

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

## **Chapter 18: WASTE – Waste and landfills**

**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

DCC	Dunedin City Council
DoC	Department of Conservation
FMU	Freshwater Management Unit
NES	National Environmental Standard
NOF	National Objectives Framework
NPS	National Policy Statement
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
RMA	Resource Management Act 1991

# Waste and landfills [WASTE] - Assessment of provisions

## 1. Introduction

1. The provisions in the WASTE chapter of the pLWRP manage different waste streams deposited to landfills or processed for resource recovery (for instance composting) and the environmental risk associated with each. This chapter manages current and future activities, for instance operating landfill sites, the creation of new landfill sites, and green and organic waste management. The structure of the pLWRP means this chapter does not cover offal pits, farm landfills, and other farm-specific activities (which are covered in the PP chapter), biosolids, or sludges (which are covered in the WW chapter). The impact of historic activities, including the management of passive discharges from contaminated land and closed landfills is covered in the CL – Contaminated Land chapter.
2. Reducing, reusing, or recycling wastes is the desired order of progression in a waste management strategy. Whilst composting provides for the reuse of materials, there will always be a certain amount of waste that requires disposal to landfills. In 2020, kerbside collections amounted to 51,112 tonnes of waste to landfill across Otago (Wilson, Eve, Middleton, Bould, & van Gool, 2022). Moreover, 55.3% of this waste was classified as organic waste, with the potential to divert 55 to 70% of this organic waste away from landfills across the different territorial authorities (Wilson, Eve, Middleton, Bould, & van Gool, 2022).
3. The Technical Guidelines for Disposal to Land Revision 3.1 (WasteMINZ, 2023) are the industry standard for good practice when it comes to managing waste activities in New Zealand. The WasteMINZ guidelines provide five classes of waste with differing levels of management, from municipal waste landfilling to cleanfill landfilling<sup>1</sup>. The pLWRP seeks to provide for four classes of waste activities and their associated discharge to land – landfills, cleanfills, green waste, and organic waste composting – these are not directly aligned with the WasteMINZ classes.
4. A risk-based approach is proposed to manage different waste streams that allows a more permissive approach to waste activities with lower risk for environmental harm such as cleanfill. On the other hand, municipal landfills, which typically receive a range of mixed wastes from multiple sources, will require stricter measures and consenting pathways to ensure more stringent management to reduce the risk to the environment.
5. For the purposes of the pLWRP, landfills are defined as an area used for, or previously used for, the disposal of solid waste and excludes cleanfill. Characteristics of landfills vary greatly from small, privately owned or community landfills, to large-scale municipal landfills. Landfills are the usual end point for wastes that have no commercial potential for recovery and, as such, are facilities for the final controlled deposition of waste into or onto land. They are not a storage or disposal facility, but a physical, chemical, and biological reactor. Landfills must have consent conditions that are appropriate to the material they accept.

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<sup>1</sup> The WasteMINZ guidelines class wastes and their corresponding landfill in five separate levels: Class 1: Municipal Landfill; Class 2: Controlled and Demolition Landfill; Class 3: Managed Fill; Class 4: Controlled Fill; Class 5: Clean Fill (WasteMINZ, 2023).

6. Ministry for the Environment regulations categorise disposal and waste facilities into six classes.<sup>2</sup> There are currently four Class 1 (municipal) landfills operating within the Otago region: Green Island in Dunedin, Mt Coee near Balclutha, Victoria Flats near Queenstown, and Palmerston landfill. There is one further landfill situated within the Dunedin City area, Smooth Hill, which has been granted consent but is not yet operating. Waste from the region is also disposed of at AB Lime’s facility in the Southland region. Out of the Class 1 landfills, Green Island is the largest in terms of annual tonnage of waste at 84,897 and Palmerston landfill is the smallest with only 250 tonnes per annum in 2020. Waste is also disposed of to a range of Class 2-5 fills and on-property in rural areas. There are two Class 2 landfills operating in Dunedin City, and 38 Class 3/4 landfills operating throughout the region (largely in Dunedin City and Queenstown Lakes district) (Wilson, Eve, Middleton, Bould, & van Gool, 2022).
7. Cleanfill material is defined in the pLWRP as meaning virgin excavated natural materials including clay, gravel, sand, soil, and rock that are free of a range of contaminants; a cleanfill area is an area used exclusively for the disposal of cleanfill material. These materials will not result in leachate that has the potential to pollute waterways, with the main risks occurring from cleanfill related activities being sediment discharge or loss.
8. Green waste is defined the pLWRP as organic plant material from gardening or arboriculture activities. This includes lawn clippings, weeds, plants, branches, and other soft vegetable matter. It does not include food waste.
9. For the purposes of the pLWRP, organic waste is defined as biodegradable vegetative material that includes compost and green waste, but excludes any sewage, greywater, industrial or trade waste or agricultural waste. Organic waste is often composted and processed at community composting sites or at a smaller scale on private properties to recycle nutrients for reuse and to reduce waste reaching landfills. It also makes up a large proportion of municipal landfill waste. The Kantar New Zealand Food Waste Survey showed that over 100,000 tonnes of edible food are wasted each year across New Zealand<sup>3</sup>, with the true volume of food waste reaching landfill much greater.
10. The provisions that are relevant to this part of the report are:
  - a. WASTE Chapter
    - i. Landfill provisions
    - ii. Cleanfill provisions
    - iii. Green waste provisions
    - iv. Organic waste composting provisions
    - v. APP12 - Background contaminant concentration levels.
  - b. IM – Integrated Management Policies

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<sup>2</sup> Class 1 – Municipal Disposal Facility, Class 2- Construction and Demolition disposal facility, Class 3 and 4 – Managed or Controlled Fill disposal facility, Class 5 – Cleanfill, Industrial Monofill (Eunomia Research and Consulting, 2023).

<sup>3</sup> Rabobank and Kiwi Harvest New Zealand Food Waste Survey, 2023

## 2. Issues

11. The issues the WASTE chapter in the pLWRP seeks to address are as follows:
  - a. Landfills can have significant adverse effects on the environment.
  - b. There is a lack of information for many of the region’s permitted landfills.
  - c. Climate change is likely to pose an increasing risk to waste management activities.
  - d. Discharges from composting can have adverse effects on water resources.
  - e. Matters of significance for Kāi Tahu.
12. Additional discussion of the policy issues associated with the status quo approach to managing WASTE activities is outlined in Section 3.3.

### 2.1. Landfills can have significant adverse effects on the environment.

13. Discharges from landfills are potential sources of contamination. In the past, landfills have often been placed in unsuitable locations, such as close to water bodies, above groundwater used for drinking water supplies, adjacent to incompatible activities, or in areas where there is a considerable adverse effect on the amenities of the area. The primary aim of landfill management is to manage and minimise the adverse environmental effects to ground and surface water and avoid them where possible. In many cases there is a lack of knowledge of what has been placed into landfills across Otago. Consequentially, there is a need to monitor some sites which are of greater risk to the environment.
14. The main concern associated with landfilling and composting activities is the discharge of leachate and subsequent contamination of soil, groundwater, surface water, and coastal environments, and the impairment of their life supporting capabilities. However, other impacts on the environment include:
  - a. subsidence or instability of surrounding land,
  - b. nuisance effects from birds, flies and vermin attracted by waste, and
  - c. adverse effects on amenity.
15. The adverse environmental effects of landfills can be avoided by adopting methods for disposal other than landfills, or through effective landfill management. The adverse effects can be remedied or mitigated by siting, constructing, and managing landfills appropriately throughout the whole lifecycle of a landfill, from conception to management after closure.

### 2.2. There is a lack of information for many of the region’s permitted landfills.

16. Discharges to water or land are more likely to arise from landfills that are uncontrolled, unmanaged, or illegal. At such landfills, hazardous wastes are not subject to appropriate management practices and are potentially more of a danger to the environment.
17. Various permitted activity rules in the Waste Plan for discharges from landfills require operators to provide ORC with information on the location of the landfill. However, in practice this has not occurred. As a result, there is uncertainty about where the region’s

permitted landfills are located, their environmental effects, and the degree to which these landfills are at risk of adverse effects arising from climate change. Uncertainty regarding the location of many landfill sites across the region also increases the complexity of managing these activities, posing difficulties for ongoing monitoring and enforcement of permitted activities.

### **2.3. Climate change is likely to pose an increasing risk to waste management activities.**

18. The Ministry for the Environment’s (2020) National climate change risk assessment for Aotearoa New Zealand report identified priority risks, including “risks to landfills and contaminated sites due to extreme weather events and ongoing sea-level rise” (Ministry for the Environment, 2020b). The Waste Plan currently permits activities such as cleanfill and green waste landfills; the extent to which these landfills will be impacted by changing conditions from climate change (for example sea-level rise, or an increase in severe weather events) is unknown as there is insufficient information or assessment of their risk from climate change.
19. Moreover, there is an additional unknown risk of ongoing erosion and natural hazards (e.g. flooding, and landslips) at several permitted areas. For instance, landfills close to the coast or rivers are at risk of erosion and entering water.

### **2.4. Discharges from composting can have adverse effects on water resources.**

20. Composting of organic material is an alternative to disposal and landfilling which recycles organic waste materials to produce a useable product. Composting can result in discharges to land, water, and air. Of particular concern within the context of the development of the pLWRP is leachate discharges from composting which has the potential to contaminate soil and freshwater.
21. Given changes in the region’s waste collection and processing, composting production may grow, with the potential for commercial composting to occur. Examples of this include QLDC community composting initiatives and DCC’s shift to now collecting food waste from residents. This needs to be accounted for through a policy framework that adequately addresses potential negative impacts of composting operations of varying scale on land and water.

### **2.5. Matters of significance for Kāi Tahu**

22. Waste disposal and landfilling activities are impacting on the mauri and health of soil and freshwater in several areas across Otago, including in the coastal environment. RMIA-MKB-11 of the pORPS highlights that the diversity and abundance of terrestrial and aquatic indigenous species has been reduced due to adverse effects of resource use and development. One of the specific concerns is in relation to the effects of soil contamination from landfilling and waste disposal activities. This pressure is also believed to be impacting on wāhi tapu and wāhi taoka sites across the region (RMIA-WTA-11). These environmental issues have knock on social and cultural impacts, through impacting on indigenous biodiversity and affecting traditional practices.



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

#### 3.1. National direction

##### 3.1.1. Resource Management Act 1991

23. At the national level, there are a large number of statutes and national direction instruments that are relevant for this topic.
24. The key pieces of legislation relevant to this topic include the Resource Management Act 1991, Health Act 1956, Waste Minimisation Act 2008, Hazardous Substances and New Organisms Act 1996. In addition to these pieces of legislation other Acts, such as the Soil Conservation and Rivers Control Act 1941, as well as the National Policy Statement for Freshwater Management 2020, the New Zealand Coastal Policy Statement, the National Environmental Standard for Storing Tyres Outdoors 2021 and National Environmental Standards for Sources of Human Drinking Water 2007 also influence the management of waste.
25. Section 30 of the RMA sets out the functions of regional councils, including:
- a. Controlling the use of land for the purpose of:
    - i. soil conservation:
    - ii. the maintenance and enhancement of the quality of water in water bodies and coastal water:
    - iii. the maintenance of the quantity of water in water bodies and coastal water:
    - iv. the maintenance and enhancement of ecosystems in water bodies and coastal water;
    - v. the avoidance or mitigation of natural hazards (section 30(1)(c));
    - vi. Controlling discharges of contaminants into or onto land, air, or water and discharges to water into water (section 30(1)(f));
    - vii. If appropriate, establishing rules in a regional plan to allocate the capacity of air and water to assimilate a discharge of a contaminant (section 30(1)(fa)(iv)).
26. Section 15 of the RMA states that no person may discharge contaminants:
- a. into water or onto or into land in circumstances which may result in that contaminant entering water (section 15(1)(a) to (b)), or discharge to land from an industrial or trade premise (section 15(1)(d)), unless the discharge is expressly allowed by a national environmental standard or other regulations, a rule in a regional plan, or a resource consent.<sup>4</sup>

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<sup>4</sup> This means that, in the absence of a relevant national environmental standard or regional plan permitted activity rule, all discharges of contaminants to water or to land where they may enter water, require resource consent. One of the roles of a regional plan is to determine at what threshold a resource consent should be required.

- b. may not discharge a contaminant into the air, or into or onto land, from a place or any other source, whether moveable or not, in a manner that contravenes a national environmental standard unless the discharge is expressly allowed by other regulations or by a resource consent; or is an activity allowed by section 20A.

### **3.1.2. Health Act 1956**

- 27. The Health Act 1956 which seeks to improve, promote and protect public health, also has several provisions that relate to waste management. Specifically, under Section 25 the Minister for Health may require any TA to provide sanitary works, including works for the collection and disposal of refuse, nightsoil, and other offensive matter.

### **3.1.3. Waste Minimisation Act 2008**

- 28. The Waste Minimisation Act 2008 (WMA) seeks to encourage waste minimisation and a decrease in waste disposal in order to protect the environment from harm and provide environmental, social, economic and cultural benefits. The WMA allows the Governor-General (on the recommendation of the Minister for the Environment) to make regulations that control the disposal of waste and that make it mandatory for certain groups (e.g., landfill operators) to report on waste. The WMA also clarifies the role and responsibility of territorial authorities with respect to waste minimisation and imposes a levy on all waste disposed of in landfills to raise revenue to address waste minimisation.

### **3.1.4. Hazardous Substances and New Organisms Act 1996**

- 29. The Hazardous Substances and New Organisms Act 1996 seeks to protect the environment, and the health and safety of people and communities, by preventing or managing the adverse effects of the handling, storage and disposal of hazardous substances and new organisms. The act assigns responsibilities to various central government agencies and all the country's territorial authorities (city and district councils) to enforce its regulations.

## **3.2. Regional policy direction**

### **3.2.1. The proposed Regional Policy Statement for Otago**

- 30. The pORPS contains direction on the management of discharges of contaminants generally, along with specific policy direction on managing landfills and waste materials. The specific direction is found in Chapter HZ-CL – Contaminated Land, which seeks that waste materials are managed to protect human health and do not harm Kāi Tahu values and the environment. HAZ-CL-P17 seeks to provide for the development and operation of facilities and service for the disposal of waste materials, only if those materials cannot be recycled, recovered, or treated for re-use. HAZ-CL-P18 requires that when providing for the development of facilities and services for waste disposal to:
  - a. avoid adverse effects on the health and safety of people,
  - b. to the extent reasonably practicable, minimise the potential for adverse effects on the environment to occur,
  - c. minimise risk associated with natural hazard events, and

- d. restrict the establishment of activities that may result in reverse sensitivity effects near waste management facilities and services.

### 3.2.2. The operative Regional Policy Statement for Otago

31. The operative RPS has several provisions which provide guidance on the management of solid waste in Otago. Chapter 4 within the RPS includes the following provisions which are most relevant:
- a. Objective 4.6 states that hazardous substances, contaminated land and waste materials do not harm human health or the quality of the environment in Otago. The following policies are also of relevance:
    - i. Policy 4.6.6: Waste management,
    - ii. Policy 4.6.7: Waste minimisation responses,
    - iii. Policy 4.6.8: Waste storage, recycling, recovery, treatment, and disposal.

### 3.2.3. Regional Plans

32. Currently, landfills are managed under Chapter 7 of the Waste Plan. Plan Change 1 for the Waste Plan has only recently become operative (9 July 2022) and has improved the policy direction for establishing and managing particular classes of landfill to reflect current best practice. However, no changes to the landfill rules in the Waste Plan were introduced by Plan Change 1.
33. The relevant objectives in Chapter 7 are Objective 7.3.1, which seeks to manage the environmental effects from the discharge of contaminants at and from landfills, composting and, and Objective 7.3.2, which seeks to eliminate illegal, uncontrolled, poorly managed/located landfill sites. There are eight policies that seek to implement these objectives.
34. Policy 7.4.1 directs the council to recognise and provide for the relationship of Kāi Tahu with Otago's natural and physical resources, as well as acknowledge the future impacts of good and bad waste management practices. Policy 7.4.2 addresses the need to take action against illegal landfills and dumping of waste.
35. Discharges from landfills and composting are to be managed so that adverse effects are avoided, remedied, or mitigated through Policy 7.4.3, whilst Policy 7.4.4 provides for the need for monitoring of discharges at landfills and composting facilities. Monitoring discharges provides an ongoing audit of how well management systems are performing and where changes are required to ensure that adverse environmental effects are minimised or avoided. Monitoring of inputs also enables management programmes to adjust depending on the types and quantities of waste being deposited into the landfill.
36. Current policy direction for identifying and quantifying waste inputs to landfills across the region is managed through Policy 7.4.5. Policy 7.4.6 states the requirement for landfills to be managed in compliance with approved management and post closure procedures. Finally, Policy 7.4.7 is in relation to upgrading and closing existing landfills which cause adverse environmental outcomes, whilst Policy 7.4.8 seeks to promote alternatives to landfills as a means of waste disposal.

37. Different rules in Chapter 7 of the Waste Plan apply to different types of landfills. Rules 7.6.1 and 7.6.2 set out the management framework for landfills other than cleanfill and green waste landfills. Landfills generally require consent as a discretionary activity, except for those closed before 1 October 1991 and not discharging contaminants, or for cleanfill landfills provided no sediment enters a waterbody. Green waste landfills are permitted provided a range of conditions are met (including setback distances from wells, surface water bodies, the coastal marine area and controls on the type of material that can be disposed of into the pit) and are otherwise discretionary activities (Rules 7.6.10 and 7.6.11).
38. Composting is managed by both the Water Plan and Waste Plan and is permitted under both plans subject to a range of conditions. Where permitted activity conditions cannot be met consent is required under one or both plans, except that it is a prohibited activity rule where overflows from composting enters a surface waterbody (Rules 7.6.12 and 7.6.13 of the Waste Plan and Rules 12.C.1.1, 12.C.2.1, 12.C.0.2 of the Water Plan).

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

39. Although the current framework for managing the activities under WASTE chapter is likely adequate, there are some issues which would lead to inefficiencies across the region should they be carried across to the pLWRP. These are discussed below.

#### **3.3.1. The current framework for managing waste is complex and split across operative Water Plan and Waste Plan**

40. The current framework for managing waste is primarily included within the Waste Plan. Overall, the current regional planning framework for managing activities captured by the WASTE chapter is complex. ORC publicly notified the Waste Plan in May 1994. Following the process of submissions, hearings and appeals, ORC made the Waste Plan operative on 11 April 1997. Since then, the Waste Plan has only been updated once, through Plan Change 1 (Dust suppressants and landfills). This Plan Change, which became operative in 2022, amended the Waste Plan by prohibiting the use of waste oil as a dust suppressant and encouraging the use of other safer alternatives, and improving the policy direction for establishing and managing certain classes of landfill.
41. Some activities associated with the management of waste, such as composting and direct and indirect contaminant discharges from landfills to water are also managed under the provisions of the Water Plan, which was notified in 1998 and made operative on 1 January 2004. While the water quality provisions in the Water Plan were updated in 2014 to include new policies and rules for managing diffuse discharges and discharges associated with storage or composting, there has been relatively little change to the broader framework in the operative Water Plan that is relevant to the management of waste.
42. While the provisions in both plans generally seek to achieve similar outcomes (which is to manage the adverse environmental effects of contaminant discharges from waste), they overlap. This creates complexity for plan users and increases the cost of preparing and processing resource consent applications.

### 3.3.2. The current framework for managing waste is out of date and lacks direction

43. Most of the provisions of the Waste Plan were prepared more than 20 years ago and do not adequately address the risks of water quality degradation. The existing provisions are not consistent with current national direction for managing freshwater nor good management practices, meaning they need updating to reflect contemporary planning and drafting principles. Some matters are not currently covered in the permitted activity rules and need updating to prioritise the health and well-being of water bodies. For example, controls on the management of stormwater discharges or run-off and potential impacts on groundwater are not considered.
44. For consented activities, the policies in both the Waste and Water Plans are general in nature and provide little specific direction to decision-makers for resource consent applications. This includes direction on siting of landfills, which is particularly pressing in reference to climate change and growing populations.
45. Composting of organic material can result in discharges to land, water, and air. Of particular concern within the context of the development of the pLWRP is leachate discharge from composting activities. The Waste Plan limits community composting by requiring that over 51% of the material composted is from the same landholding as the compost site. This creates a barrier for communal small scale composting schemes, such as school or neighbourhood facilities. Moreover, the Waste Plan manages composting as a landfilling activity, which is inappropriate, as this is a temporary storage and transfer of waste to a newly recoverable product.

## 4. Objectives

46. 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 relevant for this topic are:
  - a. All of the objectives in the IM – Integrated management chapter, and
  - b. All of the environmental outcomes included as objectives in chapters FMU1 to FMU5 (including chapters CAT1 to CAT5); and
  - c. WASTE-01 - Location of waste deposition and processing sites.

## 5. Options: Managing solid waste and landfills

### 5.1. Reasonably practicable options

47. Three reasonably practicable options to manage solid waste and landfills were identified. These options are:
  - a. **Option 1:** Retain the existing regional planning framework
  - b. **Option 2:** WasteMINZ Class approach
  - c. **Option 3:** Risk based discharge management approach (preferred option)

### 5.1.1. Option 1: Status quo

48. As described above in the status quo, Plan Change 1 to the Waste Plan was completed in 2022, and as such some of the policy framework for managing waste is relatively up to date. However, the wider policy and rule framework for managing waste disposal and landfills in the operative Water Plan and Waste Plan is complex and inefficient due to multiple overlapping provisions in these two plans.

### 5.1.2. Option 2: WasteMINZ Class approach (preferred option)

49. A second option for the WASTE chapter is to have rules for each class of landfill as defined in the WasteMINZ Technical Guidelines for Disposal to Land 2023. Waste MINZ categorises types of landfills depending on the type of waste they receive and process, as set out in Table 2 below:

Table 1: Summary of waste classes from WasteMINZ guidelines

Class	Name	Waste Material	Contaminant Risk
1	Landfill	Non-hazardous waste. Typically, mixed waste from multiple sources and containing a high content of organic material; may include waste cited for classes 2, 3, 4 and 5.	Leachate Contaminated stormwater Landfill gas Odour Dust
2	Controlled and Demolition Landfill	Unsorted/uncontrolled construction & demolition material.	Leachate Contaminated stormwater Low risk of landfill gas but may get odour due to hydrogen sulphide Dust
3	Managed Fill	Inert material (e.g., selected inert construction or demolition material) or soils with specified maximum contaminant concentrations greater than applicable local background concentrations.	Contaminant mobility, risk to groundwater and surface water Dust
4	Controlled Fill	Inert material (e.g., selected inert construction or demolition material) or soils with trace element concentrations greater than applicable regional background concentrations.	Minor risk of contaminant mobility and sediment contamination of surface water Dust
5	Clean Fill	Virgin excavated natural material	Sediment contamination of surface water Dust

50. In addition to the type of waste material received, this would allow landfills to be classed by their individual contaminant risk, with any landfill receiving any organic material to be classified as a Class 1 landfill. Under this option, all types of landfill would require

discretionary consent with the exception of cleanfill sites, which would have a permitted activity pathway available.

51. The permitted activity conditions would require that cleanfill areas have the following:
- a. 20-metre setbacks from waterways and that they are not to be located in other sensitive areas.
  - b. Cleanfill areas must be sited, designed, and constructed in accordance with the WasteMINZ guidelines, and a site management plan prepared.
  - c. Deposited materials will also need to ensure that they do not exceed relevant background contaminant concentrations in APP12 – Background Contaminant Concentration Levels.

### **5.1.3. Option 3: Risk based discharge management approach (preferred option)**

52. The framework for managing waste and landfills across the Otago region proposed under option 3 is a risk-based approach to managing the environmental impacts of waste and protecting land and freshwater resources, including for human health. This approach recognises and incorporates a range of feedback received internally across the Council, community consultations and clause 3 consultations, to reach an Otago-centric approach. This is achieved by separating waste activities into the following four classes and managing the potential discharges from each of them separately:

- a. Landfills
- b. Cleanfill areas
- c. Green waste
- d. Organic waste composting

#### **5.1.3.1. Landfills**

53. Landfill is defined as per the National Planning Standards as ‘an area used for, or previously used for, the disposal of solid waste. It excludes cleanfill areas.
54. Under the proposed framework of option 3, all landfills will require consent as a discretionary activity. ORC will maintain full discretion in granting or declining any new landfills across the region, ensuring their siting and design implements the objectives of the chapter and is guided by strong policy direction.
55. The policy framework provides clear policy direction for both new and operating landfills and ensures alignment with WasteMINZ Guidelines (2023). Provisions direct applicants and decision makers to ensure that significant adverse effects are avoided by requiring:
- a. siting, design, construction, and operation of landfills in accordance with WasteMINZ Guidelines (2023);
  - b. consideration of natural hazard and risks of erosion and flooding;
  - c. monitoring of waste quantity and composition; and
  - d. site management plans which cover leachate, stormwater and contamination as well as minimising the risk of bird strike to airports.

### 5.1.3.2. Cleanfill areas

56. In the National Planning Standards, a cleanfill area is defined as “an area used exclusively for the disposal of cleanfill material”, whilst cleanfill material is defined as ‘virgin excavated natural materials including clay, gravel, sand, soil and rock that are free of:
- a. combustible, putrescible, degradable or leachable components;
  - b. hazardous substances and materials;
  - c. products and materials derived from hazardous waste treatment, stabilisation or disposal practices;
  - d. medical and veterinary wastes, asbestos, and radioactive substances;
  - e. contaminated soil and other contaminated materials; and
  - f. liquid wastes.
57. Sediment runoff and discharges are the highest risk of a contamination from cleanfill areas. Option 3 provides for policy direction that requires:
- a. new cleanfill areas to avoid locating near water bodies and land likely to be at risk of erosion or flooding;
  - b. significant adverse effects to be avoided, and other adverse effects to be minimised, by operating and managing existing or new cleanfill areas in accordance with the WasteMINZ Guidelines (2023); and
  - c. Waste quantity and composition to be monitored and reported to the Council.
58. Under option 3, cleanfill areas are proposed to be a permitted activity. Given the relatively safe nature of the material deposited at cleanfill areas, and the ability to manage these effects by way of rule conditions, it is considered appropriate to have a permitted activity that manages the risk from sediment reaching or contaminating waterbodies.
59. The conditions require that cleanfill areas have 20-metre setbacks from waterways and that they are not to be located in other sensitive areas. Any discharges must not be to contaminated land or result in ponding or overland flows. New cleanfill areas must be sited, designed, and constructed in accordance with the WasteMINZ guidelines, and a site management plan prepared. These conditions manage the risk of sediment-related water quality issues from cleanfill operations. Deposited materials will also need to ensure that they do not exceed relevant background contaminant concentrations in the relevant appendix APP12 -Background Contaminant Concentration Levels.
60. Any activity which does not meet the permitted activity rule requirements for cleanfill areas will be required to apply for discretionary consent.

### 5.1.3.3. Green waste landfills

61. Green waste is defined in the pLWRP as ‘organic plant material from gardening or arboriculture activities including lawn clippings, weeds, plants, branches, and other soft vegetable matter. It does not include food waste’.
62. Option 3 proposes to set policy direction for both green waste and organic waste (with the latter discussed below). This policy direction requires leachate management, stormwater



management, methods to avoid contamination, monitoring and reporting, and sites to be located on land that is not likely to be at risk of erosion or flooding.

63. Green waste landfills are proposed as a permitted activity, provided several conditions are met. Given that green waste disposal facilities are to be permitted with no size or volume constraint, setbacks from waterways and sensitive areas, including drinking water protection zones is applied. No volume constraint was used as this is currently the approach taken, whilst there is an increase in protections for the environment from the status quo. Other conditions include:
- a. ensuring no stock can enter the area,
  - b. no overland flow of stormwater into the green waste landfill,
  - c. no discharge of leachate to any water body, groundwater, or coastal water.
64. The permitted activity framework enables green waste landfilling to continue as a relatively permissive activity across Otago. Any activity which does not meet the green waste permitted activity conditions will be required to apply for discretionary consent.

#### 5.1.3.4. Organic waste composting

65. Organic waste is defined in the pLWRP as “biodegradable vegetative material which includes compost and green waste and does not include any sewage, greywater, industrial or trade waste or agricultural waste”.
66. Following the receipt of information and feedback from stakeholders and community members around community composting initiatives (including through clause 3 consultation), two new organic waste composting permitted activity pathways are proposed. A two-tiered risk-based approach prioritises the health of land and freshwater whilst allowing Otago’s citizens to undertake low risk composting activities without consent. Rather than landfilling organic materials, which will require consent, the rule framework proposed under option 3 seeks to manage the potential adverse effects, namely leachate contamination, from the processing of organic waste into mulch or compost.
67. Under this option composting of up to 20m<sup>3</sup> of organic waste at any one time is permitted; this volume is consistent with that of the neighbouring Canterbury region as well as being a conservative threshold in relation to other regional councils permitted activity thresholds<sup>5</sup>. Further protections are provided through conditions that stipulate that composting cannot occur within 5m of the bed of sensitive receiving environments, including waterways. The activity must not cause contamination or damage to another person’s property, nor should it result in the discharge of any leachate to any waterbody.
68. Where the total volume of composting exceeds the 20m<sup>3</sup> threshold, the composting activity can still be permitted under an alternative permitted activity pathway, provided it takes place at least 50m from waterbodies and is not within other sensitive receiving environments. Alongside other standard controls on the activity, this rule requires:

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<sup>5</sup> Summaries of composting permitted activities across different regions is available from the following website: <https://environment.govt.nz/publications/waste-facilities-survey-methodology-and-summary-of-results/4-regional-summaries/>

- a. monitoring of organic waste input materials,
  - b. adoption of best practice through NZS4454:2005 Appendix K: Best Practice Guidelines for Composting Systems,
  - c. a sealed base to prevent leachate escaping the site and seeping through soil to groundwater stores and flows,
  - d. dilution of leachate before being discharged to land as a fertiliser.
69. Any activity that does not meet the permitted activity rules for organic waste composting will be required to apply for discretionary consent.

## 5.2. Clause 3 consultation feedback

70. Feedback on the waste provisions was received during pre-notification-consultation under Clause 3, Part 1 of the First Schedule of the RMA from several organisations, including Aukaha, DCC, DoC, Fish and Game, Horticulture NZ, Kāi Tahu, MPI, QLDC. The feedback indicated both support for, and opposition to the draft waste provisions. Key messages transpiring through the feedback are summarised below:
71. Parties were generally supportive of the objectives, policies, and approach for managing waste, siting landfills away from sensitive environmental receptors and seeking better alignment with WasteMINZ guidelines.
72. A significant amount of feedback was received seeking clarification around the management of the composting activities, with amendments sought to improve the clarity of the rule framework. This led to changes to the composting and green waste permitted activity rules and definitions, with most of this feedback being from QLDC.
73. Aukaha and iwi feedback was generally supportive of the approach, however the inclusion of best practice for composting activities, and that all landfills should require consent, and be situated to avoid sensitive receiving environments.

## 5.3. Clause 4A consultation feedback

74. No further feedback was provided in direct relation to the WASTE chapter from the clause 4A consultation.

## 5.4. Efficiency and effectiveness assessment

75. Table 3 below identifies and assesses the environmental, cultural, social, and economic benefits and costs anticipated from implementing the various options. Options 1 and 2 are compared directly with option 3 as this represents a substantially different policy approach, whereas option 1 is the status quo and 2 is primarily a different landfill categorisation system. Overall, the options are expected to give effect to the objectives of the pLWRP, including the environmental outcomes – through improvements to the health and well-being of water bodies and freshwater ecosystems. For the most part of this assessment, the costs were not reasonably practicable to quantify. This is because very little economic or consenting information is available to assess the proposed changes in relation to the activities being discussed in the options (cleanfill, green waste and composting).

Table 2: Benefits and costs for WASTE chapter

	BENEFITS	COSTS
<b>Option 1 – status quo</b>	<ul style="list-style-type: none"> <li>Retaining the current planning framework avoids the need to implement a new regulatory framework, which will have some administrative benefits for plan users and Council staff.</li> <li>The status quo approach would likely require the least financial investment from both the Council and the community in the short term. This would mean businesses and organisations are able to focus on investing and allocating financial resources to other environmental issues.</li> </ul>	<ul style="list-style-type: none"> <li>Due to the current inconsistent and overlapping approach to the management of waste activities in the status quo, Option 1 is likely to result in greater administrative costs for both plan users and the Council, including increased costs associated with consenting waste activities, compared to Option 3.</li> <li>This option does not require compliance with the industry best practice guidelines. Rather, it relies on operators to implement these standards, potentially resulting in less consistency across waste disposal activities and greater adverse environmental effects.</li> <li>There is less control on landfilling activities nearby to sensitive environmental receptors. This may lead to adverse environmental and economic outcomes in comparison to option 3, which provides up to date best practice and policy guidance in relation to siting of waste activities near environmental receptors, and in relation to natural hazards, including the effects of climate change. This could be a social, economic, and environmental cost for future generations, which is evidenced by the need to remediate Kettle Park in Dunedin today.</li> <li>ORC will have less oversight of green waste, cleanfill and organic waste sites and facilities sited near sensitive areas compared to Option 3, which includes a requirement to keep records of sites.</li> <li>Option 1 has more onerous permitted activity conditions for composting activities, compared to option 3, which will increase costs associated with community composting initiatives which could possibly prevent these activities from occurring. This will have flow on environmental and</li> </ul>

	BENEFITS	COSTS
		<p>economic costs associated with disposal of such waste.</p> <ul style="list-style-type: none"> <li>This option will have a greater cost to Kāi Tahu than option 3, as it will require greater resource use associated with exercising kaitiakitaka due to less recognition of mana whenua values in resource management decision-making.</li> </ul>
<b>Option 2 - WasteMINZ</b>	<ul style="list-style-type: none"> <li>This option would align the provisions with the WasteMINZ landfill classes, which could improve consistency in the treatment of landfills on a national basis.</li> <li>Landfill operators are familiar with the WasteMINZ classification and so the relevant definitions would be well-socialised, and applying the relevant plan rules would likely also be relatively straightforward, which could reduce administration costs and improve efficiency.</li> <li>The landfill classes are categorised by waste type and have different contaminant risks. A regulatory framework could address these different risks in an appropriate manner to reduce the risk of adverse effects and improve environmental outcomes.</li> <li>In comparison to the status quo, providing a more streamlined and straightforward management framework for discharges related to waste management will provide less uncertainty for businesses and reduce complexity for decision makers, leading to efficiency gains for both the community and Council.</li> <li>Landfills operating in accordance with contemporary best environmental practices are likely to be more sustainable in the long-term as environmental regulation is unlikely to become more permissive in the future, requiring less investment in the future.</li> <li>Taking a risk-based approach to discharges arising from waste activities through requiring discretionary consent for all</li> </ul>	<ul style="list-style-type: none"> <li>Compared to Option 3, this approach would make it difficult to distinguish between lower or higher environmental risk within each class of landfill. This could reduce the ability to provide permitted activity pathways for some activities (e.g., disposal of organic waste), which would result in higher costs associated with some types of waste disposal. Conversely, it could mean that some landfill types with higher risk elements are permitted and result in adverse environmental effects.</li> <li>With no permitted activity pathway for green waste and organic waste composting, it would likely be an unpopular with local communities across the region, and lead to increased costs for activities. Costs would be borne by both the ORC and communities for monitoring, consenting and compliance.</li> <li>This option requires consent for composting activities which will increase costs associated with community composting initiatives which could possibly prevent these activities from occurring. This will have flow on environmental and economic costs associated with disposal of such waste.</li> <li>This option provides the least consideration and protection of cultural values, providing no policy direction for resolving issues of significance for iwi, such as considering contamination of mahika kai areas, nor providing equal opportunities</li> </ul>

	BENEFITS	COSTS
	<p>landfilling activities but cleanfill would provide ORC with greater oversight of waste activities across the region and allow site-specific consent conditions to be enforced. This would likely lead to good environmental outcomes for freshwater resources.</p>	<p>for involvement in the mainstream economy (Timms-Dean et al., 2024).</p>
<b>Option 3: (preferred option)</b>	<ul style="list-style-type: none"> <li>This option will reduce the impact of discharges on the environment in comparison to options 1 and 2. More directive policy guidance that is aligned with contemporary best practice provides a more effective framework for undertaking these activities in an ecologically sound manor. In addition, setbacks and other permitted activity conditions strengthen the protection of natural resources and prioritise the health of freshwater resources.</li> <li>Through providing permitted activity pathways for responsible waste management within Otago’s boundaries there is increased opportunity for economic development in line with these standards which could facilitate or lead to more sustainable or improved waste management services for Otago’s communities.</li> <li>In comparison to the status quo, providing a more streamlined and straightforward management framework for discharges related to waste management will provide less uncertainty for businesses and reduce complexity for decision makers, leading to efficiency gains for both the community and Council.</li> <li>Landfills operating in accordance with contemporary best environmental practices are likely to be more sustainable in the long-term as environmental regulation is unlikely to become more permissive in the future.</li> <li>Enabling alternative options to municipal landfill will lower the burden on these</li> </ul>	<ul style="list-style-type: none"> <li>It is likely that there will be preliminary costs and investment in consenting and planning of new landfills and waste processing areas due to increased stringency in siting and designing landfills to avoid natural hazards. However, current waste infrastructure is adequate across the region (Wilson et al., 2022) (and these costs would likely be passed on to communities through waste service providers, spreading costs equally throughout the community.</li> <li>The cost of preparing and lodging applications for resource consent under the proposed rules may increase due to additional and more stringent requirements of consents and the associated information requirements.</li> <li>There may be costs to landfill operators to upgrade or change systems or practices where proposed or existing landfills do not comply with the required minimum standards.</li> <li>Loss in revenue for current landfills receiving reduced volumes of cleanfill and organic waste.</li> <li>Through taking a more permissive approach, an increasing number of cleanfill, composting and green waste sites may arise across the region, lowering amenity values, especially so in areas of higher population or lower land values. Additionally, there may be impairment of some individual amenity values if siting is</li> </ul>

	BENEFITS	COSTS
	<p>facilities and facilitate regional and national waste minimisation targets.</p> <ul style="list-style-type: none"> <li>Lowering transport needs by increasing capacity for local deposition of cleanfill materials in areas experiencing higher rates of development could lead to multiple co-benefits for reduced economic burden and emissions from transporting materials out of the area/region, such as to Kate Valley in Canterbury.</li> <li>Ensuring no leachate discharges are a component of the permitted activity rule and increased setbacks will lead to improved water quality outcomes and provide clear grounds for compliance or remediation where this is occurring and impacting water resources.</li> <li>In comparison to option 1, the status quo, ORC will likely have more oversight of green waste, cleanfill and organic waste sites and facilities sited near sensitive areas through consenting and permitted activity conditions.</li> <li>A relatively permissive approach reduces the likelihood for individuals to burn green waste reducing smoke nuisance and air pollution.</li> <li>Increased accessibility for community composting schemes embodies circular economic theory in local communities which may lead to further beneficial social, cultural, and environmental outcomes through improving education and awareness in relation to waste.</li> <li>Community composting facilities may provide opportunities for improving social and wellbeing outcomes, facilitating community cohesion through shared resource use and ownership.</li> <li>Reducing the amount of organic waste reaching municipal Class 1 landfills will decrease pressure on these facilities, especially so given that waste per capita</li> </ul>	<p>too near residential areas, leading to odour or increasing pest and bird activity.</p> <ul style="list-style-type: none"> <li>Cleanfill material deposition carries a risk of sediment entering waterways and allowing this activity to continue as a permitted activity means ORC have less oversight on the location and effects of sites.</li> <li>Permitted activity status will mean ORC have no oversight of sites receiving and processing green waste.</li> <li>A more permissive approach may lead to greater numbers of composting and green waste sites across the region, which would increase the potential of leachate contamination of surface and groundwater, if not managed correctly.</li> <li>A small cost for larger composting sites will be incurred to obtain the NZS 4454:2005 documentation.</li> </ul>

	BENEFITS	COSTS
	<p>reaching Class 1 facilities has been increasing over recent years (Wilson et al., 2022).</p> <ul style="list-style-type: none"> <li>• Reductions in organic waste reaching municipal landfills will reduce the amount of leachate produced and lower the burden on operators to manage this contaminant.</li> <li>• This option will have the most benefit to Kāi Tahu, through providing recognition of mana whenua values in resource management decision-making. This will likely lead to economic and social benefits as less resources will need to be allocated to exercising kaitiakitaka (Timms-Dean et al., 2024).</li> </ul>	

76. Table 4 below assesses the effectiveness and efficiency of the proposed provisions in achieving the relevant objectives and environmental outcomes.

Table 3: Efficiency and effectiveness assessment for WASTE chapter

Effectiveness	
<b>Option 1 – status quo</b>	<p>Although this option has been identified as a confusing and inconsistent for plan users, both in the community and across the Council, it would likely be sufficiently effective at implementing the objectives of the pLWRP due to amendments through recent plan changes and the provisions aimed at discharges from landfills as previously discussed in Section 3. However, upon comparing the costs and benefits associated with both options, this option would likely be less effective as option 3 at implementing the wider objectives of the plan, but more so than option 2. Relying on landholders and those in the industry to implement best practices and work collaboratively with ORC has not been as effective an approach to date, as evidenced by the issues section (3.3) of this chapter. Through incorporating best practice into directive policies and permitted activities through option 3. Moreover, postponing or waiting to implement a new approach to managing discharges</p>

	<p>associated with waste activities will likely be less effective as acting now, leading to potential adverse outcomes in the future.</p>
<b>Option 2 - WasteMINZ</b>	<p>Although the standards and best practices provided through WasteMINZ are vital to improving the environmental outcomes of the pLWRP in relation to waste management, requiring consent for managing each class of waste other than cleanfill would be an unnecessary hinderance to achieving wider policy objectives and promoting better management of waste across the region. Moreover, no specific guidance is provided in relation to cultural and social values, for instance resolving issues of significance for mana whenua. This approach doesn't provide a more nuanced approach to different waste streams, such as green waste and organic composting - facilitating the responsible management of these wastes is essential to achieving effective long-term solutions to the issues associated with waste. As a result, option 2 is likely the least effective at implementing the objectives of the pLWRP.</p>
<b>Option 3: (preferred option)</b>	<p>Although this option includes the greatest initial economic costs, it also includes all the benefits of the previous two options, as well as greater social, cultural, and environmental benefits as outlined in the analysis above in Table 3. From a social perspective this option is expected to be popular with stakeholders and communities and provides multiple pathways to undertaking composting as invited through feedback and clause 3 consultation. With relatively straight forward objectives, no large-scale change in the management of these activities across Otago is proposed; the initial costs in implementing best practices are likely to be recovered in the longer term. Moreover, it is expected that these changes will enable more activities to occur on a local level, such as cleanfill and composting.</p> <p>Options 3 gives specific guidance for composting, green waste and cleanfill management. The provisions included across the proposed WASTE chapter allow consenting and compliance teams to effectively regulate these activities within the wider context of the pLWRP objectives, including the environmental outcomes. The permitted activity conditions mean ORC will be able to allocate resources to undertake more effective scrutiny of higher risk activities which may be negatively impacting on achieving the objectives of the pLWRP. Furthermore, the permitted activity conditions are expected to assist with meeting the environmental outcomes and improve water quality.</p> <p>This option will likely be effective in guiding decision makers on consenting new landfills across Otago and setting appropriate management and consent conditions in relation to the status quo. Increasing standards of best practice whilst also taking consideration of natural hazards is expected to be more acceptable to the wider community across Otago and an effective approach to better manage waste that minimises impacts on the environment for the benefit of current and future generations.</p> <p>The cost and benefit analysis highlights expected benefits to social and cultural values through resolving issues for Kai Tāhu, as well as in relation to managing waste in relation to natural hazards and climate change. Moreover, through updating best practice and incentivising good waste management practices there are expected to be numerous environmental benefits, such as improved water quality, and reduced risk of pollution. This approach would likely be the most effective of the three options at achieving the objectives of the pLWRP. The effectiveness of this option is outweighed by inefficiencies in comparison to option 3.</p>



<b>Efficiency</b>	
<b>Option 1</b>	Under the status quo, the policy and planning framework is confusing and difficult for those in the industry to navigate. Moreover, there is less direction available to decision makers as is proposed under option 3. This means managing these activities when compared to option 3 is inefficient. Option 1 is likely to be more efficient than option 2, but less efficient at meeting the objectives of the pLWRP as option 3.
<b>Option 2</b>	Requiring consent for all waste activities (except cleanfill) would likely lead to a large increase in work related to monitoring, consenting and compliance of permits. These resources could be allocated more efficiently to manage higher risk activities, without requiring such a large investment of resources from the Council. Whilst aligning with these industry agreed good practice guidelines is essential for a uniform approach to waste management across the country, resulting in efficiency gains in the industry, it could be counterproductive to manage the discharges via consenting for each of these five classes of landfills/waste. Landfill and waste management operations already accept a range of waste and process them accordingly, it is the role of the ORC to manage the risk to the environment through the pLWRP; this approach is less effective and efficient with that in mind. As such this option is deemed the least efficient in terms of meeting the objectives of the pLWRP.
<b>Option 3: (preferred option)</b>	<p>Option 3 is likely the most efficient option for managing waste activities under the pLWRP. The short- and long-term benefits, although at an increased financial cost in relation to the other two options, are far greater in comparison. By aligning with national standards, such as the WasteMINZ guidelines, the efficiency across waste management should increase. As discussed previously, landfilling is a necessity and pragmatic and efficient management will lead to more beneficial environmental outcomes whilst discouraging irresponsible or potentially harmful waste landfilling and processing.</p> <p>Enabling appropriately managed and designed landfills and waste activities in Otago is likely to be more efficient than transporting waste streams to areas outside of the region, as transport related costs and carbon emissions are lowered. Although there will be a need for initial investment in aligning new and existing landfill sites with best practice and guidelines and diversifying site options, this should reduce transportation distances by making waste deposition more local. This is also a far more efficient method of waste management, rather than exporting externalities to other geographic areas, they are kept in the region in which the waste is produced.</p> <p>By increasing the accessibility of community composting and recycling of organic waste and vegetative material in alignment with national, and regional waste minimisation objectives the plan should reduce barriers to achieving a sustainable circular economy whilst managing activities which pose a greater risk to the environment. This is achieved through the conditions imposed for each rule within this framework.</p>

77. Section 32(2)(c) of the RMA requires the ORC to take into account the risk of acting or not acting if there is uncertain or insufficient information. While there is some uncertainty about the extent and location of some landfill activities in Otago, there is sufficient information for the purpose of supporting these changes as suggested in Option 3, the preferred option. Only small-scale changes have been proposed in Option 3, which builds on the recent

amendments to the Waste Plan and seeks to remove the duplication in the existing policy framework.

## **5.5. Conclusion**

78. The efficiency and effectiveness assessment has shown that overall, Option 3 is expected to be more efficient and effective than the options 1 and 2 at achieving the objectives of the pLWRP. The status quo is likely to be less efficient and effective in achieving the relevant objectives including the relevant environmental outcomes in the pLWRP. Option 3 is considered to be the most appropriate way to achieve the objectives of the pLWRP.