 1	This Option would likely have been very effective for achieving the objective.
Option 2 (preferred option)	Option 2 is a first important step, towards achieving the relevant objectives and environmental outcomes of the pLWRP over time. As this is a relatively new focus, some uncertainty exists within the baseline data and national and regional best practice for selecting relevant threatened species. It is envisaged that during the life of the plan, more information will become available on the topic of threatened species present in Otago, especially those reliant on water bodies. In terms of achieving the relevant objectives and environmental outcomes for threatened species, the identification of 78 threatened species under option 2 forms a sturdy foundation for knowing where the focus needed to be for developing provisions that seek to manage the recovery of these species and the protection and restoration of their habitats and can be built upon over time as more information, guidance and resources become available. Uncertainty comes from a few sources, including not knowing the extent to which achievement is dependent on managing for ecosystem health, the potential to be realised through actions plans, and the investment of resources.

	While there remains uncertainty around the achievement of relevant objectives and environmental outcomes for 78 species, the time taken is streamlined by focusing on the species in Otago at the greatest known threat, with the greatest known reliance on water bodies. Community have been generally accepting of the approach, with feedback indicating that maintenance of threatened species is not enough, and improvement (restoration of habitats and recovery of populations) is aligned with freshwater visions of community (including tangata whenua).
	Efficiency
Option 1	This Option has plentiful benefits, but also costs, towards achieving the objective. The benefits of this option were considered, but determined to not outweigh the costs.
Option 2 (preferred option)	This option has benefits that outweigh the costs and is likely to achieve the objective. The approach proposed under option 2 targets the most threatened species that rely on Otago's water bodies and allows regional council to efficiently introduce protective measures for these species. Consequently, a more comprehensive approach to threatened species and biodiversity management in general will be delayed and the risk of biodiversity decline will be an inefficiency in the meantime. Restoration and recovery should be assumed in future planning processes. Establishing a foundation with these 78 species will likely mean improved efficiencies in the future, with new information and lessons learnt from the development of the pLWRP.

11.7.6. Risk of acting or not acting

369. Section 32(2)(c) of the RMA requires Otago Regional Council to take into account the risk of acting or not acting if there is uncertain or insufficient information.

370. The risk of not acting is two-fold:

a. the continued decline in the extent or condition of the habitat of threatened species, resulting in the continued loss of threatened species in the region, including the potential loss of species locally, nationally, or globally (Harrison Grierson, 2020); and

b. The pLWRP not achieving part 2 of the Act and giving effect to the requirements set out in relevant higher order documents, including the RMA functions of regional councils to maintain indigenous biodiversity, and NPSFM requirements with respect to compulsory values.

371. The information available on threatened species in Otago is limited, however the information can be used to inform acting now, especially as guided by the NPSFM[47]. The approach taken finds a balance to using the limited information to act now in a way that minimises risk.

[47] Clause 1.6 Best information. NPSFM 2020.

11.7.7. Conclusion

372. For the reasons set out above, Option 2 is an appropriately effective option and is the most efficient option, and is therefore the preferred way to achieve the objectives.

11.8. Sub-topic: Identifying the locations of habitats of threatened species

373. The NPSFM requires regional councils to:

a. protect the habitats of indigenous aquatic species[48]; and

b. identify the locations of habitats of threatened species following the NOF process[49].

374. National guidance on the topic of threatened species (and on the sub-topic of their habitats) indicated consistent regional and national mapping methodologies as a potential intervention for the successful implementation of the NPSFM. Guidance and support on collecting and recording the mapping data was also proposed (Ministry for the Environment, 2020). Unfortunately, national mapping methodologies have not been supplied to regional councils in time for the development of the pLWRP. Without the mapping methodologies and national support, ORC staff identified a few options to identify the locations of habitats of threatened species.

11.8.1. Discounted option

375. The status quo approach for identifying the locations of habitats of threatened freshwater-dependent species was discounted because of issues identified with the RPW, including that it doesn't implement the NPSFM requirements.

11.8.2. Reasonably practicable options

376. Three reasonably practicable options were explored to identify the locations of habitats of threatened species:

a. **Option 1:** Mapping the known habitats of threatened species

b. **Option 2:** Describing the habitats of threatened species

c. **Option 3:** Mapping and describing the habitats of threatened species, as information allows (preferred option).

11.8.2.1. Option 1: Mapping the known habitats of threatened species

377. Option 1 seeks to identify the habitats of threatened species by overlapping observation records with mapped water bodies.

378. This option follows a process to match cleaned and checked observation records of species to nearby water bodies and have these records checked by a panel of experts, relying on collective familiarity with the diversity and distribution of Otago's freshwater species. Through this process all the water bodies with observations of threatened species can be identified and mapped as habitats, giving some certainty to plan users.

[48] NPSFM 2020, Policy 9.

[49] NPSFM 2020, Clause 3.8 Identifying FMUs and special sites and features.

379. Data available to fulfil this requirement comes from these two key sources:

a. Observation records of threatened freshwater-dependent species held in electronic biodiversity databases (Thorsen, 2022).

b. Mapped habitat fragments of non-diadromous freshwater fish[50].

380. The process described under this option was not undertaken due to resource constraints, but may yet be a useful approach for future planning processes or could be incorporated into plan implementation or the development of action plans.

11.8.2.2. Option 2: Describing the habitats of threatened species

381. Option 2 provides for the identification of locations of threatened species, through habitat descriptions without including maps in the pLWRP.

382. Under this option the habitats of all threatened species are described, and these descriptions are then incorporated in the pLWRP. This option limits the identification of the specific locations (or water bodies) where these habitats occur. Furthermore, this option also creates uncertainty for plan users and decision-makers by providing limited certainty around the spatial extent within which plan provisions apply.

383. The process described under this option was not undertaken due to additional information being available for some species, instead seeking to provide more certainty to plan users and decision-makers (see option 3).

11.8.2.3. Option 3: Identify the locations of habitats of threatened species using descriptions within mapped areas (preferred option).

384. Option 3 was to identify the locations of habitats of threatened species by describing them within mapped areas.

385. For the purposes of Permitted Activity rule conditions, certainty was necessary for plan users and decision-makers on the locations of the habitat of threatened species, and the type of habitat within that location. In addition to descriptions of the types of habitats that threatened freshwater-dependent species rely upon (see Option 2), spatial information was available for the locations of habitats of 14 threatened freshwater-dependent species in Otago, and was incorporated into the pLWRP after some refinements (see MAP[TS] – Threatened species habitat).

386. Consequently, Permitted Activity conditions for rules throughout the pLWRP apply to habitats described in APP6 – Threathenend freshwater-dependent species that are located within these mapped areas (see Sub-topic 4).

387. For threatened species whose habitats have not yet been mapped and whose habitats will not be shown on the MAP[TS] – Threatened species habitat of the pLWRP upon notification, future identification and mapping of their habitats may result in updating the maps shown in MAP[TS] – Threatened species habitat through a plan change process.

388. APP6 – Threathenend freshwater-dependent species includes descriptions of habitats of other threatened freshwater-dependent species whose locations of habitats have not yet been mapped, to provide guidance to plan users and decision-makers on the possible types

[50] Spatial data available (Department of Conservation, 2022), developed following methods (Dunn & O'Brien, 2022), and updated in 2024.

of habitats relied upon by the species. Habitats that are described but not mapped are not supported through rules throughout the plan.

11.8.3. Clause 3 consultation feedback

389. Through pre-notification consultation under Clause 3 of the First schedule of the RMA, feedback was received on the threatened species topic from various parties, including Kāi Tahu ki Otago, Forest and Bird, Federated Farmers, Dunedin City Council, Ministry of Primary Industries, Director-General of Conservation, and Environmental Defence Society.

390. The feedback received was general in nature, and although not specific to option 3, indicated general support, and noted the alignment between the proposed provisions and the requirements of the NPS-FM for regional councils.

11.8.4. Clause 4A consultation feedback

391. No feedback was received through pre-notification consultation under Clause 4A, Pt 1 of the first schedule of the RMA for this particular sub-topic.

11.8.5. Effectiveness and efficiency assessment

392. Table 25 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the approaches above for sub-topic: Identifying the locations of habitats of threatened species.

Table 23: Benefits and costs for options to assess which habitats should be focused on.

	BENEFITS	COSTS
Option 1	• Option 1 presents a robust and transparent process for identifying the locations of habitats of threatened species. • Mapping the habitats of 78 threatened species and including these maps in the pLWRP provides the highest level of certainty for plan users and those making decisions under the pLWRP. • This option provides great certainty for the protection of their habitats, and allows for the development of clear and certain plan provisions for the protection of threatened species and their habitats. • Mapping the locations of habitats of threatened species improves the understanding and security of threatened species, which has social and cultural benefits as threatened species are highly valued by the Otago	• Gathering information and working with regional and national experts to identify and map the habitats of threatened species requires significant resourcing and time investment. • Option 1 does not allow for threatened species habitat that is currently unmapped or that is mapped but where these maps have not been included in the pLWRP, to be considered under the pLWRP framework for managing threatened species. • Option 1 could result in maps that are outdated, incomplete, or inaccurate.

	BENEFITS	COSTS
	community (including tangata whenua) as taoka species.	
Option 2	• Option 2 allows for threatened species habitat that matches the narrative description in the pLWRP but that is either currently unmapped or that is mapped but where these maps have not been included in the pLWRP, to be considered under the pLWRP framework for managing threatened species. • Identifying habitats by describing them requires no additional investment in mapping these habitats.	• Option 2 provides for a less robust process for identifying the locations of habitats of threatened species than option 1 as it does not seek to rely on habitat maps where they exist. • Option 2 provides less certainty for plan users about spatial extent of where the pLWRP provisions apply. • Provisions that solely rely on descriptions of habitats without supporting maps to direct or guide their implementation may not meet minimum requirements (i.e., legal tests) for plan provisions. • Option 2 poses some risk for the management for specific threatened species as descriptions of habitats do not exist for all threatened species or may not describe the full diversity of habitats used. Species are likely to continue to decline and biodiversity is likely to continue to be lost until the habitats of all threatened species are accurately mapped.
Option 3 (preferred option)	• Option 3 provides for a balanced approach that maximises past investment in the development of maps of threatened species habitat and avoids the cost of having to do further map development prior to the notification of the plan. Option 3 does this by utilising mapped information where this that currently exists and providing a pathway for additional habitat information to be collected/collated during the life of the LWRP. • Community benefit from knowledge of, and ownership of the biodiversity in their region, which is an asset. • Assessments of environmental effects for discretionary activities may assist in the future mapping of habitats by providing additional information or	• Some uncertainty remains for plan users, particularly around the spatial extent of where the pLWRP provisions apply for those species whose habitats are not mapped in the pLWRP. • Environmental risks remain as descriptions of habitats do not exist for all threatened species and threatened species may experience further declines until all their habitats are accurately mapped.

BENEFITS	COSTS
observations of threatened species or their habitats. • Option 3 utilises best available information[51].	

Table 24: the effectiveness and efficiency of the approach above in sub-topic: Identifying the locations of habitats of threatened species.

Effectiveness	
Option 1	• This Option would likely have been very effective for achieving the objective.
Option 2	• This option is not very effective in identifying the locations of habitats of threatened species and consequently, achieving the relevant objectives and environmental outcomes, as the use of narrative habitat descriptions provides no certainty that relevant rules will correctly be applied in areas with threatened species habitat.
Option 3 (preferred option)	• The approach under option 3 is targeted at protecting habitats that have already been mapped, while creating a pathway for information deficiencies to be addressed during the life of the plan, as more information will become available, including mapping of the habitats of threatened species in Otago, especially those reliant on water bodies. • While the baseline data used to inform mapping has some uncertainties, including where it fully represents the distribution, this mapping is the most comprehensive and robust available, and reduces risk in the pLWRP approach. It is anticipated that through the life of the pLWRP, new mapped locations of habitat will be added to the pLWRP for these other threatened species to the maps shown in MAP[TS] – Threatened species habitat through a plan change process. • The approach in option 3 forms a sturdy foundation for developing certain pLWRP provisions that can be implemented without much difficulty, and can be built upon as more information becomes available. • While there is some uncertainty for the achievement of the relevant objectives and environmental outcomes with respect to the management of 78 threatened species and their habitats for which no maps will be included in the pLWRP, risks can be minimised though the timely development and implementation of action plans and future planning processes to update and expand the mapping of threatened species habitats in the pLWRP. • Community have been generally accepting of the approach to use information where available, and to utilise a framework where additional mapping can be incorporated in the future.
Efficiency	
Option 1	• This Option has significant benefits but also costs, resulting in lower net benefit than other options.
Option 2	• This option is not the most efficient way for achieving the relevant objectives and environmental outcomes, as narrative descriptions provide little certainty for

[51] NPSFM Clause 1.6

	plan users about where the provisions apply spatially and can result in considerable increases in the length, complexity and cost of resource consent application processes. • This option has significant costs, and lower net benefit than other options.
Option 3 (preferred option)	• The time and cost taken to achieve the objectives and outcomes is streamlined by focusing on habitats already mapped and developing a pathway for the incorporation of new habitat information.

11.8.6. Risk of acting or not acting

393. Section 32(2)(c) of the RMA requires Otago Regional Council to take into account the risk of acting or not acting if there is uncertain or insufficient information.

394. The risk of not acting is two-fold:

a. the continued decline of threatened species (and the loss of indigenous biodiversity, generally) in the region, including the potential loss of species locally, nationally, or globally (Ministry for the Environment, 2020); and

b. The pLWRP not achieving Part 2 of the Act and giving effect to the requirements set out in relevant higher order documents, including the NPSFM requirements with respect to compulsory values.

395. The information currently availableon the locations of habitats of threatened species in the Otago region is limited, however can be used to inform acting now, especially as guided by the NPSFM[52].

11.8.7. Conclusion

396. For the reasons set out above, Option 3 is an appropriately effective option and is the most efficient option, and is therefore the preferred way to achieve the objectives.

11.9. Sub-topic: Measuring the achievement of environmental outcomes

397. Options were identified for how to measure the environmental outcome for threatened species, as required by the NOF process.

398. Clause 3.10 of the NPSFM requires regional councils to use relevant attributes identified in Appendix 2A and 2B for compulsory values, including threatened species. Clause 3.10 also states that regional councils may identify any other attributes for a compulsory value, and if attributes are insufficient to assess a value, must identify alternative criteria to assess whether the environmental outcome of the value is being achieved.

399. The NOF process allows for a few approaches to determine measures for assessing the achievement of threatened species objectives/environmental outcomes.

[52] Clause 1.6 Best information. NPSFM 2020.

11.9.1. Discounted option

400. The status quo approach for measuring the achievement of environmental outcomes for threatened species was discounted because of issues identified with the RPW, including that it doesn't implement the NPSFM requirements.

11.9.2. Reasonably practicable options

401. Three reasonably practicable options were identified to assess the threatened species value including to assess whether the environmental outcome is being achieved:

a. **Option 1:** Apply only the relevant attributes from Appendix 2A and 2B.

b. **Option 2:** Apply the relevant attributes from Appendix 2A and 2B, plus other attributes.

c. **Option 3:** Apply the relevant attributes from Appendix 2A and 2B, plus alternative criteria (preferred).

11.9.2.1. Option 1: Appendix 2A and 2B only

402. To measure achievement of the desired environmental outcomes, relevant attributes from NPSFM Appendix 2A and 2B can be selected. Limits on resource-use (such as stock exclusion, nutrient application limits, etc.) can generate improvements of physicochemical habitat quality across Otago, which can be measured through these attributes. Other LWRP interventions such as management of natural wetlands and flow alteration will contribute to habitat protection. Measured or modelled improvements to the physicochemical condition of habitats (where and when measured by attributes from Appendix 2A and 2B) can be expected to improve the outlook for threatened species especially those that rely on habitats where habitat is a limiting factor (Khan & Augspurger, 2024). However, for many threatened species, habitat limitations are only one part of a complex suite of pressures.

403. Management of biotic conditions of threatened species habitats (such as presence of exotic and invasive species) or population specific requirements can benefit from other interventions such as action plans. When developed, other these interventions will require suitable measures (including attributes) for assessing their effectiveness in achieving relevant outcomes.

404. Applying both sets of interventions, and their respective measures, is likely to be the best approach for determining whether regional council is achieving the environmental outcomes in the pLWRP (Khan & Augspurger, 2024).

405. Attributes from Appendix 2A and 2B are likely to measure broadscale improvements to habitats for threatened species. However, this does not necessarily mean threatened species will persist or recover for at least two reasons. Firstly, the physicochemical conditions may be suitable for threatened species whilst biological conditions may not. Examples include the lack of available resources, or the presence and abundance of predatory invasive species. In these cases, the factor that limits persistence or recovery of a threatened species will not be addressed by the physicochemical conditions alone. Secondly, threatened species may have specialised habitat needs or conditions, even for part of their lifecycle, that is not provided through maintained or improved broadscale physicochemical habitat improvements. These

needs are likely to be highly specific to a species or a sub-population (Khan & Augspurger, 2024).

406. Additionally, the attributes provided in Appendix 2A and 2B represent a non-exhaustive list of measures for four of the five components of ecosystem health (i.e., water quality, physical habitat, aquatic life, and ecological processes). The measures include physicochemical parameters (including nitrate, dissolved reactive phosphorous, suspended fine sediment) and biological indicators of ecosystem health (including periphyton, macro-invertebrate indices and the fish index of biotic integrity) (Khan & Augspurger, 2024).

11.9.2.2. Option 2: Appendix 2A and 2B, plus other attributes

407. There are risks associated with relying only on attributes from Appendix 2A and 2B of the NPSFM, including:

a. These attributes do not comprehensively measure the abundance and diversity of aquatic life, or the presence, abundance, survival, and recovery of threatened species.

b. These attributes do not measure the abundance and diversity of aquatic life, or the presence, abundance, survival, and recovery of threatened species throughout the full suite of water body types (e.g., rivers, lakes, streams, ponds, aquifers, and parts thereof), that are habitats for threatened species.

c. The suite of attributes from Appendix 2A and 2B measure stressors or responses to stressors more applicable to values other than indigenous aquatic species and threatened species, and poorly measure the achievement of environmental outcomes for threatened species, or the extent to which the threatened species value is provided for.

d. The critical habitats and conditions necessary to support the presence, abundance, survival, and recovery of threatened species go beyond the attributes included in Appendix 2A and 2B.

408. To manage these risks and to support the Attributes in Appendix 2A and 2B, Otago Regional Council explored numerous potential attributes to better assess the threatened species value, or to assess the achievement of the environmental outcome.

409. A range of potential attributes were explored for their ability to assess the threatened species value or the achievement of the threatened species environmental outcome. The potential attributes included:

a. the presence, or recency of presence, of the threatened species.

b. the national conservation category, status, criteria, and qualifiers of the species[53].

c. the regional conservation category, status, criteria, and qualifiers of the species[54].

d. the number of sub-populations of the species[55].

[53] As assessed through the NZTCS

[54] See, for example, regional conservation status assessments published by Otago Regional Council (Jarvie, Davidson-Watts, Dennis, Gower, & Pryde, 2023; Jarvie, et al., 2024; Jarvie, McKinlay, Palmer, Rawlence, & Thomas, 2024).

[55] As assessed through the NZTCS

e. the area of habitat of the species[56].

f. the green score of recovery of the species[57].

410. These were explored within the context of being a measurable characteristic that can be used to assess the extent to which a particular value is provided for. For effectiveness and efficiency, focus was paid to potential attributes that were widely applicable across groupings of species taxonomically, or by habitat type, or by threats. Thus, potential attributes were sought from systems such as the New Zealand Threat Classification System (NZTCS), the International Union for the Conservation of Nature (IUCN) Red list of Threatened species, and the IUCN Green status of species recovery.

411. These and other potential attributes showed promise to assess the value or measure the achievement of the environmental outcome. However, it was not possible to follow every step of the NOF process for these attributes. Particular limitations included setting baseline states (due to lack of baseline data), identifying sites where the target applies[58], and the requirements for setting attributes affected by nutrients[59].

412. Conceptually the NOF process is designed to set visions, establish objectives, determine measures of success (including a baseline and a target) and establish a path of rules, limits, and actions to achieve the visions and objectives. The intent of this process could be incredibly powerful for the protection and restoration of threatened species habitats, and the persistence and recovery of threatened species populations. However, the explicit requirements of the NOF are currently better designed for measuring physicochemical conditions (i.e., related to ecosystem health) rather than measuring relevant aspects of other compulsory values including threatened species. Additionally, attribute implementation (e.g., setting a baseline or target state) is reasonably reliant on a breadth and depth of understanding that comes from monitoring for a number of years. For these reasons, this option was not preferred.

11.9.2.3. Option 3: Appendix 2A and 2B, plus alternative criteria (preferred)

413. Due to complexities faced when attempting to apply the whole suite of NOF requirements to proposed attributes, an option was explored to see which alternative criteria could be proposed to support Appendix 2A and 2B attributes for threatened species value and measuring the achievement of objectives including environmental outcomes.

414. Suitable alternative criteria that were identified included:

a. The national threat category, status, criteria, and qualifiers; and

b. The regional threat category, status, criteria, and qualifiers.

11.9.3. Clause 3 consultation feedback

415. Through pre-notification consultation under Clause 3, Pt 1 of the First schedule of the RMA, supportive feedback on Option 3 was received on the general approach for threatened species in the pLWRP from various parties including Kāi Tahu ki Otago, Forest and Bird,

[56] See, for example, the area of habitat of birds and mammals (Lumbierres, et al., 2022)

[57] As assessed through the International Union for Conservation of Nature Green List (Akçakaya, et al., 2018) (Akçakaya, et al., 2018)

[58] NPSFM Clause 3.10 – 3.11.

[59] NPSFM Clause 3.13

Federated Farmers, Dunedin City Council, Ministry of Primary Industries, Director-General of Conservation, and Environmental Defence Society.

416. Some feedback received during this consultation (and through previous discussions) was supportive of the use of conservation status assessments as a measure of the achievement of outcomes for indigenous species, including those that are threatened.

417. Other feedback expressed concern that the plan does not have a clear pathway to improve freshwater biodiversity and is focused on halting the decline rather than improvement, supported by attribute targets that are missing or lacking in aspiration. This feedback concluded by highlighting the importance of specific recovery plans. This feedback was interpreted as encouraging ORC to establish action plans to ensure the recovery of threatened species.

418. Feedback from Kāi Tahu ki Otago for threatened species identified the draft objectives of the LWRP for management of threatened species as having overlap with the environmental outcomes for this value, and preferably being included as part of the policy approach for those outcomes. As a consequence of this feedback, changes were made to the environmental outcomes, and policy provisions were added for the protection and restoration of habitats of threatened species, and the recovery of populations of threatened species.

11.9.4. Clause 4A consultation feedback

419. No feedback was received through pre-notification consultation under Clause 4A, Pt 1 of the first schedule of the RMA for this particular sub-topic.

11.9.5. Effectiveness and efficiency assessment

420. Table 27 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the approaches above for sub-topic: Measuring the achievement of environmental outcomes.

Table 25: Benefits and costs for approaches to measure the achievement of environmental outcomes for threatened species.

	BENEFITS	COSTS
Option 1	• Option 1 meets requirements under the NPSFM by relying on attributes (included in Appendix 2A and 2B of the NPSFM), which are required to be used through the NOF process. • There is no expected significant resource increase through utilising measures which already exist.	• The Appendix 2A and 2B attributes do not comprehensively measure achievement of threatened species environmental outcomes. • This option makes limited contribution to the increase in knowledge on the state of threatened species presence, abundance, survival, and recovery throughout the region over time.
Option 2	• Option 2 meets the requirements under the NPSFM. • By identifying attributes that complement the Appendix 2A and 2B	• Option 2 could prove to be expensive, without national direction on whether these potential additional attributes

	BENEFITS	COSTS
	attributes, option 2 is more effective in measuring the achievement of environmental outcomes for threatened species than Option 1.	would become best practice nationally (e.g., NEMS). • The NOF requirements for attributes identified in addition to the Appendix 2A and 2B values are impracticable.
Option 3 (preferred option)	• Option 3 meets the requirements under the NPSFM • This option complements existing Appendix 2A and 2B attributes with alternative criteria, which are useful for describing the achievement of the environmental outcomes for threatened species, without the complex NOF requirements of an "attribute". As a result, Option 3 is more effective in measuring the achievement of environmental outcomes for threatened species than Option 1.	• Option 3 does not generate additional costs, in terms of measuring these alternative criteria. The NOF process has no further requirements for alternative criteria once identified. • This option makes limited contribution to the increase in knowledge on the state of threatened species presence, abundance, survival, and recovery throughout the region over time.

421. Table 28 below assesses the effectiveness and efficiency of the approach above in sub-topic 3.

Table 26: Effectiveness and efficiency of the approach in sub-topic: Measuring the achievement of environmental outcomes.

	Effectiveness
Option 1	• This option is not very effective at measuring the environmental outcomes for threatened species, largely due to the attributes not targeting the presence, abundance, survival, and recovery of threatened species.
Option 2	• This option could be effective at measuring the presence, abundance, survival, and recovery. However, this would require deviating from the requirements of the NOF (without deviating from the intent of the NOF).
Option 3 (preferred option)	• The approach under this option provides additional focus to threatened species, without requiring additional resource required. Although Option 3 is not the most effective approach for measuring the presence, abundance, survival, and recovery of threatened species, it forms a useful foundation for future development of outcome measurement as new tools and metrics become nationally standardised and accepted. • It is envisaged that during the life of the plan, more information will become available, including mapping of the habitats of threatened species in Otago, especially those reliant on water bodies. This will enable comprehensive monitoring of both the state of threatened species in Otago and the impacts of adaptive management.
	Efficiency
Option 1	• For this option to be efficient, additional national attributes would need to be developed, with accompanying guidance for application and methodologies for measurement.

Option 2	• This option is not efficient as it introduces risks associated with using metrics that are not nationally standardised and accepted.
Option 3 (preferred option)	• The approach is efficient as it enables ORC to work with nationally coordinated working groups to determine how best to measure the achievement of environmental outcomes.

11.9.6. Risk of acting or not acting

422. Section 32(2)(c) of the RMA requires Otago Regional Council to take into account the risk of acting or not acting if there is uncertain or insufficient information.

423. The risk of not acting is two-fold:

a. the continued loss of threatened species and indigenous biodiversity in the region, including the potential loss of species locally, nationally, or globally (Ministry for the Environment, 2020); and

b. regional council not delivering its function in the RMA, or not giving effect to the NPSFM.

424. The information available on threatened species in the Otago region, however the information can be used to inform action, especially as guided by the NPSFM[60].

11.9.7. Conclusion

425. For the reasons set out above, Option 3 is an appropriately effective option and is the most efficient option, and is therefore the preferred way to achieve the objectives.

11.10. Sub-topic: Managing activities that threaten species and their habitats

426. Options were identified for how to manage activites that threatened species and their habitats. Policy 9 of the NPSFM requires the protection of the habitats of indigenous freshwater species, including threatened species, aligned with the purpose and principles of the RMA.

11.10.1. Discounted option

427. The status quo approach for managing activities that threaten species and their habitats was discounted because of issues identified with the RPW, including that it doesn't implement the NPSFM requirements.

11.10.2. Reasonably practicable options

428. Two reasonably practicable options were identified to include provisions in the plan to protect the habitats of threatened species:

a. Option 1: All activities affecting the habitats of threatened freshwater-dependent species require resource consent

[60] Clause 1.6 Best information. NPSFM 2020.

b. **Option 2:** Only activities likely to have more than minor adverse effects require resource consent (preferred option)

11.10.2.1. Option 1: All activities affecting the habitats of threatened freshwater-dependent species require resource consent

429. Policy 9 of the NPSFM requires protecting the habitats of indigenous freshwater species. Most permitted activities have some level of adverse effect, even if generally minor. Therefore, Option 1 considered for the pLWRP was to require resource consent for all activities occurring within the habitats of threatened freshwater-dependent species, as described in APP6 Threathened freshwater-dependent species, and mapped in MAP[TS]–Threatened species habitat. This would be implemented by placing a standard condition on all permitted activities in the pLWRP, preventing them from occurring within those habitats.

11.10.2.2. Option 2: Only activities likely to have more than minor adverse effects require resource consent (preferred option)

430. Option 2 recognises that a range of activities are more likely to have more than minor effects on the habitats of threatened species, and caters for those accordingly. There is no specific chapter for threatened species in the pLWRP. Rather, there are a range of provisions throughout the plan that work together to manage activities. The relevant provisions are listed in the introduction to this plan-wide topic above.

431. The suite of provisions throughout the plan recognises the activities which are likely to have more than minor effects on the habitats of threatened species if not managed through a discretionary pathway (i.e., resource consent). For each of these activities, a standardised condition was added to permitted activity conditions.

11.10.3. Clause 3 consultation feedback

432. Through pre-notification consultation under Clause 3, Pt 1 of the First schedule of the RMA, supportive feedback was received generally on the threatened species topic in the pLWRP from various parties including Kāi Tahu ki Otago, Forest and Bird, Federated Farmers, Dunedin City Council, Ministry of Primary Industries, Director-General of Conservation, and Environmental Defence Society. Feedback included general support, noting the alignment between the proposed provisions and the requirements of the NPSFM for regional councils.

433. Some feedback supported the approach through option 2, commenting that this approach provides greater levels of protection where information exists.

434. Some feedback expressed concern that the plan does not have a clear pathway to improve freshwater biodiversity and is focused on halting the decline rather than improvement. This feedback finished by highlighting the importance of specific recovery plans. This feedback was interpreted as encouraging ORC to establish action plans that highlight areas of protection to ensure the recovery of threatened species.

435. Feedback from Kāi Tahu ki Otago related to threatened species identified the draft objectives of the pLWRP as having overlap with the environmental outcomes. Because of this feedback, moderate changes were made to the provisions, incorporating the changes into revision of the environmental outcomes, plus policy provisions to describe the actions that will be undertaken to achieve the environmental outcomes as objectives. Through these changes,

the draft environmental outcome for threatened species was split into two, with one focusing on the protection and restoration (to the extent practicable) of threatened species habitats, and the other outcome focusing on the recovery of threatened species.

11.10.4. Clause 4A consultation feedback

436. No feedback specific to this sub-topic was received through pre-notification consultation under Clause 4A, Pt 1 of the first schedule of the RMA for this particular sub-topic.

11.10.5. Effectiveness and efficiency assessment

437. Table 29 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the approaches above for sub-topic: Managing activities that threaten species and their habitats

Table 27: Benefits and costs for approaches to protect threatened species and their habitats

	BENEFITS	COSTS
Option 1	• Option 1 meets requirements under the NPSFM to protect the habitats of threatened species, relying on best information. • Allows for consideration of the effects of every activity on the habitats of threatened species. • Improved information on the activities occurring, allowing for better management of cumulative effects on the water bodies. • This option provides certainty for plan users where policies and rules apply. • Likely to result in a high level of protection for these habitats from all activities and is neutral to the type of activity. • Preventing the loss of biodiversity now reduces the cost of recovery in the future.	• Additional costs for resource users as a result of applying for resource consent for their activities, particularly where uses are currently permitted. Due to a lack of information on permitted activities, the costs are unable to be quantified but may be significant cumulatively. • Additional costs for ORC to process additional resource consents (noting that most costs for consent processing are cost-recoverable and therefore tie into the previous point). • Some users may choose to cease or scale back their activities, potentially resulting in impacts on their economic well-being. • Additional restrictions on activities occurring in or near the habitats of threatened species may foreclose some future uses, including for economic development. • Guidance (accompanying the pLWRP) is needed to implement this option holistically across all activities to support plan-users and decision-makers (e.g., guidance for consent conditions, guidance for assessment of environmental effects). This guidance has not been developed yet, resulting in two potential costs – either the cost of developing this guidance, or the cost of implementing this option without the guidance.
Option 2 (preferred option)	• Option 2 ensures ORC is fulfilling its obligations under the higher order documents (e.g., NPSFM) to a similar extent to Option 1, but with focus on the activities and effects where most necessary. • Allows activities with no more than minor effects to occur (both existing and new),	• Additional costs for resource users as a result of applying for resource consent, but less than those identified in Option 1 as some permitted activities in the pLWRP can still occur within the habitats of threatened species. • Additional costs for ORC to process additional resource consents (noting that most costs for

BENEFITS	COSTS
including those which assist with enhancing or restoring the values of the water body. • Ensures that the costs of protecting these habitats fall on those using them in a way that is most likely to adversely affect their extent, condition, or values. • Preventing the loss of biodiversity now reduces the cost of recovery in the future. • Manages activities at sites where they are at the greatest risk of affecting threatened species and their habitats • Allows types of activities to be undertaken that are lower risk to threatened species and their habitats • Still likely to result in protection for the habitats of threatened species, allowing for economic well-being where these activities are of lower risk to threatened species habitats.	consent processing are cost-recoverable and therefore tie into the previous point). • Additional costs for resource users if they are required to implement additional mitigations in order to manage their effects on the habitats of threatened species. It is not possible to quantify this cost due to the wide range of potential mitigation options that could be employed in different circumstances. • Implementing this option is likely to benefit from some guidance) to accompany the pLWRP to support plan-users and decision-makers (e.g., guidance for consent conditions, guidance for assessment of environmental effects). This cost is mitigated in this option by having guidance that is more effectively targeted at the appropriate activities through this option.

438. Table 30 below assesses the effectiveness and efficiency of the approach above in sub-topic: Managing activities that threaten species and their habitats.

Table 28: Effectiveness and efficiency of the approach above in sub-topic: Managing activities that threaten species and their habitats.

Effectiveness	
Option 1	• This option is effective in providing blanket protection for habitats of threatened species from the effects of activities in the plan, relevant for achieving objectives and environmental outcomes relevant to the protection of the habitats of threatened species, the protection of the habitats of taoka species, and the recovery of threatened species.
Option 2 (preferred option)	• This option is effective in providing protection from the effects of activities where this protection is necessary for achieving objectives and environmental outcomes relevant to the protection of the habitats of threatened species, the protection of the habitats of taoka species, and the recovery of threatened species.
Efficiency	
Option 1	• This option is not very efficient at placing higher stringency on the activities that are most likely to occur, or most likely to have more than minor effects, in the habitats of threatened species. • This Option is also not efficient as it requires consent for all activities regardless of the effects.
Option 2 (preferred option)	• This option is efficient at placing higher stringency on the activities that are most likely to occur in, or most likely to have more than minor effects on the habitats of

	threatened species. Consequently, Option 2 is more efficient than option 1 as it only requires consent for those activities that will have a more than minor effect.

11.10.6. Risk of acting or not acting

439. Section 32(2)(c) of the RMA requires Otago Regional Council to take into account the risk of acting or not acting if there is uncertain or insufficient information.

440. The risk of not acting is two-fold:

a. the continued loss of threatened species and indigenous biodiversity in the region, including the potential loss of species locally, nationally, or globally.

b. regional council not delivering its function in the RMA, not giving effect to the NPS-FM 2020.

441. The information we have on threatened species in our region is limited, however the information we have can be used to inform acting now, especially as guided by clause 1.6 of the NPSFM[61].

11.10.7. Conclusion

442. For the reasons set out above, Option 2 is an appropriately effective option and is the most efficient option, and is therefore the preferred way to achieve the objectives.

[61] Clause 1.6 Best information. NPSFM 2020.

12. Fish passage

12.1. Introduction

443. This section of the report focuses on provisions relating to fish passage which are a component of the LF – Land and Freshwater chapter of the pLWRP.

444. New Zealand's indigenous fish species undertake movements to access a range of habitats. These movements may be necessary to support different life-stages and ecological functions (e.g., reproduction by adults, feeding by all life stages, rearing of larvae and juveniles). Some of these movements can be small (e.g., as small as between mesohabitat types – riffle to pool) and some are large, including between the marine and freshwater environments. Many of New Zealand's most widespread indigenous fish species undertake significant movements as part of their life cycle (herein migrations). Most of New Zealand's threatened freshwater fish do not undertake migrations, but still require unrestricted access to different habitats to complete their lifecycles.

445. Species of fish that do not undertake significant movements to and from the coastal/marine environment are collectively referred to as non-diadromous, the most notable are the non-diadromous galaxiids. Although they complete their lifecycle in freshwater and do not need access to the coastal marine environment to complete their lifecycle, non-diadromous fishes require access to and from different habitats for feeding, spawning, larval growth, and to restore distributions after disturbance events (e.g., post-flood).

446. Otago's indigenous freshwater fish fauna is characterised by unparalleled regional diversity, with more species than any other region. Many freshwater fish species are endemic to Otago, and other species are endemic to New Zealand and Otago likely holds greater than 20% of the national population of the species (i.e., a national stronghold). Otago also has the most threatened freshwater fish fauna, both in terms of the number of species and their risk of extinction.

447. Fragmentation of river systems is a key driver of biodiversity loss (Franklin, et al., 2022). Structures in water bodies (such as culverts, weirs, and dams) can delay, restrict, or prevent fish movements when fish passage has not been adequately provided through their design, installation, and maintenance. This disrupts critical population processes and limits access to, and free movement within and between aquatic ecosystems. The consequence is a reduction in the distribution and abundance of freshwater fish, reductions in the diversity of fish communities, and therefore a loss of freshwater indigenous biodiversity.

448. In New Zealand, the importance of maintaining and restoring river connectivity for reversing declines in freshwater indigenous biodiversity and in freshwater ecosystem health has been recognised in the New Zealand Fish Passage Guidelines (Franklin, Gee, Baker, & Bowie, 2018), Action for healthy waterways (Ministry for the Environment, 2019a) national policy direction through the NPSFM, and through regulations in the NESF.

449. However, barriers can be good in some locations. Man-made structures as well as natural barriers (like waterfalls) have slowed the dispersal of exotic and invasive freshwater fishes. This is particularly relevant in the Otago region, where barriers have been critical to protect non-diadromous galaxias from salmonids. There is a trade-off between maintaining and restoring connectivity for freshwater ecosystem health, and protecting threatened species and supporting their recovery. Therefore, consideration of physical and biological context is

important when assessing fish passage. Providing passage for desired species is relevant nationwide for ensuring access within and between freshwater habitats, while impeding passage for undesirable fish species is an important step for maintaining indigenous freshwater biodiversity. Both of these are important considerations for managing the adverse effects of introduced species on indigenous species and ecosystems, and maintaining or improving the ecological structures, ecological processes, and health of freshwater ecosystems.

450. Fish passage provisions in the pLWRP attempt to address the following:

a. Firstly, providing fish passage in rivers and receiving environments throughout Otago to restore lost abundance and diversity of indigenous freshwater fish

b. Secondly, preventing and controlling the introduction and dispersal of exotic and invasive fish to protect indigenous biodiversity

c. Thirdly, providing a pathway to balance outcomes for indigenous biodiversity with outcomes for sports fish as valued introduced species (Department of Conservation, 2020; Ministry for the Environment, 2021; Ministry for the Environment, 2022).

451. The relevant provisions evaluated in this section are:

a. IP-P14 – Fish passage

b. IP-P15 – Remediation of existing structures

c. IP-P16– Decision-making on instream structures

d. APP3 – Desired fish species in all rivers and receiving environments

e. APP4 – Rivers and receiving environments where desired fish species have been identified

f. APP5 – Fish species that are undesired fish species in all rivers and receiving environments

g. APP7 – Sports fish as desired fish species or undesirable fish species

452. In addition, there is a substantial suite of policies and rules in the pLWRP that relate to providing fish passage for desired fish species, and are therefore reliant on defining desired and undesirable fish species. These provisions are in four chapters (BED – Beds of lakes and rivers, DAM – Damming, EFL – Environmental flows and levels, and FLOOD – Flood protection and drainage assets).

12.2. Issues

453. While providing unimpeded fish passage is advantageous for most fish, some freshwater species and ecosystems are pressured by invasive species. Physical barriers can prevent the movement of invasive fish species in these situations and have been identified as necessary for the persistence of threatened fish species (Franklin, Gee, Baker, & Bowie, 2018; Ministry for the Environment, 2021; Ministry for the Environment, 2022).

454. In addition to the issues identified in section 6.5.2, the issues for fish passage are:

a. Structures impede the passage of freshwater fish, and many habitats are currently inaccessible;

b. Indigenous freshwater species are threatened by exotic and invasive species, and the spread of undesirable species needs to be managed; and

c. Sports fish may be desired in some situations and not in others.

455. Issues with the status quo policy context that the provisions for managing fish passage in the pLWRP seek to address are outlined in 'Status quo policy context (including operative plan provisions)' sections below, and particularly in section 12.3.6.

12.2.1. Structures impede the passage of indigenous freshwater fish, and many habitats are currently inaccessible

456. Indigenous fish need to be able to move and migrate freely. However, migration and movement across different parts of water bodies or between water bodies is often impeded by human alteration of the water body or the placement of structures in the beds of these water bodies. Structures that impede passage can have enduring effects, however there are other human alterations (e.g., flow) that can also impede fish passage if coinciding with the timing of movements or migrations.

457. Structures exist in water bodies throughout Otago, many of which are likely to pose a risk to fish passage. A desktop exercise identified over 13,000 possible structures in Otago which require assessment for their risk to fish passage, and priority for remediation to provide fish passage (National Institute of Water and Atmospheric Research, 2024). The task of assessing structures for their risk to fish passage is not insignificant, and remediation is likely to require significant investment by structure owners to achieve outcomes for fish abundance and diversity.

12.2.2. Indigenous freshwater species are threatened by exotic and invasive freshwater species, and the spread of undesirable species needs to be managed

458. The global emergency recovery plan published by Tickner et al. (2020) – discussed elsewhere in the Threatened species introduction of this report – recognises that addressing exotic species is one of the six principal actions to "bend the curve" of freshwater biodiversity loss (Tickner, et al., 2020), and subsequent research established a framework to achieve that action through preventing new introductions, avoiding the establishment of invasive populations of nonnative species, eradicating invasive populations that are dispersing, or controlling and containing invasive populations that are not likely to be easy to eradicate (Britton, et al., 2023).

459. Consistent with the global emergency recovery plan for freshwater biodiversity, and subsequent research, some exotic fish species should not have passage provided anywhere, especially those not yet identified in Otago's FMUs, or identified through legislation as being a pest, pest agent, organism of interest, unwanted organism, or a noxious fish. For clarity, the plan includes an appendix (APP5 – Fish species that are undesirable fish species in all rivers and receiving environments) which establishes these as undesirable fish species in all rivers and receiving environments in the Otago region.

460. A different approach is needed for sports fish, as a subset of exotic fish species, that are valued in some rivers and receiving environments and linked intrinsically to the fishing value that must be considered through the NOF process.

12.2.3. Sports fish may be desired in some situations and not in others

461. Some exotic fish are valued for their recreational fisheries (i.e., sports fish) which need an approach that provides for environmental outcomes for ecosystem health, threatened species, taoka, and fishing, and to give effect to NPSFM Policy 9 and Policy 10.

462. Fish passage for sports fish may be desirable in some locations, depending on the values present. Sports fish passage is desirable in areas where this provides for fishing environmental outcomes, unless inconsistent with the protection of habitats of indigenous freshwater species or the protection of the habitats of threatened species.

463. Sports fish identified in Otago's FMUs include perch, tench, brown trout, rainbow trout, brook char, and Chinook salmon, and collectively are widespread in Otago's freshwater ecosystems due to both human-assisted introductions and subsequent dispersal of varying degrees. A risk assessment model assessed these sports fish as high risk of establishment and all as high or medium risk of impact (four and two species, respectively) based on their adverse impacts on key components of aquatic environments (Rowe & Wilding, 2012). A list containing 100 of the world's worst invasive species includes both rainbow trout and brown trout, due to their serious impact on biodiversity and/or human activities, and as illustrative examples of the issues of biological invasion (Lowe, Browne, Boudjelas, & De Poorter, 2004).

464. The impact of sports fish on indigenous species and ecosystem health in Otago varies greatly depending on the sports fish species, and their area of dispersal. For example, tench are quite limited in their known area of dispersal, whereas perch appear to be dispersing[62] and brown trout are continuing to disperse towards ubiquity.

465. Brown trout have had particularly devastating impacts on the freshwater biodiversity of Otago, most famously as a major driver of the decline of non-diadromous galaxiids (McDowall, 2006; Jones & Closs, 2017). Largely because of the introduction and subsequent near-ubiquitous dispersal of brown trout, populations of non-diadromous galaxiids have suffered widespread habitat/population fragmentation, and niche truncation. Due to the spread and impacts, non-diadromous galaxiids are usually found upstream of natural barriers (e.g., waterfalls) or manmade structures that prevent the passage of salmonids (usually by accident). A very small number of barriers have been deliberately built or modified to prevent passage of trout for the protection of these threatened fish (Jack, Campbell, & Bowie, 2022; Jack, 2023). Brown trout can also cause reduced local abundance, range reduction, altered foraging behaviour, and reduced habitat usage of diadromous galaxiids (i.e., whitebait species) and other migratory species of New Zealand's indigenous freshwater fish fauna (Jones & Closs, 2017).

466. Overall, brown trout have also had far-reaching effects on the behaviour, life history, abundance, and size structure of other freshwater fish and invertebrates, altering trophic webs and ultimately affecting ecosystem structures, processes, and health (Jellyman, McHugh, Simon, Thompson, & McIntosh, 2017).

467. Other sports fish are also adversely affecting indigenous fish populations and ecosystem processes. For example, a sub-population of dusky galaxias has been extirpated by the introduction and dispersal of brook char into Munros Dam, near Lake Mahinerangi – a site known for its importance as the type locality of the dusky galaxias. Additionally, the dispersal

[62] Ravenscroft, Pete (pers. comm) 17th July 2024.

of perch is of concern due to their potential to significantly alter indigenous freshwater communities, as predators upon zooplankton, macroinvertebrates, and fish (Closs, Ludgate, & Goldsmith, 2002; National Institute of Water and Atmospheric Research, 2020). It is therefore important to determine the locations in Otago where sports fish are desired to provide for sports fisheries and related environmental outcomes when not inconsistent with the achievement of other environmental outcomes.

468. There is a risk that remediation of fish passage at structures throughout Otago allows the further dispersal of invasive and exotic species, including sports fish. As such, it is necessary to identify desired and undesirable species, and the applicable rivers and receiving environments where these definitions apply to achieve catchment- and region-wide outcomes for fish passage.

12.3. Status quo

469. ORC has responsibilities for managing the passage of fish in the following:

a. Resource Management Act 1991,

b. National Policy Statement for Freshwater Management 2020, and

c. Resource Management (National Environmental Standards for Freshwater) Regulations 2020,

d. Otago Regional Policy Statement 2019,

e. Proposed Otago Regional Policy Statement 2021,

f. Regional Plan: Water for Otago.

12.3.1. Resource Management Act 1991

470. Section 30 describes the functions of regional councils for the purpose of giving effect to the RMA. Functions relevant to the topic of fish passage include the establishment, implementation, and review of provisions to:

a. achieve integrated management of natural and physical resources[63], and

b. maintain indigenous biodiversity[64].

471. Part 2 describes the purpose and principles of the RMA 1991, which is to promote the sustainable management of natural and physical resources, including to sustain the potential of natural and physical resources for future generations, and to safeguard the life-supporting capacity of water and ecosystems.

472. With relevance to fish passage, Part 2 additionally sets out matters of national importance to recognise and provide for (e.g., the protection of areas of significant habitats of indigenous fauna), and other matters to have particular regard to (e.g., the intrinsic values of ecosystems, the finite characteristics of natural and physical resources, and the protection of the habitat of trout and salmon).

[63] RMA 1991 Section 30(1)(a)

[64] RMA Section 30(1)(ga)

12.3.2. National Policy Statement for Freshwater Management 2020

473. The NPSFM requires that freshwater is managed in a way that gives effect to Te Mana o te Wai. Fish need to be able to move freely between and within freshwater ecosystems for freshwater ecosystems to be healthy under the concept of Te Mana o te Wai. Additionally, the NPSFM contains specific provisions requiring regional councils to identify desired fish species and their relevant life stages for which instream structures must provide passage, while also identifying undesirable fish species which can or should have passage prevented in order to manage their adverse effects on desired fish species.

474. Implementing these requirements is important for managing the construction, maintenance, and remediation of structures in the beds of rivers and lakes (including dams and weirs).

475. As a result of the importance of fish passage, Clause 3.26 of the NPSFM sets out requirements for regional councils to include provisions in regional plans that:

a. Establish a fish passage objective; and

b. Identify desired fish species, and their relevant life stages, for which instream structures must provide passage; and

c. Identify undesirable fish species whose passage can or should be prevented; and

d. Identify rivers and receiving environments where desired fish species have been identified; and

e. Identify rivers and receiving environments where fish passage for undesirable fish species is to be impeded in order to manage their adverse effects on fish populations; and

f. Take into account fish management plans approved by the Minister of Conservation, and seek advice from DOC and statutory fisheries managers; and

g. Require that regard is had for certain matters when considering a consent application for an instream structure; and

h. Promote the remediation of existing structures and the provision of fish passage, other than for undesirable fish species.

476. The specific requirements of regional council through the NPSFM, particularly for regional plans, seeks to resolve catchment- and region-wide inconsistencies and achieve meaningful environmental outcomes associated with the passage of fish, managing adverse effects of undesirable fish, remediating structures, and achieving targets for fish abundance and diversity.

477. However, the NPSFM does not provide adequate direction for the achievement of the fish passage objective, instead relying on regional direction for this.

478. Therefore, each regional council must determine a pathway that provides clarity for plan users and resource managers on providing for and/or preventing fish passage (whichever one is appropriate in light of the specific circumstances).

12.3.3. Resource Management (National Environmental Standards for Freshwater) Regulations 2020

479. The Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (NESF) came into effect on 3 September 2020 and sets requirements for carrying out activities that could pose a risk to freshwater and freshwater ecosystems.

480. Subpart 3 of the NESF addresses the effects on the passage of fish from the placement, use, alteration, extension, or reconstruction of structures in, on, over, or under the bed of any river or connected area. Subpart 3 does not apply to existing structures (i.e., in situ prior to 3 September 2020) and does not apply to customary weirs.

481. Subpart 3 requires information is provided to regional councils on the design and performance in relation to the passage of fish and sets out the necessary information requirements of different types of structures.

482. It is likely that fish passage will be improved at new structures through the collection of this information, consent conditions, and monitoring and maintenance requirements, and ensuring new structures do not add to fish passage issues.

12.3.4. Otago Regional Policy Statement 2019

483. The ORPS 2019 contains policies, more generally related to the fish passage topic, including for:

a. safeguarding the life-supporting capacity of fresh water and manage freshwater; and

b. managing coastal water; and

c. managing indigenous biological diversity in terrestrial, freshwater, and marine environments.

484. The RPS 2019 does not explicitly address fish passage issues nor provide direction on the management approach. This may be a consequence of being prepared prior to the specific national direction from the NPSFM and the NESF.

12.3.5. Proposed Otago Regional Policy Statement 2021

485. The pORPS, specifically LF-FW-O1A, contains visions for the Otago region, including the following related to fish passage:

a. healthy freshwater and estuarine ecosystems supporting healthy populations of indigenous species and mahika kai that are safe for consumption; and

b. recognising the interconnection of land, freshwater, and coastal water;

c. fish passage within and between catchments is provided for except where it is desirable to prevent the passage of some species in order to protect desired fish species, their life stages, or their habitats;

d. the form, function, and character of water bodies reflects their natural characteristics and natural behaviours.

486. The pORPS also contains provisions related to the provision of fish passage, creation of fish barriers to prevent incursions from undesirable species, and the management of interactions between indigenous species and trout and salmon.

487. LF-FW-P7 states that Environmental outcomes, attribute states (including target attribute states), environmental flows and levels, and limits ensure that:

a. the habitats of indigenous species with life stages dependent on water bodies are protected and sustained; and

b. the habitats of trout and salmon are protected insofar as this is consistent with the protection of habitat of indigenous species; and

c. fish passage is provided for, except where it is desirable to prevent the passage of some fish species in order to protect desired fish species, their life stages, or their habitats.

488. LF-FW-P14 states where natural character or instream values of lakes and rivers, or the natural character of their margins has been reduced or lost, promote actions that:

a. increase the presence, resilience and abundance of indigenous flora and fauna, including by providing for fish passage within river systems and, where necessary and appropriate, creating fish barriers to prevent incursions from undesirable species.

b. Restore natural connectivity between and within water systems.

489. LF-FW-M8A relates to engaging with Kāi Tahu as iwi partners, and engaging with Department of Conservation and fish and game as statutory fisheries managers on matters where local authorities are making decisions that might affect interactions between indigenous species and trout and salmon, and states:

a. When making decisions that might affect the interactions between trout and salmon and indigenous species, local authorities will have particular regard to the recommendations of the Department of Conservation, the Fish and Game Council for the relevant area, Kāi Tahu, and the matters set out below:

b. Otago Regional Council will work with the Department of Conservation, the relevant Fish and Game Council and Kāi Tahu to:

i. describe the habitats required to provide for the protection of indigenous species; and

ii. identify areas where the protection of the habitat of trout and salmon, including fish passage, will be consistent with the protection of the habitat of indigenous species and areas where it will not be consistent; and

iii. for areas identified above, develop provisions for any relevant action plan(s) prepared under the NPSFM, including for fish passage, that will at a minimum, determine information needs to manage the species; and set short-, medium-, and long-term objectives for the species involved; and identify appropriate management actions that will achieve the objectives determined in (2), including measures to manage the adverse effects of trout and salmon on indigenous species where appropriate; and consider the use of a range of tools, including those in the Conservation Act 1987 and the Freshwater Fisheries Regulations 1983, as appropriate.

12.3.6. The Regional Plan: Water for Otago

490. The Water Plan contains an objective (8.3.5) which seeks to maintain the passage of fish, or improve the passage of fish, by instream structures except where it is desirable to prevent the passage of some fish species in order to protect desired fish species, their life stages, or their habitats.

491. The Water Plan also contains several provisions relating to fish passage, including:

a. Policy 8.5.1 To require, where necessary, desirable and practicable, any structure in or on the bed of any lake or river to provide for fish migration through or past it, or alternative remedial measures where fish migration is not practicable.

b. Policy 8.5.4 To consider the removal of any abandoned structure in, on, under or over the bed of a lake or river which can be shown to significantly impede or prevent fish passage, where such passage is desirable.

c. Rule 13.2.2 Restricted discretionary erection or placement of structures. ORC reserve its discretion to include fish passage.

d. Rule 13.2.1.7B Erection or placement of any crossing is a permitted activity, providing fish passage is retained.

492. Because of the objective and the provisions, an anticipated environmental result is that existing fish passage in lakes and rivers is not inhibited by structures[65].

493. The main issues with the provisions in the Water Plan is that these do not give adequate direction for the achievement of the NPSFM fish passage objective. This planning issue has several components to it, namely:

a. It is unclear which species are desired and which species are undesirable in a river or receiving environment.

b. The desired and undesirable species in a river or receiving environment is dependent on values.

c. Exotic species, including those valued as sports fish, exert significant pressure on indigenous species and ecosystems resulting in ongoing losses of indigenous biodiversity in Otago and elsewhere in New Zealand.

494. An additional issue is that the recognised diversity of indigenous freshwater fish has improved since the development of the Water Plan, resulting in newly recognised indigenous species, revised species distributions, and habitats that were not identified or provided for.

495. As a result of the lack of adequate direction there has likely been catchment-wide and region-wide inconsistencies when dealing with fish passage at structures on a case-by-case basis. Consistent policy direction is critical to remediate the widespread inaccessibility of habitats for many indigenous freshwater fish, whilst providing protection for indigenous freshwater fish from the adverse effects of invasive species.

[65] RPW 8.9.3

12.4. Objectives

496. 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:

i. IO-O1 Te mana o te Wai

ii. IO-O3 Long-term visions and environmental outcomes

iii. IO-O6 Fish-passage

iv. IO-O7 Freshwater species, and

b. The following environmental outcomes included as objectives in FMU1 to 5:

i. FMU1 to 5-O1 Ecosystem health

ii. FMU1 to 5-O3 Threatened species (habitat)

iii. FMU1 to 5-O4 Threatened species (recovery)

iv. FMU1 to 5-O5 Mahika kai (condition)

v. FMU1 to 5-O6 Mahika kai (access, harvest, and use)

vi. FMU1 to 5-O7 Natural form and character

vii. FMU1 to 5-O11 Taoka species

viii. FMU1 to 5-O12 Fishing

12.5. Overview of sub-topics

497. Options for managing fish passage to give effect to NPSFM requirements[66] have been presented and assessed below on a sub-topic basis, with two sub-topics defined as follows:

a. Identifying desired and undesirable species; and

b. Identifying rivers and receiving environments where desired and undesirable species have been identified.

12.6. Sub-topic: Identifying desired and undesirable species

12.6.1. Discounted options

498. The status quo approach was not considered because of issues identified with the RPW, including that it doesn't implement the NPSFM requirements.

499. Other discounted options included identifying all exotic species as desired, and any indigenous species as undesirable.

500. The option to identify all exotic species as desired was discounted as evidence shows that exotic species are drivers for the decline of indigenous freshwater species and degrade

[66] See NPSFM 2020. 3.26(2)(a)-(d)

freshwater ecological integrity[67]. Some exotic fish are on lists and registers such as Schedule 3 of the Freshwater Fisheries regulations 1983 (noxious fish), or have been identified as pests, unwanted organisms, or organisms of interest (e.g., in the Otago Regional Pest Management Plan 2019). International and New Zealand literature supports the prevention and control of invasive freshwater fish, including to prevent new introductions (Rowe & Wilding, 2012; Collier & Grainger, 2015; National Institute of Water and Atmospheric Research, 2020; Tickner, et al., 2020; Britton, et al., 2023). Identifying those exotic fish as desired would not achieve the objectives of the pLWRP, or give effect to higher order documents.

501. The option to consider whether any indigenous species are undesirable was also discounted, as their passage is necessary for the improvement of ecological integrity and health of freshwater ecosystems.

12.6.2. Reasonably practicable options

502. Three reasonably practicable options relating to the identification of desired and undesirable species were considered that would achieve the relevant objectives and environmental outcomes:

a. **Option 1:** Identify all indigenous freshwater fish species as desired and all exotic freshwater fish species as undesirable fish species for the purposes of fish passage.

b. **Option 2:** Identify all indigenous freshwater fish species as desired fish species, sports fish as desired fish species, and all other exotic freshwater fish species as undesirable fish species for the purposes of fish passage.

c. **Option 3:** Identify all indigenous freshwater fish species as desired species, sports fish as undesirable fish species with a pathway to be identified as desired in some locations, and all other exotic fish species as undesirable fish species for the purposes of fish passage (preferred option).

503. Indigenous freshwater fish were identified as desired fish species, and provisions were worded to capture the known diversity of indigenous species plus any that are not currently found and recorded in Otago but expected to appear due to range shifts from climate change or conservation translocation, or due to changes in taxonomic revision of freshwater fishes as has occurred since the RPW was notified.

504. Observations of indigenous freshwater fish recorded in the New Zealand Freshwater Fish Database (NZFFD) were accessed and cleaned to develop APP4. Cleaning – where possible – involved correcting the names of rivers and receiving environments and correcting species names. This resource and others (including eDNA databases and fish distribution models) should be utilised in conjunction with expert knowledge when considering where indigenous freshwater fish should be reasonably expected to occur.

505. From this, all indigenous freshwater fish known in Otago were identified as desired fish species. Provisions were worded to capture the known diversity of indigenous species plus any that are not recorded in Otago, including those not currently identified in Otago but expected to appear due to range shifts from climate change or conservation translocation,

[67] well established, but see the following (Rowe & Wilding, 2012; Collier & Grainger, 2015; Jellyman, McHugh, Simon, Thompson, & McIntosh, 2017; Jones & Closs, 2017)

or due to changes in taxonomic revision of freshwater fishes as has occurred since the RPW was notified.

506. Instances exist where indigenous freshwater fish threaten populations of other indigenous fish. To assist with these exceptions, the specific wording of definitions and provisions for desired fish species allows for the management of these exceptions, which may be appropriately addressed through an action plan, including for establishing outcomes where indigenous freshwater fish impact each other.

507. Priorities should be identified including assessing whether impeding the passage of some indigenous species is necessary for the protection of others (e.g., priority could be given to the most threatened species, or the species whose total population is most reliant on that particular habitat).

508. A well-known example of this occurs in Lake Mahinerangi, following the impoundment of the Waipōuri River. Here, kōaro can utilise the lake to complete their lifecycle without going to sea. The resulting increased local abundance of kōaro has exacerbated the risk of extinction of dusky galaxias in tributaries of the Waipōuri River, including upstream of waterfalls that have prevented passage of salmonids (Allibone R. M., 1999). Managing instances where indigenous fish can impact on other indigenous fish may be appropriately managed through action plans to achieve environmental outcomes, and the specific wording of definitions and provisions allows for this.

509. As all indigenous freshwater fish were identified in the pLWRP as desired fish species, options exist for how to identify exotic fish, including sports fish. These options are explored below.

12.6.2.1. Option 1: Identify all indigenous freshwater fish species as desired and all exotic freshwater fish species as undesirable fish species for the purposes of fish passage

510. This option provides an unambiguous but crude method to identify fish species as desired or undesirable, categorising Otago's freshwater fish fauna in binary fashion by their biostatus (i.e., indigenous, or exotic, respectively). However, this option does not adequately provide for sports fish which may be desired as "valued introduced species" (Department of Conservation, 2020) in some rivers and receiving environments, including where passage of sports fish do not have an adverse effect on desired fish species, and their passage is not inconsistent with the protection of the habitats of indigenous freshwater species, and does not recognise "fishing" as a value that applies to all FMUs and rohe in Otago.

511. This option also does not align with the need to have particular regard to the protection of the habitat of trout and salmon under Section 7 of the RMA or the Policy 10 of the NPSFM which requires the protection of habitats of trout and salmon, in so far as this is consistent with the protection of the habitats of indigenous freshwater species.

12.6.2.2. Option 2: Identify all indigenous freshwater fish species as desired fish species, sports fish as desired fish species, and all other exotic freshwater fish species as undesirable fish species for the purposes of fish passage

512. This option identifies all indigenous freshwater fish species as desired fish species, and then categorises exotic freshwater fish as either desired fish species or undesirable fish species (sports fish, and all other exotic freshwater fish species, respectively).

513. Fish passage guidance from MfE (Ministry for the Environment, 2021; Ministry for the Environment, 2022) states fish passage management should default to provide unrestricted upstream and downstream passage to all species present unless there are reasons not to. In Otago, the reasons not to provide region-wide fish passage for sports fish as a default include this not giving effect to Te Mana o te Wai, this default not being consistent with the hierarchy of Policy 9 and 10 of the NPSFM, and this default not being consistent with the achievement of environmental outcomes for threatened species, taoka species, and ecosystem health, amongst others.

514. As explored in the issues section of the fish passage topic of this report (see 7.7.2), there are numerous reasons why sports fish are eligible for identification as undesirable fish species as they can or should have their passage prevented, consistent with NPSFM 3.26(2)(b).

12.6.2.3. Option 3: Identify all indigenous freshwater fish species as desired species, sports fish as undesirable fish species with a pathway to be identified as desired in some locations, and all other exotic fish species as undesirable fish species for the purposes of fish passage (preferred option)

515. This option identifies all indigenous freshwater fish species as desired fish species, and then identifies sports fish as undesirable fish species with a pathway to be identified as desired fish species in some locations, and then identifies all other exotic freshwater fish as undesirable fish species.

516. The pathway for sports fish to be considered desired fish species in some locations is provided for in APP7 – Sports fish as desired fish species or undesirable fish species, which lists the sports fish in Otago FMUs, identifies a method to engage with parties to determine where sports fish are desired fish species and then has a placeholder for rivers and receiving environments where sports fish are desired fish species – to be added to the plan via plan change and is reliant on the outputs of the engagement method.

517. The approach of this option for identifying sports fish as undesirable fish species (with a pathway to being identified as desired fish species) is consistent with MfE guidance that mentions a species may be identified as both (Ministry for the Environment, 2021), and allows a spatially nuanced approach to determine whether sports fish are desired or undesirable depending on the values and their relationship with environmental outcomes.

518. This approach is also consistent with LF-FW-M8A in the pORPS 2021 which directs regional councils to engage with Kāi Tahu as iwi partners, and engaging with Department of Conservation and fish and game as statutory fisheries managers on matters where local authorities are making decisions that might affect interactions between indigenous species and trout and salmon.

12.6.3. Clause 3 consultation feedback

519. Through pre-notification consultation under Clause 3, Pt 1 of the First schedule of the RMA, feedback was received on the topic of fish passage for option 3 from a variety of parties including Kāi Tahu ki Otago, Forest and Bird, Federated Farmers, Dunedin City Council, Director-General of Conservation, and Environmental Defence Society. Feedback ranged from generally supportive to opposing.

520. Supportive feedback from multiple parties noted the alignment between the proposed provisions and the requirements of the NPSFM for regional councils.

521. Feedback from Kāi Tahu ki Otago related to fish passage identified the draft objectives of the pLWRP as having overlap with the environmental outcomes. Because of this feedback, moderate changes were made to the provisions, incorporating the changes into revision of the environmental outcomes, plus policy provisions to describe the actions that will be undertaken to achieve the environmental outcomes as objectives. Through these changes, provisions in the IM – Integrated Management chapter have incorporated this feedback.

522. Feedback from Otago Fish and Game and the Central South Island Fish and Game Council largely opposed the approach and some specific wording of the approach. The feedback also included some valuable suggested amendments, many of which were subsequently incorporated into the pLWRP, following discussions with Kāi Tahu as iwi partners and Department of Conservation and Fish and Game as statutory fisheries managers.

523. Federated Farmers voiced concern about the provision of fish passage for non-migratory fish. However, connectivity between currently disconnected habitats is needed for these non-migratory fish allowing individuals of these non-migratory species to move between habitat types and providing for larval movements counter to the direction of current. On this matter, the Department of Conservation also sought to have a more accurate name used for these fish referring to them instead as non-diadromous species, as these species do not go to sea for a stage of their lifecycle.

524. Discussion with Kāi Tahu, Department of Conservation, and Otago Fish and Game Council confirmed that more time was required to undertake the assessment to determine each river and receiving environment where sports fish are desired and undesirable.

12.6.4. Clause 4A consultation feedback

525. Feedback received through pre-notification consultation under Clause 4A, Pt 1 of the first schedule of the RMA sought amendments to the structuring of strategic provisions in the IM – Integrated Management chapter of the plan, with respect to fish passage, as well as amendments to the provisions themselves in this chapter. The amendments sought through this feedback did not extend to the identification of desired fish species or undesirable fish species in the pLWRP, and consequently no amendments were made to the pLWRP related to this sub-topic.

12.6.5. Effectiveness and efficiency assessment

526. Table 33 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the approaches above for sub-topic: Identifying desired and undesirable species.

Table 29: Benefits and costs for options to identify freshwater fish species as desired and undesirable

	BENEFITS	COSTS
Option 1	• Option 1 meets requirements under the NPSFM to identify desired and undesirable fish species in Otago. • Simplistic approach enables clarity for plan-users and decisions-makers.	• This option poorly considers the value that some introduced fish species (e.g., sports fish for the fishing value) have in some rivers and receiving environments.

		• Due to the value of sports fisheries in Otago, this option would likely be contentious.
Option 2	• Option 2 meets requirements under the NPSFM to identify desired and undesirable fish species in Otago. • This option allows the time necessary for ORC to engage effectively with Kāi Tahu and statutory fisheries managers delineate the sports fish that are desired and/or undesirable. • Decision-makers benefit from the clarity and certainty of this option, following the engagement process.	• This option poorly considers the impact that some sports fish may be having on fish populations, or on the habitats of indigenous freshwater species, or on threatened species. • Plan changes may be required in the future to give effect to outputs of the engagement process between ORC, Kāi Tahu, and statutory fisheries managers.
Option 3 (preferred option)	• Option 3 meets requirements under the NPSFM to identify desired and undesirable fish species in Otago. • This option allows the time necessary for ORC to engage effectively with Kāi Tahu and statutory fisheries managers determine the sports fish that are desired and/or undesirable fish species. • This option also allows the engagement process to be undertaken at a time when the plan provisions have legal effect, giving greater certainty to the implications of a plan change informed by the resulting output of the engagement process. • Decision-makers benefit from the clarity and certainty of this option, following the engagement process. • Seeking collaboration from iwi, DOC, and fish and game is likely to result in increased the social acceptance of the pLWRP. • Through collaboration with iwi, DOC, and fish and game, environmental outcomes, agreement on the desired fish species will result in improved collaboration between parties with statutory responsibility for managing fish passage and freshwater fisheries. • Implementation of the provisions is expected to better protect the habitats of	• The engagement process requires resourcing from parties post-notification, and there are costs that come with delaying the engagement process. • Plan changes will be required in the future to give effect to outputs of the engagement process between ORC, Kāi Tahu, and statutory fisheries managers. • Until the engagement process is completed, the desired or undesirable status of sports fish is less socially acceptable than if this had been determined through pre-notification processes. • Until the engagement process is completed, there may be some uncertainty for the management of sports fish passage at some structures. • Care is required to ensure the management of fish passage for undesirable fish species does not negatively impact the passage of desired fish species or reduce the protection of the habitats of indigenous freshwater species. • There is a risk that as undesirable fish species (at notification), sports fish will have passage impeded at some locations, which will be inconsistent with the

	threatened freshwater-dependent species (especially fish) by requiring an assessment of whether sports fish should have their passage provided for. • Implementation of the provisions is expected to better protect the habitats of indigenous freshwater species where the passage of undesirable fish species is to be impeded. • Implementation of the provisions is expected to better focus on sports fishery outcomes where they are of the greatest value and where the sports fish have the lowest adverse effect on fish populations or on the habitats of indigenous freshwater species. • Implementation of the provisions is likely to have social, cultural and economic benefits for Kai Tahu by providing better opportunities to engage in mahika kai practices and allowing mana whenua to exercise kaikiakitaka. • A suite of provisions in the pLWRP are dependent on the determination of desired fish and undesirable fish for fish passage management, including at existing and new structures in the beds of lakes and rivers in including dams. This option supports the implementation of those provisions.	outputs of the engagement process and inconsistent with achieving the objectives and environmental outcomes for fish passage, however this risk is less than the alternative.

527. Table 34 below assesses the effectiveness and efficiency of the proposed provisions in achieving the objectives.

Table 30: Effectiveness and efficiency assessment for options for identifying freshwater fish species as desired and undesirable

Effectiveness	
Option 1	• This Option is not an effective way to achieve the objectives, as it poorly considers the value of sports fisheries in Otago
Option 2	• This Option is not an effective way to achieve the objectives, as it poorly considers the impact of sports fish on indigenous fish.
Option 3 (preferred option)	• Option 3 is an effective approach to approach to identifying the desired fish species and undesirable fish species for fish passage management at structures throughout the region. This option is effective at achieving the objectives and environmental outcomes relevant for fish passage in the pLWRP and implementing the NPSFM. • Providing clear expectations about the passage of indigenous freshwater fish, and the prevention of passage for exotic fish (other than sports fish) establishes clear expectations for plan users and decision-makers alike.

	• Providing a pathway for sports fish to be determined as desired following the engagement process also provides plan-users and decision-makers the certainty they need to ensure structures maintain or improve fish passage for desired fish species, and do not exacerbate existing issues. • This option responds to direction from mana whenua, and the wider community, about where fish should have passage in Otago. • This option also responds to direction from stakeholders about committing time and resources for the engagement process.
Efficiency	
Option 1	• This Option includes significant costs, and low net benefits so is not an efficient way of achieving the objectives.
Option 2	• This Option includes significant costs, and low net benefits so is not an efficient way of achieving the objectives.
Option 3 (preferred option)	• This Option has greater net benefit than the other two options, and is therefore an efficient method for achieving the objectives. • Option 3 is efficient at identifying indigenous freshwater fish and exotic freshwater fish (other than sports fish) as desired fish species and undesirable fish species respectively. • This option introduces inefficiencies for determining sports fish as desired fish species in some locations, which will necessitate post-notification engagement. • This option efficiently aligns to the achievement of objectives relevant for fish passage and the protection of habitats of indigenous species. • This is the most efficient approach to providing a pathway for sports fish to be considered desired fish species given the current time and resource constraints for undertaking the engagement process, and the most efficient way of ensuring that no further passage of sports fish was provided for without carefully considering the achievement of objectives and environmental outcomes (e.g., threatened species, ecosystem health, taoka species) where those values overlap with some sports fish. In situations where sports fish are considered desired in the future (i.e., through a plan change), providing passage for a suite of species known for their invasiveness and dispersal ability will be far more efficient than removing them from places where their passage should have been impeded. • Overall, this approach is likely to be an efficient approach to achieving the outcomes, relying on an investment of time and resource through the engagement process for sports fish to achieve environmental outcomes and objectives relevant for fish passage.

12.6.6. Risk of acting or not acting

528. Section 32(2)(c) of the RMA requires Otago Regional Council to take into account the risk of acting or not acting if there is uncertain or insufficient information.

529. The risks of not acting include:

a. Desired fish continuing to be impeded by structures in Otago; and

b. Fish passage issues being exacerbated by uncertainty for which species should be provided passage; and

c. Fish passage management being inconsistent with the achievement of environmental outcomes; and

d. The regional plan not giving effect to higher order documents including RMA Part 2 purpose and principles, Section 30 functions, and NPSFM requirements.

530. The information available on fish passage issues in the Otago region can be used to inform acting now, especially as guided by clause 1.6 of the NPSFM[68]. The approach taken finds a balance to using the limited information to act now in a way that minimises risk.

12.6.7. Conclusion

531. For the reasons set out above, Option 3 is an appropriately effective and efficient option and is therefore the preferred way to achieve the objectives.

12.7. Sub-topic: Identifying rivers and receiving environments where desired and undesirable fish have been identified

532. For this sub-topic, the identification of rivers and receiving environments where indigenous desired fish have been identified have been included in the pLWRP as APP4 – Rivers and receiving environments where desired fish species have been identified. This appendix was able to be completed for indigenous species only, as the identification of rivers and receiving environments where sports fish are desired is the output of a process that is yet to commence, and no other exotic freshwater fish is a desired fish species in water bodies of Otago.

533. For the management of fish passage for exotic freshwater fish (other than sports fish), the passage of these fish can and should be prevented in all rivers and receiving environments in Otago, as included in the pLWRP in APP5 – Fish species that are undesirable fish species in all rivers and receiving environments.

12.7.1. Discounted option

534. The status quo approach was not considered because of issues identified with the RPW, including that it doesn't implement the NPSFM requirements.

12.7.2. Reasonably practicable options

535. Requirements for identifying rivers and receiving environments for indigenous freshwater fishes and for exotic species (other than sports fishes) had been met (see APP4 and APP5 of the pLWRP, respectively). Two reasonably practicable options were considered for identifying rivers and receiving environments where sports fish are desired fish species or undesirable fish species, to support the achievement of environmental outcomes and objectives:

[68] Clause 1.6 Best information. NPSFM 2020.

a. **Option 1:** the rivers and receiving environments where sports fish are desired fish species, or undesirable fish species, are mapped and included in the pLWRP.

b. **Option 2**: the pLWRP includes a pathway for sports fish to be assessed as a desired fish species or undesirable fish species when practicable (preferred option).

12.7.2.1. Option 1: Rivers and receiving environments where sports fish are desired fish species, or undesirable fish species, are mapped and included in the pLWRP

536. For this option, a rigorous exercise was proposed by ORC, iwi partners, Department of Conservation, and the Otago Fish and Game Council. This exercise was to assess sports fish as desired or undesirable fish species in rivers and receiving environments, or parts thereof, for the whole of Otago.

537. During pre-notification consultation, including discussions before and after Clause 3 consultation, numerous discussions with Kāi Tahu, Department of Conservation, and Otago Fish and Game Council confirmed that more time and resources were required than was available before notification of the pLWRP to undertake the assessment to determine each river and receiving environment where sports fish are desired and undesirable.

12.7.2.2. Option 2: Pathway for sports fish to be assessed as a desired fish species or undesirable fish species when practicable (preferred option).

538. Under this option, the status of sports fish in rivers and receiving environments (or parts thereof) will be determined at later stage (post-notification of the pLWRP) through the engagement process following the method established in APP7 of the pLWRP and incorporated into the plan via plan change. The outputs of the engagement process (in the form of sports fish identified as desired fish species or /undesirable fish species in specific water bodies) will need to be incorporated into a regional plan (e.g., via a plan change) to have regulatory effect.

539. The approach of this option for identifying sports fish as undesirable fish species (with a pathway to being identified as desired fish species) is consistent with MfE guidance that mentions a species may be identified as both (Ministry for the Environment, 2021b), and allows a spatially nuanced approach to determine whether sports fish are desired or undesirable depending on the values and their relationship with environmental outcomes.

540. This approach is also consistent with LF-FW-M8A in the pORPS 2021 which directs regional councils to engage with Kāi Tahu as iwi partners, and engaging with Department of Conservation and fish and game as statutory fisheries managers on matters where local authorities are making decisions that might affect interactions between indigenous species and trout and salmon.

12.7.3. Clause 3 consultation feedback

541. Through pre-notification consultation under Clause 3, Pt 1 of the First schedule of the RMA, feedback was received on the topic of fish passage for option 2 from a variety of parties including Kāi Tahu ki Otago, Forest and Bird, Federated Farmers, Dunedin City Council, Director-General of Conservation, and Environmental Defence Society. Feedback ranged from generally supportive to opposing.

542. Federated Farmers voiced concern about the provision of fish passage for non-migratory fish. However, connectivity between currently disconnected habitats is needed for these non-migratory fish allowing individuals of these non-migratory species to move between habitat types and providing for larval movements counter to the direction of current. On this matter, the Department of Conservation also sought to have a more accurate name used for these fish referring to them instead as non-diadromous species, as these species do not go to sea for a stage of their lifecycle.

543. Feedback from the Otago Fish and Game and the Central South Island Fish and Game Councils indicated that including a method in the LWRP may lead to better long-term outcomes for determining rivers and receiving environments where sports fish are desired or undesirable.

544. Both Fish and Game Councils also suggested changes to the specific wording of the provisions and suggested inclusion of a method (proposed as an appendix to the plan) to determine long and short-term goals for the passage of sport fish where they are identified as desired.

545. Feedback from Kāi Tahu ki Otago for fish passage identified the draft objectives of the LWRP as having overlap with the environmental outcomes, and preferably being included as part of the policy approach for those outcomes.

546. As a consequence of feedback received through Clause 3 consultation, moderate changes were made to the provisions, incorporating them into minor amendments to the pLWRP, including providing a method for determining the status of sports fish presented here as option 2.

12.7.4. Clause 4A consultation feedback

547. Feedback received through pre-notification consultation under Clause 4A, Pt 1 of the first schedule of the RMA sought amendments to the structuring of strategic provisions in the IM – Integrated Management chapter of the plan, with respect to fish passage, as well as amendments to the provisions themselves in this chapter. The amendments sought through this feedback did not extend to the identification of rivers and receiving environments where desired fish species have been identified, or the passage of undesirable fish species is to be impeded, and consequently no amendments were made to the pLWRP related to this sub-topic.

12.7.5. Effectiveness and efficiency assessment

548. Table 35 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the approaches above for sub-topic: Identifying rivers and receiving environments where desired and undesirable fish have been identified.

Table 31: Benefits and costs for options to identify rivers and receiving environments where freshwater fish are desired or undesirable

	BENEFITS	COSTS
Option 1	• This option allows decision-makers to weigh up the environmental, social, and cultural benefits of providing	• This Option requires reasonable investment from ORC, Kāi Tahu, DOC, and

	passage for sports fish in each river and receiving environment. • This Option provides clarity at notification for the rivers and receiving environments where sports fish are desired and undesirable. • This option considers the investment of identifying rivers and receiving environments where sports fish are desired prior to notification, which has social and cultural benefits related to the achievement of environmental outcomes and objectives.	Fish and Game, which was not available prior to notification of the pLWRP.
Option 2 (preferred option)	• This option allows decision-makers to weigh up the environmental, social, and cultural benefits of providing passage for sports fish in each river and receiving environment. • Implementation of the provisions is likely to have social, cultural and economic benefits for Kai Tahu by providing better opportunities to engage in mahika kai practices and allowing mana whenua to exercise kaikiakitaka. • Over time, there will be increased certainty for consent applications and ORC staff assessing applications due to the introduction of clear objectives, policies, rules, and definitions of desired and undesirable species.	• This option provide less clarity for plan users at notification about the locations where sports fish are desired. • This option requires investment from ORC, DOC, Kāi Tahu, and Fish and Game post-notification, and then may introduce greaters costs through a plan change process to incorporate the outputs of the engagement process to identify rivers and receiving environments where sports fish are desired. • Because some benefits of Option 2 will be delivered in the long-term, there are likely to be continued short-term environmental, social, and cultural costs associated with fish passage preventions as a result of structures or alterations that require remediation.

549. Table 36 below assesses the effectiveness and efficiency of the approach above in subtopic: Identifying rivers and receiving environments where desired and undesirable fish have been identified.

Table 32: Effectiveness and efficiency assessment for options to identify rivers and receiving environments where passage should be provided for desired fish species and prevented for undesirable fish species

	Effectiveness
Option 1	• This option is an effective way to support the achievement of environmental outcomes and objectives of the pLWRP.
Option 2 (preferred option)	• Option 2 is an effective approach for supporting the implementation of pLWRP provisions through identifying sports fish as desired fish species or undesirable fish species at a time when this is possible for ORC and key stakeholders.
	Efficiency

Option 1	• The benefits of this option were not able to be realised, meaning this option was not an efficient way of supporting the achievement of envrionemtnal outcomes and objectives.
Option 2 (preferred option)	• Option 2 is an efficient approach for supporting the implementation of pLWRP provisions through identifying sports fish as desired fish species or undesirable fish species at a time when this is possible for ORC and key stakeholders. There are efficiencies lost by delaying this work until after notification of the pLWRP, but there are also efficiencies to be gained by doing this process with expertise from all stakeholders responsible for the management of fish passage in Otago.

12.7.6. Risk of acting or not acting

550. Section 32(2)(c) of the RMA requires Otago Regional Council to take into account the risk of acting or not acting if there is uncertain or insufficient information.

551. The risks of not acting include:

a. Desired fish continuing to be impeded by structures in Otago; and

b. Fish passage issues being exacerbated by uncertainty for which species should be provided passage; and

c. Fish passage management being inconsistent with the achievement of environmental outcomes; and

d. The regional plan not giving effect to higher order documents including RMA Part 2 purpose and principles, Section 30 functions, and NPSFM requirements.

552. The information available on fish passage issues in the Otago region is limited, however the information can be used to inform acting now, especially as guided by clause 1.6 of the NPSFM[69]. The approach taken finds a balance to using the limited information to act now in a way that minimises risk.

12.7.7. Conclusion

553. For the reasons set out above, Option 2 is an appropriately effective and efficient option and is therefore the preferred way to achieve the objectives.

[69] Clause 1.6 Best information. NPSFM 2020.

13. Natural hazards

13.1. Introduction

554. It is a function of regional councils under section 30 of the RMA to control the use of land for the purpose of the avoidance or mitigation of natural hazards[70] and, in relation to any bed of a water body, the control of the introduction or planting of any plant in, on, or under that land for the purpose of the avoidance of mitigation of natural hazards.[71]

555. The ORPS 2019[72] states that the regional council is a response to specifying objectives, policies, and methods in regional plans for controlling the use of land for the management of natural hazards in the beds of rivers, lakes, wetlands, and the coastal marine area.

556. The pORPS 2021,[73] in comparison, outlines a broader role for the regional council. The statement of responsibilities includes that ORC is responsible for:

a. Specifying objectives, policies, and methods in regional plans in the coastal marine area; in wetlands, lakes, and rivers; in, on, or under the beds of rivers and lakes; and on land in relation to risk reduction,

b. Identifying areas in the region subject to natural hazards and describing their characteristics, mapping the extent of those areas in the relevant regional plan(s), and including those maps on a natural hazard register or database,

c. Identifying coastal hazards, mapping their extent, and including those maps on a natural hazard register or database, and

d. Continually monitoring natural hazard risk to understand how levels of natural hazard risk change over time and, where required, update the natural hazard mapping areas.

557. ORC's functions under both regional policy statements are not solely to be exercised in the pLWRP and some are not required to be exercised within the RMA planning framework at all.

13.2. Issues

558. As noted in section 3 of this chapter, natural hazards is identified in the ORPS as a significant resource management issue for Otago and is one that particularly relates to the region's natural asset base. Otago is prone to a range of natural hazards that pose risks to communities, property, infrastructure, and the wider environment. A major event could cause severe damage and may isolate Otago communities for an period extended time. Major events of concern include flooding, an earthquake on the Alpine fault, tsunami, coastal erosion, wildfires, and extreme weather events.

559. The risk resulting from natural hazards is not just due to the hazards themselves, but also whether human activities are located and operated in ways which make them vulnerable to those hazards. For example, new critical infrastructure (e.g., renewable energy, transport

[70] Section 30(1)(c)(iv), RMA

[71] Section 30(1)(g)(iv), RMA

[72] Part C, ORPS 2019

[73] HAZ-NH-M2, pORPS 2021.

links) should be encouraged to locate in lower risk areas. Simlarly, it is important that housing, including papakāika development is located away from land that is either at risk from natural hazards, including climate change effects such as sea level rise. Natural hazard risks may be changing with the effects of climate change, which include sea level rise, and greater frequency and intensity of extreme weather events.

560. Consequently, in addition to the region-wide issues described in section 3, a specific issue relevant to the topic of natural hazards is the need to manage the risks associated with existing and new activities that may occur within an area of significant natural hazard risk. This issue is recognised in policies in the pORPS, which include directing the identification of areas where natural hazards may impact Otago's people, communities, and property, and assessment of the nature of natural hazard risks. Addressing this issue will support people and communities in preparing for and adapting to natural hazards.

561. Other issues that are relevant to the topic of natural hazards are the effects of human activities and resource use on the risk or impact of natural hazards and the impacts of activities that seek to manage or mitigate natural hazard risk on ecological processes and natural character of the environment.

562. Resource use or activities should be undertaken in a mannr that prevents the exacerbation of the effects from a hazard or the creation of a hazard, on Otago's people, communities, and infrastructure. For example, activities such as the drainage wetlands can exacerbate of natural hazard risk or impacts. Wetlands, particularly when located in the headwaters of catchments, can lessen the risk of flooding during high interity rainfall events by absorbing precipitation, and can reduce the risk of water shortage during drought periods by slowly releasing water to downstream water bodies.

563. Although the management of natural hazard risk is an important aspect of providing for the health, sfatey and well-being of communities, these management measures themselves can have an adverse impact on local ecosystems or ecological processes or other values associated with a water body or area. For example, floodbarriers may assist prevent flooding in low lying areas but can impede passage. The construction of floodbanks may impact the natural form and function of a river by contraining its channel and altering its flows, which in turn can alter the habitat conditions for the freshwater species that reside within this water body.

564. The management of significant risks from natural hazards is recognised in the following key policies of the pLWRP:

a. IP-P18 – Natural hazard risk

b. BED–P5 – Placement or replacement of hard proection structures

c. BED–P6- Restoration of lake and river extent and values

d. FLOOD-P2 – Nature-based solutions

13.3. Status quo

565. ORC has responsibilities for managing the passage of fish in the following:

a. Resource Management Act 1991,

b. New Zealand Coastal Policy Statement

c. Proposed Otago Regional Policy Statement 2021,

d. Regional Plan: Water for Otago.

13.3.1. Resource Management Act 1991

566. The management of significant risks from natural hazards is a matter of national importance set out in section 6 of the RMA, which all persons exercising functions and powers under the RMA must recognise and provide for.

567. Regional plans must be prepared in accordance with the regional council functions set out in section 30 of the RMA.[74] Section 30 contains a wide range of matters that include the control of the coastal marine area, water take and use, and discharges to air, water and land.[75] These functions include the following for the purposes of avoiding or mitigating natural hazards:

a. controlling the use of land, and

b. in relation to any bed of a water body, controlling the introduction or planting of any plant in, on, or under that land.

13.3.2. New Zealand Coastal Policy Statement

568. Policy 26 of the NZCPS directs that, where appropriate, the protection, restoration or enhancement of natural defences is provided for. This policy is given effect in the pLWRP by IO-O5, IP-P15, BED-P5, BED-P6 and FLOOD-P2. These provisions seek to support adaptation to climate change and protect or enhance the ability of natural or modified features and systems to mitigate the effects of natural hazards.

13.3.3. Proposed Otago Regional Policy Statement 2021

569. HAZ-NH – Natural hazards forms one part of the Hazards chapter in the ORPS. While the provisions largely relate to activities managed by territorial authorities, all of the parts of this chapter apply to regional council functions to some degree. The chapter includes two objectives:

a. HAZ–NH–O1 – Natural hazards Risks to people, communities and property from natural hazards within Otago are maintained where they are acceptable, and managed to ensure they do not exceed a tolerable level.

b. HAZ–NH–O2 – Adaptation Otago's people, communities, and property are prepared for and able to adapt to the effects of natural hazards, including natural hazard risks that are exacerbated by climate change.

570. Table 25 (section 10.7.1 of Chapter 5 of this 32 report) assesses the these objectives and the other the 14 HAZ-NH policies and methods that are considered to be relevant for the pLWRP. These provisions are:

a. HAZ-NH-P1A – Identifying areas subject to coastal hazards*

[74] Section 66(1)(a), RMA

[75] section 30(1), RMA

b. HAZ-NH-P1 – Identifying areas subject to natural hazards

c. HAZ-NH-P2 – Risk assessments

d. HAZ-NH-P3 – New activities*

e. HAZ-NH-P4 – Existing natural hazard risk*

f. HAZ-NH-P5 – Precautionary approach to natural hazard risk

g. HAZ-NH-P6 – Protecting features and systems that provide hazard mitigation*

h. HAZ-NH-P7 – Mitigating natural hazards*

i. HAZ-NH-P8 – Lifeline utilities and facilities for essential or emergency services

j. HAZ-NH-P9 – Protection of hazard mitigation measures, lifeline utilities, and essential or emergency services

k. HAZ-NH-P11 – Kāi Tahu rakatirataka*

l. HAZ-NH-M1 – Statement of responsibilities*

m. HAZ-NH-M2 – Local authorities*

n. HAZ-NH-M3 – Regional plans

13.3.4. Regional Plan: Water for Otago

571. The RPW provides policy direction on the issue of natural hazards. Key provisions include the following:

a. Objective 5.3.8 which requires avoiding exacerbating any natural hazard or the creation of a hazard associated with Otago's lakes and rivers.

b. Policy 5.4.2 which seeks to ensute that, in the management of any activity involving surface water, groundwater or the bed or margin of any lake or river, priority is given to avoiding (in preference to remedying or mitigating) causing or exacerbating flooding, erosion, land instability, sedimentation or property damage.

572. However, the main issue with the policy direction in the RPW is that it does not give effect to the direction set in the NPSFM, which requires providing for the health and well-being of water bodies and freshwater ecosystems as a first priority.

13.4. Objectives

573. 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:

i. IO-O5 – Manahau ahuarangi/climate change

b. The following objectives included in other chapters of the pLWRP:

i. CL-O1 – Natural hazard risks

ii. FLOOD-O1 – River function in relation to natural hazards

iii. FLOOD-P2 – Nature-based solutions

iv. WASTE-O1 – Location of waste deposition and processing sites.

13.5. Discounted option: No policy direction

574. This option would mean there are no specific policies in the pLWRP for managing natural hazards. This option was discounted because it was not considered to give effect to:

a. Section 6(h) of the RMA, which requires recognising and providing for the management f significant risks from natural hazards, or

b. Policy HAZ-NH-P3 nd HAZ-NH-P4 of the pORPS, which set out how new and existing activities will be managed in respect of natural hazard risks.

13.6. Reasonably practicable options

575. One discounted option was identified for this topic. In addition, two reasonably practicable options were identified to achieve the objectives:

a. Option 1: Clause 3 version

b. Option 2: pLWRP (preferred)

576. There options are discussed in more detail below.

13.6.1. Option 1: Plan-wide direction – clause 3 version

577. Policy HAZ-NH-P1 of the pORPS requires identifying areas where natural hazards may adversely affect Otago's people, communities, and property by assessing the hazard type and characteristics; multiple and cascading hazards, where present; any cumulative effects; any effects of climate change; the likelihood of different hazard scenarios occurring; and any other exacerbating factors. Method HAZ-NZ-M1(2)(b) specifies that this identification is to be undertaken by ORC.

578. Within the areas identified under policy HAZ-NH-P1, policy HAZ-NH-P2 then requires assessing natural hazard risk as significant, tolerable, or acceptable in accordance with the criteria in APP6 of the pORPS. Method HAZ-NH-M2(1) requires this to be undertaken by both ORC and territorial authorities.

579. Option 1 is the provisions included in the clause 3 consultation version of the pLWRP: a policy (then LF-P20, now IP-P15) and a standard permitted activity condition preventing the following activities from occurring within an area of significant natural hazard risk without consent. The policy read as follows:

Manage new and existing activities in areas subject to natural hazard risk by:

(1) only allowing new activities where:

(a) significant natural hazard risks are avoided; and

(b) when the natural hazard risk is tolerable, the level of risk is managed so that it does not exceed tolerable; and

(c) when the natural hazard risk is acceptable, the level of risk is maintained; and

(2) encouraging activities that reduce risk or reduce community vulnerability; and

(3) encouraging design that facilitates relocation of activities to areas of acceptable risk or the reduction of risk; and

(4) protecting or enhancing the ability of natural or modified features and systems to mitigate the effects of natural hazards; and

(5) prioritising risk management approaches that reduce the need for hard protection structures.

580. To support the implementation of this policy, a standard condition was included in a range of permitted activity rules that would restrict those activities where they occurred in an area with significant natural hazard risk or in a coastal hazard area, therefore requiring consent:

a. Damming of water by an off-stream dam,

b. Earthworks and associated discharge of contaminants,

c. Controlled fill, cleanfill areas, and organic waste/greenfill,

d. New cemeteries,

e. Silage production and storage,

f. Offal pits and farm landfills, and

g. On-site wastewater discharges.

581. The clause 3 version of the pLWRP was prepared on the basis that the risk assessment discussed above would be complete, allowing the permitted activity condition to be linked to a map showing the areas identified. A range of feedback was received from clause 3 parties which is discussed in more detail below.

13.6.2. Option 2: Plan-wide direction – pLWRP (preferred)

582. Further engagement with ORC's Hazards staff following clause 3 consultation highlighted that while the initial identification exercise required by policy HAZ-NH-P1 would be completed in 2024, the additional risk assessment required by HAZ-NH-P2 would not. Additionally, the risk assessments would likely not result in the type of information required for a certain and enforceable permitted activity condition (for example, a mapped area) because risk assessments need to consider the activity itself (for example, the risk of constructing a house is different to the risk of cultivating land).

583. This required reconsidering the content of the policy. In relation to the policy, clause 3 feedback also sought a range of amendments (discussed in more detail below). As a result of both of these developments, the policy was amended to read:

Manage new and existing activities in areas subject to natural hazard risk by:

(1) in areas subject to natural hazards:

(a) until a region-wide natural hazard risk assessment has been completed in accordance with HAZ-NH-M2 of the PORPS 2021, requiring a resource consent application to include a natural hazard risk assessment in accordance with APP6 – Methodology for natural hazard risk assessment of the PORPS 2021 that is commensurate with the level of risk from the proposed activity; and

(b) only allowing new activities where, as assessed by either the region-wide natural hazard risk assessment or an assessment provided with a resource consent application under (a):

(i) significant natural hazard risks are avoided; and

(ii) when the natural hazard risk is tolerable, the level of risk is managed so that it does not exceed tolerable; and

(iii) when the natural hazard risk is acceptable, the level of risk is maintained; and

(2) providing for activities that reduce risk or reduce community vulnerability, including flood protection and drainage infrastructure and flood protection and drainage infrastructure works; and

(3) encouraging design that reduces risk, including by facilitating relocation of activities to areas of acceptable risk or, if that is not practicable, to areas of lower risk; and

(4) protecting or enhancing the ability of natural or modified features and systems to mitigate the effects of natural hazards; and

(5) prioritising the adoption of nature-based solutions that reduce the need for hard protection structures; and

(6) where the natural hazard risk, either individually or cumulatively, is uncertain or unknown, but potentially significant or irreversible, apply a precautionary approach to identifying, assessing and managing that risk by adopting an avoidance or adaptive management response.

584. Amendments to the permitted activity conditions were also required. Alongside ORC Hazards staff, each condition was reconsidered. A summary of the consideration and any amendments is provided below in

Table 33: Natural hazard permitted activity conditions

Clause 3	Amendment
Damming of water by an off-stream dam	Off-stream dams can be very large and, due to the volume of water they can store, may pose risks to surrounding communities and properties. It is appropriate to retain a permitted activity condition that would mean off-stream dams located in areas subject to natural hazards would require resource consent, allowing policy IP-P15 to be applied.
Earthworks and associated discharge of contaminants	Earthworks can increase risks of natural hazards due to the disturbance and movement of large volumes of earth, the resulting areas of exposed soil, and the need to stockpile soil for periods of time. It is appropriate to retain a permitted activity condition that would require earthworks in areas subject to natural hazards to apply for resource consent.
Controlled fill, cleanfill areas, and organic waste/greenfill	The primary concern with these activities is the potential for the area to be exposed in the future, and contaminants to be discharged as a result. The primary concern relates to flooding and coastal hazards
New cemeteries	

Offal pits and farm landfills	(such as erosion and storm surges). The permitted activity condition should be narrowed to these hazard types only.
Silage production and storage	The primary concern with silage storage is the potential for the area to be inundated during a flood event, resulting in the discharge of leachate. The permitted activity condition should be narrowed to flooding.
On-site wastewater discharges	New systems are required to be designed in accordance with Standards 5 and 6 ASNZ 1547: 2012, which require consideration of hazard events such as flooding. No permitted activity condition is required.

585. The wording of each permitted activity clause was amended to align with the hazard descriptions used in ORC's Natural Hazards Database,[76] which is the primary source of information about hazard areas in the region.

13.7. Clause 3 consultation feedback

586. There was a range of feedback on IP-P18 (formerly LF-P20) through clause 3 consultation. Some parties commented on the clarity of the provision and/or sought clarification of its intent or application. That feedback and the response to it is set out below:

a. One party considered the thresholds (significant, tolerable, acceptable) too subjective and sought more clarity in order to minimise interpretation disputes.

b. No amendments were made because the thresholds are those set out in the pORPS, which also contains the risk assessment methodology for determining whether the thresholds are met.

c. One party queried whether there was a corresponding objective for the policy.

d. An amendment to the objective on climate change (now IO-O5, formerly IO-O3) was made to include reference to avoiding or mitigating natural hazards, as part of an integrated response to climate change, and an amendment to the objective on community well-being (formerly LF-O11, now IO-O9) to clarify that it also includes health and safety.

e. One party considered the policy was unclear and sought to replace it with a policy focused on how natural hazards will be managed to achieve freshwater outcomes and to deal with the effects of climate change.

f. As for (d), amendments made to objectives to clarify the link, and additional policy direction included in the FLOOD chapter.

587. In relation to (a), no amendments were made because the thresholds are those set out in the pORPS, which also contains the risk assessment methodology for determining whether the thresholds are met. In relation to (b), an amendment to the objective on climate change was made to include reference to avoiding or mitigating natural hazards, as part of an

[76] https://www.orc.govt.nz/managing-natural-hazards/natural-hazards-adaptation/otago-natural-hazards-database/

integrated response to climate change, and an amendment to the objective on community well-being (formerly LF-O11, now IO-O9) to clarify that it also includes health and safety.

588. Some parties considered the provision was not stringent enough. That feedback and the response to it is set out below:

a. One party stated that avoiding significant risk is not enough – new activities should not be able to occur in areas of significant risk.

b. No amendments were made. This point was debated through the pORPS hearing on policy HAZ-NH-P3, which does not require the avoidance of all activities in areas of significant risk. There are some activities which can occur in these areas without significant risks to people or property, which should not be prevented outright.

c. One party sought that a precautionary approach be explicitly embedded in the provision.

d. New clause (6) was included in response, which states that where the natural hazard risk is uncertain or unknown but potentially significant or irreversible, a precautionary approach is to be applied to identifying, assessing, and managing that risk. This is consistent with the direction in policy HAZ-NH-P5 of the pORPS.

e. One party sought to delete the provision and replace it with an alternative focused on the avoidance of risk.

f. The wording proposed would not have given effect to the pORPS, however amendments were made to clarify how the policy relates to the pORPS and how and when risk assessments need to be undertaken in light of that direction.

589. Four parties sought that the provision better recognise the use of nature-based solutions, including by requiring their prioritisation over hard protection structures. In response, amendments were made to clause (5) to prioritise the adoption of nature-based solutions that reduce the need for hard protection structures. Additionally, in the FLOOD chapter, a new policy to encourage the adoption of nature-based solutions in flood protection and drainage works undertaken by or for ORC.

590. One party considered that relocating an existing activity to an area where the natural hazard risk is lower should be enabled. Amendments were made to clause (3) to provide for this outcome.

13.8. Clause 4A consultation feedback

591. No feedback was received on IP-P18.

13.9. Effectiveness and efficiency assessment

592. Table 38 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in each option. Both options respond to the direction for managing natural hazards in the pORPS, which forms part of the status quo but has yet to be fully implemented at the regional plan level.

Table 34: Benefits and costs for Natural hazards

	BENEFITS	COSTS
Option 1	▪ Improved recognition of natural hazard risk in ORC's land and water management will assist with managing risks, reducing the potential for future impacts on communities and properties. ▪ Protecting or enhancing the ability of natural or modified features and systems to mitigate the effects of natural hazards will benefit the environment as well as communities by reducing the potential for adverse effects on them, including on their property. ▪ Encouraging risk reduction and relocation of activities will assist with reducing the potential impacts of natural hazard events on people and property.	▪ Adopting the risk assessment thresholds set out in the pORPS without the necessary assessments being complete would result in costs for plan users, largely due to the need to debate and/or assess risks on a case-by-case basis. These may be significant depending on the activity proposed and its location. ▪ This option has the potential to affect the risk assessment which is required by the pORPS to be implemented by ORC and TAs at a regional and district scale using a consistent methodology, rather than through ad hoc individual site assessments. ▪ Restricting activities from occurring in areas subject to natural hazards in circumstances where the activity is unlikely to be affected by the hazard would result in unnecessary costs on resource users.
Option 2 (preferred option)	▪ As above for Option 1. ▪ Strengthening direction to prioritise the use of nature-based solutions that reduce the need for hard protection structures is consistent with taking a water-centric approach to managing fresh water and land. It is likely to support the environmental outcomes for natural character, form and function and wāhi tupuna by reducing the need for modification of water bodies, resulting in environmental and cultural benefits. ▪ Adopting a precautionary approach in certain circumstances may result in reduced risk to people and properties from natural hazards, which has economic, social, and cultural benefits.	▪ In comparison to Option 1, clarifying when natural hazard risk assessments are required to be provided as part of resource consent applications will assist with limiting some of the costs described above for plan users. There will still be costs for some resource users in preparing these assessments, in comparison to the status quo. ▪ There will be additional costs for some users if they are proposing to undertake specific activities within areas subject to a natural hazard. However, in comparison to Option 2, those costs are expected to be lower because of the narrowed focus on specific types of hazards. ▪ In comparison to Option 1, implementation costs are likely to be lower because the wording in the provisions more closely aligns with existing information sources on natural hazards in the region.

593. Table 39 below assesses the effectiveness and efficiency of the proposed provisions in achieving the objectives.

Table 35: Effectiveness and efficiency assessment – Natural hazards

	Effectiveness

Option 1	Option 1 is unlikely to be effective at achieving the objectives, particularly to manage land and water in a way that avoids or mitigates natural hazards under IO-O5 and that people are able to provide for their social, economic, and cultural well-being under IO-O9. This is because the provisions do not clearly implement the pORPS direction and rely on technical information that is not yet available. The level of uncertainty in these provisions is such that they would be difficult to implement.
Option 2 (preferred option)	Option 1 is considered to be an effective way of achieving IO-O5 and IO-O9. The policy is more closely aligned with the requirements of the pORPS and relies on existing information regarding natural hazards, while recognising that there are wider risk assessments underway in the region as required by the pORPS. This option clarifies when risk assessments are to be provided with consent applications, which is an important component of achieving the objectives. Better recognition of, and prioritising, nature-based solutions to mitigating the effects of natural hazards is an effective way to contribute to achieving the environmental outcomes for natural character, form and function, and wāhi tūpuna, because it reduces the need for hard protection structures and the modification of water bodies.
	Efficiency
Option 1	Option 1 is not considered efficient because of the costs it would impose on resource users, particularly in relation to hazards that are not relevant to a particular activity or are at a scale that is not commensurate to the risk posed. The lack of clarity about how the pORPS provisions are being implemented in the pLWRP creates uncertainty, which can also result in additional costs for users if that uncertainty leads to additional information requirements or delays in decision-making.
Option 2 (preferred option)	Option 2 is considered to be an efficient option. It assists to implement the pORPS direction for managing natural hazards in a way that is clear and reduces the potential for uncertain or debate in individual consent applications. It also takes a more targeted approach to managing specific activities in relation to the hazards that are of concern, ensuring that additional costs are justified and commensurate with the scale and significance of the activity and/or the hazard.

594. 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 uncertainty about the natural hazard risk in some parts of Otago. However, ORC has a programme of work to undertake risk assessments across the region and to work with territorial authorities to undertake additional assessments where the circumstances warrant that approach. Over time, it is expected that there will be an ongoing reduction in uncertainty. However, natural hazard risk will always have an element of uncertainty.

595. Despite the uncertainty, it is important that people and property are protected from the risks of natural hazards and that the pLWRP supports this outcome. The risk of not acting may result in additional costs and other adverse impacts on Otago's communities. The risk of acting is considered to be lower than the risk of not acting.

13.10. Conclusion

596. Option 2 is considered to be more efficient and effective than option 1, largely because it is a clearer way to achieve the objectives and results in lower costs for plan users. For this reason, Option 2 is considered to be the most appropriate way to achieve the objectives of the pLWRP.

14. Discharges

14.1. Introduction

597. This sub-topic relates to the policies in the IM chapter of the pLWRP that seek to provide direction on the discharge of water or contaminants to water or land, and provide for the use of receiving water standards, being IP-P19, IP-P20 and APP14 – Receiving Water Standards.

14.2. Issues

598. In addition to the issues described in section 3 of this chapter, there is a specific issue relevant to discharges.

14.3. Status quo policy context (including operative plan provisions)

599. The status quo for this topic is described in section 4.1 above.

14.4. Objectives

600. The objectives for this option are those described in section 5 above.

14.5. Discounted option

601. One discounted option was identified for this topic. This option would include:

a. For permitted activities, including conditions mirroring the standards for discharges set out in s70, and

b. For consented activities, topic-specific direction for decision-makers included as policies in the topic chapters of the pLWRP.

602. The first part of this option concerning s70 was discounted due to a High Court judgement on s70 that was released in April 2024. In *Federated Farmers Southland Inc v Southland Regional Council* [2024] NZHC 726, the Court considered Rule 24 in the Proposed Southland Water and Land Plan which permitted certain discharges of contaminants provided they met the standards set out in s70. One question explicitly considered by the High Court in this case was whether the Environment Court was correct in questioning whether s 70 would be contravened when the conditions of the Rule would preclude the very effects which s 70 was concerned with.[77] The High Court found that simply replicating the s70 criteria and making them conditions of a permitted activity would not meet the procedural requirements of s70, which require a regional council to be satisfied that the listed effects will not arise from permitted a discharge before including a rule in a regional plan.[78]

603. The second part of this option was considered reasonably practicable and so is included in options 1 and 2 below.

[77] See [76], *Federated Farmers Southland Inc v Southland Regional Council* [2024] NZHC 726.

[78] See [83] – [91], *Federated Farmers Southland Inc v Southland Regional Council* [2024] NZHC 726

14.6. Reasonably practicable options

604. Three reasonably practicable options were identified to achieve the objectives:

a. **Option 1:** Otago-specific standards and topic-based direction

b. **Option 2:** Otago-specific standards and topic-based and region-wide direction – clause 3 version

c. **Option 3:** Otago-specific standards and topic-based and region-wide direction – pLWRP (preferred)

605. These options are described in more detail below.

14.6.1. Option 1: Otago-specific standards and topic-based direction

606. As an alternative to relying on the s70 standards from the RMA (discussed above), this option adopts the use of Otago-specific receiving water standards that apply to receiving waters after a discharge has occurred as well as topic-based direction on managing discharges.

607. This option includes a definition of 'reasonable mixing' that refers to a mixing zone as set out in an appendix to the pLWRP. Part 1 of the Appendix on receiving water standards sets out the mixing zones for the purposes of the pLWRP and provides that within these mixing zones the receiving water standards do not have to be met. The size and method for determining the mixing zones differ depending on the type of water body. The mixing zone is based on an approach set out in Technical Publication 10, "Stormwater Treatment Devices Design Guideline Manual" (TP10). (Cooke, Milne, & Rutherford, 2010)

608. Part 2 of the Appendix specifies the receiving water standards that apply to water bodies and artificial watercourses. Some of the receiving water standards include a narrative measure (e.g., the standards for artificial watercourses, change in sediment cover, and chlorophyll-a), and some are numeric standards (e.g., standards for temperature, pH, and ammoniacal nitrogen). Many of the numeric standards are based on ANZECC default guideline values and apply to water bodies using the second-level River Environment Classification classes (climate by typography), while some are based on NPSFM attribute bands. (Ozanne , 2023)

609. The receiving water standards have been designed to set clear thresholds for determining when a discharge has minor or less than minor adverse effects. In doing so, the receiving water standards can assist in determining whether a discharge can be permitted under s70 of the RMA or whether the effects of a discharge need further consideration through a consent application process. While assisting with managing the cumulative effects of discharges and therefore contributing to the achievement of the target attribute states set under this plan, the receiving water standards are not intended to be used as targets for water quality.

610. In terms of direction for decision-makers, this option relies solely on the direction being provided in the topic chapters of the pLWRP, meaning that any direction is specific to that type of activity (for example, wastewater discharges).

14.7. Option 2: Otago-specific standards and topic-based and region-wide direction – clause 3 version

611. This option was included in the version of the pLWRP prepared for clause 3 consultation. It included:

a. Otago-specific receiving water standards to be applied to certain types of discharges,

b. topic-based direction on managing discharges set out in the relevant topic chapters of the plan, and

c. region-wide direction in the IM – Integrated management chapter (through what was then LF-P14).

612. This option contains the same receiving water standards approach as described in Option 1. In comparison to Option 1, however, it removes common direction from topic chapters and incorporates it into a policy in the IM – Integrated management chapter which applies to all activities managed by the plan.

613. Under this option, that region-wide policy (then LF-P14) sets out requirements for the consideration of applications for resource consent to discharge of water or contaminants. It requires applicants to demonstrate the implementation of measures to address the potential adverse effects of the discharge (ranging from first avoiding the production of the contaminant to reusing/recycling the contaminant, minimise the amount, or carrying out a range of treatments). It also directs decision-makers to only grant consent provided three criteria were met:

a. the discharge is to land, unless the adverse effects were greater than a discharge to water; and

b. the discharge will not cause an acute toxic effect within the reasonable mixing zone; and

c. discharges to water complied with the receiving water standards.

614. As part of this option, many of the permitted activity discharge rules in the pLWRP include a condition that the discharge had to meet all or some of the receiving water quality standards set out in the appendix beyond the mixing zone.

14.8. Option 3: Otago-specific standards and topic-based and region-wide direction – pLWRP (preferred option)

615. Option 3 builds on Option 2 discussed above and reflects the amendments made to the provisions following the clause 3 feedback (which is discussed below in section 6.5.11.3).

616. This option contains similar policy direction as Option 2. IP-P19 sets out the mandatory considerations for decision-making and requirements for applicants to demonstrate as part of consent applications. It contains similar direction that requires applicants to demonstrate a hierarchy of measures aimed at mitigating the adverse effects of the discharge. The direction for decision-makers has been softened slightly, whereby decision-makers are to 'prefer discharges to land over discharges to water' compared to 'only grant consent if' as required by Option 2. Option 3 contains a number of exceptions to the direction for

discharges to be to land, but the options are 'alternative' options where only one needs to be met (compared to Option 2 where all limbs had to be met). The exceptions are where:

a. the adverse effects associated with a discharge to land are greater than a discharge to water; or

b. the discharge is for the elimination or control of aquatic pests, pest agents, organisms of interest, and unwanted organisms; or

c. the discharge will comply with the receiving water quality standards.

617. This option also contains a number of explicit exceptions for activities that are instead covered by other policy direction in the topic chapters of the pLWRP, including for reticulated wastewater systems, industrial and trade waste, stormwater networks, approved and unapproved hazardous substances.

618. This option differs from Option 2 in that it contains policy direction about mixing zones, rather than this sitting in the appendix. IP-P20 provides that if an applicant proposes to use a mixing zone, then the applicant must demonstrate that within the mixing zone contaminant concentrations will not cause acute toxicity effects on aquatic ecosystems (unless it is for biosecurity purposes). In addition, the applicant must demonstrate that the mixing zone is either the default mixing zone (which is the same mixing zone requirements as that proposed in Option 2), or a site-specific mixing zone that takes into account the default distances and will not result in significant adverse effects on aquatic life. The receiving water quality standards are set out in APP14 and are the same as for Option 2.

619. This option also differs in the way the rules apply the receiving water standards. As part of Option 3, permitted discharges apply the receiving water quality standards at the point of the discharge (and do not use a mixing zone). This means that the receiving water standards in the pLWRP will apply at the point of discharge. This will be more stringent than applying them after reasonable mixing as per Option 2. In Option 3, mixing zones will only apply for consented discharges. These discharges tend to be larger in volume and have contaminant concentrations that cannot meet receiving water standards. In these situations, mixing zones can be determined on a case-by-case basis that allows consideration of the specific site in question.

14.9. Clause 3 consultation feedback

620. Feedback from Clause 3 parties on the overarching discharge policy (then LF-P14) and receiving water standards included support for the policy as a response to Te Mana o te Wai, cultural values and biodiversity, and encouraging more sustainable management of discharges.

621. There were some concerns with applying the mixing zones in practice and that the use of mixing zones would, in many cases, result in a lower standard being applied compared to the current Water Plan rules (which do not use mixing zones). In response to this feedback, the provisions were amended to remove the requirement to apply a mixing zone for permitted discharges, and instead apply the receiving water quality standards at the point of discharge. Additional policy direction was included to assist with determining mixing zones for consented discharges. This is further described in the discussion on Option 2 above.

622. Some feedback was also directed at amendments to reduce the stringency of the policy direction to avoid granting consents, to ensure that consent could be obtained in

appropriate situations (e.g. for biodiversity operations purposes) or where environmental outcomes are met. Some parties were concerned that the strict hierarchy of measures to manage effects of discharges were not appropriate for certain activities (e.g. stormwater and treated wastewater discharges). This feedback resulted in changes to the order of the measures in the policy, and some exemptions to the requirement to avoid discharges directly to water, along with specific exemptions for certain activities, including reticulated wastewater and interim measures for stormwater.

14.10. Clause 4A consultation feedback

623. The following feedback was received on IP-P23:

a. In clause (2)(b), specify that exception for discharges for biosecurity relates to aquatic pests.

b. In clause (2)(c), the requirement to comply with receiving water standards should apply in all circumstances (i.e. should be linked to other clauses by 'and' not 'or').

624. The amendment sought in (a) was made, as it more clearly expressed the intent of the clause – that it provides an exemption for biosecurity activities occurring in water (i.e. targeting freshwater pests).

625. No amendment was made to clause (2)(c) for the following reasons:

a. If the adverse effects of a discharge to land are greater than a discharge to water, it would not be appropriate to potentially then prevent the discharge to water occurring by requiring those discharges to comply with the receiving water standards, which (as described earlier in this section) have been designed to set a very conservative 'limit' which may prevent discharges that do not have significant adverse effects. The best way to manage these discharges will be in a way that allows activity- and site-specific information to be taken into account.

b. It is not necessary for discharges for biosecurity purposes to be subject to the receiving water standards. Substances for biosecurity purposes are approved under the Hazardous Substances and New Organisms Act 1996 with controls on their use, depending on the nature of the hazard they pose. For substances that are considered hazardous to the environment, environmental exposure limits apply (including specifically for surface water).

626. Feedback was also received on IP-P14 – Mixing zones:

a. Consider whether provision for a mixing zone should be precluded for some discharges e.g. wastewater.

b. Amend clause 2(c) as follows:

will not result in significant adverse effects on aquatic life within the mixing zone unless the discharge is for biosecurity <u>and the effect is limited to the pest species being controlled</u>

c. Make clause (2)(c) applicable to the default mixing zone as well as site-specific ones.

627. In response to the first point, determining whether provision for a mixing zone should be precluded .is appropriate should be considered within the context of an application because

it will depend on a range of factors, such as the content of the discharge, the management approach, and the sensitivity of the receiving environment. No changes were made.

628. No feedback was received on APP14 – Receiving water standards.

14.11. Effectiveness and efficiency assessment

629. Table 40 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in each option.

Table 36: Benefits and costs for Discharges

	BENEFITS	COSTS
Option 1	▪ All direction in the plan would be tailored to specific activities rather than applying plan-wide. ▪ Setting and requiring compliance with receiving water standards will likely result in environmental benefits while also enabling discharge activities to continue to occur, which has both social and economic benefits.	▪ Some activities do not have topic-specific direction in the pLWRP, either because they occur infrequently or have not been anticipated by the plan. This may result in a gap in the provisions for managing some types of discharges. ▪ The requirement to meet receiving water standards will likely result in costs for dischargers. ▪ Applying a mixing zone to permitted discharges may result in a lower standard of water quality or increased environmental effects, compared to Option 2. ▪ Potential for duplication across topic chapters, which amy increase administration costs.
Option 2	▪ As for Option 1 in relation to receiving water standards. ▪ The requirement to 'avoid direct discharges to water' except in limited circumstances will have cultural benefits by ensuring that potentially culturally offensive activities are avoided.	▪ As for Option 1 in relation to receiving water standards and mixing zones.
Option 3 – preferred option	▪ Increased environmental benefits compared to Option 2, by requiring permitted activity rules to meet the receiving water standards at the point of discharge. This in turn will likely result in social, cultural and economic benefits associated with better water quality and/or avoiding significant adverse effects of discharges for Kai Tahu and the community at large (e.g. positive impacts on public health, improved opportunities for local food/mahika kai harvesting). ▪ By removing mixing zones from permitted activities this option is significantly	▪ Potentially increased costs for dischargers associated with meeting the permitted activity conditions (compared to Option 1) as discharges will need to meet the receiving water standards at the point of discharge. ▪ Potentially greater adverse cultural implications associated with allowing more exceptions for direct discharges to water in the consenting framework compared to Option 2.

simpler to implement, so it will decrease the time and resources involved in complying along with monitoring and/or enforcing compliance.

630. Table 41 below assesses the effectiveness and efficiency of the proposed provisions in achieving the objectives.

Table 37: Effectiveness and efficiency assessment – Discharges

	Effectiveness
Option 1	Option 1 is considered to be effective at achieving the objectives for activities with topic-specific direction. However, it may not be effective at achieving the objectives in relation to managing activities without topic-specific direction.
Option 2	Option 2 is considered to be effective at achieving the objectives by requiring discharges to meet the receiving water standards at the edge of the mixing zone and creating a strong preference for discharges to land over discharges to water across the plan. It means there is a common 'minimum standard' for managing all types of discharges.
Option 3 – preferred option	Option 3 is also considered to be effective at achieving the Objectives. It is likely to be more effective than Options 1 and 2 as it requires a more stringent approach for permitting discharges, which is likely to contribute to better environmental outcomes.
	Efficiency
Option 1	Option 1 is likely to be efficient, but less efficient compared to Option 3 due to the difficulties with applying a mixing zone to permitted activity rules, and the policy framework not recognising some of the practicalities with applying the effects management hierarchy to particular types of discharges, which may be appropriately managed in a way to still achieve the outcomes required by the objectives (particularly in relation to improving or maintaining water quality). There may be higher administration costs for activities without topic-specific direction if there is uncertainty about how they should be managed.
Option 2	Option 2 is considered to be similarly as efficient as Option 1, although there may be lower administration costs if there is consistent, plan-wide direction on managing all discharges (including those without topic-specific direction) as well as topic-specific direction.
Option 3 – preferred option	Option 3 is likely to be more efficient than Options 2 and 3 as removing the mixing zone for permitted activities will require fewer resources and be more certain to determine whether a permitted activity meets the receiving water standards. Applying a mixing zone to consented discharges is appropriate as they often have a potential increased risk of adverse effects occurring. Option 2 also recognises that there are some instances where a direct discharge to water is unavoidable to serve a particular purpose (e.g., for biosecurity / pest control) or that there are ways to appropriately manage discharges to achieve the same outcomes.

631. 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. In this case, there is sufficient and sufficiently certain information on which to decide on the proposed provisions. The discharge provisions in the IM – Integrated management chapter (IP-P23, IP-P24 and APP14) are largely directed by national direction and the pORPS and are intentionally pitched at a high level. The provisions direct what information should be considered in certain circumstances and require applicants to demonstrate specified matters. The risks associated with not acting in

the manner proposed is that there is limited specific guidance on how discharges are to be managed in a consistent and integrated way across the entirety of the pLWRP, which undermines the entire cohesion of the pLWRP and may result in different types of discharges across the different topic sections being treated differently. Overall, the information supporting Option 3 is suitably certain and sufficient that there is a minimal risk of acting compared to the status quo.

14.12. Conclusion

632. The effectiveness and efficiency assessments have shown that overall, Option 3 is the most efficient and effective way to achieve the objectives of the pLWRP and to implement the RMA, higher order direction including the NPSFM, ORPS and pORPS.

15. Drinking water protection zones

15.1. Introduction

633. Access to safe drinking water is of critical importance to the health and wellbeing of people. The importance of drinking water is reflected in national direction. Clause 2.1 of the NPS-FM 2020 states that *the health needs of people (such as drinking water)*, are a second priority, below *the health and well-being of water bodies and freshwater ecosystems* (1st priority) and above other uses of water that enable people *and communities to provide for their social, economic, and cultural well-being* (3rd priority). In addition to this, drinking water supply is a value that must be considered in Appendix 1B of the NPS-FM (listed under 'other values').

634. The Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007 (NES-DW) is the primary instrument at a national level for managing drinking water. The NPS-FM 2020 as well as other national direction instruments, such as the National Environmental Standards for Freshwater (NES-F) and the Resource Management (Stock Exclusion) Regulations 2020 also play a role in managing the health of freshwater.

635. In recent years public confidence in the management of drinking water supplies has started to erode due to a number of drinking water contamination outbreaks both locally and nationally. In 2016 an outbreak of gastroenteritis in Havelock North caused approximately 5,500 people to become ill with campylobacteriosis. Four people died and 45 people were hospitalised. This outbreak was traced to contamination of the drinking water supplied by two bores on the outskirts of Havelock North. (Department of Internal Affairs, 2017)

636. Other, Otago-specific, examples that illustrate the public health risks due to insufficient protection of drinking water supplies from contamination are the acute gastroenteritis outbreak at the Cardrona ski field in July 20026 and norovirus outbreak in Cardrona village in late August and early September 2012.

637. During the 2006 acute gastroenteritis outbreak at the Cardrona ski field at least 218 cases were identified, 115 which were ski resort staff and 103 of which were visitors. An investigation that was completed in July the following year concluded that identification of E. coli contamination of the water supply of the Cardrona ski field and the subsequent

identification of NoV in the feces of individuals with gastroenteritis suggested that this water supply had been contaminated by human sewage (Hewitt, et al., 2007).

638. The Cardrona 2012 outbreak, that occurred 6 years later in the nearby Cardrona Village and affected 66 people, was first notified to the Southern District Health Board on 27 August 2012 when four groups of visitors, all of whom had eaten or consumed water at the Cardrona Hotel in the previous 48 hours, fell ill with acute gastroenteritis. However, cases of gastroenteritis in the Cardrona village also had been reported the week earlier. Further investigation revealed that the main bore for the supply of the Cardrona Hotel and nearby residences was within close proximity of the wastewater disposal fields of for the hotel and holiday resort and two private septic tanks. Although it was revealed that at the time of the outbreak the bore was not completely secure, the investigation findings suggested that if drinking water suddenly increased it would be possible, in effect, to draw contaminated water into the drinking water bore (Nicholas & Weaver, 2016).

639. Following the 2016 outbreak of gastroenteritis in Havelock North a government inquiry was held to identify the cause of the contamination, evaluate the response to the outbreak and consider any necessary changes to prevent or minimise similar incidents in the future (Department of Internal Affairs, 2017). The Inquiry was key in recognising 'significant problems' with the current NES-DW and recommended a full review of the NES-DW to 'enable risks to source water to be addressed in a straightforward and comprehensive manner.' Key issues identified were that the existing NES-DW is complex and difficult to interpret and apply. As well as this, it does not cover the wide range of activities posing a risk to source water, nor does it provide adequate protection for water supplies serving less than 500 people.

640. Since the completion of the Inquiry, the Government has been progressing the development of amendments to the NES-DW to improve the protection of human drinking water sources. The objectives of the proposed amendments to the NES-DW are to strengthen and align national direction for the protection and management of source water. The changes seek to improve how at-risk source water areas are delineated, how activities that pose risks to source water are regulated or managed and protect all registered water supplies. In early 2022 the Government undertook consultation on these proposed amendments.

641. Although the timeframe for amending the NES-DW is uncertain, the feedback undertaken during the rounds of public engagement on the LWRP indicates strong community support for the protection of safe drinking water supplies. Through engagement on the policy direction for the pLWRP in March 2022, mana whenua have indicated that drinking water needs to be protected (but not at the expense of the health of water bodies). Their position is that drinkable water standards must be achieved across the takiwā wherever possible to recognise hauora and for the benefit of future generations.

642. The protection of drinking water supplies does not have a dedicated chapter in the LWRP. Instead, such protection has been given effect to throughout the relevant provisions in the pLWRP, which include:

a. Policy LF-P15 – Activities within drinking water protection zones

b. Various provisions, particularly performance standards for rules, within the BED, CL, DAM, EARTH, EFL, FLOOD, OTH, PP, SW, WASTE, WET, WW chapters

c. APP14 – Drinking water suppliers

643. Some of these provisions may not directly reference drinking water protection zones, but are an essential part of the package to promote safe drinking water.

15.2. Issues

644. In addition to the issues described in section 3 of this Chapter, there is a more specific issue relevant to managing drinking water sources: there are adverse effects on the water quality of sources of human drinking water.

645. In general terms, the key issue relating to human drinking water supplies is the potential adverse effects on water of direct and indirect contaminant discharges or bed disturbances associated with activities at or near the point of take for human drinking water supplies. Access to safe drinking water is a fundamental issue for the entire community, including Kāi Tahu, as water is the "life giver" of all things, including people.

646. An overview of the state and trends of water quality in Otago for the period between 01 July 2017 and 30 June 2022 is provided in ORC's May 2023 report State and Trends of Rivers, Lakes, and Groundwater in Otago 2017 – 2022 (Ozanne, Levy, & Borges, 2023). The findings of this report were based on analysis of monitoring data for key NPSFM attributes[79], collected from the ORC's State of Environment (SoE) monitoring network for rivers (107 sites), lakes (34 sites/depths), and groundwater (55 sites) (Ozanne, Levy, & Borges, 2023). The report findings indicate that the state of river and lake quality is variable across the region.

647. Trend analysis for rivers and lakes returned mixed results. The 10-year trend analysis for rivers showed fewer degrading trends compared to the 20-year trend analysis, with overall improvement in *E. coli*, TN, Nitrate Nitrite Nitrogen (NNN as a proxy for NO3-N) and turbidity. The 5-year trends for lakes on the other hand showed degradation at most sites. results show that the state of river and lake water quality is spatially variable across Otago (Ozanne, Levy, & Borges, 2023). Water quality is typically best in surface water bodies located at high elevations surrounded by a predominantly native land cover. Whereas water bodies with poorer water quality are typically found in urbanised areas, such as Dunedin, or in catchments characterised by higher incidence of more intensive rural land uses, such as North Otago and parts of the Lower Clutha Rohe (Ozanne, Levy, & Borges, 2023).

648. As the NPS-FM does not contain attribute states for groundwater, its state was assessed against the Maximum Acceptable Values (MAV) in the Drinking Water Standards for New Zealand (DWSNZ) for *E. coli*, nitrate, and dissolved arsenic. Similar to the rivers and lakes data, the state of groundwater quality is also mixed across Otago. Spatial variability was also observed with *E. coli* and nitrate exceedances usually an issue in the same areas, while high dissolved arsenic concentrations were more site-specific. High nitrate concentrations in groundwater were typically observed in aquifers located in areas with high densities of septic tanks or intensive nitrate application (e.g., dairy farming, market garden), such as North Otago. This report further shows that in these parts of the region many sites sow elevated nitrate concentrations that exceed the DWSNZ MAV (Ozanne, Levy, & Borges, 2023).

[79] Monitoring data was collected for the following NPS-FM attributes: fortoxicity (ammonia-N; NH3- N and nitrate-N; NO3-N), Dissolved Reactive Phosphorus (DRP), Chlorophyll A (Chl-a), E. coli, Total Nitrogen (TN), Total Phosphorus (TP), and suspended fine sediment.

15.3. Status quo

649. National direction relating to drinking water protection and supply, including the NES-DW, is currently implemented in Otago by the pORPS and the RPW. This section provides an overview of the status quo, as well as describing the issues associated with the status quo.

650. The NES-DW requires regional councils to ensure that the effects of activities on drinking water sources are considered in decisions on regional plans and resource consents. Key regulations within the NES-DW are regulation 10, which sets limitations on permitted activity rules for activities upstream of abstraction points, and regulation 12, which requires regional councils to set a condition on resource consent requiring notification of registered drinking-water supply operators if an activity may significantly adversely affect such a supply. An important threshold in the NES-DW is greater requirements for the protection of drinking water supplies that serve more than 500 people.[80]

651. The importance of drinking water is reflected in the pORPS. Policy LF-WAI-P1 requires all decision-making affecting freshwater to prioritise first the health needs of water bodies and ecosystems, and second the health needs of people ingesting or immersing in water – this explicitly includes drinking water. These health needs are to be prioritised over other uses of water.

652. The RPW recognises in various provisions the importance of domestic or communal water supply values. In some instances, the provisions make direct reference to *water supply values*, a term defined in the glossary of the RPW as "*the existence of a take for human consumption, which people and communities come to depend upon".* In other cases, the provisions refer to the term natural and human use values. This term is defined in the RPW as "*characteristics of a water body which are important to, or are an essential part of, ecological communities, or are enjoyed or utilised by people and communities. While some of these values are identified in Schedule 1, natural character, amenity values, existing lawful uses, and archaeological sites will be identified on a case-by-case basis."*

653. The Water Plan identifies a number of existing water takes from lakes and rivers, where the water is used for public water supply purposes in *Schedule 1B: Schedule of water supply values. Schedule 3A: Schedule of human uses of particular aquifers* identifies a small number of aquifers (8) that provide for the water takes for human consumption, while specific locations for existing groundwater takes for 13 community water supplies are listed in *Schedule 3B: Schedule of groundwater takes for the purpose of community water supply*. [81]

654. Key objectives, polices and other provisions in the Water Plan that are relevant to the management of water supply values include the following:

    a. Objective 5.3.1 seeks to maintain or enhance natural and human use values, including water supply values, that are supported by Otago's lakes and rivers.

[80] Regulations 9 and 10, NES-DW

[81] Some of the information contained in these schedules is no longer up to date. For example, the settlement of Mosgiel is no longer supplied with water provided by the Mosgiel Water Supply identified as Site no 12 in Schedule 3B of the Water Plan.

b. Policy 5.4.1 provides for the identification of natural and human use values, including water supply values, supported by Otago's lakes and rivers, as expressed in Schedule 1:

   i. Policy 5.4.2 seeks to give priority to avoiding adverse effects on water supply values, in preference to remedying or mitigating, in the management of any activity involving surface water, groundwater or the bed or margin of any lake or river.

   ii. Policy 7.B.2 seeks to avoid objectionable discharges of water or contaminants to maintain the natural and human use values of Otago lakes, rivers, wetlands, groundwater and open drains and water races that join them.

   iii. Policy 7.B.6 requires decision-makers to take into account relevant natural and human use values when assessing any consent to discharge contaminants to water and consider the need for and the extent of any zone for physical mixing, within which water will not meet the characteristics and limits described in Schedule 15.

   iv. Policy 9.4.1 seeks to ensure that the suitability of aquifers to support the recognised uses of groundwater identified in Schedule 3 is maintained when considering activities involving the taking of groundwater or the discharge of contaminants.

655. While some of the Water Plan's provisions seek to explicitly provide for the protection of water supply values, the Water Plan also contains a broad suite of provisions that seek to manage the adverse effects of contaminant discharges to water stemming from a wide range of activities. These provisions provide an incidental benefit to the protection for water supplies.

656. Key objectives, policies and provisions in the Water Plan that are relevant to management of water quality in a more general sense include:

a. Objective 7.A.1 seeks to maintain the water quality in Otago lakes, rivers, wetlands and groundwater, but enhance water quality where it is degraded.

b. Objective 9.3.3 seeks to maintain the quality of Otago's groundwater.

c. Policy 7.B.1 seeks to manage the quality of water in Otago lakes, rivers, wetlands and groundwater, including by maintaining Good Quality Water; enhancing water quality where it does not meet limits specified in the plan, recognising discharge effects on groundwater; and promoting the discharge of contaminants to land in preference to water.

d. Policy 7.B.4 requires that decision-makers have regard to any potential effects on water quality when considering any discharge of water or contaminants to land.

e. Policy 9.4.18 provides for the identification of land of high risk in terms of the vulnerability of underlying groundwater to leachate contamination and for the management of activities and land use change as well as point source discharges of water or contaminants to land or groundwater, with respect to this land.

f. Policies 9.4.18 and 9.4.19 provide for the identification of:

   i. the identification of:

- land of high risk in terms of the vulnerability of underlying groundwater to leachate contamination; or
- land that protects underlying aquifers from this type of contamination; and

ii. the management of land use change, point source discharges and other activities such as excavation.

657. The rules that provide for the management of any activities that can have potential impact on the water quality of source water bodies that provide for water supply values are contained in:

a. Chapter 12 - Rules: water take, Use and Management

b. Chapter 13 - Rule: river & lake beds

c. Chapter 14 - Rules: other land uses

658. A review of the existing Water Plan provisions in terms of how well these provide for the protection of drinking water has pointed toward the following issues:

a. The current framework in the Water Plan does not provide for the effective management of drinking water protection zones.

b. The current management framework in the Water Plan is unclear and lacks specificity.

c. The current management framework has not been effective in improving water quality across the region.

659. The following sections discuss these issues in more detail.

15.3.1. The current management framework in the Water Plan is unclear and allows for inconsistent decision-making.

660. Only a limited number of provisions within the Water Plan specifically refer to *community water supply* or *water supply values*. While domestic and communal drinking water supply values are often understood to be captured within the definition of the broader term *Natural and Human Use Values*, this term itself is clouded with uncertainty and not always referred to in a consistent manner by the policies in the Water Plan. For example, some policies apply to *natural and human use values* in their broadest sense, capturing both values identified in Schedules 1A, 1B and 1C as well as any values intended to be captured by the definition of *natural and human use values,* while other policies only refer to water supply values identified in Schedule 1 of the Water Plan. In doing so the broader policy framework is inconsistent with regard to the level of protection it provides for different drinking water supplies, with some, such as the ones included in the Schedules receiving more protection than others that are not included in this Schedule.

661. In addition, various relevant policies that provide for the management of drinking water supplies and water quality in general are not very directive. Rather than applying clear thresholds beyond which activities or their effects should be avoided, these policies direct decision-makers to consider or have regard to the adverse effects of activities on domestic and communal drinking water supplies. This approach leaves decision-makers with considerable discretion and could result in inconsistent decision-making. .

15.3.2. The Water Plan does not provide for the delineation and effective management of drinking water protection zones.

662. The Water Plan does not provide for the delineation and effective management of drinking water protection zones. However, the Plan goes some way towards identifying specific groundwater resources that require more careful management, through the identification of Groundwater Protection Zones under policies 9.4.18 and 9.4.19.

663. The Explanation of Policy 9.4.18 states:

> *"The vulnerability of aquifers to leachate contamination is determined by the depth of the aquifer and the permeability of the overlying soil or rock. Any area of land, over parts of aquifers which are considered to be high risk in this regard, is identified as Zone A of the Groundwater Protection Zones on the C-series maps.*
>
> *In this zone, change of land use to activities likely to generate leachate should, where practicable, be avoided. Where it is not considered possible to do so, provision must be made to contain any leachate generated. City and district councils will manage such land use change within Zone A in accordance with the direction provided by this policy. …."*

664. The Explanation of Policy 9.4.19 states:

> *"Some aquifers are protected from leaching contaminant discharges by a layer of soil or impervious sediment. Zone B of the Groundwater Protection Zones is of generally low risk in terms of groundwater vulnerability, provided these protective soils or sediments are not compromised by inappropriate excavation. As such, city and district councils will manage excavation within Zone B in accordance with the direction provided by this policy. Zone B of each Groundwater Protection Zone is identified on the C-series maps."*

665. In 1996, ORC commissioned IRRICON Consultants and Landcare Research (NZ) Ltd to develop recommendations with respect to a framework for the management and protection of groundwater quality and quantity in Otago. IRRICON (1996) produced vulnerability maps for 6 selected aquifers chosen because of the level of groundwater demand and usage, and, in some cases, the threat of groundwater quality deterioration due to land management developments at the time. [82] These vulnerability maps were overlain onto aquifer maps to delineate Groundwater Protection Zones. Groundwater protection zones are defined in the glossary of the Water Plan as "*An area of land in which land use and water use activities are to be managed to protect the underlying groundwater resource*" The policies in Chapter 9 of

[82] The inputs behind the creation of these maps included:

- Identification of aquifer recharge areas
- Depth to aquifer/water table
- Geology of the unsaturated zone and its ability to attenuate contaminants
- Soil type and its ability to provide a protective mantle for the aquifer

the Water Plan distinguish between Groundwater Protection Zones A and B (GWPZ-A and GWPZ-B).[83][84]

666. The aquifers containing Groundwater Protection Zones in the Water Plan are tabled below:

Table 38: Aquifers containing Groundwater Protection Zones

Aquifer	GWPZ - A	GWPZ - B
Lower Waitaki Plains Aquifer	✓	✓
Kakanui-Kauru Alluvial Aquifer	✓	
Shag Alluvial Aquifer	✓	
Lower Taieri Aquifer	✓	✓
Ettrick Basin Aquifer	✓	
Roxburgh Basin Aquifer	✓	
Dunstan Flats Aquifer	✓	✓

667. A review of the GWPZ framework in the Water Plan has highlighted various issues.

668. Firstly, the mapping of GWPZs in the Water Plan is incomplete, as the Water Plan only includes six GWPZs. The intention to further delineate protection zones in other aquifers was never carried out, which further undermines the effectiveness of the GWPZs.

669. Secondly, the approach for identifying and mapping GWPZs is no longer considered robust. The vulnerability mapping was carried out in 1996. Since then, knowledge around groundwater hydrogeology, long term quality trends (which helps identifying high pressure areas), and aquifer boundary delineation have substantially improved. Additionally, higher resolution soil mapping is also now available (Landcare Research S-Map)[85].

670. Thirdly, the Water Plan does not apply a consistent approach with respect to the management of activities in GWPZs, by only focussing on a limited set of activities that result contaminant discharges. This is illustrated by the fact that the Water Plan only contains two rules that manage discharges on GWPZs. These are:

a. Rule 12.A.1.2 - discharges of human sewage into land from any long-drop toilet

b. Rule 12.A.1.4 - discharges of human sewage through any on-site wastewater treatment system

671. The concerns around the limited level of protection offered by the Water Plan for managing water quality in these GWPZs seem supported by the monitoring data, which indicates that the Water Plan has failed to make a significant difference to overall groundwater quality in GWPZ areas. The State of Environment (SoE) monitoring in areas with current GWPZ such, e.g., Ettrick, Lower Waitaki and the Kakanui-Kauru Alluvium, identified variable groundwater quality with contamination from E-coli, nitrate, and Dissolved Reactive Phosphorus (DRP).

[83] Relevant policies in Chapter 9 of the Water Plan making reference to Groundwater Protection Zones A and/or B include policies 9.4.18, 9.4.19 and 9.4.20.

[84] GWPZ-A areas have thinner soil mantle protection and shallower water tables that are more vulnerable to contamination. For instance, in these areas any discharge to land, e.g., from septic tanks, is classified as a discretionary activity. GWPZ-B areas have a protective soil mantle that can protect the aquifer from leachate contamination. Therefore, any land use activity that disturbs the soil mantle e.g., excavation, requires the applicant to replace the protective soil mantle1.

[85] https://smap.landcareresearch.co.nz/

15.3.3. The current management framework for managing water quality has not been effective in improving water quality across the region.

672. Although the ORC does not systematically monitor water quality at the location of all drinking water supply takes across the region, the findings from a review of the Water Plan undertaken in 2020 and data collated through ORC's SoE monitoring network cast doubt over the effectiveness of the Water Plan in maintaining water quality, or improving it where it is currently degraded (see earlier discussion in section 1.1.2.4 in chapter 3 of this report).[86]

15.4. Objectives

673. 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-O1 Te mana o te Wai

ii. IO-O3 Long-term visions and environmental outcomes

iii. IO-O9 Community well-being

b. Th following environmental outcomes included as objectives in chapters FMU1 to FMU5 (including chapters CAT1 to CAT5):

i. FMU1 to 5 – O2 Human contact

ii. FMU1 to 5 – -O8 Drinking water supply source water.

15.5. Discounted options

674. Two discounted options were identified for identifying and managing drinking water protection zones.

675. Fistly, the status quo was not considered a reasonably practicable option because it does not give effect to the NPS-FM 2020 and is not likely to achieve the relevant objectives and environmental outcomes in the pLWRP. The framework for managing drinking water supplies in the operative Water Plan is ineffective, relies on outdated technical information and is not aligned with iwi and community aspirations for the protection of the water quality of sources of human drinking water.

676. A second option that was discounted was to adopt the amendments to the NES-DW proposed by the NZ Government in 2022.

677. The proposed amendments to NES-DW outlined in the consultation document released by the NZ Government in January 2022 seek to establish a default methodology for delineating

[86] Relevant key findings from this review include the following:

- The RPW does not allow for sufficient consideration of the cumulative impacts of wastewater discharges, including on-site systems;
- The rule framework for contaminant discharges in the RPW is uncertain and difficult to enforce
- There is no clear decision-making framework for resource consent applications for discharge consents
- There is no clear link between the rule and policy framework for managing discharges and the water quality limits in the RPW.
- There is scope for strengthening the framework for the management of bores

three levels of source water risk management areas (SWRMAs) around abstraction points (Ministry for the Environment, 2022a).

678. SWRMA 1 is the immediate area around the source water take where there is an immediate risk of contamination. Most activities will be restricted in this area.

a. For rivers, it encompasses the river and its bed 1,000 metres upstream and 100 metres downstream of the intake, extending 5 metres into land from the river edge.

b. For lakes, it encompasses the lake and its bed within a 500-metre radius of the intake, extending 5 metres into land from the lake edge.

c. For aquifers, it encompasses land within a 5-metre radius around the intake (bore head).

679. SWRMA 2 is a larger area where activities need to be managed, to mitigate more medium-term risks of contamination. The size will vary because it is based on the time it takes for water to flow to the source.

a. For rivers, it is the river and bed from where water travels to the intake within an 8-hour period.

b. For lakes, it is the entire lake area, extending landward 100 metres, and includes tributaries (being the area from where water travels to the lake within an 8-hour period).

c. For aquifers, it is the land area above where groundwater travels to the intake (bore) within a 1-year period, to a maximum of 2.5 kilometres.

680. SWRMA 3 is the entire catchment area for the source water. Persistent contaminants and cumulative effects of all activities within the catchment are the management focus in this area.

681. The proposed amendments also include a mechanism that allows regional councils to establish 'bespoke' SWRMAs. This would cover scenarios where the default SWRMA would not give enough protection or where it would unnecessarily restrict land use. However, the default approach would apply until any bespoke approach is formally established.

682. In addition, under the proposed amendments, a very large number of drinking water abstraction points would require SWRMAs, as abstraction for just a small number of households would qualify.

683. Further investigation by ORC staff into the feasibility of developing a management framework in the LWRP that gives full effect to the proposed new requirements, as outlined in the Ministry for the Environment's Consultation Document (Ministry for the Environment, 2022a), suggests that ORC is currently lacking sufficient technical information to give full effect to these requirements, and the establishment of SWRMA-2s in particular, and that the science programme that would be required to do this is likely to be time-consuming and significant in terms of cost. In addition, the amendments have not been progressed. Consequently there is still uncertainty around the mandatory requirements that will be imposed on ORC, landowners near water takes and water suppliers by the planned amendments to the NES-DW. Therefore, this option is not considered a reasonably practicable option.

15.6. Reasonably practicable options

684. Two reasonably practicable options were identified to achieve the objectives. Both of these options are based on the identification of registered drinking water supplies as defined in the Water Services Act 2021.[87] The options are:

a. **Option 1:** DWPZs based on a variant of SWRMA 1 for all registered drinking water supplies.

b. **Option 2:** DWPZs based on a variant of SWRMA 1 for larger registered drinking water supplies (servicing over 500 people) – preferred option.

685. Both options were considered as an interim framework until the amendments to the NES-DW are finalised and gazetted. At that point the development of a plan change to the LWRP is likely to be required to ensure alignment of the provisions with the updated requirements of the NES-DW and give full effect to the latter.

686. All of these options are described below.

15.6.1. Option 1: DWPZs based on a variant of SWRMA 1 for all registered drinking water supplies.

687. This option seeks to protect all drinking water supplies that were listed on the Public Register of Drinking Water Supplies as at 29 August 2024 held by Taumata Arowai, a crown entity and water services regulator for New Zealand. On that date the Register of Drinking Water Supplies listed 90 registered drinking water supplies in Otago.

688. Under this option protection to these registered drinking water supplies is provided by delineating DWPZs around these supplies. Activities that pose a risk to the water quality of source water bodies that supply registered drinking water supplies would be restricted within these DWPZs.

689. The approach for managing DWPZs under option 1 relies on the delineation of DWPZs based on a definition of the term *Drinking Water Protection Zone* in the Plan. It is not proposed to include maps in the pLWRP showing the boundaries of DWPZ. The DWPZs are delineated based on the framework for delineating SWRMA 1 areas outlined in the proposed amendments to NES-DW. This is reflected in the definition of "drinking water protection zone", which provides that, for drinking water sources supplied by a drinking water supplier listed in APP[14] – Drinking water supplies, the DWPZ is:

a. For surface water takes from rivers (or directly connected groundwater takes), it encompasses the river and its bed 1,000 metres upstream and 100 metres downstream of the intake, extending 5 metres into land from the river edge.

b. For surface water takes from lakes (or directly connected groundwater takes), it encompasses a 500m radius; or

c. For bores, it encompasses a 20m radius around the intake.

[87] Section 5 of the Water Services Act 2021 defines the concept of a registered drinking water supply as follows: *registered, in relation to a drinking water supply, means a drinking water supply registered in accordance with the requirements of subpart 7 of Part 2 of the Water Services Act.*.

690. The 20m setback for bores is greater than the 5m setback proposed in the consultation document for the proposed amendments to NES-DW. This is to ensure better alignment with the setbacks applied in other provisions in the pLWRP, and in light of the last SoE report that noted there was a reasonable proportion of unsecured bores around the region, which were contributing to groundwater contamination.

691. Additional DWPZs may also be identified in a resource consent to take drinking water.

692. Under option 1 protection to drinking water supplies is provided by managing various types of activities can occur within DWPZs. Specifically, the pLWRP includes standard conditions on the permitted activity rules for discharges from a wide range of activities, land uses and land management practices, as well as some activities in the beds of lakes and rivers, that restrict these activities occurring in DWPZs. Consequently, most discharges and some land uses are not permitted within a DWPZ, and will require resource consent.

693. The types of activities that option 1 seeks to manage within DWPZs include the following:

a. Various activities in the beds of lakes and rivers including:

    i. The placement alteration or demolition of structures, such as single span bridges and fords;

    ii. The placement of sediment traps in the beds of lakes and rivers;

    iii. Drilling the bed of a lake or river;

    iv. Vehicle access;

    v. Maintenance of drains and modified watercourses; and

    vi. Suction dredge mining.

b. The disturbance of land for site investigations.

c. The establishment of temporary instream dams and weirs and removal or demolition of instream dams and weirs.

d. The diversion of water.

e. Discharges of agrichemicals, vertebrate toxic agents, dust suppressants and tracer dye.

f. Earthworks and drilling of land.

g. Stormwater discharges.

h. Onsite wastewater discharges.

i. Discharges to land of cleanfill, green waste and larger volumes of organic waste material.

j. Farming activities such as:

    i. the use of land for sacrifice paddocks, feedlots, stock holding areas, intensive winter grazing, baleage based wintering, silage production/storage, offal pitts and farm landfills; and

    ii. discharges of fertiliser and effluent, including solid animal effluent.

694. Policy IP-P25 requires decision-makers to consider a range of matters when considering applications for resource consent for activities within a DWPZ. This includes ensuring

compliance with the NES-DW. For land uses and discharges to land, decision-makers must not grant resource consent for any discharge within 20 m of a bore used for drinking water and beyond that area, only grant consent if the applicant demonstrates that the affected bore head is secure and practicable measures are implemented to reduce the risk of groundwater contamination. Decision-makers must also avoid or mitigate the risk of contamination of drinking water supplies by taking into account a number of matters, including the nature of any likely contaminants and contaminant pathways.

15.6.2. Option 2: DWPZs based on a variant of SWRMA 1 for larger registered drinking water supplies (servicing over 500 people) – preferred option

695. Option 2 is identical to Option 1 in terms of the approach for delineating DWPZs and the restrictions on activities within these DWPZs (which is outlined above).

696. However, option 2 is to only provide DWPZs for drinking water supplies listed on Taumata Arowai's Public Register as at 29 August 2024 that service communities of 500 people or more. On that date the Register of Drinking Water Supplies, Otago had 72 drinking water supplies servicing more than 500 people.

697. Under this option, the "drinking water suppliers" servicing more than 500 people (as defined in the Plan) are listed in APP14 – Drinking water supplies. Under option 2 the pLWRP does not provide for the delineation of DWPZs for any additional drinking water suppliers servicing more than 500 people added to Taumata Arowai's Public Register after 29 August 2024, unless these are added to APP14 – Drinking water supplies through a plan variation or a plan change.

15.7. Clause 3 consultation feedback

698. Feedback on the framework for managing and delineating DWPZs was received from only a small number of clause 3 parties with there being support for some aspects of this framework and opposition against other aspects. In general, farming parties opposed the approach, largely on the basis that it was more stringent than the NES-DW and that additional stringency was unjustified. Several were concerned about the impacts of restricting discharges within DWPZs, particularly the use of agrichemicals for pest control. One party (a territorial authority) sought a more stringent approach that incorporated all three SWRMAs.

699. The key matters raised with respect to this topic were:

a. The list is incomplete and further drinking water suppliers should be added to APP14 – Drinking water supplies

b. Further detail should be provided in APP14 – Drinking water supplies around the different end uses that are supplied by the listed Drinking Water Supplies (e.g. human consumption, industrial and commercial uses, irrigation, etc.)

c. Need to amend the definition of the term Drinking Water Protection Zone in the Glossary of the pLWRP to ensure consistency with the term drinking water source protection zone and the technical guidelines for drinking water source protection zones prepared for the Ministry for the Envionment (Pattle Delamore Partners Ltd, 2018).

d. It is not clear whether the DWPZ framework in the plan is effective, efficient and necessary, particularly with regard to the management of fertiliser application and discharges of agrichemicals under the pLWRP.

700. No specific comments were raised by Iwi on the framework for managing and delineating DWPZs though the Clause 3 pre-notification consultation process. However mana whenua did raise the need to consider manaakitaka in the management of freshwater, which encompasses the principle of reciprocity and means that any use of the river must respect the river and must enhance the mana of the river as well as the mana of the people using it.

701. No changes were made to the framework for delineating and managing DWPZs as result of the Clause 3 feedback. The reasons for this are as follows:

a. The drinking water suppliers proposed to be listed in APP[14] – Drinking water supplies provides for 97% of the total population that can be supplied by all drinking water supplies listed on Taumata Arowai Public Register. Further Drinking Water Supplies can be added to the plan through future plan changes.

b. Applying a management approach that incorporates all three SWRMAs would not be possible as the ORC currently lacks the technical information to implement this approach, particularly to set DWPZS based on the SWRMA 2 framework.

c. Information around the different end uses that are supplied by the listed Drinking Water Supplies can be obtained from the resource consents that provide for these supplies, which is public information. Including this information in the pLWRP would require regular plan changes to the plan to ensure this information is kept up to date.

d. The terminology used in the pLWRP (Drinking Water Protection Zone) is deliberately different from the term Drinking Water Source Protection Zone in MfE's (2018) Technical guidelines for drinking water source protection zones, as the concepts both documents are referring to are different.

e. Rules OTH-R2-PER1 (agrichemical discharges to water) and FF-R9-PER1 (fertiliser) do not allow for discharges of fertiliser and agrichemicals within a DWPZ. A consent pathway is available for circumstances where agrochemicals need to be discharged within a DWPZ for pest management purposes.

15.8. Clause 4A consultation feedback

702. No specific feedback was provided on the framework for managing DWPZs through clause 4A consultation.

15.9. Effectiveness and efficiency assessment

703. Table 44 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in preferred Option 2 above.

Table 39: Benefits and costs for Drinking water protection zones

	BENEFITS	COSTS
Option 1	• Implementation of the provisions proposed under option 1 is expected	▪ Option 1 does not provide protection for all of Otago's domestic water supplies, as the

	BENEFITS	COSTS
	to increase drinking water quality, and decrease the risk of contamination of all of Otago's drinking water supplies included in Taumata Arowai's Public Register of Drinking Water Supplies as at 29 August 2024. These drinking water supplies have a combined capacity to service over 259,500 people. • A consenting regime for discharge activities (including land uses with an associated discharge) in DWPZs will increase Council oversight of the activities through the consent process and subsequent monitoring of consents. • Implementation of the provisions proposed under option 1 is also expected to benefit the health and water quality of source water bodies providing for drinking water supplies included in Taumata Arowai's Public Register of Drinking Water Supplies as at 29 August 2024, or the health of freshwater ecosystems supported by these water bodies. • Reducing the risk of contamination or an outbreak also has positive economic implications for the community. For example, the Havelock North outbreak had a significant economic impact across multiple sectors including $4.1 million incurred by local government.[88] • Water treatment to remove or treat contaminants to acceptable levels for drinking can be costly. Managing activities that may introduce contaminants to source water may reduce these costs to drinking water suppliers. As such there are anticipated economic benefits for Kāi Tahu and the community al large through positive public health impacts	term drinking water supply, as used in the context of option 1, does not include a domestic self-supply, meaning a stand-alone domestic dwelling that has its own supply of drinking water. ▪ The default DWPZs terminate over set distances, which does not allow for path variability or uncertainty, and may be inappropriate (too big or too small) in some situations. This could mean that DWPZs provide insufficient protection for end users. ▪ A consenting regime for activities within DWPZ will come at a cost to persons wanting to carry out the relevant activities, particularly where these activities were previously permitted under the Water Plan. These costs may range from adjusting current practices (e.g. changes to management of riparian areas), to relocating activities (i.e., not locating or excluding part of the activity from within the DWPZ), or costs associated with obtaining resource consents and compliance with consent conditions. ▪ Preventing or managing activities within DWPZs may have wider economic implications across wider economic sectors, particularly for rural activities. ▪ The default DWPZs terminate over set distances, which does not allow for path variability or uncertainty, and may be inappropriate (too big or too small) in some situations. This could mean that DWPZs place undue restrictions on activities, thereby creating unnecessary economic costs for landholders. ▪ By setting more stringent controls on management of potential sources of discharges in or near water bodies that provide source water for registered drinking water supplies, option 1 does allow for higher levels of contaminant concentrations to occur in freshwater bodies that do not support these supply

[88] Ministry for the Environment. 2022. *Kia kaha ake te tiakina o ngā puna wai-inu / Improving the protection of drinking-water sources: Proposed amendments to the Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007: Consultation document.* Wellington: Ministry for the Environment. https://environment.govt.nz/assets/publications/nes-dw-consultation-document.pdf

	BENEFITS	COSTS
	▪ Improved drinking water quality will enhance mauri and better provide for Kāi Tahu cultural and spiritual beliefs and values associated with the source water bodies that provide for all drinking water supplies included in Taumata Arowai's Public Register of Drinking Water Supplies as at 29 August 2024. There are also likely to be social and economic benefits for Kāi Tahu associated with the improved oporotunities for mahika kai harvesting.	services. This means that the Kāi Tahu cultural and spiritual beliefs, values, and uses associated with these water bodies, their mauri and the ecosystems supported by these water bodies are exposed to a higher level of risk from impacts from contaminant discharges, compared to those water bodies that do supply source water for registered drinking water supplies.
Option 2 (preferred option)	• Option 2 provides for the same types of community benefits (reduced health risks) as Option 1 (e.g. increased drinking water quality, and decreased the risk of contamination), but does this for a slightly smaller group of (potential) end users. While Option 1 protects a drinking water supply networks with a combined capacity of serving approximately 259,500 people, option 2 protects a drinking water supply networks with a combined capacity of serving over 252,100 people. • Option 2 provides Council with the same level of oversight of activities occurring within DWPZs delineated around larger registered drinking water supplies as option 1, but does not provide the same level of oversight for activities occurring in close proximity to drinking water supplies that serve less than 500 people. • Option 2 provides drinking water supplies that serve over 500 people with the same economic benefits as option 1, by better managing activities that may introduce contaminants to source water and therefore reducing the costs associated with the treatment of source water to bring it up to standards suitable for consumption. However, Option 2 provides for these economic benefits for a smaller number of supplies than option 1. Option 2 provides these	• Option 2 generates the same types of costs for landholders or persons wanting to carry out the relevant activities that falls within a DWPZ, but under this option the number of persons or landholders affected is likely to be significantly smaller than the number of landholders that would be impacted by option 1. As a result the overall economic costs of option 2 are considered to be smaller than those associated with option 1. • Like Option 1, Option 2 does not provide protection for all domestic water supplies, as the term drinking water supply does not include a domestic self-supply, meaning a stand-alone domestic dwelling that has its own supply of drinking water. • In addition, Option 2 entails a higher risk of risk of contamination of community drinking water supplies than option 1 as it provides for a lower level of protection for smaller (<500 people served) registered drinking water supplies. As a result, it poses a higher risk of economic and public health impacts across the communities and businesses served by these supplies than option 1 • By only imposing more stringent controls on management of potential sources of discharges in or near water bodies that provide source water for registered drinking water supplies for over 500 people, option 2 allows for higher levels of contaminant concentrations to occur in a larger number of freshwater bodies than option 1. This means that, compared to option 1, option 2 creates risks for

	BENEFITS	COSTS
	economic benefits for 30 drinking water supplies, while Option 1 provides these benefits for 90 drinking water supplies. • Implementation of the provisions proposed under option 2 is also expected to benefit the health and water quality of some source water bodies, as well as their mauri and the Kāi Tahu cultural and spiritual beliefs, values, and uses associated with them. However, when compared to option 1 these environmental and cultural benefits are considered to be smaller than option 1 as option 2 provides enhanced protection for a smaller number of source water bodies	freshwater ecosystems, water quality and the Kāi Tahu cultural and spiritual beliefs, values, and uses associated with larger number of water bodies.

704. Table 45 below assesses the effectiveness and efficiency of the proposed provisions in achieving the objectives.

Table 40: Effectiveness and efficiency assessment for Drinking water protection zones

	Effectiveness
Option 1	• Protecting drinking water supply and ensuring access to safe drinking water is a requirement of the NES-DW and is the second priority in the hierarchy of obligations under the NPSFM. • The policy direction and relevant permitted rule conditions proposed under Option 1 aim to ensure that Te Mana o te Wai is implemented by providing for the health needs of people (i.e. drinking water) after the health and well-being of water bodies and associated freshwater ecosystems is looked after, but before any other activity that allows people and communities to provide for their social, economic and cultural well-being is enabled. • Option 1 responds to direction from the community and mana whenua, as expressed in the environmental outcomes. Option 1 also responds to a broader need expressed by decision-makers and plan users for clear and certain plan provisions that set out where and how the protection of drinking water supplies is to occur. Option 1 also provides clarity for land holders by outlining clear conditions for managing new and existing activities in DWPZs. • The impacts of Option 1 will largely be borne by landholders seeking to undertake activities within DWPZs. They will either need to change their land management practices to comply with the permitted activity conditions or obtain resource consent. • While the provisions proposed under Option 1 may result in additional regulation for existing activities, this is considered to be acceptable given the public health risks associated with carrying out these activities and the cost for the wider community associated with the treatment of water for

	drinking water supply. In addition, the rule framework overlaps with other controls on discharges to water, setbacks and other requirements for waterbodies and bores, such that the additional requirements are relatively limited and directly related to the protection of water from contaminants that may cause the drinking water to fail to meet drinking water standards • It should be noted that Option 1 does not provide for the full protection of all sources of human drinking water for the following reasons. Firstly, the framework for option 1 only seeks to manage activities within DWPZs, but the (cumulative) effects of activities located upstream of these drinking water supplies and outside these DWPZs can also impact on the availability of safe drinking water. Secondly, the framework proposed under Option 1 does not seek to manage activities occurring in the vicinity of unregistered drinking water supplies or small domestic supplies. Providing for the management of activities around these smaller supplies may not be possible as a number of them are likely to be operating under the RMAs s14(3)(b) authorisations. Consequently, there is currently often no information available around their location. • Despite the above Option 1 is considered to have an acceptable level of effectiveness in achieving the relevant objectives and environmental outcomes in the pLWRP, achieving the purpose of the Act and giving effect to the NPSFM.
Option 2 (preferred option)	• Like Option 1, Option 2 seeks to ensure that Te Mana o te Wai is implemented and responds to the desire expressed by the community and mana whenua to have access to safe drinking water. • By applying the same method for delineating DWPZs and setting the same controls on activities within DWPZs Option 2 is very similar to Option 1 and provides for the same level of clarity and certainty in the plan provisions as option 1 • The main point of difference between Options 1 and 2 is that Option 2 provides for slightly reduced community benefits when compared to Option 1. This is because Option 2 does not provide for the protection of registered drinking water supplies that supply less than 500 people. However, given the small size of the population that is supplied by these drinking water supplies and the fact that the source water bodies that supply smaller registered drinking water supplies are still offered a degree of protection by other controls on discharges to water, setbacks and other requirements for waterbodies and bores, Option 2 is still considered to have an acceptable level of effectiveness in achieving the relevant objectives and environmental outcomes in the pLWRP and giving effect to the NPSFM.
	Efficiency
Option 1	• Option 1 is an efficient option for achieving the relevant objectives and environmental outcomes in the pLWRP, as the benefits associated with Option 1 outweigh the costs. • Option 1 will result in more controls through permitted activity conditions on activities in DWPZs than the status quo due to there currently being very little or no specific restrictions on activities within these areas (other than the general restrictions for managing water quality that apply under the

	operative Water Plan). Where permitted activity conditions cannot be met resource consents will be required. As a result, Option 1 will result in increased costs for resource users and ORC through administrative, consenting, compliance and enforcement requirements, compared to the status quo. Option 1 may also restrict the viability of some new and existing activities. However, these restrictions and costs are justified by the associated benefits to the health and safety Otago's communities. • Efficiencies will be gained for consent applicants and ORC staff from clear direction and guidance in the plan for applying or and processing activities. Under option 1 resource users will also have clarity on the types of activities that are anticipated to require consent within a DWPZ by the Plan and the adverse effects that must be managed.
Option 2 (preferred option)	• Compared to Option 1, Option 2 will likely result in restrictions for a smaller number of landholders. Under Option 2 landholders in the vicinity of smaller registered drinking water supplies will be able to continue current practices (provided they meet other permitted activities). • There are considerable costs associated with obtaining consents, complying with consent conditions and undertaking monitoring and enforcement. When compared to Option 1 Option 2 is also likely to result in less regulatory costs for ORC and communities as activities in the vicinity of drinking water supplies that serve less than 500 people are less likely to require resource consent. • Option 2 may still restrict the viability of some new and existing activities within some DWPZs. However, it is likely that these costs are justified by the associated benefits to local communities. • Overall, the provisions proposed under Option 2 seek to protect drinking water in a way that prioritises safe drinking water and is mindful of the restrictions on activities occurring within a DWPZ, including by providing protection to those registered supplies of over 500 people. As the costs of protection generally falls on individuals, while the benefits are enjoyed by individuals and communities and the benefits associated with option 2 outweigh the costs, Option 2 is considered the most efficient option of the two options for achieving the relevant pLWRP objectives and environmental outcomes.

15.10. Risk of acting or not acting

705. 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 limited information about the nature and extent of some activities affecting drinking water in the Otago region, particularly in relation to cumulative effects. As such, there is a level of uncertainty regarding the full impacts and costs of implementing Option 2. However, there is sufficient information about the current issues with drinking water supplies and the associated environmental, social and cultural impacts in Otago. The deficiencies of the Water Plan for managing drinking water supplies are well understood. This warrants the implementation of a more restrictive regime. Overall, the information supporting Option 2 is suitably certain and sufficient that there is a minimal risk of acting compared to the status quo.

15.11. Conclusion

706. The efficiency and effectiveness assessment has shown that overall, Option 2 is expected to be more efficient and effective than the status quo at achieving the objectives of the pLWRP and national direction, including the NES-DW.

707. Option 2 is the preferred approach as it is consistent with the requirements of the current NES-DW to protect drinking water supplies that serve 500 people or more (Regulation 10). It does this by applying a relatively small protection area, as set out in the draft update to the NES-DW, and restricts some activities and discharges in that area. This option is preferred as it is certain and consistent across the drinking water supplies of the region, and is consistent with the use threshold in the NES-DW. All drinking water supplies, including those below the 500 threshold, are also protected by a wide range of provisions in the proposed Plan.

708. While the drinking water protection zones draw particular attention to the protection of sources, the rule framework overlaps with other controls on discharges to water, setbacks and other requirements for waterbodies and bores, such that the additional requirements are relatively limited and directly related to the protection of water from contaminants that may cause the drinking water to fail to meet drinking water standards. The SoE monitoring results indicates that there are adverse effects on water quality occurring throughout Otago. Further, the status quo is not likely to achieve the relevant objectives and environmental outcomes in the pLWRP. The protection of sources of human drinking water warrants more stringent regulation, and in light of the costs and benefits analysis above, Option 2 is considered to be the most appropriate way to achieve the objectives of the pLWRP.

16. Consent duration

16.1. Introduction

709. Resource consents are granted for a set period of time (known as their duration) after which time they expire. The RMA sets different maximum durations for different types of consents:

a. Section 9 land use consents and subdivision consents: unlimited.

b. Coastal or section 13 land use consents for reclamation: unlimited.

c. Discharge and water permits, and other section 13 land use and coastal permits: 35 years.

710. Although consents can be granted for the maximum allowed by the RMA, this has not always been standard practice in consenting. Over the past decade or so in particular, there has been a trend in practice towards shorter durations than the RMA maximums. This has come about partly due to increased demand for resources, as well as regulatory uncertainty (for example, in advance of changes to legislation or national policy statements). It has also been used by some councils in areas where there are environmental issues to address, for example degraded water quality, that require improvements over time. Regional plans can provide direction on consent duration through policies to be assessed when decision-makers are considering resource consent applications.

16.2. Issues

711. There are no additional issues to those described in section 3 of this chapter.

16.3. Status quo

712. The status quo for this topic is described in section 4 of this Chapter. The Water Plan did not contain any specific direction on consent duration until Plan Changes 7 and 8 were introduced. Both included maximum durations for specific types of consents in order to enable a transition from the current planning framework to the new LWRP:

a. Water permits are limited to a duration of six years, and

b. Discharge permits for animal effluent are limited to a duration of ten years.

c. For all other activities, there is policy direction on the types of matters to be taken into account when considering applications, but no specific direction on the duration of consents.

713. The direction to only grant short-term consents for the take and use of surface water is having significant impacts on Otago's communities, largely as a result of the economic consequences associated with short-term consents, coupled with the freeze on the expansion of irrigation. This issue is discussed further in section 1.1.2.3 of Chapter 3 of this report.

16.4. Overarching matters

714. The options considered in relation to consent duration have been informed by direction provided by councillors throughout the development of the pLWRP.

715. In April 2022, councillors provided direction on shaping the content of the draft pLWRP. In relation to consent duration, the direction provided was:

a. Different timeframes for new and existing systems,

b. Long-term consents are an impediment to change,

c. Need to make sure that consent duration does not prevent council from achieving outcomes (which might change over time),

d. Review clauses including consents, and

e. Balancing duration with investment needs.[89]

716. In July 2022, councillors considered this matter again and provided the following direction:

a. Incentivise longer-term consents and provide for easier consent pathways where:

i. Evidence is provided that the landholder is contributing towards achieving the environmental outcomes in the plan; and

ii. the activity is undertaken within the context of catchment-wide approach to water management (i.e., catchment group)

b. Incentivise/support the development of catchment plans.

c. Provide for non-regulatory tools.

d. Provide certainty by granting consents while allowing landholders to adapt to changing conditions.

e. Preference for consent reviews as opposed to arbitrary short-term duration.

f. Make use of both consent review processes and short-term consents as mechanisms to achieve environmental outcomes rather than solely relying on short-term consent only.[90]

717. Irrespective of consent duration, the RMA allows the council to review a resource consent in certain circumstances, including to ensure compliance with environmental flows, levels or take limits set in the regional plan. As set out in the assessment of provisions for the EFL chapter, the preferred approach to address over-allocation includes reviewing resource consents to implement minimum flows for the rivers specified in APP9 – Consent reviews and catchment expiry dates. The consent duration options considered below apply in addition to the use of consent reviews where appropriate.

16.5. Objectives

718. 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. All of the objectives in the IM – Integrated management chapter, and

[89] Council workshop, 13 April 2022

[90] Strategy and Planning Committee meeting, 13 July 2022, available from https://www.orc.govt.nz/media/12595/agenda-strategy-and-planning-20220713.pdf

b. All of the environmental outcomes included as objectives in chapters FMU1 to FMU5 (including chapters CAT1 to CAT5).

16.6. Discounted options

719. Two options were considered and discounted:

a. Discounted option 1: Consent reviews

b. Discounted option 2: Clause 3 version

720. These discounted options and the reasons they were discounted are described in more detail in the sections below.

16.6.1. Discounted option 1: Consent reviews only

721. Consent review clauses are sometimes put forward as an alternative to short consent durations on the basis that longer consent durations provide certainty for consent holders around the activity to be authorised, such that they can invest in longer-term mitigations that may not be viable over shorter duration. However, the scope of consent reviews under s128 means that while consent reviews are not able to prevent the activity for which consent was granted, they may place additional limits on the activity authorised in order to deal with adverse effects, implement new limits set in an operative plan or any other reasons described in consent conditions. The wide scope of consent reviews means that the certainty sought through longer consent durations is able to be eroded.

722. In addition, the burden of proof to initiate a review, particularly in the case of adverse effects and the shouldering of costs associated with consent reviews often falls on the regional council, which can reduce the appetite to undertake consent reviews, particularly on a catchment or activity-wide scale.

723. Therefore, the use of consent reviews in combination with shorter consent durations is considered more appropriate than relying on consent reviews alone.

16.6.2. Discounted option 2: Clause 3 version

724. This option is the policy on consent duration included in the version of the draft pLWRP prepared for consultation under clause 3 of Schedule 1 of the RMA. It was considered a reasonably practicable option in 2023, but later discounted.

725. In 2023, while preparing the pLWRP, the RMA was amended by the previous government to restrict the duration of certain types of resource consents, including water and discharge permits, in order to facilitate implementation of the NPSFM and the Natural and Built Environment Act.[91] To align with the RMA, the following policy was included in the version of the pLWRP consulted on under clause 3 of Schedule 1 of the RMA as policy LF-P17:

When determining the duration of a resource consent, decision-makers must:

(1) for affected resource consents, ensure the maximum duration is the shorter of either five years after the relevant rules in Otago's first Natural and Built Environment Plan prepared under the

[91] https://environment.govt.nz/assets/publications/RM-system-2023/New-maximum-duration-for-some-freshwater-related-consents.pdf

Natural and Built Environment Act 2022 take legal effect, or ten years, unless the application is for one of the following activities:

(a) the construction, operation, upgrading, or maintenance of local authority or community reticulated water supply networks; or

(b) the construction, operation, upgrading, and maintenance of infrastructure that forms part of a public wastewater or stormwater network; or

(c) the operation, upgrading, or maintenance of any hydro-electricity generation scheme that existed at 23 August 2023; or

(d) the construction, operation, upgrading, or maintenance of any of the following activities:

(i) State highways; or

(ii) the national grid electricity transmission network or local distribution network; or

(iii) the New Zealand rail network (including light rail); or

(iv) renewable electricity generation facilities, excluding any hydro-electricity generation facility, that connect directly to the national grid electricity transmission network or that connect to a local distribution network; or

(v) any airport used for regular air transport services by aeroplanes capable of carrying more than 30 passengers; or

(vi) port facilities of each port company referred to in item 6 of Part A of Schedule 1 of the Civil Defence Emergency Management Act 2002; or

(vii) infrastructure that forms part of a public telecommunications network; or

(e) replacement, repair, or removal activities for the purpose of an activity described in clauses (a) to (d); and

(2) take into account:

(a) any relevant timeframes for achieving interim target attribute states or target attribute states or implementing environmental flows and levels; and

(b) any other methods or timeframes for phasing out or avoiding over-allocation.

726. These amendments to the RMA were subsequently repealed in early 2024. As a result, this option was no longer considered to be reasonably practicable because it relied on legislative requirements, timeframes, and definitions which were no longer in place.

16.7. Reasonably practicable options

727. Four reasonably practicable options were identified to achieve the objectives:

a. Option 1: No default duration policy

b. Option 2: Default duration policy with no exceptions

c. **Option 3:** Default duration policy (20 years) with exceptions

d. **Option 4:** Default duration policy (15 years) with exceptions

e. **Option 5:** Default duration policy (10 years) with exceptions (preferred option)

728. These options are described in more detail in the sections below.

16.7.1. Option 1: No default duration policy

729. This option is to have no policy direction in the LWRP on consent duration, relying instead on the relevant sections of the RMA. Until Plan Changes 7 and 8 to the Water Plan, this was the approach in place in Otago. As an example, the explanation to Policy 6.4.19 of the Water Plan states "*The duration of each resource consent to take and use water should have regard to the particular circumstances of the activity and its likely environmental effects, but there needs to be good reason for Council to reduce the duration of consents from that required for the purpose of use*" (emphasis added). As identified in the Environment Court's decision on Plan Change 7, the Water Plan has created an expectation of granting consents with long-term durations.[92]

730. Option 1 is not the preferred approach because the default consent durations in the RMA (up to 35 years for most regional consents) may "lock in" resource use for longer than the time periods available to meet the long-term visions for the FMUs and rohe, which are:

a. 2030 (six years): Upper Lakes rohe,

b. 2035 (11 years): Catlins FMU,

c. 2040 (16 years): Dunedin & Coast FMU,

d. 2045 (21 years): Dunstan and Roxburgh rohe, and

e. 2050 (26 years): Manuherekia and Lower Clutha rohe, Taiari FMU, North Otago FMU,

731. Generally, the FMUs and rohe with longer timeframes are those with more challenging freshwater issues to address. Without clear policy direction otherwise, there is a risk that applicants will continue to expect to be granted consents for long durations and little policy support for shorter durations, which could undermine the achievement of the long-term visions[93].

732. When activities such as discharges or water takes are not renewed at regular intervals, it is more challenging to adopt new technologies, mitigation measures or respond to environmental effects. In these situations, the only option is to manage the conditions of existing consents through the consent review process, however there are limitations to that process which are explained above in relation to discounted option 1 (Consent reviews only).

733. Alternatively, if there is uncertainty about when a longer term would be appropriate, there is a possibility that a conservative approach may see consents granted for short terms, which would not provide enough certainty for consent holders or support investment.

16.7.2. Option 2: Default duration policy with no exceptions

734. This option would include a policy setting a maximum consent duration of either 10, 15 or 20 years for all types of resource consents granted by ORC, with no pathway for durations longer than the maximum set in the policy. This would provide some level of certainty for resource users. However, it would potentially stifle investment in beneficial infrastructure and other projects which require long lead-in times and regulatory certainty. This option does not reflect the different environmental circumstances (for example, whether a water

[92] *Re Otago Regional Council* [2021] NZEnvC 164, [71e]

[93] LF-FW – Fresh water Chapter of the pORPS.

body was over-allocated or not) or the different levels of effects generated by different activities. It is also inconsistent with the direction provided by councillors in 2022 and reiterated following clause 3 feedback. For these reasons, Option 1 is not the preferred option.

16.7.3. Option 3: Default duration policy (20 years) with exceptions

735. This option is a policy containing a default maximum consent duration, with exceptions, which is consistent with guidance provided by councillors in the shaping of the pLWRP to consider different durations for different types of activities. The maximum consent duration would apply in addition to the use of consent reviews. In comparison to discounted option 3 (default duration policy with no exceptions), in addition to a default maximum duration, this option includes exceptions from that default duration – i.e. specified pathways where a longer duration than the default could be granted.

736. Following clause 3 feedback, further guidance was sought from councillors on the original direction provided in 2022 in light of the feedback received. Similarly to the clause 3 feedback itself, there was a mixture of views on whether the pLWRP should include a maximum duration that was shorter than the RMA provided for. There was no support for a 'blanket' maximum duration in every instance, and support for exempting either a range of specific activities, or all activities, from any maximum duration specified in the plan.

737. The discussion focused on the importance of:

a. Recognising the impact of short durations on investment certainty, and the effect that may have on investing in practices or infrastructure that would help to achieve the environmental outcomes for FMUs, including by assisting to phase in new environmental flows and levels,

b. Needing to transition towards achieving environmental outcomes over time, and the risks posed by consents being granted for the maximum duration under the RMA (35 years for water and discharge permits) which may exceed the timeframes specified for achieving those outcomes (which range from 2030 to 2050, or between six and 25 years from the time of writing),

c. Incentivising activities being undertaken in ways that contribute to achieving environmental outcomes for FMUs, particularly where they are following best practice and/or reducing contaminant losses or actual water use,

d. Providing for the ongoing operation and maintenance of nationally and regionally significant infrastructure,

e. Aligning any policy on consent duration with staged implementation of environmental flows and levels, including any use of common expiry dates within catchments, and

f. Clear drafting that will support implementation by reducing ambiguity in consent processing.

738. Taking into account the guidance from councillors and the feedback received through clause 3 consultation the proposed exceptions to the default duration in this option are:

a. To allow the duration of a consent to align with a common catchment expiry date in order for the consent's next expiry date to align with other consents in the catchment and allow all water use in that catchment to be considered together;

b. Nationally and regionally significant infrastructure (excluding permanent take, damming and diversion of water); or

c. Conveying and storing water (excluding permanent take, damming and diversion of water); or

d. Applications for the ongoing use of a bore or defence against water which are currently granted for unlimited durations; or

e. Applications that are consistent with the objectives and policies of the plan and that demonstrate the activity will contribute to achieving environmental outcomes, target attribute states and environmental flows and levels or take limits at a scale that is commensurate with the likely contribution of that activity to those outcomes, including:

   i. implementing staged improvements over the duration of the consent to reduce contaminant losses or actual water use; or

   ii. replacing an existing activity with one that has lower contaminant losses or actual water use; or

   iii. either already implementing, or proposing to implement, best practice for the management of the activity as recognised by a relevant industry or organisation.

739. In terms of the default duration, this option adopts a 20-year default. There are five FMUs in Otago, including one (Clutha Mata-au) that contains five rohe. Two of the FMUs (Catlins and Dunedin & Coast) and one rohe (Upper Lakes) have long-term vision timeframes of less than 20 years. Under this option, there would be limited opportunities to review the effects of activities, including cumulatively, if a 20-year default duration was adopted. This would likely also be the case for the Dunstan and Roxburgh rohe, where there is only 21 years until the long-term vision timeframe is reached. If monitoring demonstrated that degrading trends were not being reversed, or not at a quick enough rate to achieve the long-term visions, ORC would be reliant on using consent reviews to address the issue, which can be costly for both ORC and the consent holders.

740. However, a 20-year default would provide certainty for resource users in terms of:

a. Access to water and reliability of future supply,

b. Future productivity and cash flow projections,

c. Planning capital investment in infrastructure,

d. Business confidence and ability to commit to planned developments or upgrades of infrastructure,

e. Securing finance from lending institutions on favourable repayment terms, and

f. Maintaining or increasing land values.

741. This type of economic certainty would have flow-on effects for the wider community, particularly in the primary sector, which is a major source of employment in the region.

16.7.4. Option 4: Default duration policy (15 years) with exceptions

742. Option 3 is the same as Option 2 but with a 15-year default duration instead of 20 years. This option would have less economic certainty than Option 3, but more than Option 5. Only Upper Lakes rohe and Catlins FMU have long-term vision timeframes of less than 15 years, although Dunedin & Coast FMU is only slightly longer at 16 years. For the Dunstan, Roxburgh, Manuherekia, and Lower Clutha rohe, and the Taiari and North Otago FMUs (which have vision timeframes of between 21 and 26 years from now), there would potentially be only one opportunity to review the effects of consented activities

16.7.5. Option 5: Default duration policy (10 years) with exceptions (preferred option)

743. Option 5 is the same as Options 3 and 5 but with a 10-year default duration. A duration of 10 years is considered to provide sufficient certainty for consent applicants while balancing the need to review activities to assess progress towards achieving the environmental outcomes for Otago's FMUs and their long-term visions as set out in the pORPS. Ten-year consent terms are becoming more common in planning practice across New Zealand, with shorter terms often adopted in areas where resource demand is high.

16.8. Clause 3 consultation feedback

744. The repeal of the amendment to the RMA occurred during the clause 3 consultation period. As a result, many parties highlighted that the policy on consent duration included in the draft LWRP at that time (option 2 above) was no longer based on a statutory obligation and referred to timeframes that no longer existed because the requirement to prepare a Natural and Built Environment Plan had been repealed.

745. Clause 3 parties had mixed views on whether the policy should be retained with amendments or deleted entirely. Broadly, feedback fell into three categories:

a. Support for retaining a policy that placed a maximum limit on consent duration (either with or without exceptions),

b. Support for retaining a policy on consent duration provided the party's particular industry or activity was excluded, and

c. Opposition to the pLWRP setting maximum durations.

746. Three parties considered that consent terms for land uses that affect water quality, discharges to land and water, and water takes should be no longer than ten years in duration and, in some cases, no more than five years if:

a. There is uncertainty around the impact on the environment, species, or people, or

b. The regional plan has been unable to clearly implement the NPSFM and give effect to Te Mana o te Wai, whether this is due to timeframes, capacity issues, or other limiting factors, or

c. To synchronise the expiry dates of consents across a catchment so future consent decisions can consider the impact of all proposed activities in a catchment at the same time.

747. One party supported the policy in general but sought clarity about the duration of consents subject to an exemption from the direction on maximum consent duration. Another

supported the policy if hydro-electricity generation was included in the exemptions from the maximum duration. Another sought that the duration be either ten or 15 years in order to ensure long-term planning for their activities.

748. Of the parties in opposition:

a. One opposed any restriction on consent durations and sought to rely on s123 of the RMA, on the basis there would be significant implications for farmers in being able to invest in the future, create innovative businesses, and have long-term business certainty.

b. One stated that short-term consents (the party did not specify what they considered to be short-term) discourage consent holders from making investment decisions, which limits economic growth and the ability to adapt to climate change.

c. One stated that a consent duration that provides only ten years of regulatory certainty makes it difficult to plan and implement major site upgrades (for example, if consent conditions were to change significantly after the ten year period then different or upgraded infrastructure may be required), with significant implications for planning and funding investments. This party sought that the policy be rewritten to be consistent with current law, efficient for resource users, and in line with good planning practice.

749. One party noted that the policy provided no recognition of existing investment, planned growth or linkages to other elements important in integrated management, including:

a. Allocation to highly productive land (productive capacity).

b. Food production.

c. Climate change.

750. One party did not support or oppose the policy but stated that large infrastructure investments should be granted at least a 15 to 20 year duration, to decrease the risk of the investment.

751. The response to this feedback is described in Option 2.

16.9. Clause 4A consultation feedback

752. The feedback provided by iwi authorities was to amend Clause 3(b) to clarify the extent of reduction that will be required to qualify.

753. Iwi authorities considered that IP-P18(3)(b) allowed for duration longer than 10 years if an activity is being replaced with one that has *"lower contaminant losses or actual water use"*, but there is nothing to say how much lower this needs to be to qualified. They sought an amendment to this clause to clarify the extent of reduction that will be required in order to qualify for an exemption to the ten year maximum duration under this clause.

754. Sub-clause (3)(b) is subject to its parent clause, clause (3), which states that the application must be (emphasis added) "*consistent with the relevant objectives and policies of this plan and demonstrates that the activity will contribute to achieving the relevant environmental outcomes, target attribute states and interim target attribute states, and environmental flows and levels or take limits to an extent that corresponds with the scale and significance of the activity by: …"*

755. It is not possible to quantify the extent of the reduction that will be required to qualify. The extent of the reductions required will be determined on a case-by-case basis and will be specific to each application (i.e. the type of proposed activity and the state/characteristics of the receiving environment).

756. In response to the feedback, "including" was added before "by" in clause (3) so that it is clear that the sub-clauses are part of the main clause. In responding to this feedback, it became apparent that references to 'target attribute states' and 'interim target attribute states' had unintentionally had the word 'attribute' removed. Additionally, to improve clarity and comply with the Planning Standards, the sub-clauses under (3)(b) need to be renumbered (i), (ii), and (iii). Amendments to correct these errors were made.

16.10. Effectiveness and efficiency assessment

757. Table 46 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in each option.

Table 41: Benefits and costs for consent duration

	BENEFITS	COSTS
Option 1	▪ The status quo is having a significant impact on Otago's communities, particularly in relation to economic uncertainty associated with short-term durations.[94] Removing default durations and leaving duration to be determined on a case-by-case basis may have economic and environmental benefits. It would allow for longer durations where the level of risk and proposed management of effects warrant it. ▪ There are 986 current surface water take permits in Otago. Of which, approximately 400 were granted after PC7 to the Water Plan was notified in 2020, and therefore are likely to be short-term consents (i.e. durations of no more than six years). Removing the 6-year duration requirement provides scope for durations up to 35 years if deemed appropriate, which may benefit nationally and regionally significant infrastructure owners and those with large-scale water storage. These benefits include reduced consenting costs and an increased ability to secure finance for investment.	▪ Without any guidance on appropriate consent terms, there may be increased uncertainty compared to the status quo on suitable consent terms. Increased uncertainty can lead to increased consent processing costs due to the time required to assess and determine a consent duration. ▪ Consent durations may be longer than the status quo and therefore make it more challenging to adopt improved practices or limits in order to achieve target attribute states. This may inhibit environmental improvements such as reducing water quality degradation. This may in turn have social and cultural costs.
Option 2	▪ A default duration policy with no exceptions will provide certainty to resource users and help reduce consent	▪ No exceptions to the maximum duration may stifle innovation and investment, reducing business confidence and the

[94] *Re Otago Regional Council* [2021] NZEnvC 164 at [52]-[53].

	BENEFITS	COSTS
	processing costs related to determining the appropriate duration for a consent. ▪ A shorter duration than the maximums set out in the RMA will assist with achieving environmental outcomes for Otago's FMUs and the long-term visions as set out in the pORPS by ensuring that the management of activities is reviewed at regular intervals. ▪ The need for consent reviews may be reduced by this option in comparison to Option 1, reducing costs for ORC and resource users.	ability to finance projects, including large-scale infrastructure. These costs could be significant, not only for resource users directly but also for the wider community and region. ▪ There would be little incentive for resource users to adopt practices most likely to assist with delivering environmental improvements, potentially delaying these or preventing their realisation altogether. ▪ Negative impacts on social and cultural values, including mahika kai practices, and costs associated with health impacts arising from degraded or over-allocated water bodies may continue.
Option 3	▪ A 20-year default duration would reduce current uncertainty and result in economic benefits for resource users. These benefits are likely to be greater than those provided by Options 2, 4 and 5, but potentially less than Option 1. ▪ The economic benefits of removing the restriction on expanding irrigated land would be more in some parts of Otago than others. For example, in North Otago the ratio of irrigated to dryland (i.e., non-irrigated) cropping is estimated to be around 60:40, although there is more dryland in South Otago (Moran E. , 2022). ▪ Implementing Option 2 would extend the 'default' maximum consent duration to 10 years and reduce the overall proportion of surface water take permits that have short-term durations (when these permits expire and are replaced). This will increase the certainty and economic benefit for these permit holders and will likely have flow-on economic benefits for the wider community. It will also result in a range of social benefits for permit holders, which include reducing stress and uncertainty in investment decisions (Moran, McDonald, & McKay, 2022). ▪ Extending the maximum duration under the status quo to 20 years would increase the ability for resource users (particularly farmers) to secure financing, which in turn would enable further investment in agricultural/irrigation infrastructure,	▪ Policy direction that seeks to increase the default maximum duration of resource consents (compared to the status quo) may have environmental costs as activities are 'locked in' for a longer period of time and can continue to operate even if monitoring data shows a decline in environmental outcomes. This in turn could also result in cultural costs associated with poorer environmental outcomes. ▪ Consents reviews may be able to mitigate the costs described above, but this would come with time and costs for ORC and consent holders and, due to the limitations of consent reviews (which cannot negate the consent itself), may not be able to fully resolve any environmental issues. These costs are likely to be greater than those arising from Options 4 and 5 due to the longer duration. ▪ There will still be costs for consent holders in obtaining consents, including social and economic implications with obtaining new consents and investment. ▪ While there may be environmental costs associated with granting durations longer than 20 years, this is partially mitigated by the direction that the activity will contribute to achieving the relevant environmental outcomes, target attribute states and flows and levels or take limits. ▪ With reduced opportunities to review the management of consented activities compared to Options 3 and 4, this option may result in higher costs for resource users later on. For example, if a consent

	BENEFITS	COSTS
	including access to new technology. This may also have environmental benefits (e.g., infrastructure that enable greater water use efficiency). ▪ Land uses such as farming, particularly horticulture and viticulture that rely on water, require large investments to develop or purchase the land and become operational. For example, a new orchard could cost between $120,000 and $160,000 per hectare. Longer-term consents give producers increased certainty to invest in their land and infrastructure because costs can be spread out over a longer period.[95] ▪ There will likely be environmental benefits associated with creating a default starting point for consent holders and allowing greater long-term management of in the catchment, including more regular review of the management of activities against progress towards achieving the environmental outcomes and long-term visions for FMUs. ▪ Option 3 may result in environmental, social and cultural benefits as it contains additional policy direction on the circumstances in which consents may be granted for periods longer than 10 years, which include that the activity contributes to achieving environmental outcomes, target attribute states and flows, levels or limits. This includes staged reductions in contaminant losses or water use, replacing activities with one that has lower losses or water use, or implementing best practice. This may result in better environmental and social outcomes if consent holders implement this direction. This option also is likely to result in better cultural outcomes for Kāi Tahu by better supporting social and econnmic acitvties supported by healty waterbodies	expires after 20 years and the timeframe for achieving the relevant long-term vision is less than ten years away, the consent holder may be required to change their practices more quickly and at a greater scale in order to achieve the improvements required in the timeframe.
Option 4	▪ As above for Option 3. Although overall, the economic benefits for key water	▪ As above for Option 3, although overall, the economic and social costs may be

[95] Moran, E. (Ed.). (June, 2023). Otago's rural businesses and environmental actions for fresh water. Otago Regional Council (LWRP Economic Work Programme), Dunedin.

	BENEFITS	COSTS
	dependent economic sectors may be lower under this option due to the reduced duration, and environmental, social and cultural benefits, including the social and economic benefits associated with cultural practices, may be higher.	greater and the environmental and cultural costs lower than Option 3.
Option 5 (preferred option)	▪ As above for Options 3 and 4. Although overall, the economic benefits for key water dependent economic sectors may be lower under this option due to the reduced duration, and environmental, social and cultural benefits, including the social and economic benefits associated with cultural practices, may be higher.	▪ As above for Options 3 and 4, although overall the economic and social costs may be greater and the environmental and cultural costs lower than Option 3.

758. Table 47 below assesses the effectiveness and efficiency of the proposed provisions in achieving the objectives.

Table 42: Effectiveness and efficiency assessment – Consent duration

	Effectiveness
Option 1	This option is not as effective as options 2, 3 or 4 at achieving the environmental outcomes for Otago's FMUs and, in turn, the long-term visions.[96] This is because varied durations may be applied to similar activities, long durations may "lock in" environmental effects and inhibit adoption of new mitigation and improvements to achieve target attribute states. If durations tend towards the RMA maximums, this will assist with providing for community well-being as set out in IO-O9 but would come at the cost of achieving other outcomes, particularly for the environment.
Option 2	This option is more effective at achieving the objectives of the pLWRP than Option 1, but less than Options 3, 4 and 5. While setting direction on consent duration, not providing exceptions does not assist to achieve IO-O3 – Long-term visions and environmental outcomes and IO-O10 – Significant infrastructure by recognising applications that will contribute to achieving environmental outcomes or recognise significant infraustructure.
Option 3	Option 3 is considered effective at achieving IO-O9 – Community well-being and IO-O10 – Significant infrastructure as it provides a duration sufficient to provide certainty to resource users. It may be effective at achieving IO-O3 – long-term visions and environmental outcomes as it will ensure that some review of activities can occur within the timeframes set out in the pORPS for achieving the long-term visions. However, there is a risk that there will not be this opportunity, or only limited opportunity, in some FMUs or rohe, meaning this option may not achieve the outcomes required by the plan. This is mitigated to some extent by providing for longer durations where activities demonstrate they are contributing to the achievement of environmental outcomes.
Option 4	Option 4 is considered to be more effective than Option 3 because it reduces the risk of not achieving the outcomes sought by the plan.

[96] LF-FW – Fresh water Chapter of the pORPS.

Option 5 (preferred option)	Option 4 is considered to be more effective than Options 3 and 4 because it further reduces the risk of not achieving the outcomes sought by the plan.
	Efficiency
Option 1	Option 1 is considered the least efficient of the four options as it provides no guidance and therefore has a high degree of uncertainty. This uncertainty is likely to lead to greater costs and inconsistency between consents of a similar nature. Although it may provide certainty if longer durations are granted, it may 'lock in' inefficient uses of resources for long periods.
Option 2	Option 2 is likely to be more efficient at achieving the pLWRP objectives compared to Option 1 as it provides some certainty for resource users and ensures that consent duration does not degault to the maximum allowed by the RMA. However, this option is not as efficient as Options 3, 4 or 5 because it does not provide any exceptions to the defulat duration and therefore increases the consenting costs for all activities, even where longer durations could be acceptable. It does not incentivise the adoption of good practices that will assist with improving the health and well-being of water and, in turn, assist with achieving environmental outcomes for Otago's FMUs.
Option 3	Option 3 is considered to be more efficient than Options 1 and 2 because it provides more certainty for users and, in comparison ot Option 2, more flexibility for longer durations than the default to be granted. This option is also more effective than Option 2 because it provides exceptions to the default that are considered to be appropriate either based on the activity (i.e., the provision of infrastructure, bores, or defences against water) or the potential environmental effects (i.e., the activity will contribute to the achievement of environmental outcomes and target attribute states). However, consent holders may incur higher costs later under this option if they are required to make larger and more costly improvements in a shorter time period, in order to assist with achieving the long-term visions within their specified timeframes.
Option 4	The efficiency of Option 4 is considered to be similar to Option 3, however there are likely to be higher economic costs and potentially higher environmental and cultural costs.
Option 5 (preferred option)	The efficiency of Option 5 is considered to be similar to Option 4, however there are likely to be higher economic costs and potentially higher environmental and cultural costs.

759. 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 uncertainty about the impacts of all of the options described. However, as discussed above, the status quo is resulting in considerable impacts on the community as a result of imposing short consent durations on permits to take and use surface water and the restriction on expanding irrigated areas. These impacts include significant adverse economic impacts and effects on land values. All options described above reduce those impacts by increasing the default consent duration. Accordingly, the risk of acting is considered to be minimal compared to the status quo.

16.11. Conclusion

760. The effectiveness and efficiency assessments have shown that overall, Option 5 is an effective and efficient way to achieve the objectives of the pLWRP. It is considered the most appropriate way to balance the need for certainty for resource users (and associated economic benefits) and the need to ensure that progress is being made towards achieving

the environmental outcomes and long-term visions for Otago's FMUs within the timeframes set out in the pORPS.