

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

## **Chapter 17: Stormwater**

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



**Otago  
Regional  
Council**

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## Abbreviations

CDC	Clutha District Council
CODC	Central Otago District Council
DCC	Dunedin City Council
FMU	Freshwater Management Unit
ICPM	Integrated Catchment Management Plan
NES	National Environmental Standard
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
QLDC	Queenstown Lakes District Council
RPS	Regional Policy Statement
RMA	Resource Management Act 1991
WDC	Waitaki District Council

## Stormwater [SW] - Assessment of Provisions

### 1. Introduction

1. Stormwater is defined as “run-off that has been intercepted, channelled, diverted, intensified or accelerated by human modification of a land surface, or run-off from the surface of any structure, as a result of precipitation and includes any contaminants contained within”<sup>1</sup>. In the pLWRP a ‘stormwater network’ means “an interconnected system of devices or structures used to capture, convey, store, treat or discharge stormwater including, but not limited to kerbs, pipes, soakpits, sumps, swales and constructed ponds and wetlands which are operated by or on behalf of a territorial authority or network utility operator”.
2. Most stormwater discharges are managed by stormwater networks generally servicing urban, township and some rural-residential catchments.
3. Stormwater networks owned by territorial authorities typically consist of roadside gutters, mud tanks, pipes, manholes, pump stations, detention ponds, inlet and outlet structures. Some watercourses are used to channel stormwater to discharge points to land, surface water or the coast, these are also considered part of a stormwater network.
4. Subdivisions as well as industrial and trade premises may have infrastructure that collects stormwater and discharges to stormwater networks owned by territorial authorities. Stormwater treatment and disposal infrastructure developed to service a specific subdivision may also either be vested to territorial authorities to form part of their stormwater network or remain owned and maintained by the site owner and/or operator.
5. Stormwater discharge that are not from a stormwater network occur when stormwater runs directly off impervious areas (such as carparks, roads and rooves). These discharges can go into or onto land, or directly into surface water. They typically occur where there is no available stormwater network to connect to or where the territorial authority does not accept the discharge into its stormwater network (this is typically due to issues regarding the capacity of the stormwater network to sufficiently convey stormwater).
6. Stormwater management focusses on both the quantity and quality of ‘end-of pipe’ discharges and the ability of the receiving environment to assimilate adverse effects. Currently, stormwater (whether from a network or not) tends to be discharged to the receiving environment without any or very limited treatment. Stormwater discharges can also cause damage to land and waterbodies from flooding, scouring and erosion.
7. Managing the quality of stormwater discharges generally means slowing the flow of stormwater to allow for treatment prior to discharge into the environment. Treatment systems typically comprise of a treatment device, such as vegetated swales, detention and infiltration systems, filtration systems (such as proprietary treatment devices), and constructed wetlands. Water sensitive design and consideration of green infrastructure are recent developments in stormwater management (particularly within urban environments) that address both water quality and quantity issues. ‘Green infrastructure’

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<sup>1</sup> As per the National Planning Standards 2019

- “means a natural or semi-natural area, feature, or process, including engineered systems that mimic natural processes, which are planned or managed to:
- a. Provide for aspects of ecosystem health or resilience, such as maintaining or improving the quality of water, air or soil, and habitats to promote biodiversity; and
  - b. Provide services to people and communities, such as stormwater or flood management or climate change adaptation.”<sup>2</sup>
8. Water sensitive design is intended to ensure multiple public benefits from stormwater management and to develop a sense of place for communities. The approach also seeks to deliver lower risk and better returns on investment for land developers. Kirimoko Park is a recent residential subdivision development in Wanaka that utilises a number of different types of green infrastructure including rain gardens, vegetated swales, infiltration basins alongside minimal impermeable surfaces. Stages two and three of Kirimoko Park utilises characteristics of the site (permeable sub-soils and suitable slopes) and the benefit of low intensity rainfall to replace traditional underground stormwater pipework with swales and vegetated areas (Ira & Simcock, 2019).
  9. The existing policy approach to stormwater management in the Regional Plan: Water includes direction to reduce sewerage entering the stormwater network. The management of wet and dry weather overflows occurring from reticulated wastewater systems are dealt with in the WW – Wastewater chapter.
  10. The relevant provisions for this section are those contained in the SW – Stormwater chapter of the pLWRP. That chapter manages the discharge of stormwater as follows:
    - a. Stormwater network discharges; and
    - b. Stormwater discharges not from a stormwater network.
  11. The relevant provisions from the SW – Stormwater Chapter include:
    - a. SW-P1 – Discharges from stormwater networks;
    - b. SW-P2 – Consent framework for stormwater networks;
    - c. SW-P3 – Interim consent framework for stormwater networks;
    - d. SW-P4 – Comprehensive consent framework for stormwater networks;
    - e. SW-P5 – Stormwater Management Plans;
    - f. SW-P6 – Stormwater discharges not from a stormwater network;
    - g. SW-R1 – Stormwater network discharges;
    - h. SW-R2 – Stormwater discharges not from a stormwater network; and
    - i. APP-30 – Stormwater Management Plans.

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<sup>2</sup> As per the National Planning Standards 2019.

## 2. Issues

12. This section outlines the resource management issues that the SW chapter seeks to address. These issues are:
- a. Stormwater discharges to land and water can cause adverse effects on the environment;
  - b. Issues of significance for Kāi Tahu;
  - c. Consistency with national direction.
13. Additional issues with the status quo policy context that the SW chapter seeks to address are outlined in 'Status quo policy context (including operative plan provisions)' section.

### 2.1. Stormwater discharges to land and water can cause adverse effects on the environment

14. In many developed parts of Otago, stormwater currently discharges to land and surface water bodies without any treatment or attenuation. As stormwater runs off from the land surface (including roads, carparks, rooves and other impervious areas), contaminants such as sediment, heavy metals, hydrocarbons, litter and pathogens (*E.coli*) can become entrained in its flow. The discharge of these contaminants to surface water and groundwater can result in a range of adverse effects, including:
- a. Adverse effects on groundwater quality and users (such as drinking water supplies);
  - b. Effects on surface water quality and aquatic ecosystems;
  - c. The mobilisation of contamination in soils to surface water or groundwater;
  - d. Adverse effects on the flood carrying capacity of surface water bodies; and
  - e. Erosion, land instability and property damage.

### 2.2. Issues of significance for Kāi Tahu

15. The pORPS sets out the resource management issues of significance to iwi in the region. Given the significance of water to Kāi Tahu, all issues related to water are relevant to the discharge of stormwater. However, the issues set out below are considered most relevant to stormwater discharges:
- a. RMIA–WAI–I1 – The loss and degradation of water resources through drainage, abstraction, pollution, and damming has resulted in material and cultural deprivation for Kāi Tahu ki Otago.
  - b. The explanation to this issue notes that degraded water quality, degrades the mauri of water and the habitats and species that it supports. The degradation of mahika kai and taoka species means that Kāi Tahu have had to adapt and change their use of the environment.
  - c. RMIA–WAI–I5 – Poor integration of water management, across agencies and across a catchment hinders effective and holistic freshwater management.



- d. The explanation to this issue states that the management of water in Otago is not holistic, referencing two regional council interests in the Waitaki, the role of district councils in managing activities that affect freshwater, and the separation of the coastal and freshwater environments through separate plans.
- e. Under RMIA-WAI-15, the pORPS notes that Kāi Tahu concerns across issues RMIA-WAI-11 to RMIA-WAI-15 are interrelated. Specific concerns relevant to this topic include:
  - i. Deterioration in water quality resulting from poor land management practices.
  - ii. The cultural and water quality effects of point source discharges of human waste and other contaminants to water.

### 2.3. Consistency with national direction

- 16. As set out in Section 3 of this report there have been significant changes in national direction since the Water Plan became operative. Of most relevance to the management of stormwater is the NPSFM. The NPSFM requires that Te Mana o te Wai be the fundamental concept underpinning the future of freshwater in New Zealand. As mentioned in Section 3, the Water Plan is far from complying with this new direction.
- 17. The National Planning Standards contains a range of definitions that must be used in a regional plan. The definition of 'stormwater' in the National Planning Standards differs to the definition of 'stormwater' in the Water Plan. The key difference between the two definitions is that 'stormwater' in the Water Plan is only water and does not contain other contaminants which are included in the definition of 'stormwater' in the National Planning Standards.

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

- 18. Objectives and policies that are relevant to the discharge of stormwater are contained in Chapter 7 of the Water Plan. Chapter 12 of the Water Plan contains the rule framework relevant to stormwater discharges. Definitions for 'stormwater' and 'reticulated system' are provided in the glossary. The Water Plan defines 'stormwater' as "the water running off from any impervious surface such as roads, carparks, roofs, and sealed runways". 'Reticulated system' is defined as "the means by which water, stormwater, sewerage or other waterborne contaminant is collected and delivered prior to discharge".
- 19. There are three relevant objectives in Chapter 7.A, these objectives are broad and apply to all activities that could impact on water quality, including:
  - a. Objective 7.A.1: To maintain water quality in Otago lakes, rivers, wetlands, and groundwater, but enhance water quality where it is degraded;
  - b. Objective 7.A.2: To enable the discharge of water or contaminants to water or land, in a way that maintains water quality and supports natural and human use values, including Kāi Tahu values; and
  - c. Objective 7.A.3: To have individuals and communities manage their discharges to reduce adverse effects, including cumulative effects, on water quality.

20. Chapter 7.B contains policies that similarly apply to all activities affecting water quality. The most relevant of these include:
- a. Policy 7.B.1: Manage the quality of water in Otago lakes, rivers, wetlands and groundwater by: [...];
  - b. Policy 7.B.2: Avoid objectionable discharges of water or contaminants to maintain the natural and human use values, including k̄ai tahu values, of Otago lakes, rivers, wetlands, groundwater and open drains and water races that join them;
  - c. Policy 7.B.3: Allow discharges of water or contaminants to Otago lakes, rivers, wetlands and groundwater that have minor effects or that are short-term discharges with short-term adverse effects;
  - d. Policy 7.B.4: When considering any discharge of water or contaminants to land, have regard to [...];
  - e. Policy 7.B.6: When assessing any consent to discharge contaminants to water, consider the need for and extent of any zone for physical mixing, within which water will not meet the characteristics and limits described in Schedule 15, by taking account of: [...]; and
  - f. Policy 7.B.8: Encourage adaptive management and innovation that reduces the level of contaminants in discharges.
21. Section 7.C contains policies for specific types of discharges, including discharges from stormwater reticulation systems. These include:
- a. Policy 7.C.5: Avoid significant adverse environmental effects and minimise other adverse effects on waterbodies, with respect to discharges from any new stormwater reticulation system, or any extension to an existing stormwater reticulation system, by requiring measures to be taken to prevent industrial and trade waste contamination of receiving waterbodies and consideration of measures to reduce stormwater being discharged from rain events and a preference to discharge to land rather than water.
  - b. Policy 7.C.6: Reduce the adverse environmental effects from existing stormwater reticulation systems by requiring implementation of appropriate measures to progressively reduce sewage entering the stormwater reticulation system (wet weather overflows), measures to progressively reduce contaminants to improve the water quality of the receiving environment, and preference to discharge to land rather than water.
22. The rule framework for discharges of stormwater is relatively simple. Most discharges are able to occur as a permitted activity (subject to meeting certain requirements set out in the rules identified below, but some require resource consent):
- a. Rule 12.B.1.8 permits discharges of stormwater from reticulated systems to water and to land provided conditions are met (including that the discharge does not contain any human sewage).
  - b. Rule 12.B.1.9 permits discharges of stormwater from roads provided conditions are met.

- c. Rule 12.B.3.1 requires resource consent as a restricted discretionary for any discharges that either do not meet the conditions of the permitted activity rules or are not managed by the permitted activity rules above. The matters discretion is restricted to under Rule 12.B.3.1 are fairly broad and enable consideration of a number of matters relating to effects arising from the discharge and the contents of resource consent conditions.
23. The Dunedin City Council (DCC) holds 10 resource consents that authorise the discharge of stormwater from its network (over 40,000 properties) to the Otago Harbour (nine catchments) and the Pacific Ocean (one catchment).<sup>3</sup> Earlier resource consents obtained by the DCC required the implementation of a stormwater and environmental monitoring regime and preparing an Integrated Catchment Management Plan (ICMP) for each of the 10 stormwater catchments in Dunedin. Under current resource consents each of the 10 stormwater catchments are managed via ICMPs alongside an adaptive management approach which requires monitoring of:
- a. Stormwater quality;
  - b. Harbour water quality;
  - c. Harbour sediment quality; and
  - d. Biological receptors (such as epifauna, inafauna, macrofauna and cockles).
24. In the event the monitoring regime identifies exceedances of trigger levels, then actions must be undertaken.
25. QLDC operates and maintains seven reticulated stormwater networks throughout the Queenstown Lakes District. CODC, CDC and WDC operate and maintain smaller networks within some of the larger townships of each district. Aside from DCC, district councils in the region do not hold resource consents to authorise discharges from these reticulated stormwater networks.

### **3.1. Issues with the status quo**

26. There are a number of issues with the status quo approach for managing stormwater. These issues can be categorised as:
- a. Limited direction for the management of stormwater on an activity-specific basis in the Water Plan;
  - b. Provisions in the Water Plan are inadequate to manage the adverse environmental effects arising from the discharge of stormwater.

### **3.2. Limited direction for the management of stormwater on an activity-specific basis**

27. The Water Plan provides a permissive rule framework and little direction for the management of stormwater on an activity-specific basis.

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<sup>3</sup> RM11.313.01; RM11.313.02; RM11.313.03; RM11.313.04; RM11.313.05; RM11.313.06; RM11.313.07; RM11.313.08; RM11.313.09; RM11.313.10.

28. At an objective and policy level, there are no provisions in the Water Plan that provide specific direction to stormwater discharges that are not from a reticulated stormwater network. Instead, stormwater discharges are subject to the broad direction provided for all discharges managed by the Water Plan.
29. With regards to the rule framework, there is no permitted activity rule that applies to the discharge of stormwater not from a stormwater network or a road where not connected to a stormwater network in the Water Plan. Any discharges of stormwater (excluding discharges from a stormwater network or from a road where not connected to a stormwater network) must be considered a restricted discretionary activity.
30. As set out above, the matters discretion is restricted to under Rule 12.B.3.1 are fairly broad and enable consideration of a number of matters relating to effects arising from the discharge and the contents of resource consent conditions. Broad matters of restricted discretion, in combination with limited direction at an objective and policy level means it is difficult for the ORC to regulate the discharge of stormwater to land and water. Given this, there are very limited details relating to the extent and impact of stormwater discharges within the region.

### **3.3. Provisions are inadequate to manage the adverse environmental effects arising from the discharge of stormwater**

31. Given the permissive rule framework for stormwater management in the Regional Water Plan there is little regulation of stormwater discharges within the region currently.
32. Contaminants are entrained in stormwater as discharges flow across impervious surfaces or is filtered through land. Typical contaminants that can become entrained in stormwater discharges include hydrocarbons, metals, sediment, animal excrement and any other contaminants that are managed on an unroofed, hardstand surface. Contamination from contaminated sites can also become mobilised in the soil profile. These contaminants can cause adverse environmental effects on water quality including drinking water quality and aquatic ecosystems if not appropriately treated.
33. Stormwater discharges to water can also cause impacts on the flood-carrying capacity of surface water bodies, this can cause flooding downstream and can contribute to erosion and scour of the bed and banks of the water body.
34. The current objectives, policies and rules relating to stormwater in the Water Plan do not enable a fulsome assessment of effects to be undertaken that addresses all matters listed above.

## **4. Objectives**

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

- iii. IO-05 Manahau āhuarangi/climate change
  - iv. IO-08 Land and soil resources
  - v. IO-09 Community well-being
  - vi. IO-010 Significant infrastructure,
- b. The following environmental outcomes included as objectives in chapters FMU1 to FMU5 (including chapters CAT1 to CAT5):
- i. FMU1 to 5-01 Ecosystem health
  - ii. FMU1 to 5-02 Human contact
  - iii. FMU1 to 5-08 Drinking water supply (source water)
  - iv. FMU1 to 5-09 Animal drinking water
  - v. FMU1 to 5-014 Commercial and industrial use

## 5. Overview of sub-topics

36. The options set out in the sections and subsections below were developed to resolve the issues and to achieve the freshwater related objectives set out above. Aspects of the options were informed by workshops and discussions with staff from Council, Aukaha and Te Ao Marama, and external stakeholders.
37. The options below are presented on a sub-topic basis. The sub-topics are:
- a. Discharges from stormwater networks; and
  - b. Stormwater discharges not from stormwater networks.

## 6. Sub-topic: Discharges from stormwater networks

### 6.1. Discounted options

38. The status quo has been discounted as a reasonably practicable option given the issues identified in this report.

### 6.2. Reasonably practicable options

39. Two reasonably practicable options have been identified for this subtopic:
- a. **Option 1:** pLWRP direction (preferred option)
  - b. **Option 2:** Catchment specific approach to managing discharges from stormwater networks
40. Both options use the status quo as a starting point and then adopt different methods of giving effect to the national direction and the issues identified above. An overview of each option is provided below.

#### 6.2.1. Option 1: pLWRP direction – preferred option

41. Discharges of stormwater are unavoidable and the pLWRP must specify how these discharges should be managed to ensure the freshwater objectives are achieved. Option 1

proposes a new approach for managing discharges of stormwater in the pLWRP. The intent of this option is that discharges from stormwater networks are managed on a comprehensive basis where contributing catchments are aggregated, and discharges are authorised via a single discharge permit. To achieve this, Option 1 proposes a two-stage consenting approach to managing discharges from reticulated stormwater networks.

42. Stage one of the two-stage consenting approach provides for the ongoing operation of stormwater networks through an interim consent framework for a five-year duration. This provides time for the collection of information to eventually inform the second stage of the consenting approach which consists of a longer-term stormwater discharge consent accompanied by a stormwater management plan and a prioritised programme of progressive improvements to assist with achieving environmental outcomes, target attribute states and interim target attribute states over time. The two-stage process acknowledges that a number of district councils do not hold resource consents to authorise the stormwater discharges and some district councils may not hold sufficient information about their stormwater networks or the impact of stormwater discharges on the receiving environments to inform a Stormwater Management Plan.
43. The policy and rule framework setting out this two-stage approach for stormwater networks can be summarised as follows:
  - a. SW-P1 and SW-P2 set out the approach to managing stormwater networks on a comprehensive basis and, at a high level, the two-stage resource consent framework for authorising discharges from stormwater networks.
  - b. SW-P3 sets out the matters that must be addressed through the stage 1 interim consent framework and to assist with the development of a stormwater management plan. At a high level, SW-P3 requires:
    - i. The implementation of a monitoring programme to identify any impacts the discharge of stormwater from the stormwater network may be causing in the receiving environment. The monitoring programme is required to be proportional in scale and detail to the risk associated with discharges from the stormwater network and the sensitivity of the receiving environment to those discharges;
    - ii. Any adverse effects detected via the monitoring programme to be managed and a longer term option to mitigate the adverse effect implemented; and
    - iii. Development of a prioritised programme of progressive improvements within the stormwater network to eventually inform the stormwater management plan.
  - c. SW-R1-CON1 provides a controlled activity pathway for the stage 1 interim resource consent. Resource consents can only be granted under the controlled activity rule if:
    - i. The application for resource consent is lodged prior to 30 December 2026;
    - ii. The maximum duration is for five years; and
    - iii. The discharge has not previously been authorised under the relevant rule.
  - d. The matters of control under the stage 1 interim rule framework enable ORC to consider:

- i. Actual and potential environmental effects of the discharge;
  - ii. Monitoring requirements;
  - iii. Timeframes for the development of a stormwater management plan; and
  - iv. The benefits of stormwater networks for the community and the environment and the extent to which the activity contributes to achieving mana whenua aspirations for land and freshwater.
- e. Where the conditions of the controlled activity rule are unable to be met, the discharge must be considered as a restricted discretionary activity. The matters discretion is restricted to under this rule include:
- i. The actual and potential environmental effects on water quality, water quantity, aquatic ecosystems; and
  - ii. The actual and potential effects of the discharge on the quality and safety of human and animal drinking water; and
  - iii. The contents, adequacy and implementation of the Stormwater Management Plan prepared in accordance with APP30; and
  - iv. The benefits of stormwater networks for the community and the environment; and
  - v. The extent to which the activity is consistent with the matters set out in APP8 – Mana whenua environmental indicators.
- f. SW-P4 provides direction for the stage 2 resource consent for discharges from stormwater networks. At a high level, this policy requires:
- i. New or extensions to existing stormwater networks to ensure separation of wastewater and stormwater and utilise good practice guidelines for stormwater treatment and attenuation systems to contribute to the achievement of target attribute states and interim target attribute states set out in FMU1 to FMU5 within timeframes set in a stormwater management plan;
  - ii. Existing networks to progressively improve stormwater treatment and disposal to contribute to the achievement of target attribute states and interim target attribute states set out in FMU1 to FMU5 within timeframes set in a stormwater management plan;
  - iii. The adoption of green infrastructure wherever practicable; and
  - iv. Stormwater networks to have sufficient capacity to prevent discharges causing or contributing to flooding, erosion, land instability or property damage.
- g. SW-P5 requires that all stormwater networks be managed in accordance with a stormwater management plan that:
- i. Is prepared in accordance with APP-30 and provided with a resource consent lodged under Rule SW-R2-DIS1;
  - ii. Describes how the stormwater network will be managed in accordance with good practice guidelines for managing stormwater; and

- iii. Is reflective of the scale and significance of the water quality and quantity improvements required to achieve environmental outcomes.
  - h. APP-30 sets out the matters that must be addressed by stormwater management plans. At a very high level this appendix requires stormwater management plans to include a:
    - i. Description of all stormwater catchments within the stormwater network (such as the location of waterbodies and identification of any contaminated or potentially contaminated land);
    - ii. Description of the stormwater network (such as the locations of discharge points and any inspections, maintenance and monitoring undertaken);
    - iii. Description of the quality and quantity of stormwater discharged (including the identification and characterisation of contaminants that are washed off surfaces during rainfall events);
    - iv. Prioritised programme of progressive improvements to achieve environmental outcomes. This includes any actions or mitigations to improve stormwater treatment and disposal, prioritisation of catchments where improvements are required most (as identified by the monitoring programme) identify any objectives and timeframes for implementation of additional measures.
  - i. SW-R1-DIS1 provides a discretionary activity status for applications made for a comprehensive stormwater discharge consent.
- 44. As part of this option, new definitions as required by the National Planning Standards are adopted for the following terms:
  - a. Stormwater; and
  - b. Green infrastructure.
- 45. To support the implementation of this option, additional definitions for the following terms are proposed:
  - a. Stormwater network; and
  - b. Available stormwater network.

### **6.2.2. Option 2: Catchment specific approach to managing discharges from stormwater networks**

- 46. Option 2 is similar to the approach that already occurs under the status quo for reticulated stormwater networks. This option does not require catchments to be aggregated and managed by a single discharge permit. Instead, separate consents would be required by a stormwater network operator to authorise discharges from different systems within the area that their stormwater network operates in. The interim consenting framework (referred to as stage 1 of the two-stage consenting approach in Option 1) does not form part of Option 2. This means the monitoring programme and collection of information that eventually informs the progressive programme of improvements included in the Stormwater Management Plan as part of Option 1 does not occur.



### 6.3. Clause 3 consultation feedback

47. Feedback received during Clause 3 consultation was largely supportive of the proposed framework to manage stormwater. However, some feedback received sought amendments to the regime to manage stormwater networks as follows:
- Greater clarity in relation to the application and implementation of the relevant policies and rules;
  - Require consideration of nature-based solutions and water sensitive design; and
  - Greater consideration of climate change impacts.
48. Feedback received from Kāi Tahu ki Otago during Clause 3 sought amendments to:
- Amend the policy and rule framework to clearly identify adverse effects, other than on water quality, are to be managed; and
  - Require greater consideration of climate change impacts and consideration of environmental outcomes.
49. To address the consultation feedback summarised above, a number of amendments were made to the chapter as follows:
- Policies and rules were clarified and simplified to assist with implementation;
  - Policies were amended to enable greater consideration of climate change impacts by enabling the development and use of green infrastructure; and
  - Policies and APP30 - Stormwater Management Plans were amended to clarify connection to environmental outcomes.

### 6.4. Clause 4A consultation feedback

50. There was no feedback received on the provisions of this chapter during Clause 4A consultation.

### 6.5. Efficiency and effectiveness assessment

51. Table 2 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in Options 1 and 2 above.

*Table 1: Benefits and costs for discharges from stormwater networks*

	BENEFITS	COSTS
<b>Option 1 (preferred option)</b>	<ul style="list-style-type: none"> <li>Improved fresh water quality will enhance instream ecology and better provide for broader social values within communities. This is a social and environmental benefit.</li> <li>In addition, option 1 will provide benefits for Kāi Tahu cultural values and the Kāi Tahu economy by better</li> </ul>	<ul style="list-style-type: none"> <li>Increased requirements for stormwater network operators will likely incur additional costs over both the short and long term. Stormwater network operators that have never obtained resource consent to authorise discharges will require</li> </ul>

	<p>providing for mahika kai species, reducing the health impacts of stormwater discharges and providing better opportunities for Kāi Tahu to connect with the environment, engage in social and economic activities (i.e. harvest of mahika kai species) and exercising kaitiakitaka. This is a cultural benefit.</p> <ul style="list-style-type: none"> <li>• Providing an interim consenting pathway as part of a two-stage consenting framework for discharges from stormwater networks will enable the collection of data to inform the eventual stage 2 resource consent application. There is limited information currently known in relation to the impact of stormwater network discharges in the receiving environment. The monitoring programme that informs a prioritised programme of progressive improvements will provide environmental benefits by requiring improvements where they are necessary in addition to benefits in terms of capital expenditure planning for stormwater network operators and the ORC.</li> <li>• Requirements in the stage 1 interim consenting framework for stormwater networks will enable any degradation identified to be mitigated as soon as practicable. This will provide environmental, cultural and social benefits.</li> <li>• Option 1 provides a flexible and strategic approach for stormwater network operators to manage their systems. This flexibility will enable community input on how stormwater networks should be managed. A similar approach is already in place for the DCC resource consents to discharge stormwater. This will provide economic, environmental and social benefits.</li> <li>• Stormwater management plans are key to this strategic and flexible</li> </ul>	<p>resource consents. However, the costs associated with Option 1 are considered to be significantly less than Option 2 over the long term. This is in part due to the policy direction provided for stage 1 interim consents to gather information to support the development of a stormwater management plan and programme of progressive improvements for discharges from the stormwater network. This is an economic cost of Option 1.</p> <ul style="list-style-type: none"> <li>• Policy direction to utilise good practice guidelines for stormwater treatment and attenuation systems (including green infrastructure wherever practicable) as part of Option 1 will likely incur additional costs. This cost is in part reduced in the interim by policy direction requiring improvements to occur progressively.</li> <li>• Resource consents for stormwater network discharge are likely to be more complex than currently. This situation could mean increased compliance and monitoring costs for resource consent. However, this cost may be mitigated by more specific direction for consent processing officers and decision makers. These costs will initially be borne by the consent applicants and eventually the consent holder. The costs are likely to be borne in differing proportions by private individuals via on-charging from developers, network utility fees or rates (targeted or otherwise), businesses increasing the price of their goods or services, or everyday household costs.</li> <li>• An environmental, cultural and social cost of Option 1 is that</li> </ul>
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	<p>approach and are designed to reflect the typically long asset management and planning timeframes associated with infrastructure. A similar approach is already in place for the DCC resource consents to discharge stormwater and is an approach adopted around New Zealand. This will provide economic benefit.</p> <ul style="list-style-type: none"> <li>• A benefit of Option 1 compared to Option 2 is that the policy framework requires stormwater discharges from stormwater networks to be managed on a comprehensive basis, reducing the need for multiple consents. This will provide economic benefit.</li> <li>• The restricted discretionary activity status achieved by the Stage 2 consenting process under Option 1 will ensure that ORC’s discretion when assessing resource consent applications or imposing conditions is limited. This will provide social, economic, cultural and environmental benefits.</li> <li>• A flexible outcome-based approach to the management of stormwater network discharges will provide for the identification of opportunities for other non-statutory initiatives to better manage the effects of stormwater discharges (such as education initiatives). This is a similar approach to that adopted by the DCC global stormwater consents and is an approach adopted around New Zealand. This will provide economic, environmental and social benefits.</li> <li>• Policy level direction to utilise good practice guidelines for stormwater treatment and attenuation systems (including green infrastructure wherever practicable) clarifies that such systems are required to achieve outcomes. Such systems can contribute multiple benefits for a range of values including ecosystem health and indigenous biodiversity. This will provide environmental,</li> </ul>	<p>there is likely to be a delay before improvements in the receiving environment are realised. This is due to the two-stage consenting framework. However, this cost is in part mitigated by policy direction requiring any adverse effects identified in the receiving environment to be managed as soon as practicable following the effect being identified.</p> <ul style="list-style-type: none"> <li>• Population growth projections predict that Dunedin’s population is likely to grow at a higher rate until 2038 where it could eventually reach 142,318 (Dunedin City Council, 2021).</li> <li>• Similarly QLDC expect day population to increase to 85,372 in 2031 (Queenstown Lakes District Council , 2021). Populations within Waitaki, Clutha and Central Otago are also projected to increase. Policies enabling a flexible approach to managing stormwater networks is required to ensure infrastructure continues to meet necessary levels of service. Requiring progressive improvements to existing stormwater networks will ensure that improvements are incremental over time so costs are able to be borne as populations increase.</li> <li>• Over 50% of DCC’s three waters systems is expected to reach the end of its useful life and require renewal by 2060. To maintain current level of service for the next 30 years, DCC has determined that there is a need for \$3.6 billion to be invested in three waters infrastructure (Moffat, 2023). The predominant source of funding this operational and capital expenditure is via rates revenue. DCC’s Infrastructure Strategy has a 50-</li> </ul>
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	<p>cultural, social and economic benefit.</p> <ul style="list-style-type: none"> <li>As found in a case study for the Kirimoko Park subdivision in Wanaka, utilising a water sensitive design approach reduced the amount of earthworks required for the development. Utilising narrower road widths resulted in an average saving of 22% when compared to a traditional piped, kerb and channel approach to development. This ultimately reduced the total proportion that stormwater infrastructure (design, installation and ongoing maintenance) contributes to the overall development cost (Ira &amp; Simcock, 2019). This will provide economic benefit.</li> <li>As found in the Kirimoko Park subdivision case study, the cost efficiency of different devices in relation to the amount of contaminant removed clearly shows that if the removal of sediment (TSS), zinc (Zn) and copper (Cu) are clear objectives for management, then a combination of swales and raingardens are far more cost effective than using pipes and catchpits. Cost efficiency (Life Cycle Costs (LCC)) of swale and raingardens vs catchpits and pipes for TSS, ZN and Cu are as follows (Ira &amp; Simcock, 2019):</li> </ul> <table border="1" data-bbox="384 1456 901 1686"> <thead> <tr> <th></th> <th>LCC\$/kg/yr TSS</th> <th>LCC \$/g/yr Zn</th> <th>LCC \$/g/yr Cu</th> </tr> </thead> <tbody> <tr> <td>Swales/Rain Gardens</td> <td>\$20-\$50</td> <td>\$120-\$170</td> <td>\$720-\$770</td> </tr> <tr> <td>Catchpits and Pipes</td> <td>\$150</td> <td>\$2,400</td> <td>\$5,650</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>While difficult to quantify in financial terms, there are likely to be social benefits enjoyed by the wider community as a result of Option 1. This includes an increase in amenity values as a result of adopting green infrastructure for stormwater treatment and disposal and improved resilience to natural hazards as</li> </ul>		LCC\$/kg/yr TSS	LCC \$/g/yr Zn	LCC \$/g/yr Cu	Swales/Rain Gardens	\$20-\$50	\$120-\$170	\$720-\$770	Catchpits and Pipes	\$150	\$2,400	\$5,650	<p>year timeframe, which provides additional certainty over how significant infrastructure project will be funded in the longer term (Dunedin City Council , 2021). A flexible approach to the management of stormwater networks provided by Option 1 will go some way to managing costs over time.</p>
	LCC\$/kg/yr TSS	LCC \$/g/yr Zn	LCC \$/g/yr Cu											
Swales/Rain Gardens	\$20-\$50	\$120-\$170	\$720-\$770											
Catchpits and Pipes	\$150	\$2,400	\$5,650											

	<p>stormwater networks are required to have sufficient capacity to reduce flooding, erosion, land instability and property damage.</p> <ul style="list-style-type: none"> <li>Improved plan structure and readability will provide greater clarity for plan users and reduce administrative costs and costs for consent applicants and ORC. This will provide economic benefit.</li> </ul>	
<p><b>Option 2</b></p>	<ul style="list-style-type: none"> <li>Similar to Option 1, improved fresh water quality will have social and environmental benefits.</li> <li>Like option 1, option 2 will also provide benefits for Kāi Tahu cultural values and benefit the Kāi Tahu.</li> <li>When compared to Option 1, Option 2 would assist with ‘smoothing’ the work involved to prepare applications for resource consent. Option 2 would require resource consent preparation, processing and monitoring to be undertaken multiple times for a large number of resource consents.</li> <li>An environmental, social and cultural benefit of Option 2 is that there may be shorter delays before improvements in receiving environments are realised. However, there would still be a need to identify where improvements are required.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Option 1, increased requirements for stormwater network operators will likely incur additional costs over both the short and long term. Stormwater network operators that have never obtained resource consent to authorise discharges will require resource consents. It is considered that the costs associated with Option 2 would be greater than those associated with Option 1 over the longer term.</li> <li>Similar to Option 1, resource consents for stormwater network discharges are likely to be more complex than currently. This situation could mean increased compliance and monitoring costs for resource consents. However, this cost may be mitigated by more specific direction for consent processing officers and decision makers. These costs will initially be borne by the consent applicants and eventually the consent holder. As concluded above, the costs are likely to be borne in differing proportions by private individuals via on-charging from developers, network utility fees or rates (targeted or otherwise), businesses increasing the price of their goods or services, or everyday household</li> </ul>

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

*Table 2: Efficiency and effectiveness assessment for managing discharges from stormwater networks*

	<b>Effectiveness</b>
<b>Option 1 (preferred option)</b>	<p>Option 1 is effective for achieving the objectives. As shown above, the benefits associated with these options outweigh the costs. Specific and clear direction for managing discharges from stormwater networks to provide for the health and well-being of water bodies and freshwater ecosystems, protect significant habitats and sensitive areas, and will assist with giving effect to IO-O1 – Te Mana o te Wai over time.</p> <p>The two-stage consenting process provided for by Option 1 will ensure that any upgrades required to stormwater networks are targeted to receiving environments where monitoring shows that improvements are necessary to assist with achieving target attribute states, interim target attribute states and environmental outcomes over time.</p> <p>An acknowledged cost of Option 1 is that it may take some time for environmental benefits to be released within receiving environments. To mitigate this cost, Option 1 requires any adverse effects identified to be mitigated as soon as practicable after the adverse effect is identified during the stage 1 interim consenting framework for stormwater network discharges. Based on this, it is considered to be effective at achieving the outcome sought.</p> <p>Option 1 provides a discharge specific response to direction from the community and mana whenua, as expressed in the environmental outcomes and long-term visions<sup>4</sup> for Otago. The impacts of Option 1 will largely be borne by stormwater network operators (territorial authorities) and communities as a result of obtaining rates revenue to facilitate stormwater network upgrades and improvements. Given the extended time horizons typically associated with infrastructure planning and progressive nature of improvements required by Option 1, it is considered the while costs incurred are likely to be significant, flexibility is provided for them to occur over time.</p>
<b>Option 2</b>	<p>Option 2 is effective at achieving the relevant objectives of the pLWRP for similar reasons to Option 1. Requiring multiple resource consents for individual discharge points would likely result in a piecemeal approach to achieving the relevant objectives over time. This could mean that Option 2 is less effective at achieving the objectives when compared to Option 1.</p>
	<b>Efficiency</b>
<b>Option 1 (preferred)</b>	<p>Option 1 is an efficient method to achieve the objectives of the pLWRP. The set of policies and rules as part of Option 1 are specific and directive resulting in an efficient approach for managing discharges from stormwater networks, achieving the relevant objectives over</p>

<sup>4</sup> LF-FW – Fresh water Chapter of the pORPS.

<b>option)</b>	<p>time.</p> <p>Providing a two-stage consenting pathway to authorise discharges from stormwater networks will enable network owners to collect information on their stormwater networks and scale and extent of current environmental impacts. This information will inform the stormwater management plan required as part of the second stage consent process.</p> <p>Option 1 is reflective of the typically long asset management and planning timeframes associated with infrastructure. If any issues are identified in the interim, they must be mitigated accordingly, while there may be a slight tension related to efficiency associated with Option 1 acknowledged as a cost in the table above, its effectiveness will remain unchanged.</p> <p>Efficiencies will be gained for plan users, resource consent applicants, decision makers and ORC staff through clear direction and guidance for stormwater network discharges.</p> <p>Overall, it is considered the benefits associated with Option 1 outweigh the costs when compared to Option 2 or the status quo.</p>
<b>Option 2</b>	<p>Option 2 is considered to be less efficient than Option 1 at achieving the relevant objectives. This is due to the catchment-by-catchment approach to obtaining multiple consents instead of a comprehensive approach where catchments are aggregated and are authorised via a single discharge permit.</p> <p>Option 2 does not include additional direction relating to the development of a stormwater management plan or prioritised program of progressive improvements. It is considered that this is less efficient at achieving the outcome sought as there would likely be a piecemeal approach adopted to improving stormwater network discharges over time.</p>

## 6.6. Risk of acting or not acting

53. Section 32(2)(c) of the RMA requires ORC to take into account the risk of acting or not acting if there is uncertain or insufficient information. There is sufficient information about the current water quality issues and the associated environmental, social and cultural effects in Otago. The deficiencies of the Water Plan for managing discharges from stormwater networks are also well understood. This warrants the implementation of a more restrictive and directive regime. Overall, the information supporting Option 1 is suitably certain and sufficient that there is minimal risk of acting.

## 6.7. Conclusion

54. The effectiveness and efficiency assessment demonstrates that, overall that Option 1 is more efficient than Option 2 and will be effective at achieving the objectives of the pLWRP. Given the efficiency and effectiveness of this option, the ORC considers Option 1 is the most appropriate way to achieve the objectives of the pLWRP.

# 7. Sub-topic: Discharges from stormwater networks

## 7.1. Discounted options

55. The status quo has been discounted as a reasonably practicable option given the issues identified in this report.

## 7.2. Reasonably practicable options

56. The following reasonably practicable options have been identified for this sub-topic:

- **Option 1:** pLWRP direction (preferred option);
- **Option 2:** Option 1 policy framework plus resource consent required for all discharges of stormwater not from a stormwater network.

57. Both options use the status quo as a starting point and then adopt different methods of giving effect to the national direction and resolving the issues identified with the status quo. An overview of each option is provided below.

### 7.2.1. Option 1: pLWRP direction – preferred option

58. Option 1 provides a policy and rule framework that applies specifically to stormwater discharges not from a stormwater network. SW-P6 requires the adverse effects of stormwater discharges not from a stormwater network to be minimised by:

- a. Implementing all practicable measures to reduce contaminants at source which could become entrained in stormwater and discharged to the environment;
- b. Requiring all stormwater to be discharged into a stormwater network where there is an available stormwater network, unless alternative treatment and disposal options will result in better outcomes for fresh water;
- c. Utilising good practice guidelines for determining appropriate stormwater treatment and attenuation systems, including green infrastructure wherever practicable;
- d. Ensuring treatment and attenuation systems are monitored and maintained in accordance with good practice guidelines to ensure their ongoing operation is effective.

59. This policy direction is supported by Rule SW-R2-PER1, which provides the permitted activity criteria that a discharge of stormwater to land or water must meet. The permitted activity conditions that must be complied are typical assessment matters for such discharges and aim to only require resource consent to discharge stormwater from sites where there is a higher risk of contaminants becoming entrained in stormwater or discharges are to particularly sensitive sites. Conditions also require discharges from larger sites (including residential subdivisions of more than five landholdings).

### 7.2.2. Option 2: Option 1 policy framework plus resource consents required for all discharges of stormwater not from a stormwater network

60. At a policy level, Option 2 would adopt the same policy framework as Option 1 (SW-P6).

61. Option 2 would maintain the existing consenting regime under the Water Plan. There is no permitted activity framework specific to stormwater discharges not from a stormwater network under this option and instead resource consents are required for all discharges of stormwater regardless of the risk of activities occurring on the site or sensitivity of the receiving environment.



### 7.3. Clause 3 consultation feedback

62. Feedback received during Clause 3 consultation was largely supportive of the proposed framework to manage stormwater discharges not from a stormwater network. However, some feedback received sought amendments as follows:
- a. Remove requirements for stormwater discharges from contaminated or potentially contaminated land or land used for industrial or trade processes to not require resource consent;
  - b. Include controls for permitted activities to attenuate post development flows of stormwater;
  - c. Require consideration of nature-based solutions and water sensitive design; and
  - d. Greater consideration of climate change impacts.
63. Feedback received from Kāi Tahu ki Otago during Clause 3 sought amendments to:
- a. Amend the policy and rule framework to clearly identify adverse effects, other than on water quality, are to be managed;
  - b. Require greater consideration of climate change impacts and consideration of environmental outcomes; and
  - c. Strengthen the rule framework that applies to stormwater discharges not from a stormwater network.
64. To address the consultation feedback summarised above, a number of amendments were made to the chapter as follows:
- a. Policies and rules were clarified and simplified to assist with implementation; and
  - b. Policies were amended to enable greater consideration of climate change impacts by enabling the development and use of green infrastructure.

### 7.4. Clause 4A consultation feedback

65. There was no feedback received on the provisions of this chapter during Clause 4A consultation.

### 7.5. Efficiency and effectiveness assessment

66. Table 4 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the provisions proposed in Options 1 and 2 above.

*Table 3: Benefits and costs for discharges of stormwater not from a stormwater network*

	<b>BENEFITS</b>	<b>COSTS</b>
<b>Option 1 (preferred option)</b>	<ul style="list-style-type: none"> <li>• Improved freshwater quality will enhance instream ecology and better provide for broader social values within communities. This is a social and environmental benefit.</li> </ul>	<ul style="list-style-type: none"> <li>• ORC's resource consent charging system is based on the principle of 'user pays'. This means that if an activity requires resource consent then</li> </ul>

	<ul style="list-style-type: none"> <li>• In addition, option 1 will provide benefits for Kāi Tahu cultural values and the Kāi Tahu economy by better providing for mahika kai species, reducing the health impacts of stormwater discharges and providing better opportunities for Kāi Tahu to connect with the environment, engage in social and economic activities (i.e. harvest of mahika kai species) and exercising kaitiakitaka. This is a cultural benefit.</li> <li>• The discharge of stormwater needs to occur. Providing a permitted activity rule for stormwater discharges not from a stormwater network will mean less resource consent applications are required. Given the targeted nature of the permitted activity conditions, the activities that require resource consent will be only those that are occurring from a higher risk site or within close proximity to a sensitive environmental or cultural feature. Only stormwater discharges that will result in a very low level of environmental effect will continue to be permitted. This is an environmental and economic benefit.</li> <li>• Improved plan structure and readability will provide greater clarity for plan users and reduce administrative costs and costs for consent applicants and ORC. This is an economic benefit.</li> <li>• Policy level direction for the adoption of good practice guidelines for stormwater treatment and attenuation systems (including green infrastructure wherever practicable) clarifies that such systems are required to achieve outcomes. Such systems can contribute multiple benefits for a range of values including ecosystem health and indigenous biodiversity. This is a social, cultural and environmental benefit.</li> <li>• As found in a case study for the Kirimoko Park subdivision in Wanaka, utilising a water sensitive design approach reduced the amount of earthworks required for the</li> </ul>	<p>resource consent applicant's pay the costs of assessing and monitoring the consent and maintaining records relating to that activity. A non-notified resource consent application is \$3,000 at the time of drafting this report.</p> <ul style="list-style-type: none"> <li>• Depending on the reasons for resource consent (what conditions are unable to be complied with), it is likely that advice from an expert in contaminated land, surface water quality or a stormwater engineer may be required to support an application for resource consent. This will result in additional resource and costs for those resource users that discharge stormwater.</li> <li>• Policy direction to adopt good practice guidelines to determine appropriate stormwater treatment and attenuation as part of Option 1 will likely incur additional costs.</li> <li>• There is a small risk that permitted activities as part of Option 1 will not comply with the permitted activity framework, and because they are not routinely monitored low level contamination may occur.</li> <li>• Stormwater discharges will likely require additional treatment to achieve the outcomes sought. This will incur additional resource and costs both to install, monitor and maintain the system. It is considered that all costs will be borne in differing proportions by private individuals via on-charging from developers, network utility fees or rates (targeted or otherwise), businesses increasing the price</li> </ul>
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	<p>development. Utilising narrower road widths resulted in an average saving of 22% when compared to a traditional piped, kerb and channel approach to development. This ultimately reduced the total proportion that stormwater infrastructure (design, installation, and ongoing maintenance) contributes to the overall development cost (Ira &amp; Simcock, 2019). This is an environmental and economic benefit.</p> <ul style="list-style-type: none"> <li>As found in the Kirimoko Park subdivision case study, the cost efficiency of different devices in relation to the amount of contaminant removed clearly shows that that if the removal of sediment (TSS), zinc (Zn) and copper (Cu) are clear objectives for management, then a combination of swales and raingardens are far more cost effective than using pipes and catchpits. Cost efficiency (Life Cycle Costs (LCC)) of swale and raingardens vs catchpits and pipes for TSS, ZN and Cu are as follows (Ira &amp; Simcock, 2019):</li> </ul> <table border="1" data-bbox="387 1155 927 1397"> <thead> <tr> <th></th> <th>LCC\$/kg/yr TSS</th> <th>LCC \$/g/yr ZN</th> <th>LCC \$/g/yr Cu</th> </tr> </thead> <tbody> <tr> <td>Swales/Rain Gardens</td> <td>\$20-\$50</td> <td>\$120-\$170</td> <td>\$720-\$770</td> </tr> <tr> <td>Catchpits and Pipes</td> <td>\$150</td> <td>\$2,400</td> <td>\$5,650</td> </tr> </tbody> </table>		LCC\$/kg/yr TSS	LCC \$/g/yr ZN	LCC \$/g/yr Cu	Swales/Rain Gardens	\$20-\$50	\$120-\$170	\$720-\$770	Catchpits and Pipes	\$150	\$2,400	\$5,650	<p>of their goods or services, or everyday household costs (Ira &amp; Simcock, 2019).</p> <ul style="list-style-type: none"> <li>Resource consents to discharge stormwater are likely to be more complex than currently. This situation could mean increased compliance and monitoring costs for resource consent holders and applicants. However, this cost may be managed in the interim by more specific direction for consent processing officers and decision makers. These costs will initially be borne by the consent applicant and eventually the consent holder. As concluded above, the costs are likely to be borne in differing proportions by private individuals via on-charging from developers, network utility fees or rates (targeted or otherwise), businesses increasing the price of their goods or services, or everyday household costs.</li> </ul>
	LCC\$/kg/yr TSS	LCC \$/g/yr ZN	LCC \$/g/yr Cu											
Swales/Rain Gardens	\$20-\$50	\$120-\$170	\$720-\$770											
Catchpits and Pipes	\$150	\$2,400	\$5,650											
<p><b>Option 2</b></p>	<ul style="list-style-type: none"> <li>Similar to Option 1, policy level direction for the adoption of good practice guidelines for stormwater treatment and attenuation systems (including green infrastructure wherever practicable) clarifies that such systems are required to achieve outcomes. Such systems can contribute multiple benefits for a range of values including ecosystem health and indigenous biodiversity. This is an environmental and economic benefit.</li> <li>Like option 1, option 2 will also provide benefits for Kāi Tahu cultural values and benefit the Kāi Tahu.</li> <li>As Option 2 will require resource consents be obtained for all discharges</li> </ul>	<ul style="list-style-type: none"> <li>As the discharge of stormwater is unavoidable, Option 2 would result in significant regulatory costs for the ORC and communities. There are considerable costs associated with preparing and processing resource consent applications, complying with consent conditions (in some cases) and undertaking monitoring and enforcement for the large number of resource consents generated by such a framework.</li> <li>Advice from experts in contaminated land, surface</li> </ul>												

	of stormwater, the Council will be aware of all discharges that are occurring within the region.	water quality, groundwater quality and stormwater engineers will likely be required for all resource consent applications audited by the Council. This will result in additional resource and costs for those resource users that discharge stormwater.
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67. Table 5 below assesses the effectiveness and efficiency of the proposed provisions in achieving the objectives.

*Table 4: Efficiency and effectiveness assessment for discharges of stormwater not from a stormwater network*

	<b>Effectiveness</b>
<b>Option 1 (preferred option)</b>	<p>Option 1 is an effective option for achieving the relevant objectives. As shown above, the benefits associated with this option outweigh the costs. Specific and clear direction for activities to provide for the health and well-being of water bodies and freshwater ecosystems, protect significant habitats and sensitive areas, and will assist with giving effect to the objectives of the pLWRP.</p> <p>The consenting framework proposed under Option 1 will ensure that it is only those discharges with very low-level environmental effects will continue to be permitted. Where discharges are occurring from a higher risk site or within proximity to a sensitive environmental or cultural feature these will be unable to comply with the permitted activity framework and resource consent will be required.</p>
<b>Option 2</b>	<p>Option 2 is an effective option for achieving the relevant objectives for the same reasons as Option 1.</p> <p>As set out above, while Option 2 is effective there would be significant costs incurred and it is unlikely to result in any additional environmental benefit beyond that provided by Option 1. Given the large number of resource consents that would likely be generated as a result of Option 2, it is considered that the effectiveness of Option 2 could be diluted given the high number of resource consents that would need to be processed and monitored.</p>
	<b>Efficiency</b>
<b>Option 1 (preferred option)</b>	<p>Option 1 is an efficient method to achieve the relevant objectives of the pLWRP as listed above. The policy and rules as part of Option 1 are specific and directive, resulting in an efficient approach for managing stormwater discharges and achieving the relevant objectives.</p> <p>Efficiencies will be gained for plan users, resource consent applicants, decision makers and ORC staff through clear direction and guidance for stormwater. Efficiencies are also evidence by adopting a risk-based approach to managing stormwater discharges.</p>
<b>Option 2</b>	<p>Option 2 is considered to be less efficient at achieving the relevant objectives when compared to Option 1. This is primarily due to the significant costs associated with requiring resource consents for all discharges of stormwater not from a stormwater</p>

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network.

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## 7.6. Risk of acting or not acting

68. Section 32(2)(c) of the RMA requires ORC to take into account the risk of acting or not acting if there is uncertain or insufficient information. There is limited information about the nature and extent of stormwater discharges in the Otago region, particularly those that operate as permitted activities under the Water Plan. As such, there is a level of uncertainty regarding the full impacts of implementing Option 1. However, there is sufficient information about the current water quality issues and the associated environmental, social and cultural effects in Otago. The deficiencies of the Water Plan for managing discharges of stormwater not from a stormwater network are also well understood. This warrants the implementation of a more directive regime. Overall, the information supporting Option 1 suitably certain and sufficient that there is minimal risk of acting.

## 7.7. Conclusion

69. The effectiveness and efficiency assessment demonstrates that, Option 1 is more efficient and effective at achieving the relevant objectives of the pLWRP. Given the efficiency and effectiveness of this option, the ORC considers it is the most appropriate way to achieve the objectives of the pLWRP.