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

Chapter 9: BED - Beds of Lakes and Rivers

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

Otago Regional Council

Contents

List of figures

List of tables

Abbreviations

FMU	Freshwater Management Unit
NES	National Environmental Standard
NESF	National Environmental Standards for Freshwater 2020
NPS	National Policy Statement
NPSFM	National Policy Statement for Freshwater Management 2020
ORPS	Otago Regional Policy Statement 2019
pORPS	Proposed Otago Regional Policy Statement 2021
pLWRP	Proposed Otago Land and Water Regional Plan 2024
RPS	Regional Policy Statement
RPW	Regional Plan: Water
RMA	Resource Management Act 1991

Beds of lakes and rivers [BED] - Assessment of Provisions

1. Introduction

1. The beds and margins of lakes and rivers provide habitat for flora and fauna, including threatened and mahika kai species. Some lakes and rivers are outstanding natural features, or are within outstanding natural landscapes, and so are an important part of Otago's natural character. Beds and margins also support a wide range of uses including recreational activities, built structures, navigation, renewable electricity generation, gravel extraction, and flood mitigation. Lakes and rivers, and their margins, are integral parts of Kāi Tahu values, including ki uta ki tai, rakatirataka, kaitiakitaka, taoka and mahika kai, wai maori and taoka species.

2. There are a number of matters of national importance that the Council must recognise and provide for under the RMA. Those of relevance to activities in the beds and margins of lakes and rivers include:

    a. Preserving the natural character of lakes and rivers and their margins,

    b. Protecting areas of significant indigenous vegetation and significant habitats of indigenous fauna,

    c. Maintaining and enhancing public access to and along these water bodies,

    d. The relationship of mana whenua to their ancestral lands, water, sites wāhi tapu and taoka.

3. Activities in lake and river beds are wide ranging, and include works related to 1) structures, 2) disturbances of the bed including extraction of gravel and minerals, and 3) vegetation management. Structures in the bed can serve many purposes, including supporting recreation (such as maimai and whitebait stands), scientific research, navigational safety, easier access to or across waterbodies (bridges, culverts and fords), or facilitating the use of water (pumps and intakes). Outside of those linked to structures, bed disturbances capture a range of other activities in the bed, including vehicle access through the bed, remediation works following weather events, suction dredge mining and gravel extraction. There may also be disturbance associated with vegetation planting and removal.

4. The purpose of this topic in the pLWRP is to establish the region-wide provisions for managing the beds and margins of lakes and rivers in Otago appropriately. These provisions will act as the default management approach unless superseded by specific FMU / rohe provisions, or the FLOOD - Flood protection and drainage assets chapter which includes provisions for flood protection and drainage works that are undertaken by or on behalf of ORC.

5. This topic includes the following activities in relation to the bed of any lake or river:

    a. Use, maintenance, alteration, placement and removal of structures;

    b. Disturbance of the bed and margin for specified activities, including rebattering and reinstating banks;

    c. Suction dredge mining and gravel extraction;

    d. Introduction or removal of vegetation; and

e. Clearance of drains and modified watercourses.

6. The relevant provisions for this section are those contained in the BED – Beds of lakes and rivers chapter. The diversion of water associated with any activities in the bed is managed in the DAM – Damming and diversion chapter. Discharges of contaminants other than bed substrate or sediment to water, or to land where they may enter water are managed in the OTH – Other discharges chapter. The FLOOD - Flood protection and drainage assets chapter also provides relevant direction for flood protection and drainage works undertaken by or on behalf of ORC, particularly in relation to drain maintenance and gravel extraction which require consent under the BED chapter.

2. Issues

7. This section outlines the resource management issues that the BED chapter seeks to address. These issues are:

   a. Issues of significance for Kāi Tahu.

   b. Water quality is degraded in parts of Otago

   c. There are potentially significant environmental effects of activities in the bed

8. Additional policy issues with the status quo policy context that the BED chapter seeks to address are outlined in section 3.2 below.

2.1. Issues of significance for Kāi Tahu

9. The pORPS sets out the resource management issues of significance to iwi in the region, all of which are relevant to activities in the beds of lakes and rivers. In particular, the effects of these activities are emphasised in the following places:

   a. 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

   b. The explanation of this issue describes how the loss of mahika kai species and places of procurement amounts to a loss of Kāi Tahu culture and affects the intergenerational transfer of mātauraka and tikanga. It outlines that "… activities such as the construction of barriers to fish passage, drainage, altered flow regimes, reduced water quality and removal of riparian vegetation all impact on access to and use of resources."

   c. Under RMIA-WAI-I5, the pORPS notes that Kāi Tahu concerns across all issues identified are interrelated. Some specific concerns relevant to this topic are:

      i. Effects of activities such as channel maintenance and channel cleaning on water quality and on disruption of species living in the channel and their habitat.

      ii. Effects of channel reshaping, in particular straightening, on river flow and habitats, and the mauri of the water body.

      iii. The effects of bed disturbance, including suction dredging and gravel extraction, on stream morphology and habitats.

iv. Effects of willow removal on water quality, water temperature and mahika kai habitat.

v. Introduction of exotic weeds through poorly cleaned machinery, and the subsequent effects on bank habitat and water ecosystems.

10. Many of these issues have arisen as a result of the piecemeal approach the Water Plan takes to managing a range of activities, including those in the beds of lakes and rivers. The issues identified by Kāi Tahu underscore those identified with the status quo discussed in the following section, and in some cases they may be the outcomes of the issues with the status quo (section 3.2).

2.2. Water quality is degraded in some parts of Otago

11. As described in Chapter 2 of this report, surface water quality in Otago is variable and ranges from excellent to poor, with degrading trends for turbidity over a 20-year period, while the 10-year trends are variable.

12. Works in the beds of lakes and rivers and their riparian margins are likely to impact turbidity, particularly where large scale bed disturbance is undertaken, so will contribute to poor water quality outcomes, although these changes in water quality are generally only temporary in nature.

2.3. The potentially significant effect of activities in the bed on the environment

13. Activities in the bed can have many adverse effects, including:

a. reducing the extent and values of water bodies,

b. modifying the natural behaviours of water bodies, including channel form, flows and flood carrying capacity,

c. sedimentation and increased turbidity in water bodies,

d. contributing to the decline or loss of aquatic species and their habitats, including by damaging habitat, preventing passage or disrupting spawning habitats during spawning seasons, and

e. exacerbating natural hazard risk, including by contributing to or impacting flooding, erosion and land instability.

14. Activities in the bed require careful management to ensure that these effects are adequately recognised and avoided, remedied or mitigated.

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

3.1. Overview of the RPW provisions

15. The current provisions relevant to works in the beds of lakes and rivers are contained within multiple chapters of the RPW.

a. Chapter 5 contains the policy direction for protecting natural and human use values supported by Otago's lakes and rivers and their margins. The RPW recognises that the natural and human use values can be adversely affected by a number of activities, including land use activities in, on, under or over the bed or margins of lakes or rivers.

b. Chapter 6 sets out the objectives and policies for managing water quantity, which are relevant to this topic to the extent that works in the bed may include the damming or diversion of water.

c. Chapter 7 sets out the objectives and policies for managing water quality, with a focus on discharges to water. Many are either general in nature, or specific to particular types of discharges. Of particular relevance to this topic is the direction allowing for discharges to water that have minor effects, or are short-term discharges with short-term adverse effects.

d. Chapter 8 provides the policy framework for managing the beds and margins of Otago's lakes and rivers, including structures, bed disturbance, vegetation planting and removal, deposition on the bed and drainage or reclamation of waterbodies.

e. Chapter 12 includes rules that manage the take, use, damming, and diversion of water, as well as discharges of water and contaminants to water and to land.

f. Chapter 13 includes rules that manage the use of land on lake or river beds or Regionally Significant Wetlands, with the activities covered being the same as those referenced in the Chapter 8 summary (above).

g. Chapter 14 contains rules that regulate land use other than in lake or river beds, including rules that are relevant to the margins of lakes and rivers.

16. Under the existing plan there are approximately 651 current general/structure land use consents, many of which are assumed to authorise activities in the bed. 360 of those consents were issued after 2020, likely as a result of the NESF taking effect. These consents are distributed across the region, with the most in the Queenstown Lakes District (188) and Dunedin City (178), and the least in the Waitaki District (79). There are a further 39 consents authorising the extraction of gravel, with most of those being granted since 2020. The majority of gravel extraction consents are within the Queenstown Lakes District (24).

17. Table 1 below shows the minimum, maximum, and median processing costs for resource consent applications that resulted in at least one general/structure land use consent in the bed of a lake or river being issued. The "number of examples" column shows how many applications resulted in that number of consents being issued. For example, in the 2022/23 financial year, there were 32 resource consent applications that resulted in one general/structure land use consent being issued.

18. The information shows that the processing costs vary considerably. In 2022/23, the cost of an application which resulted in one resource consent ranged between $881.69 and $20,355.70. Overall, the median costs of processing applications resulting in one or more general/structure land use consents ranged from $3,029.55 to $25,895.15.

Table 1: Processing costs for general structure/land use consents

Financial year	Number of consents issued	Minimum cost	Maximum cost	Median total cost	Number of examples

2022/23	1	881.69	20,355.70	3,029.55	32
	2	1,143.40	27,368.20	5,289.34	21
	3	861.25	27,879.95	5,059.63	27
	4	3,415.38	13,035.29	8,581.87	15
	5	8,040.31	17,291.71	9,357.88	18
	7	6,266.43	11,676.45	6,853.56	11
	9	9,538.06	18,683.46	17,209.49	8
2023/24	1	1,035.20	12,166.53	3,249.28	35
	2	2,572.87	13,681.35	6,537.56	31
	3	2,168.21	22,380.89	4,982.07	21
	4	3,541.20	16,470.21	11,177.95	21
	5	4,889.42	8,973.21	5,034.43	7
	6	5,895.48	6,742.88	6,319.18	4
	7	22,758.95	22,758.95	22,758.95	1
	8	9,086.70	25,895.15	25,895.15	7
	12	9,456.74	9,456.74	9,456.74	4
	14	14,852.96	14,852.96	14,852.96	3

19. For gravel consents, Table 2 below shows the minimum, maximum, and median processing costs for resource consent applications that resulted in at least one gravel extraction consent being issued. The "number of examples" column shows how many applications resulted in that number of consents being issued. For example, in the 2023/24 financial year, there were two resource consent applications that resulted in three resource consents being issued (at least one of which was a gravel extraction consent).

20. The information shows that there are very few gravel extraction consents issued. In 2022/23 the median cost of these applications was between $9,480.93 and $9,559.39.

Table 2: Processing costs for gravel extraction consents

Financial year	Number of consents issued	Minimum cost	Maximum cost	Median total cost	Number of examples
2023/24	1	9,480.93	9,480.93	9,480.93	1
	3	9,559.39	9,559.39	9,559.39	2

3.2. Issues with the status quo

21. There are several issues with the status quo approach for managing activities in the beds of lakes and rivers that are categorised as follows:

    a. Provisions in the RPW are piecemeal.

b. Provisions in the RPW are inadequate to manage the environmental effects of activities in the bed.

c. Needing to implement new regulatory requirements.

d. Uncertainty about the long-term framework for gravel management.

22. The issues with the status quo are discussed in more detail in the following sections.

3.2.1. Piecemeal provisions

23. Activities in the beds of lakes and rivers are complex, and often include the placement of a structure, disturbances of the bed and adjacent land, as well as discharges to the bed. The RPW currently does not recognise these connections. It manages disturbances of the bed, and discharges of contaminants separately to the activities they are associated with, such as the use or placement of structures in the bed. This approach makes it difficult for plan users to find and understand all of the provisions relevant to their activity. It can also result in situations where the activity itself is permitted, but the associated disturbance or discharge is not, or vice versa. Where the activity itself is permitted, the resource user may miss associated consent requirements, particularly if ORC is unaware that the activity is occurring. An example may be where the placement of a structure, or other specified activity in the bed is permitted under one rule, but the disturbance of the bed and discharge of contaminants are captured by other rules that are not considered, and may result in a consent being required.

3.2.2. Inadequate management of environmental effects

24. Activities in the bed can have adverse effects on the extent and values of rivers and lakes. Effects on extent and value are broad, and can include effects on water quality, morphology, freshwater ecosystems (including indigenous biodiversity and fish passage), and the spread of pest species. Additionally, activities in the bed can affect erosion and stability of surrounding land, the ability to avoid or mitigate natural hazards, existing structures in the bed, and existing legal public access to the bed.

25. Activities in the bed are largely permitted by the RPW as long they meet standard permitted activity conditions. All permitted activity rules for works in the bed include several of the standard permitted activity conditions. These conditions are summarised as:

a. Existing structures are lawfully established,

b. Limits on the physical parameters of the structure or works,

c. The structure does not cause erosion of the bed of banks, or property damage, or result in flooding,

d. Any disturbance is limited to the extent necessary to undertake the works,

e. Work in the wetted bed does not exceed 10 hours,

f. Sediment release is minimised, and any discharge does not conspicuously change the clarity or colour of the water downstream,

g. Notification of DoC and Fish and Game if some disturbances occur between 1 May and 30 September,

h. Minimise damage to fauna and native flora,

i. The site is left tidy following the erection or placement, and

j. The structure is maintained in good repair.

26. For most activities where physical limits are prescribed, the limits do not take into account the waterbody within which these activities are occurring, such as the river or catchment size, the bed substrate, or the particular values of the river or lake.

27. The standard permitted activity conditions also allow activities in sensitive sites, such as outstanding water bodies, or habitats of threatened species. These sites are likely to be more susceptible to adverse effects arising from activities in the bed and need more careful management than a permitted activity offers (i.e., a consent process is needed).

28. In addition, water quality monitoring shows that there are various water quality issues in surface water bodies throughout Otago, including suspended fine sediment and turbidity. Disturbances of the bed and discharges associated with activities in the bed both contribute to the levels of suspended fine sediment, deposited sediment and turbidity. It is not clear whether the current permitted activity conditions either maintain or contribute to improvements to water quality.

29. It is also unclear whether compliance with the permitted activity conditions in the RPW would prioritise freshwater and freshwater ecosystems, which is related to the issue of needing to respond to new regulatory requirements (discussed below).

3.2.3. Needing to implement new regulatory requirements

30. There have been significant changes to the national planning frameworks since the Water Plan became operative. These changes are outlined in Chapter 3 as they affect the whole of the pLWRP and are, therefore, not repeated here.

31. The parts of the NPSFM that direct the way that activities in the beds of rivers must be managed in regional plans include:

a. Avoiding the loss of river extent and values where practicable; and

b. Providing for fish passage.

3.2.4. Avoiding the loss of a river's extent and values

32. Clause 3.24 of the NPSFM requires the following policy to be inserted into all regional plans:

> *The loss of river extent and values is avoided, unless the council is satisfied that:*
> *(a) there is a functional need for the activity in that location; and*
> *(b) the effects of the activity are managed by applying the effects management hierarchy.*

33. This policy has been inserted into the RPW as policy 5.4.2A, and will be included in the pLWRP as policy IP-P9.

34. Clause 3.24 goes on to set out the requirements for:

a. Information to be included in consent applications for activities provided for in the policy above,

b. The decision-making process for councils to follow when assessing those applications, and

c. Matters to be controlled by consent conditions.

35. This policy direction has been included in the pLWRP as policy IP-P19.

36. Some small-scale activities are not expected to affect river extent or value, so may be able to be permitted subject to conditions. Where extent or value may be, or is likely to be affected, consent is needed to fulfil the council's obligations. Activities that may result in the loss of river extent and values will be required to demonstrate a functional need to be in that location, and will need to manage effects on the extent or values of a river by applying the effects management hierarchy. Some small-scale activities are not expected to affect river extent or value, so may be able to be permitted subject to conditions. Where extent or value is likely to be affected, consent is needed to fulfil the council's obligations. The effects management hierarchy is a significant change for the management of activities in the beds of rivers in Otago, when compared to the existing direction in the RPW, which does not explicitly reference river extent or value.

3.2.5. Providing for fish passage

37. Clause 3.26 of the NPSFM requires the following policy to be inserted into all regional plans:

> *The passage of fish is maintained, or is improved, 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.*

38. This policy has been inserted into the RPW as policy 8.3.5, and is captured by policy IP-P14 in the pLWRP.

39. Clause 3.26 also requires all regional plans include policies that identify desired fish species for which in-stream structures must provide passage and the water bodies they occur within, and undesirable fish species whose passage should be prevented. The pLWRP includes guidance on desired and undesirable fish species, including definitions for both terms, in relation to fish passage.

40. The NPSFM direction is particularly relevant for in-stream structures that may affect fish passage, and is considerably more stringent than the existing direction in the RPW for fish passage.

3.2.6. Uncertainty about the long-term framework for gravel management

41. During internal workshops, staff identified a range of concerns about the current framework in the RPW for gravel management, including that:

a. Where gravel is scarce, the rules are too permissive and the permitted extraction volumes could cumulatively have significant adverse effects on some rivers;

b. The rules do not address all adverse effects, including those on indigenous species, recreation and access, natural character and cultural values; and

c. The extraction volumes are inconsistent with the permitted activity rules in the coastal marine area, which causes compliance issues if people believe they can take the same amount in the coastal marine area.[1]

42. In addition to the regulatory framework, there are no publicly available practice or guidance notes describing best practices for gravel extraction in Otago. A number of other regional councils around the country have a range of guidance for gravel extractors, ranging from guidance notes to codes of practice.

43. Alongside these issues, the LWRP needs to establish a clear framework for managing gravel extraction, given its value as a river management tool. The current permitted activity volumes for gravel extraction have the potential to result in a large amount of extraction with very limited oversight from ORC, which is a risk to the ORC river management workstream, and the future availability of gravel in the region.

44. Several rivers in the region are subject to 'Morphology and Riparian Management Strategies'.[2] These strategies are not statutory documents, but are intended to help protect the recreational, cultural and ecological values of the relevant river by providing a general consensus on the values of the river, and the objectives for the river. In relation to gravel extractions, all of the strategies have an objective to enable sustainable gravel extraction, with options for its implementation including the continuation of council-led morphological studies to inform sustainable gravel extraction, council held consents for gravel extraction, and identifying areas of gravel accumulation.

45. Outside of the Morphology and Riparian Management Strategies, there is no region wide management strategy for gravel extraction from rivers, nor any region wide direction on how extractions should be managed. Some other regional councils across the country have a gravel management strategy or plan, and/or a code of practice for the extraction of gravel, both of which aid in the management of gravel extractions.[3]

4. Objectives

46. 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.

47. The objectives 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-O2 Relationship of Kāi Tahu to freshwater

iii. IO-O3 Long-term visions and environmental outcomes

iv. IO-O5 Manahau āhuarangi/climate change

v. IO-O6 Fish passage

[1] The current limits are 20 m^3 alluvium extraction from the bed of a river per person/month under the RPW, and 0.5 m^3 removal of sand, shell, shingle or other natural material from the coastal marine area per three year period under Rule 9.5.2.1 of the Regional Plan: Coast for Otago

[2] Waianakarua River, Pomahaka River, Kakanui River, Taieri River (Strath Taieri), Shag/Waihemo River

[3] Canterbury Regional Council, Bay of Plenty Regional Council, Marlborough District Council,

vi. IO-O7 Freshwater species

vii. IO-O9 Community well-being

viii. IO-O10 Significant infrastructure

5. Overview of sub-topics

48. The options below have been presented on a sub-topic basis, with five sub-topics defined. These sub-topics are:

a. Omnibus, which covers all provisions relating to structures in, on, over or under the bed; demolition or removal of structures; vehicle access; clearance of material following natural hazards; bank rebattering; bank reinstatement; vegetation planting and clearance;

b. Sediment traps;

c. Suction dredge mining;

d. Gravel extraction; and

e. Drain clearance.

49. These options will be discussed in turn in the following sections, alongside a summary of the clause 3 and clause 4A consultation feedback, and the effectiveness and efficiency assessment.

50. For all options, the differences are primarily in the rule frameworks and activity statuses used, rather than the policy direction. The policy direction is largely driven by regional council obligations under national direction, and the direction provided in the pORPS, and the IM chapter of the pLWRP.

6. Sub-topic: Omnibus

6.1. Discounted options

51. The status quo is not a reasonably practicable option for the reasons identified above in the 'Issues with the status quo' section.

6.2. Reasonably practicable options

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

- **Option 1:** Permitted activity pathways for specified activities (preferred option)
- **Option 2:** A more restrictive framework, including requiring resource consents for more activities, supported by stronger policy direction

53. Both options use the status quo as the starting point, and then use different ways to give effect to the national direction, and resolve issues with the status quo. Aspects of the options were variously discussed with internal staff, Kāi Tahu and external stakeholders.

54. Each option is discussed below, including a general overview of the option as well as specific information by activity where needed. The activities are:

a. Structures in, on, over or under the bed,

b. Demolition or removal of a structure,

c. Works in the bed, including bank rebattering, clearance of material and bank reinstatement,

d. Vegetation planting and clearance.

6.2.1. Option 1: Permitted activity pathways for specified activities (preferred option)

55. Option 1 proposes an approach for managing activities in the beds of lakes and rivers that gives effect to national direction by prioritising the health and well-being of water bodies and freshwater ecosystems, and addresses the issues with the plan structure and content.

56. This option has some continuity by adopting a similar rule framework to that in the RPW, whereby small-scale activities that comply with conditions are permitted, while all other activities will need a consent.

57. The permitted activity conditions have been developed to reflect current good practice and ensure that activities that are permitted have less than minor adverse effects on a river's extent or value, and will not put at risk the achievement of target attribute states, environmental outcomes and long-term visions[4]. The standard permitted activity conditions applied to most activities are summarised as:

a. Activity is not in the habitat of a threatened species, any mātaitai, taiāpure or nohoaka, or a drinking water protection zone;

b. Activity does not:

i. result in any reduction in the flow carrying capacity of the river;

ii. impede fish passage or legal public access;

iii. prevent the exercise of lawful takes of water;

iv. disturb roosting or nesting indigenous birds or bats;

v. disturb the spawning habitat of desired fish species during their spawning seasons;

vi. cause or exacerbate flooding, erosion, land instability, sedimentation or property damage;

vii. frustrate the use of any nationally significant infrastructure, regionally significant infrastructure or other lawfully established structure;

c. Accidental discovery protocol;

d. Works in the wetted bed do not exceed 10 hours;

e. Discharge complies with the receiving water quality standards for visual clarity and change in sediment cover 200 m downstream of the works; and

f. The site is returned as near as practicable to the prior works state, and is left tidy.

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

58. The standard permitted activity conditions are similar to those already used in the RPW, although with some changes to align with current practice, such as tying discharges to receiving water quality standards, and specifically excluding permitted activities in some sensitive areas, including mātaitai, taiāpure, nohoaka, identified habitats of threatened species and drinking water protection zones.

59. Many activities have had an existing permitted pathway made more stringent as a result of the new standard permitted activity conditions, when compared to the RPW.

60. Unless otherwise specified, most activities that do not comply with the permitted activity conditions require consent as a discretionary activity. The exceptions to this are described in the sub-topic sections below.

61. For activities where a consent is required, the policies provide clear direction on the anticipated management of activities in the bed. This guidance includes how specific effects, such as those on water quality, existing infrastructure and structures, legal public access and passage of desired fish species, are to be managed.

62. Option 1 also combines related activities into a single rule (a hybrid rule). For example, an activity in the bed (e.g., the placement or maintenance of a structure in, on, over or under the bed of a lake or river) alongside any associated disturbance, land use and discharge of bed material is captured by a single rule. The exceptions to these hybrid rules are:

    a. the associated clearance of vegetation, which is managed by specific rules in the BED chapter,

    b. the damming and diversion of water, which is managed by the DAM chapter, and

    c. the discharge of contaminants other than bed substrate, which is managed by the OTH chapter.

63. The use of hybrid rules also applies to flood protection and drainage works managed by the rules in the FLOOD – Flood protection and drainage assets chapter. In relation to the exceptions above, the FLOOD rules capture the associated clearance of vegetation, off-stream damming, and instream diversions. The FLOOD rules do not capture instream damming or the discharge of contaminates other than bed substrate.

64. Key details regarding Option 1 are provided for each sub-topic below.

6.2.1.1. Structures in, on, over or under the bed

65. In relation to the use and maintenance of structures, Option 1:

    a. Permits the use and maintenance of any lawfully established structure provided:

        i. the structure is maintained in a state of good repair, including removing debris;

        ii. any changes in effects associated with a change in use are the same, similar or less than the preceding use; and

        iii. the structure is not identified in an action plan as requiring remediation.[5]

[5] As required by clause 3.26(7)(c) of the NPSFM

b. Requires consent (as a restricted discretionary activity) for any use or maintenance that does not comply with the permitted activity conditions. The matters of discretion are limited to the effects of not complying with the permitted activity conditions.

66. In relation to the alteration or placement of structures, Option 1:

a. Permits a number of structures and associated works in the beds. The structures for which alteration, placement or replacement is permitted are:

i. Fences, pipes, lines and cables,

ii. Monitoring and sampling structures, navigational aid structures and signs,

iii. Submersible pumps and connected hoses,

iv. Flow or level recording devices,

v. Intake structures not including dams or weirs,

vi. Maimai,

vii. Whitebait stands and eel traps,

viii. Floating booms,

ix. Barriers to upstream fish passage,

x. Single span bridges, and

xi. Fords.

b. Requires consent for activities not captured by the permitted activity rules.

67. The permitted activity conditions largely retain the limits in the RPW for these small structures as they relate to the size and extent of the structures, with updated standard permitted activity conditions.

68. The standard permitted activity conditions that apply to these structures intentionally differ slightly across the rules. For example for single span bridges, there are fewer locational restrictions, given these bridges span across the bed, rather than being in the bed, when compared to a ford, where both the works, and the structure itself are in the bed.

69. For culverts and passive flap gates, while the NESF contains regulations that manage the placement, use, alteration, extension or reconstruction of weirs, it does not manage the associated disturbance of the bed or discharge of bed material. Option 1 permits those parts of works on culverts and passive flap gates not managed by the NESF and is designed to complement the national provisions. Option 1 does not include any stringency over the NESF in relation to the physical parameters of the culvert or passive flap gate.

6.2.1.2. Demolition or removal of a structure

70. Option 1 generally permits the demolition of structures, consistent with the pLWRP policy direction that encourages the removal of structures that are not lawfully established, or that cease to be maintained, operated or used. The removal of such structures will support the restoration of the extent and values of rivers and lakes.

71. Option 1 includes several of the standard permitted activity conditions, including the restriction on removing structures from mātaitai, taiāpure and nohoaka. While it is acknowledged that the removal of structures may benefit the values associated with these

areas, the removal of structures may also adversely impact those values, so a consent process is considered appropriate to manage those effects.

72. The permitted activity rule enables the partial removal or demolition of a structure, provided that the section that remains does not present a risk to navigation or safety. This acknowledges that in some situations it may not be practicable to remove a structure in it's entirety, but that where this can be managed appropriately, partial removal is still preferable to the structure remaining in situ, subject to compliance with the other permitted activity conditions.

6.2.1.3. Vehicle access

73. Option 1 generally permits vehicle access through lake and river beds, provided the activity can be demonstrated as being necessary to cross over the bed, and the area is not mapped as threatened species habitat.

6.2.1.4. Works in the bed, including bank rebattering, clearance of material and bank reinstatement

74. Option 1 generally permits these activities, where they will benefit a river's extent and values (bank rebattering) or are part of the recovery from natural hazard events to reinstate the pre-event status quo (clearance of material or bank reinstatement). In all other cases, consent will be required as a discretionary activity, including for activities not captured by these activity specific rules.

75. The direction in the Kawarau Water Conservation Order regarding the maintenance of the braiding of water[6] is acknowledged, but is not referenced in the BED policies or rules, given the conservation order does not restrict or prohibit ORC's functions related to works in the beds of rivers.

6.2.1.5. Vegetation planting and clearance

76. Option 1 generally permits vegetation planting or clearance that will benefit a river or lake's extent or values, such as the planting of species to restore or enhance habitat and mahika kai, or the removal vegetation other than indigenous vegetation. This option expressly prohibits the planting of species classified as a pest, pest agent, unwanted organism, or organism of interest.

77. The policy direction for vegetation planting and removal requires that it protects or restore the natural character, form, function, extent or value of the waterbody or riparian margin, or will enhance or restore the habitat of indigenous freshwater species. It is anticipated that most planting and removal activities will be consistent with at least one,if not both of these pathways.

6.2.2. Option 2: More restrictive framework

78. Option 2 adopts a similar structure to Option 1. However, it contains additional permitted activity standards to further protect the health and well-being of water bodies and

[6] Te Awa Whakatipu/Dart River mainstem from Whakatipu Waimāori/Lake Wakatipu to confluence with Beans Burn and Puahiri/Puahere/Rees River mainstem from Whakatipu Waimāori/Lake Wakatipu to confluence with Hunter River

freshwater ecosystems. The additional permitted activity standards are likely to result in more activities requiring resource consent. The policy direction in Option 2 is also more restrictive and precautionary than Option 1 and the RPW, and requires that all works in, on, over or under the bed, even if temporary, are avoided in outstanding water bodies and habitats of threatened species. This direction differs to Option 1, where permitted activity conditions related to outstanding water bodies and mapped habitats of threatened species do not apply to all permitted activities.

79. Option 2 narrows the scope of the permitted activity rules in Option 1, such that many more activities are likely to require a resource consent. Option 2 also includes more prohibited activity rules for specific activities in sensitive areas.

80. Option 2 requires that all new structures, regardless of scale, in water bodies with unimpeded passage of desired fish species along the full length of their course require consent.

6.3. Clause 3 consultation feedback

81. The key feedback from clause 3 parties on the BED policy direction was:

a. Largely supportive, with minor wording changes sought to improve clarity;

b. Greater recognition of climate change mitigation and adaptation actions sought, including the use of nature-based solutions to manage natural hazard risks;

c. Specific direction needed for biosecurity operations;

d. Greater provision for activities associated with renewable electricity generation;

e. Improved direction on works undertaken during the period of fish spawning and migration;

82. The key feedback from clause 3 parties on the rules was:

a. General support for rule frameworks, including the use of receiving water standards in the permitted activity rules;

b. Requests for additional activities to be captured by the 'specified structures' permitted activity rule;

c. Include reference to industry best practices for erosion and sediment control.

83. Feedback from Kāi Tahu ki Otago sought that:

a. The BED chapter should have a broader objective that recognises the beds of lakes and river as being integral to the waterbody, and managed to maintain or enhance hauora and mauri of the waterbody;

b. Greater focus should be provided in policies on the management the effects, rather than providing for activities, including effects on mahika kai;

c. Policy direction for structures be split for existing and new structures, with similar feedback on the restoration of lake a river values in relation to removing structures and conservation works;

d. Clearer direction be provided on the removal and planting of vegetation, including separate policy direction for the enhancement of riparian margins, and the

management of natural hazard risks. They also sought that planting in the bed use indigenous species found, or traditionally found in the area, and avoid the use of species which are prone to uncontrolled spreading;

e. The permitted activity conditions include references to mahika kai, effects on taoka species (outside birds, threatened species and fish passage), and ecosystem health more generally.

f. Permitted activity conditions include a limit of the duration of effects on water quality, as well as reasonable mixing;

g. In relation to the activity specific rules not covered by the other sub-topics below:

   i. For the removal of structures, the preference is for all of the structure to be removed (rather than allowing parts to remain in situ), in order to better restore mauri;

   ii. For the clearance of material accumulated as a result of a weather event, conditions should be included to avoid deposition of material onto banks and riparian margins, and manage effects on mahika kai, wetlands, ecosystems and habitats, and access. An option to permit works is suggested where undertaken in accordance with an approved strategy;

84. Feedback from Kāi Tahu ki Otago also noted particular support for the permitted activity pathway for the placement of barriers to upstream fish passage by undesirable fish species.

85. In response to the feedback received, some changes have been made to:

a. Improve clarity in the provisions, and also provide greater recognition of climate change mitigation and adaptation and the management of effects, with ordering of policies also amended;

b. Provide a specific pathway for works in the bed associated with renewable electricity generation, included in the relevant FMU chapters; and

c. Improve direction, and management of works during spawning times for desired fish species.

86. In response to internal feedback from compliance staff, the use of the receiving water standards for permitted activities has been amended to use a standard 200 m mixing zone, and works in the wetted bed limited to 10 hours.

87. Greater direction on biosecurity operations has not been included, but provisions have been reviewed to ensure they are enabling of some biosecurity activities.

6.4. Clause 4A consultation feedback

88. The key feedback received through clause 4A consultation on the Omnibus BED provisions is set out below, alongside the changes made to the pLWRP provisions:

a. Consideration of an objective which makes clear the outcomes for which activities in the bed and being managed, and including cross-references to IM policies.

   i. A BED objective has not been included, and cross-references to the IM direction have been used sparingly. This is due to the way the plan works, with the IM and FMU provisions applying in addition to the BED provisions.

b. Amending BED-P3(3) to include direction on sediment and water quality, and expanding the direction on spawning habitats to include indigenous freshwater species other than fish;

    i. BED-P3(3) was amended to include direction on water quality, and better align with IO-O7 in respect of the habitat of indigenous freshwater species. A consequential change has also been made to the standard permitted activity conditions;

c. Amending BED-P4 to provide specific direction on effects, cross-reference IM policies and clarify that it only relates to BED-R2-PER1.

    i. The effect-specific direction included in BED-P3 has not been duplicated in BED-P4, as these provisions are to be read together. BED-P4 has not been limited to only the structures managed by BED-R2-PER1, as it applies to all structures;

d. Amend the chapeau of BED-P6, clarify the intent of 'works that support adaption to climate changes, or managed retreat in response to natural hazard risks', and amend the clauses relating to fish passage;

    i. BED-P6 has been amended to improve consistency with IP-P12 and IP-P13. No change to the climate change wording has been made, as when read with the chapeau the intent is considered to be clear;

e. Include an additional purpose for vegetation planting and removal in BED-P7;

    i. The additional purpose has been included in BED-P7;

f. Include a permitted activity condition relating to works within or adjacent to nohoaka entitlements from 1 August to 30 April;

    i. This has been included in the standard permitted activity conditions used throughout the BED rules;

g. Use default mixing zones in permitted activity conditions to manage visual clarity and change in sediment cover, rather than the current 200 m downstream condition;

    i. This has not been changed, as the current approach is consistent with internal advice, confirming that these standards have been effective in the RPW.

h. Amendments to the advice notes for culverts and flap gates, and that consent may be required under other ORC rules relating to other aspects of these structures;

    i. The rule reference in the advice notes has been corrected. No changes have been made to rules, given the pLWRP is not intended to add additional stringency for culverts and passive flap gates in terms of their physical parameters;

i. Review whether permitted activity status is appropriate for whitebait stands and maimai is appropriate in all waterbodies;

    i. No change is recommended, as it is not clear what types of locational considerations are anticipated;

j. Amending the permitted activity conditions for bridge design, to ensure no animal effluent will enter the river;

i. No change is recommended, as the wording provided would present a very high bar to be certain of compliance;

k. Include a limit on the width of permitted activity fords;

i. A maximum width of 3.5 m has been recommended.

l. Delete permitted activity restriction on removal of structures in sensitive sites;

i. No change recommended, given in some cases structures may be providing for the values identified.

6.5. Effectiveness and efficiency assessment

89. Table 5 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in options 1 and 2 for the omnibus sub-topic.

90. For both options, given the variation in activities managed by the BED provisions in the omnibus topic, it is not certain whether either option would provide opportunities for economic growth or employment.

Table 3: Benefits and costs for beds of rivers and lakes – Omnibus sub-topic

	BENEFITS	COSTS
Option 1 (preferred option)	▪ Option 1 is proposed to give effect to Te Mana o te Wai, and is expected to result in improvements to the health and well-being of water bodies and freshwater ecosystems. This has benefits for mana whenua, indigenous species, desired fish species and outstanding water bodies. Giving effect to Te Mana o te Wai will also support the tourism sector and associated industries, as Otago freshwater bodies are a tourism drawcard. Giving effect to Te Mana o te Wai will also enhance mauri. ▪ Permitted activity pathways, and clear policy direction for activities that will protect, restore or enhance instream environmental will incentivise these activities. In addition to environmental benefits there are also likely to be economic and social benefits associated with the implementation of these beneficial activities. ▪ Requirements for the provision of information to the regional council for some permitted activities will improve the information currently held by the council, particularly in respect to the location of activities and potential cumulative effects. ▪ There will be greater clarity for plan users regarding consent requirements, with the combining of structure, bed disturbance and discharge activities into each rule.	▪ Strong policy direction for avoiding the loss and extent of rivers and natural lakes will restrict the types of activities, particularly larger scale, that can occur in the bed. This is likely to benefit water bodies and freshwater ecosystems, but is likely to come at an economic cost, where activities in the bed are required to be consented. ▪ Adverse effects caused or exacerbated by existing lawfully established structures are unlikely to be resolved, particularly where these structures are not removed or replaced and their ongoing use and maintenance is permitted. ▪ Some activities that may be beneficial to the values of mātaitai, taiāpure, nohoaka or other sensitive sites, may require consent, due to the standard permitted activity conditions requiring that works do not occur within those sensitive sites. ▪ Where existing structures are currently resulting in degradation of mahika kai habitat, their ongoing use and maintenance is likely to result in continued impacts on the Kāi Tahu economy and impede mana whenua fully exercising kaitiakitaka. ▪ For activities that are permitted under the RPW but will not be under the pLWRP, there will be a cost to those undertaking the activity, associated with either reducing the scale of the activity to meet the

		permitted activity conditions, applying for a resource consent, or ceasing the activity. ▪ More activities are likely to require resource consent compared to the status quo, which will create additional costs for resource consent applicants. The consent deposits for non-notified and limited notified applications are $3000, increasing to $25,000 for publicly notified applications. These costs do not include the cost to prepare a consent application, nor any processing costs that may be incurred over and above the deposit. Consent data from ORC shows that there are 651 active consents for general/structure land use, of which half were granted since 2021, due to the introduction of the NESF. Many of these consents are assumed to authorise activities in the bed. Using the cost data described in the Status quo policy context section, for the consents granted in the last two years to June 2024, the median costs were less than $6,000 for 54% of applications and less than $10,000 for 85% of applications. For the remaining applications, median costs were between $11,200 and $25,900. ▪ The placement and use of culverts and passive flap gates, which are managed under the NESF, may require additional resource consents under the pLWRP to authorise the associated disturbance of the bed, resulting in additional costs for resource users. ▪ There will continue to be some loss of extent or value of rivers and natural lakes, where a functional need for the activity to occur in that location can be demonstrated. This may result in environmental, social and cultural costs, depending on the nature of the extent of values lost.
Option 2	▪ Similarly to Option 1, Option 2 is proposed to give effect to Te Mana o te Wai. ▪ The additional permitted activity standards and increased reliance on consenting will likely result in better outcomes for the instream environment and Kāi Tahu values and economy. Improved instream ecology will benefit the resilence of freshwater habitats and the species that rely on them, including mahika kai species. ▪ There will be greater clarity for plan users regarding consent requirements, with the combining of structure, bed disturbance and discharge activities into each rule.	▪ The costs identified for Option 1 apply for Option 2, but at a greater scale given more activities are likely to require consent. There are costs associated with obtaining consents, complying with consent conditions and undertaking monitoring and enforcement. ▪ The reduced reliance on permitted activities may result in fewer environmentally beneficial activities occurring, due to the cost and time associated with consent processing. This may come at an environmental, social and cultural cost, depending on the nature of the works not undertaken.

- A consent requirement for more activities will increase council oversight of works occurring within the beds of lakes and rivers, and improve the ability of the compliance and enforcement team to monitor those works.

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

Table 4: Effectiveness and efficiency assessment for beds of lakes and rivers

	Effectiveness
Option 1 (preferred option)	Option 1 is an effective option for achieving the relevant environmental outcomes and other objectives in the pLWRP and to implement the NPSFM and align with the NESF. Specific and clear direction for activities to provide for the health and well-being of water bodies and freshwater ecosystems, avoid the loss of values or extent of rivers and natural lakes and protect significant habitats and sensitive areas will assist with giving effect to Te Mana o te Wai. The length of time required to achieve the objectives is unknown, and will in part be influenced by how many existing structures can continue to operate as permitted activities, how many structures will be removed or demolished, and how many structures will require consent to be placed, replaced or altered. To enable activities such as crossing the bed of a river, the more permissive requirements for single span bridges may encourage a greater uptake of them, in comparison to alternative options such as culverts or fords. The additional resource consents that will be required under Option 1, as well as the provision of information for some of the permitted activities will increase the administration, compliance and enforcement burden for the council. However, increased information about the types of activities occurring within the bed will enable ORC to better manage environmental effects, including cumulative effects, of those activities, as well as enabling the distribution of compliance resourcing according to activity risk.
Option 2	Option 2 is an effective option for achieving the relevant environmental outcomes and other objectives in the pLWRP and to accord with the NPSFM and align with the NESF. The environmental benefits are similar to those identified in Option 1, but without the financial incentives that the permitted activity pathways may provide for some activities. Compared to Option 1, the additional resource consents that will be required under Option 2 will increase the administration, compliance and enforcement burden for the council. However, increased information about the types of activities occurring within the bed will enable ORC to better manage environmental effects, including cumulative effects, of those activities, as well as enabling the distribution of compliance resourcing according to activity risk.
	Efficiency
Option 1 (preferred option)	Option 1 is considered to be an efficient method of achieving the objectives. As shown above, read as a whole the benefits associated with this option outweigh the costs. While additional resource consents will be required and costs will be incurred, efficiencies will be gained for both consent applicants and ORC staff through clear direction and guidance for processing activities. Option 1 will constrain or prevent some new and existing activities in the beds of rivers and lakes, where they will result in a loss of extent or value of the waterbody. However, to an

	extent, this cost is unavoidable due to the requirement to implement the NPSFM and to achieve the long-term visions[7] identified by Otago's communities. In terms of benefits, Option 1 will work to improve the health and well-being of water bodies, which is considered to benefit local communities, compared to the consenting burden associated with the more restrictive regime in Option 2. Providing permitted activity pathways for environmentally desirable activities, such as the placement of barriers to upstream fish passage to protect threatened fish species, the placement of single span bridges, the removal of structures and the planting and removal of vegetation, is an efficient way to encourage these types of activities to occur, when compared to requiring a consent for such activities. Option 1 will also result in efficiency gains for consent applicants and ORC staff, with clear direction and guidance for applying or and processing activities, and rules that better capture the activities associated with works in the bed. Resource users will also have clarity on the types of activities that are anticipated by the Plan and the adverse effects that must be managed for each stage of an activity.
Option 2	Option 2 is considered to be less efficient than option 1, given that while the benefits will be similar to Option 1, the costs will be substantially higher, due to the increased number of activities that will require consent. Option 2 may unnecessarily constrain activities with potentially less than minor adverse effects on the environment. The costs associated with consents, and

92. 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.

93. There is limited information about the nature and extent of some activities in the beds of lakes and rivers in the Otago region, particularly for activities permitted under the RPW. As such, there is a level of uncertainty regarding the full impacts of implementing either option.

94. However, there is sufficient information about the current water quality issues and the associated environmental, social and cultural impacts in Otago. In addition, the NPSFM provides clear direction on the management of rivers, and the protection of their extent and value. This warrants the implementation of a more restrictive regime than the status quo.

95. Overall, the information supporting Option 1 is suitably certain and sufficient that there is a minimal risk of acting.

6.6. Conclusion

96. The effectiveness and efficiency assessments have shown that overall, Option 1 is a more efficient and effective way to implement the national direction and achieve the objectives of the pLWRP than Option 2. Therefore, Option 1 is considered to be the most appropriate way to achieve the objectives of the pLWRP.

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

7. Sub-topic: Sediment traps

97. Sediment traps are acknowledged as being a useful tool to remove sediment from water, by slowing the flow of water. Rules permitting the construction of sediment traps were included in the RPW through Plan Change 8.

7.1. Discounted options

98. The status quo is not a reasonably practicable option for the reasons identified above in the 'Issues with the status quo' section.

7.2. Reasonably practicable options

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

- **Option 1:** Permitted pathway for sediment trap use and maintenance, and permitted pathway for the creation of sediment traps, provided works do not occur in flowing water (preferred option)
- **Option 2:** Alternative permitted activity pathway for construction, where works may occur in flowing water, subject to design requirements that the sediment trap must meet.

100. Both options use the status quo as the starting point, and then use different ways to give effect to the national direction, and resolve issues with the status quo. Aspects of the options were variously discussed with internal staff, Kāi Tahu and external stakeholders.

7.2.1. Option 1: Permitted pathway for sediment trap use and maintenance, and permitted pathway for the creation of sediment traps, provided works do not occur in flowing water (preferred option)

101. Option 1 permits the construction of sediment traps in critical source areas and rivers, subject to standard permitted activity conditions. Option 1 removes some of the current RPW restrictions relating to the size of the river bed, on the basis that construction works must not occur in flowing water, with works in the wetted bed not exceeding 10 hours in duration. Sediment traps that are not able to be constructed outside of flowing water will either require the implementation of a temporary diversion of water around the works site, or will require consent.

102. For works in flowing water, Option 1 provides two consenting pathways: A controlled activity pathway for works in critical source areas, or small rivers using the River Environment Classification System; and a discretionary activity pathway for all other works in flowing water, or whether the permitted or controlled activity conditions are not complied with.

103. Option 1 also permits the use and maintenance of sediment traps, with no restriction on works occurring in water, given maintenance works will primarily be occurring upstream of the sediment trap, such that the trap itself will manage the sediment discharged during maintenance works. Sediment trap use and maintenance that does not comply with the permitted activities will require consent as a discretionary activity.

7.2.2. Option 2: Alternative permitted activity pathway for construction, where works may occur in flowing water, subject to design requirements that the sediment trap must meet.

104. Option 2 retains a permitted activity pathway for sediment trap construction, subject to different conditions to Option 1. The key difference is that while Option 2 would permit works in flowing waters, such activities would be subject to the sediment trap meeting design criteria. The design criteria would be fairly prescriptive, and any non-compliance with those requirements would trigger a consent requirement.

7.3. Clause 3 consultation feedback

105. The Clause 3 version of the sediment trap rule aligned most closely with Option 1 described above, with a permitted activity rule for the construction, use and maintenance of sediment traps subject to similar permitted activity conditions as Option 1, and a discretionary activity status where not permitted. The Clause 3 version did not provide a controlled activity pathway for the placement of sediment traps in critical source areas or small rivers, where the works occur in flowing water.

106. Clause 3 parties variously supported or opposed the proposed permitted activity pathway for sediment traps, with those in opposition seeking a consent requirement for all sediment traps, or clear requirements in the permitted activity rule.

107. In their feedback, Kāi Tahu ki Otago noted their opposition to a permitted activity status for sediment traps, citing the need for controls on scale, extent of modification, works occurring in flowing water and effects on mahika kai.

108. In response to feedback from Clause 3 parties and council direction, the controlled activity rule has been added to enable the works associated with the placement of a sediment trap to occur in flowing water in selected locations.

7.4. Clause 4A consultation feedback

109. Cl4A feedback sought that the permitted activity pathway for sediment traps be removed, or amended to address:

a. The scale or the works and extent of modification of the water body;

b. Effects on habitat, including taoka species that are not threatened;

c. Effects of the discharge of substrate and sediment removed from the bed; and

d. The effective life of the sediment trap, including rehabilitation or restoration once the sediment trap is no longer operating.

110. No changes to the permitted activity rule framework for sediment traps are recommended at this stage, given both the permitted and controlled activities already set limits on where sediment traps can be established, including managing effects on freshwater species.

7.5. Effectiveness and efficiency assessment

111. Table 7 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in each option.

112. For both options, given sediment traps are primarily implemented at a relatively small scale, options 1 and 2 are unlikely to provide significant opportunities for economic growth or employment.

Table 5: Benefits and costs for sediment traps

	BENEFITS	COSTS
Option 1 (preferred option)	▪ Will enable some sediment traps to be installed without consent, particularly at a farm scale, where sediment traps may be identified as an action in a FWFP to mitigate risks associated with farming activities. ▪ A consent process may result in improved practices and better outcomes for sediment traps, particularly in larger waterbodies. ▪ A consent requirement for sediment traps may result in the adoption of other measures to reduce sediment loads in rivers and coming from critical source areas, such as riparian planting and land management practices that reduce the volume of sediment entering water, in lieu of managing sediment once it is entraned in water. ▪ Permitting the construction of sediment traps in water bodies, subject to standard permitted activity conditions, while requiring a temporary diversion of water around the works site, or consent for works in flowing water, will have positive outcomes for the ecology and Kāi Tahu values supported by downstream water bodies, including by creating envionmental conditions that will improve mahika kia habitat, increase food production and provide better opportunities for harvesting.	▪ Sediment traps established as a permitted activity will not be subject to minimum requirements regarding design or capacity, which may mean that some sediment traps do not function or perform as intended. ▪ The consent requirement for many sediment traps in flowing water may result in a lower uptake of sediment traps, due to the time and cost of obtaining a consent. The consent deposits for non-notified and limited notified applications are $3000, increasing to $25,000 for publicly notified applications. These costs do not include the cost to prepare a consent application, nor any processing costs that may be incurred over and above the deposit. Consent processing costs specific to sediment traps are not available, but are likely to be captured by the figures presented in relation to the Omnibus sub-topic.
Option 2	▪ The benefits are similar to those identified for Option 1 above, as they relate to the consent requirements for sediment traps. ▪ Option 2 is likely to enable more sediment traps to be installed without consent, due to the ability to undertake works under a permitted activity rule enabling placement works in flowing water. This may have benefits for water quality where sediment traps are installed.	▪ The economic costs are likely to be lesser than those identified for Option 1 above, given more works may be able to occur as a permitted activity. ▪ There may be environmental costs associated with the construction of sediment traps in flowing water, subject to the permitted activity conditions by which they are managed. ▪ Having specific permitted activity conditions that limit works in flowing water may limit how many sediment traps

	are able to be established as permitted activities, depending on whether compliance with the permitted activity conditions is feasible.

113. Table 8 below assesses the effectiveness and efficiency of the proposed provisions in achieving the objectives.

Table 6: Effectiveness and efficiency assessment sediment traps

	Effectiveness
Option 1 (preferred option)	Option 1 is effective for achieving the relevant environmental outcomes and other objectives in the pLWRP and to implement the NPSFM. Enabling sediment traps to be established will encourage their establishment at a property or catchment level, contributing to the achievement of the long term visions[8] and environmental outcomes, which will assist with giving effect to Te Mana o te Wai. While consents will be required under Option 1, it is anticipated that these will primarily be in larger waterways where it is not feasible to not do works in flowing water. For works of this larger scale, a consent process will ensure that the sediment trap is designed appropriately to achieve the desired outcomes.
Option 2	Option 2 is an effective option for achieving the relevant environmental outcomes and other objectives in the pLWRP and to accord with the NPSFM, for similar reasons as described in relation to Option 1. Option 2 may be more effective than Option 1, by being more enabling for permitted activity sediment trap construction, due to works being able to occur in water. However, the degree of greater effectiveness is uncertain, due to the use of the design requirements, as it is not clear what design requirements would be included, nor whether those requirements would be suitable for the sediment traps that are intended to be established as permitted activities.
	Efficiency
Option 1 (preferred option)	Option 1 is considered to be an efficient method of achieving the objectives. As shown above, read as a whole the benefits associated with this option outweigh the costs. While some sediment traps will require resource consents, and the associated costs will be incurred, efficiencies will be gained for both consent applicants and ORC staff through clear direction and guidance for processing activities.
Option 2	Option 2 is considered to be an efficient method of achieving the objectives. As shown above, read as a whole the benefits associated with this option outweigh the costs. The efficiency of Option 2, compared to Option 1 is uncertain, due to the use of the design requirements, as it is not clear what design requirements would be included, nor whether those requirements would be suitable for the sediment traps that are intended to be established as permitted activities. In this sense, the permitted activity rule in Option 1 provides greater certainty around its efficiency, compared to Option 2.

114. 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.

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

115. There is limited information about the nature and extent of sediment traps in the Otago region, although it is understood that there is significant interest in their use amongst catchment groups across the region. As such, there is a level of uncertainty regarding the full impacts of implementing Options 1 or 2. The uncertainty associated with Option 2 is greater, given there has been no testing of design criteria against existing or proposed sediment traps, and therefore whether the design criteria required to enable permitted activity works in flowing water would enable or hinder the establishment of sediment traps as permitted activities.

116. However, there is sufficient information about the current water quality issues and the associated environmental, social and cultural impacts in Otago. This warrants the implementation of a more restrictive regime. Overall, the information supporting the preferred options is suitably certain and sufficient that there is a minimal risk of acting compared to the status quo.

7.6. Conclusion

117. The effectiveness and efficiency assessments have shown that overall, Option 1 is a more efficient way to implement the national direction and achieve the objectives of the pLWRP than Option 2, due to the uncertainty surrounding the design requirements that Option 2 relies upon. Therefore, Option 1 is considered the most appropriate way to achieve the objectives of the pLWRP.

8. Sub-topic: Suction dredge mining

118. Suction dredge mining is managed by New Zealand Petroleum and Minerals, and the regional council. Based on figures available from the New Zealand Petroleum and Minerals website, within Otago, there are 140 Tier 2 mining consents in Otago.[9] Tier 2 permits include a hobbyist subset, which captures sand mining using a gold pan, a sluice box, hand tools, a riffle box, and small-scale suction dredging operations where the dredge has a combined engine rating no higher than 10 horsepower. Of the Tier 2 permits in Otago, 104 are for gold only, and 77 are for sites less than 50 ha (likely to be hobby permits).

119. There are some areas in Otago where a permit is not required to fossick for gold, being Twelve Mile Creek, Five Mile Creek, Arrow River, Shotover River and Gabriels Gully (New Zealand Petroleum and Minerals, 2024).

120. There are 12 suction dredging operations currently consented under the RPW, with the majority of these consents required due to suction dredging occurring in a Schedule 7 location. Some require consent under the RPW due to the nozzle size, and would otherwise be permitted.

8.1. Discounted options

121. The status quo is not a reasonably practicable option for the reasons identified above in the 'Issues with the status quo' section.

[9] As at 28 November 2023

8.2. Reasonably practicable options

122. Two were identified to achieve the objectives:

- **Option 1:** Permitted pathway for small-scale suction dredge mining, with a consent requirement for all other suction dredging (preferred option)
- **Option 2:** A more restrictive framework requiring consent for suction dredge mining activities, regardless of scale

123. Both options use the status quo as the starting point, and then use different ways to give effect to the national direction, and resolve issues with the status quo. Aspects of the options were variously discussed with internal staff, Kāi Tahu and external stakeholders.

124. In January 2024, two members of the ORC policy team were invited out to the Manuherekia River to view a suction dredge in action. The suction dredge was of a size, and located in an area that would likely meet the permitted activity conditions of Option 1. The staff appreciated the opportunity to see a suction dredge in situ.

8.2.1. Option 1: Permitted pathway (preferred option)

125. Option 1 consists of a permitted pathway for small-scale suction dredge mining, with a consent requirement for all other suction dredging.

126. Option 1 generally permits small-scale suction dredge mining, provided:

a. the nozzle size of the dredge is no greater than 150 mm,

b. the maximum area of the bed disturbed does not exceed 30 m^2 per day, and

c. the activity only occurs for a maximum of 30 days between 1 December and 30 April (inclusive).

127. The limit on nozzle size is consistent with the status quo under the RPW, while the limit on area and duration of works are additional. The limits on area and timing have been supported by ORC technical advice (Ravenscroft, 2023a).

128. In addition, small-scale suction dredge mining will also be subject to most of the 'standard permitted activity conditions' referred to Omnibus Option 1, with the addition of an exclusion from Outstanding Water Bodies identified as having outstanding ecological values.

129. Option 1 also combines related activities into a single rule (a hybrid rule) for suction dredge mining, such that associated discharge or bed disturbance components will all be managed under a single rule.

130. The limits around timing and duration of suction dredge mining, as well as the restrictions associated with habitats of threatened species and ecologically Outstanding Water Bodies are additional, when compared to the RPW framework. The RPW required consent for suction dredging activities occurring in the rivers specified in Schedule 7.

131. Suction dredge mining that does not meet the permitted activity conditions will require resource consent as a discretionary activity.

132. Figure 1 below shows the Tier 2 mining permits in Otago, laid over with the outstanding water bodies identified as having outstanding ecological values. The key area of crossover is

the Kyeburn River and its tributaries, which are ecologically outstanding, and also the location of a (or a number or) mining permits.

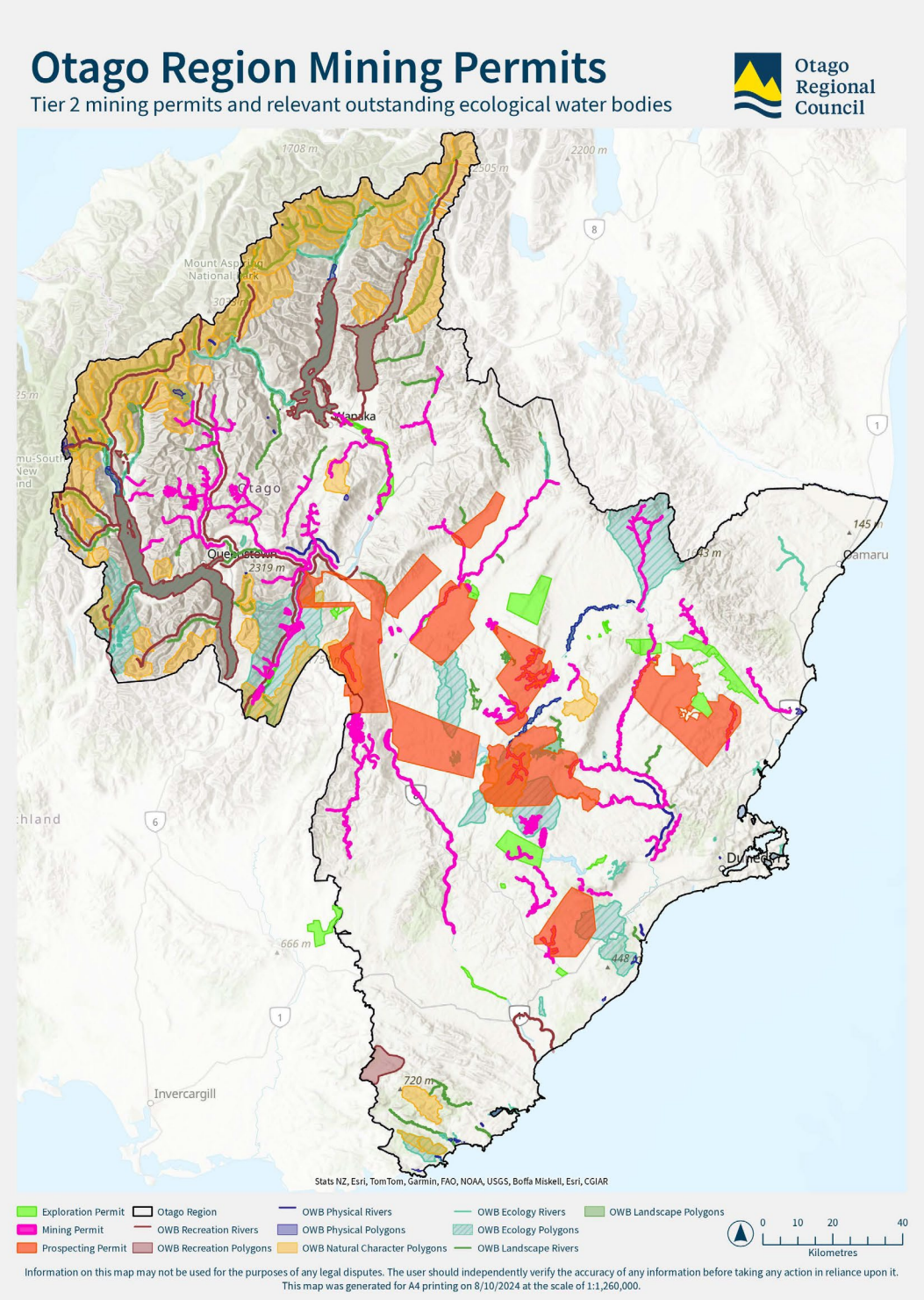

Figure 1: Gold mining permits in Otago

8.2.2. Option 2: More restrictive approach

133. Option 2 adopts a precautionary approach, with all suction dredge mining operations requiring resource consent under the pLWRP, regardless of scale, extent or location. Within these consent requirements, it may be possible to differentiate between smaller scale and

larger scale operations, with a controlled or restricted discretionary pathway for lower risk operations. However, this would not remove the need for all operators to have consent under the pLWRP.

134. Option 2 would enable the site by site assessment of all suction dredging consents, including consideration of the scale of the mining activity proposed and the sensitivity of the surrounding environment and receiving water body, including in particular the fish species present that may be adversely affected by the dredging activity.

135. To improve efficiencies in consent processing, it is likely that small-scale scale, lower risk dredging activities may be able to utilise a 'simplified' consent process, which could lessen the financial and administrative burden of consenting on dredge operators.

8.3. Clause 3 consultation feedback

136. The Clause 3 provisions most closely aligned with Option 1. The key feedback from Clause 3 parties on suction dredge mining was:

a. Variously support or oppose the permitted activity pathway for suction dredge mining, with those in opposition seeking a consent requirement for all such activities.

137. In their feedback, Kāi Tahu ki Otago note that they do not support the permitted activity for suction dredge mining, as they consider that the effect on the benthic environment is not related to nozzle size.

138. No changes have been made to the suction dredging provisions as a result of Clause 3 feedback.

8.4. Clause 4A consultation feedback

139. In Clause 4A feedback, the permitted activity rule for suction dredge mining is opposed, for the same reasons as provided in the Clause 3 feedback. The feedback also notes that the permitted activity conditions do not manage the effects on the habitat of taoka species that are not classified as threatened species.

140. No changes to the suction dredging permitted activity rule have been recommended.

8.5. Effectiveness and efficiency assessment

141. Table 9 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in each option.

142. For both options, given suction dredging mining is primarily done on a small, hobbyist scale, options 1 and 2 are unlikely to provide significant opportunities for economic growth or employment.

Table 7: Benefits and costs for beds of rivers and lakes – Suction dredge mining

	BENEFITS	COSTS
Option 1 (preferred option)	▪ Option 1 is proposed to give effect to Te Mana o te Wai, and is expected to result in improvements to the health and well-being of water bodies and freshwater ecosystems. This has benefits for mana	▪ There may be some environmental costs associated with permitted activity suction dredge mining, although there is limited evidence to quantify these effects. Based

	whenua, indigenous species, desired fish species and outstanding water bodies. Giving effect to Te Mana o te Wai will also enhance mauri. ▪ A permitted activity pathway for small scale suction dredge mining enables the continuation of primarily hobbyist mining activities. ▪ Requirements for the provision of information to the regional council for permitted activities will improve the information currently held by the council in relation to suction dredge mining. ▪ The consent pathway for larger scale activities will enable council oversight of these activities.	on the limits on nozzle size, area of disturbance and maximum number of days of mining each season, the environmental costs associated with permitted activity suction dredge mining are considered to be limited. ▪ Strong policy direction for avoiding the loss and extent of rivers and natural lakes will limit the extent of large scale suction dredge mining that can occur. This likely to benefit water bodies and freshwater ecosystems, but is likely to come at an economic cost, where suction dredging mining requires consent. ▪ For suction dredge mining activities that are permitted under the RPW but will not be under the pLWRP, there will be a cost to those undertaking the activity, associated with either reducing the scale of the activity to meet the permitted activity conditions, applying for a resource consent, or ceasing the activity. Consent processing costs specific to suction dredge mining are not available, but are likely to be captured by the figures presented in relation to the Omnibus sub-topic. ▪ The burden of costs will be concentrated in areas where this suction dredge mining most commonly occurs, as shown in Figure 1.
Option 2	▪ Option 1 is proposed to give effect to Te Mana o te Wai, and is expected to result in improvements to the health and well-being of water bodies and freshwater ecosystems. This has benefits for mana whenua, indigenous species, desired fish species and outstanding water bodies. Giving effect to Te Mana o te Wai will also enhance mauri. ▪ A consent requirement for all suction dredge mining will increase council oversight of these activities, and improve the ability of the compliance and enforcement team to monitor them. ▪ A consent requirement for all suction dredge mining may reduce the number of small scale mining operations. This may have some environmental benefits and social, cultural and economic benefits for Kai Tahu due to improved opportunities for mahika kai harvesting and exercising kaikiakitaka due to the reduction in bed disturbance from suction dredging.	▪ The costs identified for Option 1 apply for Option 2, but at a greater scale given all suction dredge mining activities will require consent. ▪ For small scale suction dredge miners, the cost associated with obtaining consent may reduce the viability of mining, particularly where suction dredge mining is undertaken primarily as a hobby.

143. Table 10 below assesses the effectiveness and efficiency of the proposed provisions in achieving the objectives.

Table 8: Effectiveness and efficiency assessment for beds of lakes and rivers

	Effectiveness
Option 1 (preferred option)	Option 1 is an effective option for achieving the relevant environmental outcomes and other objectives in the pLWRP and to implement the NPSFM. Specific and clear direction for works in the bed, including suction dredge mining, including the protection of significant habitats and sensitive areas, will assist with giving effect to Te Mana o te Wai. It is anticipated that some small scale operators may still require consent, or alternatively will need to make some changes to their operations in order to comply with the permitted activity conditions, particularly the locational restraints. The provision of information for permitted suction dredge mining activities will enable ORC to better distribute compliance resourcing for permitted activities according to risk. This information will also be useful to inform any future changes to plan provisions, should changes be necessary in relation to suction dredge mining. The consent requirement for large scale suction dredge mining operations will enable site by site consideration of the proposed activities, in a similar manner to the status quo, albeit with improved policy direction that implements higher order direction.
Option 2	Option 2 is an effective option for achieving the relevant environmental outcomes and other objectives in the pLWRP and to accord with the NPSFM. Given all suction dredging activities require consent under Option 2, it is likely to be more effective than Option 1, given each activity will be subject to site and activity specific considerations through the consent process. Compared to Option 1, the additional resource consents that will be required under Option 2 will increase the administration, compliance and enforcement burden for the council. However, as with Option 1, increased information about the types of activities occurring within the bed will enable to better manage environmental effects, including cumulative effects, of those activities, as well as enabling the distribution of compliance resourcing according to activity risk.
	Efficiency
Option 1 (preferred option)	Option 1 is considered to be an efficient method of achieving the objectives. As shown above, read as a whole the benefits associated with this option outweigh the costs. While there may be some additional resource consents for operations that are currently permitted, efficiencies will be gained for both consent applicants and ORC staff through clear direction and guidance for processing activities. In terms of benefits, Option 1 will work to improve the health and well-being of water bodies, which is considered to achieve the highest net benefit to local communities. Providing a permitted activity pathway for small scale suction dredge mining enables hobby type operators to continue, subject to permitted activity conditions, while larger scale operators will require consent, as is already the case under the RPW. Option 1 will also result in efficiency gains for consent applicants and ORC staff, with clear direction and guidance for applying for and processing consents for suction dredge mining, activities, and rules that better capture the activities associated with works in the bed.

Option 2	Option 2 is considered to be less efficient than Option 1, given that while the benefits will be similar to Option 1, the costs will be substantially higher, due to all suction dredge mining activities requiring consent.

144. 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.

145. As described previously, there is information available on the number of mining permits in Otago, and therefore the number of people that may be affected by the proposal (although it is acknowledged that some people hold multiple permits, and multiple people may operate under one permit). There remains however a level of uncertainty regarding the full impacts of implementing either option on both the people undertaking suction dredge mining, and the effects on the environment, particularly in relation to the permitted activity conditions under Option 1 that are additional to those in the RPW, and how this may impact mining activities that are currently permitted under the RPW.

146. There is sufficient information about the current water quality issues and the associated environmental, social and cultural impacts in Otago. This warrants the implementation of a more restrictive regime. Overall, the information supporting Option 1 is suitably certain and sufficient that there is a minimal risk of acting compared to the status quo.

8.6. Conclusion

147. The effectiveness and efficiency assessments have shown that overall, Option 1 is a more efficient way to implement the national direction and achieve the objectives of the pLWRP, as it is more efficient than Option 2. Therefore, Option 1 is considered the most appropriate way to achieve the objectives of the pLWRP.

9. Sub-topic: Gravel extraction

9.1. Discounted options

148. The status quo is not a reasonably practicable option for the reasons identified above in the 'Issues with the status quo' section.

9.2. Reasonably practicable options

149. Two were identified to achieve the objectives:

- **Option 1:** Permissive framework for small scale gravel extraction
- **Option 2:** Permitted pathway for small-scale gravel extraction, with a stepped consenting regime from controlled to discretionary for large-scale extraction, including a pathway to utilise an ORC Code of Practice for Gravel Extraction that is prepared in accordance with APP2 – Code of practice for gravel extraction (preferred option).

150. Both options use the status quo as the starting point, and then use different ways to give effect to the national direction, and resolve issues with the status quo. Aspects of the options were variously discussed with internal staff, Kāi Tahu and external stakeholders.

9.2.1. Option 1: More permissive framework

151. Option 1 adopts an enabling approach for small-scale gravel extractions, retaining volumetric limits equivalent to those in the RPW (20 cubic metres per month). While retaining the RPW volume limits, Option 1 provides protection to small waterbodies with the inclusion of a setback between extractions and the wetted bed.

152. Option 1 is an interim framework, being the first part of a signalled two-stage approach. The second part will enable the preparation and implementation of the gravel management strategy and subsequent code of practice. This two stage approach may result in a reduction (or increase) in permitted activity volumes in time, based on the direction provided in a gravel management strategy and the supporting technical evidence regarding gravel availability across Otago. Further discussion on the two stage approach is provided in relation to Option 2 below.

9.2.2. Option 2: Permitted pathway and a stepped consenting regime (preferred option)

153. Option 2 consists of a permitted pathway for small-scale gravel extraction, with a stepped consenting regime from controlled to discretionary for large-scale extraction, including a pathway to utilise an ORC Code of Practice for Gravel Extraction that is prepared in accordance with APP2 – Code of practice for gravel extraction.

154. Option 2 adopts a precautionary approach to gravel extractions when compared to the status quo and Option 1, based on:

a. the limited current knowledge around gravel availability in the region, and

b. the current lack of oversight of gravel extractions that occur as a permitted activity.

155. Option 2 permits gravel extractions that do not exceed 20 cubic metres per person per year, subject to most of the 'standard permitted activity conditions' referred to in Omnibus Option 1. A key change from the standard permitted activity conditions is that permitted gravel extractions would not be from the wetted bed, although this is consistent with the current RPW rules for permitted extractions.

156. Where the permitted activity conditions are not complied with, a consent is required, with three consenting options available under Option 2:

a. A controlled activity for extractions up to 240 cubic metres per person per year,

b. A restricted discretionary activity for extractions that comply with the to be developed code of practice, and

c. A discretionary activity for all other extractions.

157. The permitted activity rule results in a substantial reduction in the permitted activity volume for extraction compared to the RPW and Option 1, while the controlled activity volume is equal to the total volume able to be extracted on an annual basis as a permitted activity under the RPW and Option 1 (240 cubic metres per year). Neither the permitted nor controlled activity rules provide for the processing of gravel in the bed. This is on the basis that these rules do not have any limits on the size of the river, or extent of the dry bed within which gravel can be extracted. While in rivers with a large bed it is acknowledged that processing in the bed may be appropriate, there is uncertainty around the effects of

processing when the extent of the dry bed is limited, such that there is insufficient certainty to provide for processing as a permitted activity.

158. The supporting policy direction encourages engagement with ORC prior to lodging a consent application, which is intended to provide for a more efficient process, particularly where an application is consistent with advice received from ORC, particularly in their hazard and river management capacity. It also enables extractions that do not exceed the rate of gravel recharge and either:

a. are for the purpose of protecting significant infrastructure, or

b. are for the purpose of flood hazard mitigation undertaken by or on behalf of ORC; or

c. demonstrate the functional need and operational need for the extraction, and that there are no other practical alternatives.

159. There is also policy direction limiting consents for gravel extraction to five year terms, unless applicants can demonstrate why a longer duration is appropriate. The reasons for short term for gravel extraction are two-fold:

160. A five year duration acknowledges the two-stage approach to gravel extraction, and that the framework in the pLWRP is likely to be subject to change once a gravel management strategy and code of practice are in place.

161. Gravel extractions occur in active and mobile river environments, and there can be significant uncertainty associated with estimating sustainable extraction volumes more than a few years into the future.

162. A precautionary approach has been adopted to managing gravel extractions from the bed under Option 2, on the basis that these provisions will be subject to a plan variation or change in the future. There was insufficient time and river specific information available to prepare a gravel management strategy and subsequent code of practice prior to the notification of the pLWRP. Consequently, a two-stage approach has been adopted, with the interim provisions as drafted in either Option 1 or 2, followed by a plan variation or change in the future. The purpose of the plan variation or change will be to align the gravel extraction provisions with the gravel management strategy and subsequent code of practice, which are to be developed following the notification of the pLWRP. Through the plan variation or change, it is anticipated that river specific information will be able to support more lenient gravel extraction provisions for specified areas, which is likely to include an increase in permitted activity volumes in some areas, and more certainty around the volumes available for extraction elsewhere for extractions requiring consent.

163. A greater reliance on a code of practice was considered as part of this option, but then discounted because (as discussed above) the code of practice will not be available when the pLWRP is notified. In the interim, the restricted discretionary pathway for gravel extraction has been included to enable to the use of the code of practice once it takes effect. A more lenient activity status has not been adopted due to the current uncertainty around the scope and nature of the code of practice, although an Appendix has been included in the pLWRP which, at a high level, sets out the minimum requirements for the code of practice. It is possible that through the plan change or variation signalled above, extractions that are consistent with the code of practice may have a more lenient activity status, particularly if the code of practice and gravel management strategy are developed to capture the matters that would otherwise be managed through a consent process.

9.3. Clause 3 consultation feedback

164. The key feedback from Clause 3 parties on the gravel extraction provisions rules was:

a. Recognition of the conflict between the health needs of waterbodies, and the needs of people, particularly in relation to flood works,

b. A reduction in the maximum term of consents for gravel extraction, and

c. Variously support or oppose the permitted activity pathway for gravel extraction, with those in opposition seeking a consent requirement for all such activities.

165. Feedback from Kāi Tahu ki Otago sought that:

a. The policy direction for gravel extraction include stronger direction relating to effects on the health of the waterbody and ecosystems, and the matters in APP8 – Mana whenua environmental indicators;

b. The permitted activity rule for gravel extraction include consideration of effects on wahi tupuna and the cumulative impacts from multiple gravel extractors.

c. The controlled activity rule be amended to be at least a restricted discretionary activity, with the matters of discretion to include consideration of APP8 – Mana whenua environmental indicators.

166. Limited changes were made to the gravel provisions, with the key change being providing more detail on the Code of Practice for Gravel Extraction, with the introduction of APP2. No changes were made to the rules.

9.4. Clause 4A consultation feedback

167. Feedback was received on the policy direction specific to gravel management, seeking that:

a. In BED-P10, extend consideration of the impact of gravel extraction on the mean bed level of the waterbody to apply downstream of the extraction location, as well as at the immediate extraction site;

b. Greater clarity be provided about the future of gravel management described in BED-P11; and

c. Identify the criteria that would need to be met by consent applicants when seeking a consent duration longer than five years.

168. BED-P10 has been amended in response to the Clause 4A feedback. No changes have been made to BED-P11 or BED-P12. Specific feedback was not provided on the rules managing the extraction of gravel.

9.5. Effectiveness and efficiency assessment

169. Table 78 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in options 1 and 2.

170. For both options, gravel extraction may support opportunities for economic growth or employment, particularly where the extraction is intended to supply infrastructure or

building development. This growth is likely to be associated with consented extractions under either option, rather than at the permitted levels of extraction.

Table 9: Benefits and costs for beds of rivers and lakes – Gravel extraction

	BENEFITS	COSTS
Option 1	▪ Option 1 is proposed to give effect to Te Mana o te Wai, and is expected to result in improvements to the health and well-being of water bodies and freshwater ecosystems. This has benefits for mana whenua, indigenous species, desired fish species and outstanding water bodies. Giving effect to Te Mana o te Wai will also enhance mauri. ▪ A permitted activity limit consistent with the RPW will enable the continuation of many existing extractions without the need for resource consent. ▪ There will be greater clarity for plan users regarding consent requirements, with the combining of bed disturbance and discharge activities into each rule. ▪ The development of a code of practice for gravel extraction will assist in improving environmental outcomes and providing certainty for resource users.	▪ There will continue to be some loss of extent or value of rivers and natural lakes, where a functional need for gravel extraction to occur in that location can be demonstrated. ▪ For small scale extractions that were permitted under the RPW but will not be under the pLWRP, there will be a cost to those undertaking the activity, associated with either reducing the scale of the activity to meet the permitted activity conditions, applying for a resource consent, or ceasing the activity. The consent deposits for non-notified and limited notified applications are $3000, increasing to $25,000 for publicly notified applications. These costs do not include the cost to prepare a consent application, nor any processing costs that may be incurred over and above the deposit. ▪ Extraction under the Option 1 permitted activity rule may negatively impact future gravel availability by enabling extraction of greater volumes than could be sustainably extracted, particularly when compared to the Option 2 framework, which has more precautionary permitted activity limits.
Option 2 (preferred option)	▪ Option 1 is proposed to give effect to Te Mana o te Wai, and is expected to result in improvements to the health and well-being of water bodies and freshwater ecosystems. This has benefits for mana whenua, indigenous species, desired fish species and outstanding water bodies. Giving effect to Te Mana o te Wai will also enhance mauri. ▪ A permitted pathway for small scale gravel extraction will enable some small takes to continue, although at a lesser scale than under the RPW. ▪ Compared to the Option 1 (and the status quo under the RPW), Option 2 is also likely to have cultural and economic benefits for Kai Tahu due to improved opportunities for mahika kai harvesting and exercising kaikiakitaka due to reduced impacts caused bed disturbance from gravel extraction.	▪ There will continue to be some loss of extent or value of rivers and natural lakes, where a functional need for the activity to occur in that location can be demonstrated. ▪ For small scale extractions that were permitted under the RPW but will not be under the pLWRP, there will be a cost to those undertaking the activity, associated with either reducing the scale of the activity to meet the permitted activity conditions, applying for a resource consent, or ceasing the activity. ▪ More small scale gravel extractions activities are likely to require resource consent compared to the status quo and Option 1, which will create additional costs for resource consent applicants. This difference is likely to be less pronounced for larger scale abstractions,

- Requirements for the provision of information to the regional council will improve the information currently held by the council, particularly in respect to the location of and extent of gravel extractions, and potential cumulative effects.
- There will be greater clarity for plan users regarding consent requirements, with the combining of bed disturbance and discharge activities into each rule.
- Careful management of the gravel resource in the short term will ensure there is sufficient gravel in the future to protect river extent and value, and enable continued extraction where sufficient gravel is available. This has economic benefits, particularly where river gravel is the closest source for a particular need, reducing associated transport costs.
- The development of a code of practice for gravel extraction will assist in improving environmental outcomes and providing certainty for resource users.

which would not be permitted under either option. There are currently 39 active consents for gravel extraction, with most of these authorising extraction in the Queenstown Lakes District. The large number of gravel consents in the Queenstown Lakes District is considered to in part, be related to the urban growth and development in the district, as well as the presence of some readily available gravel. The number of consents required is expected to increase with the implementation of Option 2. Using the cost data described in the Status quo policy context section, for the consents granted in 2023-2024, the processing costs were approximately $9,500, for extractions between 4,000 and 20,000 cubic metres per year, and durations of five or ten years.

- For activities that are currently consented, there will be a cost to reconsenting under the new policy direction, which is generally more directive and stringent than the RPW. This means some consented activities may require more stringent management, or their operation reconsidered.

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

Table 10: Effectiveness and efficiency assessment for beds of lakes and rivers

	Effectiveness
Option 1	Option 1 is effective for achieving the relevant environmental outcomes and other objectives in the pLWRP and to implement the NPSFM. Specific and clear direction for gravel extractions, including avoiding the loss of values or extent of rivers and natural lakes and protecting significant habitats and sensitive areas will assist with giving effect to Te Mana o te Wai. The additional resource consents that will be required under Option 1, as well as the provision of information for some of the permitted activities will increase the administration, compliance and enforcement burden for the council. However, increased information about gravel extractions, particularly smaller scale extractions will enable ORC to better manage environmental effects, including cumulative effects, of those activities, as well as enabling the distribution of compliance resourcing according to activity risk.
Option 2 (preferred option)	Option 2 is an effective option for achieving the relevant environmental outcomes and other objectives in the pLWRP and to implement the NPSFM, for similar reasons as described in relation to Option 1.

	Option 2 is likely to be more effective than Option 1, given it adopts a more precautionary approach to permitted activity extractions, meaning there is a reduced risk of extraction beyond sustainable limits as a permitted activity. Extraction beyond sustainable limits is likely to be inconsistent with the objectives of the pLWRP, particularly those related to the natural form and character of waterbodies.
	Efficiency
Option 1	Option 1 is considered to be an efficient method of achieving the objectives. As shown above, read as a whole the benefits associated with this option outweigh the costs. Option 1 comes with risks associated with potential extraction beyond sustainable limits in some waterbodies. Against the background of a two stage planning response to gravel extraction, whereby options 1 and 2 represent the first stage, it is considered less efficient to start with a less restrictive permitted activity pathway, which may need to be dialled back through stage 2 (Option 1), compared to starting with a more conservative pathway, which may be able to be expanded through stage 2 (Option 2).
Option 2 (preferred option)	Option 2 is considered to be an efficient method of achieving the objectives. As shown above, read as a whole the benefits associated with this option outweigh the costs. While additional resource consents will be required and costs will be incurred, when compared to the status quo, efficiencies will be gained for both consent applicants and ORC staff through clear direction and guidance for processing activities. As described in relation to Option 1 above, when considered as part of the two stage approach to gravel management in Otago, Option 2 is considered to be more efficient than Option 1.

172. 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.

173. There is limited information about the nature and extent of permitted gravel extractions in the Otago region. As such, there is a level of uncertainty regarding the full impacts of implementing Option 2. However, there is sufficient information about the current water quality issues and the habitats of threatened species and the associated environmental, social and cultural impacts in Otago. This warrants the implementation of a more restrictive regime. Overall, the information supporting the preferred options is suitably certain and sufficient that there is a minimal risk of acting compared to the status quo.

9.6. Conclusion

174. The effectiveness and efficiency assessments have shown that overall, Option 2 is a more effective way to implement the national direction and achieve the objectives of the pLWRP than Option 1. It is acknowledged that Option 1 may be considered to be more efficient than Option 2 in the short term, but it carries more risk in relation to future gravel availability, reducing its efficiency over the longer term. Therefore, Option 2 is considered the most appropriate way to achieve the objectives of the pLWRP.

10. Sub-topic: Sediment removal from drains and modified watercourses

10.1. Discounted options

175. The status quo is not a reasonably practicable option for the reasons identified above in the 'Issues with the status quo' section.

176. One other option that was discounted, is the use of FWFPs in lieu of a resource consent to authorise drain clearance. This option was discounted on the basis that FWFP certifiers are unlikely to have the skillset required to be able to assess the effects of drain clearing activities and the efficacy of mitigations. In particular, it is uncertain whether a certifier would have the necessary level of knowledge to consider the impacts of any discharges resulting from the clearance on freshwater fish species.

10.2. Reasonably practicable options

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

- **Option 1:** A permitted pathway for sediment removal that is undertaken by hand, in the dry or complies with a Code of Practice that is prepared in accordance with APP1 – Code of practice for drain maintenance, a controlled activity pathway for small scale removal, and a discretionary pathway for all other removal activities (preferred option)
- **Option 2:** A more restrictive framework requiring resource consents for all sediment removal.

178. Both options use the status quo as the starting point, and then use different ways to give effect to the national direction, and resolve issues with the status quo. Aspects of the options were variously discussed with internal staff, Kāi Tahu and external stakeholders.Both options manage drains and modified watercourses together, rather than through separate rule frameworks. Drain clearance is currently permitted under the RPW. While drains are not rivers, and therefore are not managed under s13 of the RMA, they often share similar characteristics with rivers, including connections to larger water body systems, and providing habitat for a range of flora and fauna, including indigenous fish. It is also acknowledged that there can be considerable difficulties in delineating different types of water bodies (rivers, modified watercourses, artificial watercourses and drains), so grouping these two types of water bodies together will alleviate some of this complexity.

179. It is recognised that drains and modified watercourse can be prone to sediment build-up and weed growth, and that this sediment and vegetation is required to be removed periodically to better provide for the flow of water through these waterbodies.

10.2.1. Option 1: Permitted pathway and a Code of Practice (preferred option)

180. Option 1 consists of a permitted pathway for sediment removal that is undertaken by hand, in the dry or complies with a Code of Practice that is prepared in accordance with APP1 – Code of practice for drain maintenance, a controlled activity pathway for small scale removal, and a discretionary pathway for all other removal activities.

181. Option 1 provides a controlled activity pathway for small scale drain clearance, subject to compliance with some good practice type conditions for the activity, including limits on the duration of works in water, and the length of continuous clearance.

182. Alongside the controlled activity rule, Option 1 provides two other rules, being a permitted activity rule where sediment removal is undertaken, by hand, in the dry or in accordance with Code of Practice that is prepared in accordance with APP1 – Code of practice for drain maintenance, and a discretionary rule for all other sediment removal activities.

183. Until the Code of Practice is developed, the controlled activity pathway is intended to enable clearance of privately managed drains and modified watercourses, as well as providing for clearance within council managed networks. All clearance activities that do not comply with the controlled activity rule will require consent as a discretionary activity. In time however, it is anticipated that many drain clearance activities of all scales will be able to utilise the permitted activity pathway afforded by the Code of Practice, once it has been developed in accordance with the minimum requirements for the code of practice set out in APP1.

10.2.2. Option 2: Increased stringency

184. Option 2 requires consent as a discretionary activity for all clearance activities in drains and modified watercourses. This option would not include a rule pathway related to a Code of Practice, such that were this to be developed, a more lenient activity status would not be available. Not having a specific rule pathway for activities undertaken in accordance with a Code of Practice does not rule out the ability for a Code of Practice to be used during the consent process.

185. This option recognises the risk associated with drain clearance activities, and takes a precautionary approach to managing those risks, through the need for a resource consent process where both the need for the clearance activity, as well as the management of its effects can be considered.

10.3. Clause 3 consultation feedback

186. The Clause 3 version of the drain maintenance rule aligned most closely with Option 2 described above. Clause 3 parties variously supported or opposed the proposed consented pathway for drain clearance, with those in opposition seeking a permitted activity rule.

187. Kāi Tahu ki Otago did not provide detailed feedback on the drain maintenance rule, outside questioning the relationship between this rule and BED-R1-PER1, which in the Clause 3 version of the plan permitted the use and maintenance of flood protection and drainage infrastructure, excluding scheduled drains.

188. In response to Clause 3 feedback and direction from Council, two new pathways have been included for drain maintenance, including a permitted activity rule where clearance is done in the dry, by hand, or in accordance with a code of practice, and a controlled activity with limits on the duration and extent of works.

10.4. Clause 4A consultation feedback

189. Clause 4A feedback sought that BED-P8 include a limit on the impact of drain maintenance works, such that drain maintenance would not increase the degree of modification of a

modified watercourse. A change to this effect has not been recommended, as it is unclear how this would be managed through permitted activity conditions. Some consideration was given to changes in width or depth, but were not adopted given any clearance activity is likely to result in an increase in depth, compared to what existed immediately prior to the clearance.

10.5. Effectiveness and efficiency assessment

190. Table 13 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in each option.

191. For both options, drain maintenance is unlikely to provide significant opportunities for economic growth or employment. Drain maintenance activities will however enable existing land use activities to continue in areas where the maintenance mitigates risks associated with flooding.

Table 11: Benefits and costs for beds of rivers and lakes

	BENEFITS	COSTS
Option 1 (preferred option)	▪ Will enable some drain clearance to continue without consent, and provide for continuance of the flood mitigation benefits provided. ▪ Requiring consent for most drain clearance works will improve the information held by ORC, and enable improved monitoring of this activity. ▪ A consent process may result in improved practices and better outcomes for drain maintenance activities, compared to the status quo. ▪ A Code of Practice for drain maintenance, once developed will provide consistency in drain maintenance across the region, and in many cases, remove the need for a resource consent to be obtained. ▪ A consent requirement for most drain clearance activities may result in the adoption of measures to reduce the need for clearance, such as the use of sediment traps, riparian planting and land management practices that reduce the volume of sediment entering water.	▪ Until the Code of Practice is developed, most drain clearance activities will require consent, which will come at a cost to land owners/operators and ORC in their river management function. ▪ The consent requirement for most drain maintenance may result in these works not being carried out, due to the time and cost of obtaining a consent. The consent deposits for non-notified and limited notified applications are $3000, increasing to $25,000 for publicly notified applications. These costs do not include the cost to prepare a consent application, nor any processing costs that may be incurred over and above the deposit. Consent processing costs specific to sediment removal from drains are not available, but are likely to be captured by the figures presented in relation to the Omnibus sub-topic. ▪ The cost of obtaining consent, and therefore reduction in drain maintenance works could have flow on impacts in terms of drainage capacity not being maintained, resulting in flooding of land adjacent to drains. Environmental values supported by the drain networks could also be impacted if they drains are not maintained, reducing the quality of the habitat provided.
Option 2	▪ The benefits are similar to those identified for Option 1 above, as they	▪ The costs are similar to those identified for Option 2 above, but likely to be amplified given all drain clearance

	relate to the consent requirements for drain maintenance.	activities will require consent under Option 2. ▪ The development of a code of practice may be less likely under Option 2, which could have costs associated with a lack of clear and consistent guidance for drain maintenance across the region. This is likely to increase costs for applicants, while resulting in uncertain environmental outcomes, particularly where the efficacy of proposed mitigations is not certain.

Table 12: Effectiveness and efficiency assessment drain maintenance

	Effectiveness
Option 1 (preferred option)	Option 1 is effective for achieving the relevant environmental outcomes and other objectives in the pLWRP and to accord with the NPSFM. Specific and clear direction for drain maintenance, including the signalled development of a code of practice will assist with giving effect to Te Mana o te Wai. The additional resource consents that will be required under Option 1, as well as the provision of information for some of the permitted activities will increase the administration, compliance and enforcement burden for the council. However, increased information about drain maintenance activities will enable ORC to better manage environmental effects, including cumulative effects, of those activities, as well as enabling the distribution of compliance resourcing according to activity risk.
Option 2	Option 2 is an effective option for achieving the relevant environmental outcomes and other objectives in the pLWRP and to accord with the NPSFM, for similar reasons as described in relation to Option 1.
	Efficiency
Option 1 (preferred option)	Option 1 is considered to be an efficient method of achieving the objectives. As shown above, read as a whole the benefits associated with this option outweigh the costs. While additional resource consents will be required and costs will be incurred, when compared to the status quo, efficiencies will be gained for both consent applicants and ORC staff through clear direction and guidance for processing activities, particularly where applicants are able to utilise the controlled activity pathway.
Option 2	Option 2 is considered to be a less efficient method of achieving the objectives than Option 1. As shown above, read as a whole the costs associated with this option may outweigh the benefits, due to the costs associated with consenting drain maintenance works, regardless of scale. In addition, Option 2 does not provide an enabling pathway for applicants proposing to comply with the code of practice for drain maintenance, which may reduce the willingness to establish or utilise the code of practice.

192. 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.

193. There is limited information about the nature and extent of drain maintenance activities in the in the Otago region, particularly for activities permitted under the Water Plan, such as drain maintenance. As such, there is a level of uncertainty regarding the full impacts of implementing Options 1 or 2.

194. However, there is sufficient information about the current water quality issues and the associated environmental, social and cultural impacts in Otago. This warrants the implementation of a more restrictive regime. Overall, the information supporting the preferred options is suitably certain and sufficient that there is a minimal risk of acting compared to the status quo.

10.6. Conclusion

195. The effectiveness and efficiency assessments have shown that overall, Option 1 is a more effective and efficient way to implement the national direction and achieve the objectives of the pLWRP than Option 2. Therefore, Option 1 is considered the most appropriate way to achieve the objectives of the pLWRP.