REPORTS

WASTE FUTURES - COMMERCIAL MATTERS

Department: Waste and Environmental Solutions and Legal Services

REASONS FOR CONFIDENTIALITY

Grounds:	S48(1)(a) - The public conduct of the part of the meeting would be likely to result in the disclosure of information for which good reason for withholding exists under section 7.
Reason:	S7(2)(g) - The withholding of the information is necessary to maintain legal professional privilege.
	S7(2)(h) - The withholding of the information is necessary to enable the local authority to carry out, without prejudice or disadvantage, commercial activities.
	S7(2)(i) - The withholding of the information is necessary to enable the local authority to carry on, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations).

EXECUTIVE SUMMARY

1 Council has been progressing the development of a landfill at Smooth Hill for a number of years. The process is now at a point where Council needs to determine if it wishes to proceed with building Smooth Hill Landfill and, if so, whether it wants to build Smooth Hill alone or in a facility partnership.

2 This report was presented to Council on 30 October 2024, but additional information has been added into this report in response to questions raised by Council.

3 This report details a variety of factors including financial risks and cost, resilience, waste minimisation, export, and ownership options.

4 There are three shortlisted options for Council:

a) Build a landfill at Smooth Hill alone.

b) Build a landfill at Smooth Hill in a 50:50 partnership with a private waste company.

c) Export Dunedin's municipal waste out of district.

5 Based on all the factors outlined in this report, staff recommend that Council build Smooth Hill Landfill alone.

6 This report:

a) Discusses various factors and the shortlisted options, analyses them and provides advice for Council to consider.

b) Seeks an "in principle" decision from Council on:

i) Whether it would prefer to build a landfill at Smooth Hill or export waste out of district; and

ii) If Council wants to build a landfill at Smooth Hill, whether it would prefer to do so alone or in a partnership with a private waste company.

7 The decision is an "in principle" decision as it will be subject to consultation through the next Long Term Plan, being the 9 Year Plan 2025-34 (9 Year Plan).

8 Council is now able to make this decision because:

a) The resource consents for Smooth Hill have been granted, and all conditions are known;

b) Council has prices for the export of waste out of district; and

c) It has recent cost estimates for the Smooth Hill Landfill.

9 Morrison Low has completed a detailed business case, and a comparison of the following three short-listed options:

a) Option 1 – Council to build a landfill at Smooth Hill alone;

b) Option 8 – Council to build a landfill at Smooth Hill in a 50:50 partnership with a private waste company; and

c) Option 12 – Council to export waste out of district.

10 For a variety of reasons, Option 12 is not seen by Council staff as a feasible long-term solution for the Council's waste needs. However, it is included in the options assessment for completeness.

11 There are many factors that Council will need to consider when assessing the options, including the financial modelling, resilience for the City, Council's waste minimisation goals and its Zero Carbon Policy.

12 The financial modelling is based over a 20-year period. This is an industry standard as modelling becomes unreliable after this period.

13 The Smooth Hill Landfill is expected to last 40 years if annual tonnage of waste remains at current levels (approximately 60,000 tonnes per annum). The Smooth Hill Landfill would last more than 70 years if tonnage reduced to 35,000 tonnes per annum (which is approximately the current volume of waste, *excluding* waste from commercial operators).

14 The financial modelling largely depends on:

a) The likely construction costs of Smooth Hill Landfill (noting that $92.4 million has been allocated in the draft budgets for consideration by Council as part of the 9 Year Plan process); and

b) The annual tonnage of waste. This is because, from a purely financial perspective, there needs to be a sufficient level of annual waste to generate revenue to offset the initial capital costs of building a landfill and to cover operating costs.

15 Having a sufficient level of tonnage to provide revenue that funds the construction and operation costs of a landfill is not necessarily inconsistent with Council's waste minimisation goals. For example, Council could focus on reducing current waste streams, but seek to broaden its catchment area.

16 The financial modelling shows that Option 1 (Council build Smooth Hill alone) provides the best financial position for Council provided the annual waste tonnage to the Smooth Hill Landfill remains the same or similar to the annual waste tonnage through Green Island Landfill. This is because, although Council would pay the full construction costs, it would retain all gate revenue.

17 Based on cost and risk, Morrison Low recommends Option 8 (Council building Smooth Hill in partnership with a private waste company). This is because Option 8 reduces the risk of there being insufficient gate revenue to offset the construction and operation costs of the Smooth Hill Landfill. However, Morrison Low notes that:

> While the facility partnership (Option 8) balances cost and financial risk, recent contract negotiations between councils and the private waste sector have highlighted the deficiencies in contractual arrangements (both standard and bespoke contracts) to protect councils from financial risk in the way the councils anticipated when the contracts were signed. Therefore the difference between DCC alone (Option 1) and the facility partnership (Option 8) is highly dependent on the commercial model and associated contracts that can be negotiated with the private waste sector. Overall, the difference between these options is small.

18 Morrison Low has also verbally advised that, given the industry at present, they see the decision between Council building Smooth Hill Landfill alone versus Council building Smooth Hill Landfill in partnership as being finely balanced.

19 Council staff recommend that Council builds Smooth Hill Landfill. This is for a variety of reasons, including:

a) Construction of a landfill at Smooth Hill:

i) Creates resilience for the City, including in natural disasters.

ii) Provides long-term certainty.

iii) Is strongly supported by mana whenua.

iv) Aligns with Council's Carbon Zero Policy and minimises risks around fuel price increases, as compared to the export option.

v) Has economic benefits to Dunedin.

b) Council has resource consents for Smooth Hill Landfill, which means that obtaining resource consents is no longer a project risk.

c) The option of exporting waste is calculated to be more expensive than building Smooth Hill either alone or in partnership, even if Council were to receive no commercial tonnage at Smooth Hill.

20 Council staff recommend that Council builds Smooth Hill Landfill alone rather than in partnership. This is for a variety of reasons, including:

a) Building Smooth Hill Landfill alone provides Council with the greatest autonomy and allows it to focus on its waste minimisation goals.

b) There is strategic value in having ownership control.

c) Building Smooth Hill landfill alone is the best option financially based on a Net Present Value (NPV) comparison over 20 years. However, this relies on the annual waste tonnage to the Smooth Hill Landfill remaining the same or similar to current tonnages to the Green Island Landfill. There may be measures that could mitigate this risk (such as a landfill management contract with appropriate incentives).

d) Building Smooth Hill Landfill alone allows Council to dispose of its own waste (such as from the kerbside collection and Kettle Park), without needing to share half of the profit, after operating and capital expenses, with its facility partner.

21 The key risks of building the Smooth Hill Landfill alone rather than in partnership would be:

a) The potential loss of commercial tonnage. It only takes a small reduction in the commercial tonnes Council is able to secure, from 26,000 tonnes to 21,000 tonnes, for the facility partnership (Option 8) to become the best option financially based on a NPV comparison.

b) The potential for significant capital cost increases in building Smooth Hill Landfill. In updating the financial model, Morrison Low has applied a 20% uplift in capital costs for Green Island and Smooth Hill. If capital cost increases are 70% instead of 20% then out of district disposal would become the least expensive option based on a NPV comparison. If Council was in a facility partnership, then the cost escalation risk would potentially be shared with the facility partner, subject to negotiations with the facility partner.

22 It is for Council to balance these risks against the potential benefits when assessing the options.

RECOMMENDATIONS

That the Council:

a) **Decides** in principle for inclusion in the draft 9 Year Plan 2025-34, that it would prefer to:

i) Build a landfill at Smooth Hill, rather than export waste out of district; and

ii) Build a landfill at Smooth Hill alone, rather than in a partnership with a private waste company.

b) **Notes** that this decision is subject to consultation through the 9 Year Plan 2025-34 as the funding will be included in the draft 9 Year Plan 2025-34 budget.

BACKGROUND

Waste Futures Project Objectives

23 In 2018, Council established the Waste Futures project. Council's overall objective of this project is:

> *To ensure effective reduction and management of solid waste to achieve the goals set out in its Waste Management and Minimisation Plan. Specifically, to identify and procure the best solid waste solution for Dunedin City to enable us to move towards a zero-waste future and a circular economy.*

24 The Waste Futures project has a strong focus on the minimisation of waste, the minimisation of carbon dioxide emissions from waste, cost effectiveness of services to ratepayers, the reduction of environmental impacts because of waste operations and the provision of refuse collection and kerbside recycling services that meet ratepayer expectations.

Need for Disposal of Residual Waste

25 As shown in the diagram below, while Council is actively committed to achieving its waste reduction and diversion targets, it is recognised that there is some waste which cannot currently be diverted through reuse, recycling, or re-purposing.

History

26 The Waste Futures project is following the Better Business Case model, which is the model developed by New Zealand Treasury and Waka Kotahi NZ Transport Agency for projects of this nature.

27 The aim of the Better Business Case process is to ensure a robust rationale for investment.

28 Morrison Low, in partnership with GHD and Boffa Miskell, prepared two detailed business cases in 2019. These were:

a) Detailed Business Case One (DBC1) which related to Council's waste collection system.

b) Detailed Business Case Two (DBC2) which covered the wider waste system, including the diversion and disposal facilities needed to support the collection system and how the facilities could be provided.

29 Since 2019:

a) **Waste Minimisation and Management Plan (WMMP):** In 2020, Council adopted a WMMP, attached as Attachment A. The WMMP is currently being reviewed and the draft WMMP 2025 will be consulted on as part of the 9 Year Plan. The targets that the draft WMMP 2025 aims to achieve are:

i) Target 1: Waste generation: Reduce the amount of material entering the waste management system, by 10% per person by 2030.

ii) Target 2: Waste disposal: Reduce the amount of material that needs final disposal, by 30% per person by 2030.

iii) Target 3: Waste emissions: reduce the biogenic methane emissions from waste, by at least 30%.

These targets complement Te Rautaki Para – New Zealand's Waste Strategy. They aim to reduce the quantity of waste being generated, being sent to landfill, and greenhouse gas emissions from waste.

Note: Having a sufficient level of tonnage to provide revenue that funds the construction and operation costs of a landfill is not necessarily inconsistent with Council's waste minimisation goals. For example, Council could focus on reducing current waste streams, but seek to broaden its catchment area.

b) **Long Term Plan 2021-31:**

i) Kerbside Collection Service**:** On 31 May 2021, Council resolved to adopt a new kerbside collection service for inclusion in the 2021-31 10-Year Plan.

ii) Smooth Hill Landfill**:** Council included $56 million to develop a new landfill at Smooth Hill. This was specifically referred to in the consultation document for the Long-Term Plan 2021-31.

iii) Resource Recovery Park (RRP): Council included $22 million for the development of a RRP consisting of new waste diversion and transfer facilities, to be constructed at the Green Island Landfill site.

c) **Kerbside Collection Service**: The new kerbside collection service began on 1 July 2024, and is being implemented through a contract with Enviro NZ. Under that contract, Enviro NZ is required to take the waste collected from red wheelie bins to a location directed by Council (which may be the Green Island Landfill, the Smooth Hill Landfill or Council's proposed bulk transfer station at the RRP).

d) **Smooth Hill Landfill Consents**: Resource consents for a class one landfill at Smooth Hill have been granted. This is discussed in more detail later in this report.

e) **Green Island Landfill Consents**: Resource consents for the Green Island Landfill were due to expire in October 2023. However, Council applied for resource consents for continued

landfilling operations at Green Island Landfill on 16 March 2023, and Council will have the right to continue landfilling operations at Green Island Landfill until the replacement consents have been decided and any appeals resolved. The application process is still underway. If replacement consents are granted, Council could extend the life of Green Island Landfill to sometime between 2029-2031. This will depend on the volume of waste brought to the Green Island Landfill.

f) **Contract with AB Lime Limited (AB Lime)**: Council has signed a contract with AB Lime as a contingency option (e.g., if Council is unable to obtain replacement consents for the Green Island Landfill or if Green Island Landfill capacity is exhausted before Smooth Hill Landfill is operational) and as an option if Council elects to export all or any part of its waste. Under the contract with AB Lime, Council is not obliged to present any minimum tonnage of waste. In other words, Council can send as much or as little waste as it wants to AB Lime (subject to payment of the fees listed in the contract). The AB Lime contract is discussed in further detail later in this report.

g) **RRP**: The draft budget to be considered by Council as part of the 9 Year Plan process currently has approximately $52 million allocated for the RRP (which does not include the $21.2 million allocated in the 24/25 budget). Staff are working through the design, consenting and procurement required for the RRP. The Organic Waste Receival Building was completed on 17 June 2024. The consents required for the rest of the RRP were notified to affected parties on 5 August 2024. If consents are granted, then it is expected that the RRP will be developed during 2024/25-2025/26, including:

   i) A new composting operation, using the material consolidated and shredded in the Organic Waste Receival Building.

   ii) A material recovery facility for mixed recyclables.

   iii) A construction and demolition recovery facility for construction and demolition waste.

   iv) A bulk waste transfer station for depositing general waste, prior to transfer to the landfill tip face at Green Island (current) or alternative landfill (future).

Updated Morrison Low Reports

30 Morrison Low has prepared:

   a) An updated DBC2 (February 2023), attached as Attachment B;

   b) A comparison of disposal costs (September 2024), attached as Attachment C; and

   c) Questions and Answers (November 2024), attached as Attachment D.

31 For the purposes of this report to Council, the reports referred to in the above paragraph are called the Morrison Low Reports.

32 The Morrison Low document called “Questions and Answers” (Attachment D) has been updated to include information in response to questions raised at the Council meeting on 30 October 2024. These questions and answers are discussed later in this report.

Previous Council resolutions

33 Most of this report was presented to Council on 30 October 2024. Council resolved to note the report as last month's meeting to allow further time for Council to consider the report and so that further information could be added in response to questions raised by Council.

34 There have been regular updates regarding the Waste Futures project, mainly through the Infrastructure Services Committee. The most recent update to Council's Infrastructure Services Committee was on 19 August 2024.

35 At Council's meeting on 5 August 2020, in the confidential part of the agenda, Council resolved among other things to ask staff to further investigate the financial implications of exporting waste out of district and report back to Council. A copy of the resolution is attached as Attachment E.

36 This report responds to Council's request for staff to further investigate the financial implications of exporting waste out of district. This report has been held until now so that Council can be provided with the most current and complete information following the grant of resource consents for Smooth Hill Landfill, updated cost estimates for Smooth Hill Landfill and a signed contract with AB Lime detailing gate prices for Council.

DISCUSSION

Structure of this Report

37 This part of the report is structured as follows:

a) An overview of the resource consents that have been granted for Smooth Hill Landfill.

b) An overview of Council's contract with AB Lime. As set out earlier in this report, the Council's contract with AB Lime does not commit Council to deliver any minimum tonnage of waste to AB Lime's landfill in Winton.

c) A summary of the Morrison Low Reports, including Morrison Low's recommendations.

d) A discussion of the Morrison Low Reports, including staff's recommendations.

e) Council's consultation requirements.

An overview of the resource consents that have been granted for Smooth Hill Landfill

38 In August 2020, Council applied for resource consents for the development of a landfill at Smooth Hill, together with consents for associated roading upgrades.

39 Following public notification, and submissions from the community and stakeholders, the applications were heard by an independent hearings panel in May 2022.

40 A decision granting the consents was issued on 9 September 2022. The consents were subject to one appeal to the Environment Court, which was successfully resolved during mediation on 18 and 19 April 2023. The Environment Court approved the consents on 8 May 2023.

41 The consents held to construct and operate the landfill at Smooth Hill are:

a) A land use consent;

b) Two water permit consents;

c) Two discharge consents; and

d) A designation.

42 The consents for construction and operation of the Smooth Hill landfill have been granted subject to a range of conditions, including those set out in the paragraphs below.

43 A Community Liaison Group (CLG) must be established to facilitate ongoing engagement between the consent holder and the community on the design, construction and operation of the landfill.

44 An Independent Peer Review Panel (IPRP) must also be established to review design, construction, operation, and closure of the landfill.

45 The CLG and IPRP have both been established. There have been 2 meetings with the CLG. In due course, the IPRP will need to review the detailed design of the landfill and relevant management plan.

46 Three years of baseline groundwater, surface water, and freshwater ecology monitoring must be completed prior to construction. This monitoring will inform various management plans including the overall Landfill Management Plan that must be developed in consultation with the CLG and *Te Rūnanga o Ōtākou***.**

47 A suite of conditions have been included to monitor and manage Southern Black Backed Gulls (SBBG) including: the preparation of a SBBG Management Plan within six months of the granting of consent (completed), monthly baseline bird monitoring to establish a baseline estimate of any bird-related risks around Dunedin Airport, completion of a full bird strike risk assessment at least six months prior to construction of the landfill, and preparation of a Landfill Operational Bird Management Plan.

48 DCC must provide a bond (to be maintained in favour of ORC for a minimum of 25 years following closure of the landfill site) to secure compliance with conditions and completion of rehabilitation and closure in accordance with the Landfill Management Plan. The bond is assessed and established prior to deposit of any waste.

49 The landfill must be designed and constructed with a landfill liner to isolate landfill leachate, a leachate collection system, and leachate storage and management facilities to store leachate prior to removal from the landfill site.

50 A full detailed design report must be submitted to the IPRP and to the ORC for certification prior to construction.

51 During operation of the landfill, the conditions of consent:

a) Impose limits on the site operating hours;

b) Establish waste acceptance criteria (including the requirement that to the extent practicable, putrescible waste be removed prior to placement of waste at Smooth Hill); and

c) Require covering of highly odorous waste within 30 minutes of placement at the landfill.

52 The operation of the landfill will also be subject to a number of requirements related to landfill fire prevention and detection - including that a person trained in landfill fire detection supervises the active landfilling area at all times during operating hours. DCC also has an obligation, resolved through mediation, to contribute to the cost of fire suppression systems for residents of properties in the immediate vicinity of the landfill.

53 Given that the resource consents require three years of baseline environmental monitoring (which started in April 2023), construction of the Smooth Hill Landfill is not expected to start until the 2026-27 year, with projected completion in 2029.

An overview of Council's contract with AB Lime

54 While staff do not recommend the export of waste, it is important to ensure that there is an export contract in place as a contingency measure in case:

a) Council is unable to obtain replacement consents for Green Island Landfill; or

b) If Green Island Landfill capacity is exhausted before Smooth Hill Landfill is operational; or

c) Some other need arises (such was the case with sludges recently).

55 AB Lime's landfill is a class one landfill at Winton, in Southland. It currently takes all of Southland's municipal household waste and some special industrial wastes. Waste Management currently transports most of the municipal waste from the Waitaki region (including Oamaru) to AB Lime's Landfill. The Queenstown Lakes District Council uses AB Lime for the disposal of special wastes (e.g. wastewater treatment sludges).

56 The AB Lime Landfill is a solid waste disposal facility. Liquid wastes (below 20% solid) are not accepted. However, liquid wastes can sometimes be mixed with lime so that it becomes at least 20% solid. The AB Lime Landfill is a non-hazardous waste facility, but is consented to take asbestos, medical waste, and methamphetamine contaminated furnishings as special waste.

57 AB Lime is considered by staff to be most likely to meet Council's requirements if Council decides that it wants to export waste out of district, or needed to in a contingency situation. This is because AB Lime was granted new resource consents to operate a class one landfill in July 2021, and currently accepts municipal waste from the wider Southland region.

58 In May 2022, Council issued AB Lime with a confidential Request for Information (RFI).

59 The RFI specified that Council was seeking information from AB Lime so that it could consider:

a) Whether AB Lime would be able to take Council's wastewater sludges and/or general waste and/or hazardous and special waste and, if so, on what terms and conditions.

b) Whether AB Lime's Landfill would be a feasible alternative to Council building a landfill at Smooth Hill.

c) Whether AB Lime would be able to take waste from Council in the case of an emergency.

60 Following negotiations, Council signed a contract with AB Lime on 22 November 2022.

61 The key details of the AB Lime contract are as follows:

a) Council is not obliged to present any minimum tonnage of waste. In other words, Council can send as much or as little waste as it wants to AB Lime (subject to payment of the fees listed in the contract).

b) The term of the contract is until 31 December 2032. A contract for a longer term was indicated to be at a higher base price.

c) The contract records that AB Lime will take "acceptable waste". This essentially means solid municipal waste and commercial and industrial waste, plus certain kinds of special waste if a special waste permit has been granted. Council staff expect that all of Council's waste would meet AB Lime's acceptance criteria.

d) The contract specifies gate prices for:

i) Permitted waste – solid general (municipal) waste;

ii) Special waste other than difficult discretionary waste; and

iii) Special waste that is classed as difficult discretionary waste.

e) The gate prices are comprised of a base price, plus the government waste levy, ETS cost and an ETS margin of 10 percent.

f) The base price is listed in the contract as being $117 per tonne for permitted waste, $227 per tonne for special waste, other than difficult discretionary waste, and $301 per tonne for special waste that is classed as difficult discretionary waste. Waste levy and ETS costs are charged in addition to the base price.

g) The base price is subject to an annual increase, in accordance with the Producers Price Index for Mining.

h) If the Government Waste Levy is increased or decreased, then the gate rates will be adjusted to reflect the increase or decrease.

i) If the cost of ETS units or AB Lime's unique emissions factor is increased or decreased, then AB Lime may review and amend the ETS cost using an agreed formula.

j) Council has the option of purchasing ETS units and transferring them to AB Lime, instead of paying the ETS cost to AB Lime.

k) The contract contains a confidentiality clause. That clause prevents Council and AB Lime from disclosing the contents of the contract and any confidential information provided by one party to the other.

62 The table below shows the current AB Lime contract rates:

Waste type	Base price[1]	Govt Levy	ETS unit price	UEF[2]	ETS Cost	ETS margin[3]	Gate Price	Modelled Disposal Rate[4]
General Waste								
Price at 14 Nov-21	$117.00	$30.00	$88.75	67%	$59.46	$5.95	$212.41	**$122.95**
Price at 1 Jul-23	$127.12	$50.00	$51.00	29.7%	$15.15	$1.51	$193.78	**$128.63**
Price at 15 May-24	$133.11	$60.00	$62.25	9.1%	$5.66	$0.56	$199.34	**$133.67**
Sludge								
Price at 14 Nov-21	$301.00	$30.00	$88.75	67%	$59.46	$5.95	$396.41	**$306.95**
Price at 1 Jul-23	$327.04	$50.00	$51.00	29.7%	$15.15	$1.51	$393.70	**$328.55**
Price at 15 May-24	$342.44	$60.00	$62.25	9.1%	$5.66	$0.56	$408.67	**$343.00**

(1) Base price is subject to annual review. Escalation 14 Nov-21 to 1 Jul-23 was 8.65%
(2) UEF = Unique Emissions Factor. AB Lime had a reduced UEF approved by the EPA in 2024 of 9.1%
(3) The ETS margin on ETS costs is 10%.
(4) In financial modelling, the base price plus ETS margin was used for out-of-district disposal rate.

63 Council has used the contract with AB Lime for wastewater treatment sludges from Tahuna Wastewater Treatment Plant. It was necessary to use AB Lime in that instance pending completion of the Tahuna lime dosing plant. This is no longer necessary as the Tahuna Lime dosing plant is fully operational, which means that wastewater treatment sludges can be disposed of at Green Island Landfill as general solid waste.

A summary of the Morrison Low Reports, including Morrison Low's Recommendations

Morrison Low

64 Morrison Low is a management consulting firm that provides consultancy services to government, local government, and the wider public sector.

65 The Morrison Low reports have been prepared by civil engineers who specialise in waste management, with assistance from an accountant within Morrison Low.

Process

66 As part of the Detailed Business Case process, Morrison Low undertook a longlist assessment process. The longlist had 12 options for the wider waste system:

a) Option 1- Council alone

b) Option 2- Shared service with Clutha District Council or Waitaki District Council

c) Option 3 – Regional shared service: disposal and diversion facilities

d) Option 4 – Regional shared service: all facilities and services

e) Option 5 – Regional waste CCO

f) Option 6 – Regional partnership between councils and private waste company

g) Option 7 – Regional partnership between councils and multiple private waste companies

h) Option 8 – Council in partnership with private waste company: disposal only

i) Option 9 – Council in partnership with private waste company: disposal and diversion facilities

j) Option 10 – Council in partnership with private funder

k) Option 11: Council in partnership with private waste company and private funder

l) Option 12 – No Council involvement – private sector only

67 Based on the longlist assessment and Council's earlier request for information on the financial implications of exporting waste out of district, a shortlist was selected as follows:

a) Option 1 – Council to build a landfill at Smooth Hill alone;

b) Option 8 – Council to build a landfill at Smooth Hill in a 50:50 partnership with a private waste company; and

c) Option 12 – Council to export waste out of district.

68 Morrison Low has completed financial modelling for each of the shortlisted options. The financial modelling is based over a 20-year period. This is an industry standard as modelling becomes unreliable after this period.

69 Morrison Low has compared the shortlisted options on a total cost of disposal basis (i.e., consolidation, bulk haulage and disposal costs, and excluding waste levy and ETS costs that are the same for all modelled options).

70 Bulk haulage costs have been modelled based on:

a) An allowance of $72 per tonne for transporting waste to the AB Lime Landfill in Winton; and

b) An allowance of $17 per tonne for transporting waste to a landfill at Smooth Hill.

Assumptions

71 In completing its financial modelling, Morrison Low has needed to make numerous assumptions, including the following:

a) Morrison Low has assumed that the annual tonnage being delivered to the Green Island Landfill and then the Smooth Hill Landfill will be approximately as follows:

Waste source	Tonnes per annum
DCC waste:	35,000
Kerbside collections (after recycling and organics diversion)	*21,000*
Green Island public transfer station	*6,800*
Wastewater treatment plant solids	*7,000*
Rural transfer stations	*200*
Commercial waste:	25,900
Total	**60,900**

Note: The financial analysis is highly sensitive to any changes in the annual tonnage received at a landfill.

b) Morrison Low has assumed that the initial cost of building a landfill at Smooth Hill will be approximately $80 million. This cost is based on recent calculations by GHD using the Full Cost Accounting Model and includes a 20% contingency. This cost is for both the landfill itself and the associated access road from the State Highway. (Note: The draft budget for the 9 Year Plan has allocated $92.4 million for the landfill and access road. This is higher than the $80 million estimated by GHD because an additional contingency has been allowed for unexpected ground conditions during construction (particularly the access road), additional design and compliance costs during detailed design, and subsequent contract variations).

c) Morrison Low has assumed that the operation costs will be $4 million per annum (using 2024 dollar values) to cover waste placement, environmental controls and landfill monitoring. (Note: The draft budget for the 9 Year Plan will need to allocate for OPEX on a similar basis).

d) For Smooth Hill, Morrison Low has assumed that the gate rates will be:

   i) For general waste - $172.50 per tonne (plus waste levy plus ETS plus GST). The current charge for disposal of general waste at the Green Island Landfill is $120.15 per tonne (plus waste levy plus ETS plus GST).

      For special waste - $224.25 per tonne (plus waste levy plus ETS plus GST). The current charge for disposal of special waste at the Green Island Landfill is $238.15 per tonne (plus waste levy plus ETS plus GST).

e) For the export option, Morrison Low has assumed that the gate rates will be:

   i) $133 per tonne (plus waste levy, ETS and ETS margin, plus GST) for general waste; and

   ii) $342 per tonne (plus waste levy, ETS and ETS margin plus GST) for special waste.

f) Morrison Low has assumed that the Green Island Landfill will be used for the first 6 years of the 20-year assessment period.

72 The updated financial comparison of options is shown in the table below:

Options	Option 1: 100% Council owned	Option 8: 50:50 partnership	Option 12: Out of District
Description	Closure of GI for landfilling by Jun-30. SH built and operated by DCC alone	Closure of GI for landfilling by Jun-30. SH built and operated by DCC entering 50:50 partnership with private operator	Closure of GI for landfilling by Jun-30. DCC transport council-controlled waste to out-of-district landfill (AB Lime)
NPV ($million)	(89)	(103)	(120)
Whole of Life Cashflow 20-Year Total Cost ($million)	(151)	(218)	(296)
Average Annual Cashflow ($million)	(7.6)	(10.9)	(14.8)
Annual Rates Impact Average ($million)	(4.8)	(9.3)	(14.8)
Capital Requirements 20 years ($million)	(143)	(74)	(6)
Capital Requirements 10 years ($million)	(97)	(51)	(6)

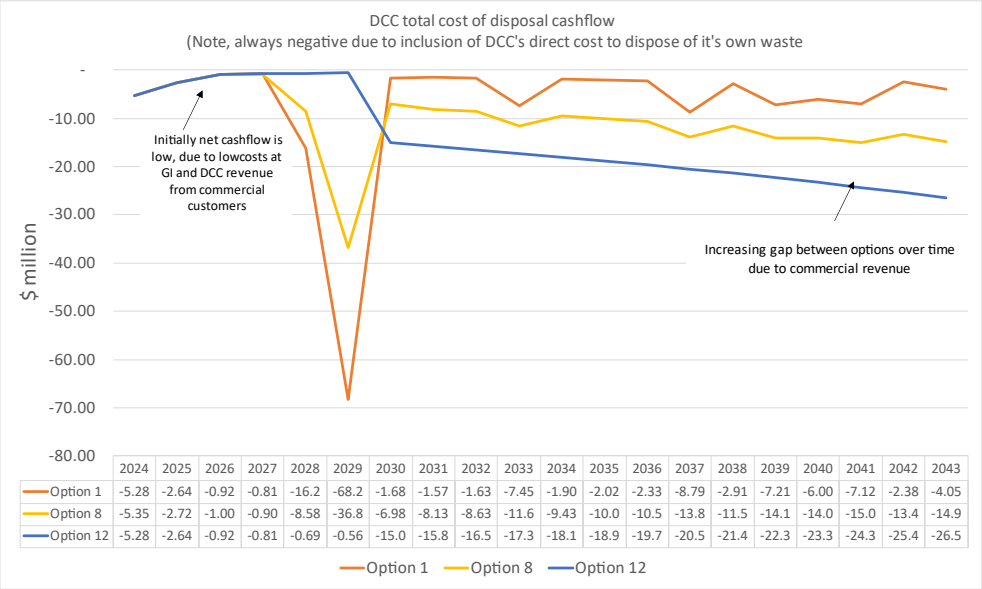
73 The overall modelled cost of disposal over 20 years (whole of life cashflow) for each of the shortlisted options is:

a) $151 million for Option 1 (Council alone) provided that Council continues to receive approximately 60,900 tonnes per annum (adjusted for 2% annual tonnage growth) at the Smooth Hill Landfill;

b) $218 million for Option 8 (Council in a 50:50 partnership with a private waste company); and

c) $296 million for Option 12 (out of district export option).

74 The financial modelling shows that Option 1 (Council building Smooth Hill alone) provides the best financial position for Council if the annual waste tonnage to the Smooth Hill Landfill remains the same or similar to the annual waste tonnage through Green Island Landfill (adjusted for tonnage growth). This is because, although Council has the full construction costs, it retains all gate revenue. This is illustrated in the diagram below:

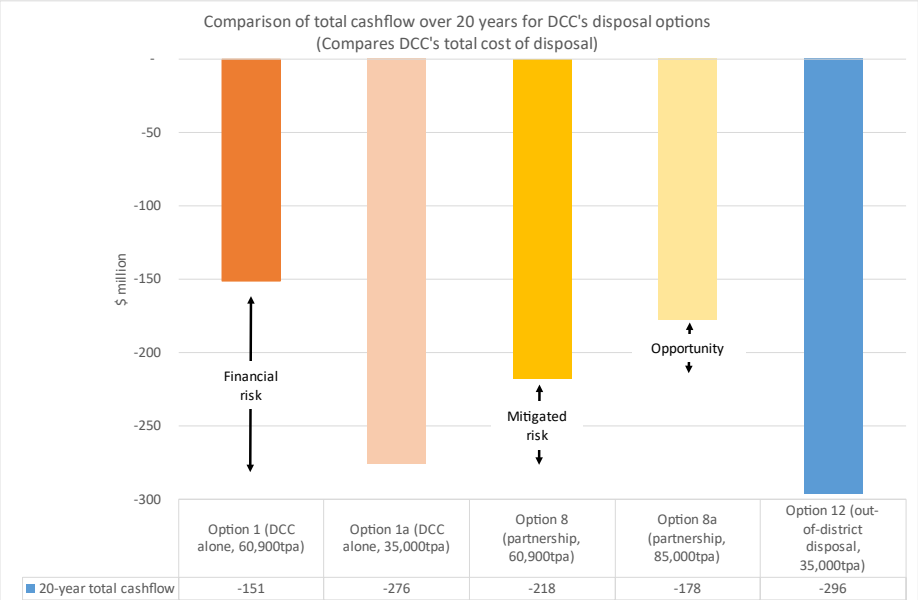


	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Option 1	-5.28	-2.64	-0.92	-0.81	-16.2	-68.2	-1.68	-1.57	-1.63	-7.45	-1.90	-2.02	-2.33	-8.79	-2.91	-7.21	-6.00	-7.12	-2.38	-4.05
Option 8	-5.35	-2.72	-1.00	-0.90	-8.58	-36.8	-6.98	-8.13	-8.63	-11.6	-9.43	-10.0	-10.5	-13.8	-11.5	-14.1	-14.0	-15.0	-13.4	-14.9
Option 12	-5.28	-2.64	-0.92	-0.81	-0.69	-0.56	-15.0	-15.8	-16.5	-17.3	-18.1	-18.9	-19.7	-20.5	-21.4	-22.3	-23.3	-24.3	-25.4	-26.5

75 There is a risk that the commercial tonnage may reduce if Council elects to build Smooth Hill Landfill alone (e.g., if a private waste company decided to use another landfill instead of the Smooth Hill Landfill or if another landfill owner set up their own transfer station in Dunedin).

76 Morrison Low advises that AB Lime have already signalled that they would look to develop their own transfer station in Dunedin, to attract commercial customers to their landfill in Southland.

77 Morrison Low has prepared the diagram below to illustrate the effect of changes to the waste volume disposed at Smooth Hill Landfill:



78 The above diagram shows that, if Council built Smooth Hill Landfill alone and the commercial tonnage reduced to zero, then the overall cost of disposal over a 20 year period would increase to $276 million. The option of building alone (Option 1) would become a more expensive option than a facility partnership (Option 8).

79 Morrison Low therefore recommends that Council pursue the facility partnership (Option 8). The reasons for this include:

a) It lowers the financial risk for Council and reduces Council's capital requirements.

b) Council has already invested in the land and consent for Smooth Hill, which de-risks the project for a commercial partner, potentially increasing the value of the site over and above costs incurred to date.

c) If Council builds Smooth Hill Landfill in a 50:50 partnership with a private waste company, there is the potential to generate more revenue if the facility partner can attract more commercial tonnes.

80 Morrison Low has ranked the three shortlisted options as follows:

a) Option 8, facility partnership (preferred option): balances cost and financial risk.

b) Option 1, DCC alone: lowest cost of disposal but highest financial risk.

c) Option 12, out-of-district disposal (least preferred): highest cost of disposal but lowest financial risk.

81 Morrison Low notes that, under Option 1, Council carries all the financial risk associated with the capital costs. While these costs could be passed onto landfill customers through gate fees, there is a risk that high gate fees are not competitive and commercial customers choose to use

other, cheaper disposal options (such as AB Lime). Capital costs would then need to be spread across a smaller customer base.

82 The tipping point for Option 8 to become financially better than Option 1 (over a 20-year period) is if the volume of commercial waste received at Smooth Hill drops from 26,000 tonnes per annum to 21,000 tonnes per annum.

83 The tipping point for Option 12 (the export option) to become financially better than Options 1 and 8 (building a landfill at Smooth Hill, either alone or in partnership) would be:

a) If the capital costs associated with building Smooth Hill increased by 70% instead of the 20% that has been assumed in the Morrison Low modelling; or

b) If AB Lime reduced their base disposal rate by almost half, from $134 per tonne to $71 per tonne. Waste levy, ETS and ETS margin and GST would be applied on top of the base disposal rate.

Information added to Morrison Low's "Questions and Answers" document

84 After the Council meeting on 30 October 2024, staff asked Morrison Low to update their "Questions and Answers" document (Attachment D) to include answers to the following questions:

a) Where are the major landfills in NZ (as shown on a map)?

b) Will there be an ongoing need for landfills in NZ?

c) What are the catchment areas for the major landfills (as shown on a map)?

d) How are other landfills owned in NZ?

e) What are typical gate fees at major landfills in New Zealand?

f) What would be the impact on Smooth Hill if an incineration plant was built in the Waimate region?

g) Could DCC operate an incineration plant at Smooth Hill?

h) What do you consider resilience to be?

i) Could rail be used to transport waste out of Dunedin? If so, what effect would that have on your modelling?

j) What non-financial considerations do you think DCC should consider when deciding whether to build Smooth Hill (alone or in partnership)?

k) What level of bond is usually set for landfills?

l) Can you please confirm that your modelling has factored in on-going operational costs?

m) Can you please advise what interest rate has been assumed?

85 Answers to the above questions are set out in Attachment D rather than being restated in this report. However, of particular note:

a) There are currently 40 registered Class 1 Landfills in New Zealand, with 17 in the South Island. Most of these landfills receive less than 10,000 tonnes per annum.

b) The main South Island Landfills are:

i) York Valley Landfill, Nelson (owned by Nelson City Council)

ii) Marlborough Regional Landfill (Bluegums), Marlborough (owned by Marlborough District Council)

iii) McLean's Pit Landfill, West Coast (owned by Grey District Council)

iv) Kate Valley Landfill, Canterbury (owned by Canterbury Waste Services Joint Venture)

v) Redruth Landfill, Canterbury (owned by Timaru District Council)

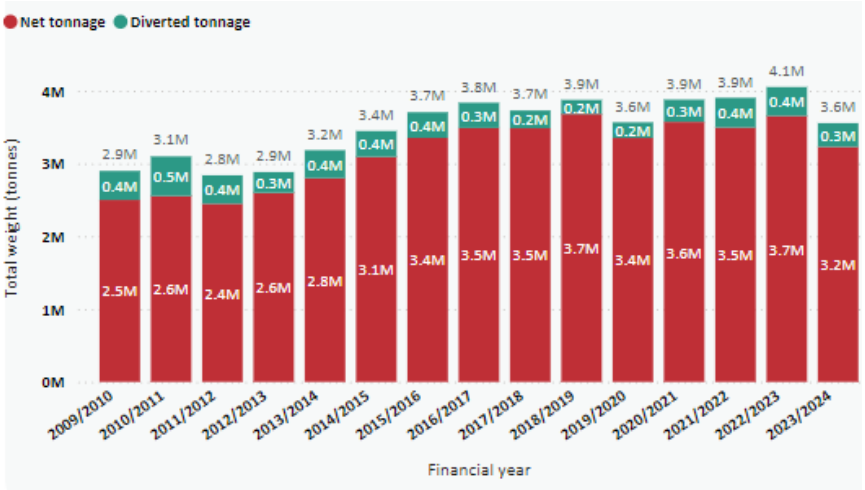
vi) Green Island Landfill, Otago (owned by Dunedin City Council)

vii) Victoria Flats Landfill, Otago (owned by Queenstown Lakes District Council)

viii) AB Lime Limited, Southland (owned by AB Lime)

c) In 1995 there were 327 Landfills in New Zealand, compared to the current 40 Landfills.

d) While the number of Class 1 Landfills has reduced substantially over recent decades, the volume of waste disposal has not.



e) Most landfills in New Zealand are publicly owned, although the four large facilities (which handle most of the waste) are privately owned or public-private partnerships. Bonny Glen, Redvale and Hampton Downs are privately owned, and Kate Valley is a public-private partnership.

A discussion on the Morrison Low Reports, including Staff Recommendations

General comments

86 It is clear from the Morrison Low Reports that the continuation of the Green Island Landfill for at least the next few years has significant benefits for Council as it is the lowest cost option during this period.

87 Comparing the three shortlisted options of building Smooth Hill Landfill alone or in partnership or exporting waste is difficult because:

a) There are numerous variables and assumptions that need to be made.

b) The financial modelling is based on a 20-year period. This is an industry standard as modelling becomes unreliable after this period. However, Smooth Hill Landfill is expected to last:

i) Forty (40) years if current annual volumes continue; and

ii) More than 70 years if the annual volume of waste is reduced to 35,000 tonnes per annum.

c) Given the financial modelling is based on a 20-year period, it does not consider the future construction costs of a subsequent landfill (say in 40 or 70 years), nor the difference in operating costs for operating a landfill for an additional 30 years (from 40 to 70 years), while receiving the same overall volume of material (and associated revenue) within the landfill.

d) While the financial analysis is important, it is one factor among many considerations for Council (e.g. other considerations for Council will include its waste minimisation and zero carbon goals).

88 The focus of the Morrison Low Reports is on financial resilience, and therefore the need for commercial tonnage.

89 Having a sufficient level of tonnage to provide revenue that funds the construction and operation costs of a landfill is not necessarily inconsistent with Council's waste minimisation goals. For example, Council could focus on reducing current waste streams, but seek to broaden its catchment area.

90 However, Council has moved away from decision making that is primarily focused on revenue and profit, and towards decision making that is also focused on Council's waste minimisation goals.

91 Council will need to keep in mind when considering its options here, that there is the upcoming issue of disposal of waste from Kettle Park. Council is expected to need to remove approximately 220,000 cubic metres from the old landfill at Kettle Park. This is likely to equate to more than 300,000 tonnes of waste. Council will need to dispose of that waste to an approved landfill in a way that is financially prudent and in a way that aligns with Council's Carbon Zero Policy.

Building a landfill at Smooth Hill vs the export of waste out of district

92 The option of exporting waste out of district is not considered by staff to be a viable alternative to developing a landfill at Smooth Hill. Reasons for this include:

a) The gate rates at AB Lime's Landfill would need to drop by almost half to become economically competitive with the cost of building a landfill at Smooth Hill. This is seen by Council staff as being unrealistic given the contract negotiations with AB Lime regarding pricing.

b) Even if AB Lime could be financially competitive, as compared to Council building a landfill at Smooth Hill, there are other factors that Council will need to consider. These include:

   i) The views of mana whenua;

   ii) Council's Carbon Zero Policy;

   iii) The economic benefits to Dunedin;

   iv) Resilience for the Council and City, including in an emergency; and

   v) Council's level of control.

c) To provide some level of certainty, Council would need a contract that is at least 20 years. AB Lime was only willing to agree to a 10 year term at the current base rate.

93 Mana whenua support the construction of Smooth Hill Landfill and have stated that an export option is unacceptable to mana whenua (as per Mr Ellison's evidence to the Smooth Hill Hearing on behalf of Te Rūnanga o Ōtākou).

94 The export of waste out of district would be inconsistent with Council's Carbon Zero Policy because of the transport that would be required from Dunedin to Winton. The number of truck movements each week is estimated to be 38-40 trucks per week if the waste volume remains at approximately 60,900 tonnes per annum. If the volume dropped to 35,000 tonnes then it is estimated that the number of truck movements would be 22-23 trucks per week.

95 The Economic Assessment Report prepared as part of the consenting process for Smooth Hill Landfill identified that trucking Dunedin's waste out of district would have a range of costs associated with transporting waste over large distances (costs and environmental emissions) that are not offset by any of the economic and other benefits associated with developing infrastructure and employment opportunities locally.

96 The out of district option would also expose Council to economic risk from increases in fuel prices.

97 If Council has its own landfill, then this creates resilience for the city because it provides Council with a disposal option during the life of the landfill. This could be important in the event of a natural disaster. For example, it is not unforeseeable that roads could be blocked preventing access to an out of district landfill.

98 If Council builds its own landfill, then it has control over a lot more things than it would under a contract with an out of district landfill owner. For example, under the AB Lime contract:

a) The contract term is for only 10 years. Although it is likely that a new contract would be signed, there is no certainty on this.

b) The gate rates are set in the contract for the next 10 years, subject to an annual adjustment of the base price by the Producers Price Index for Mining and changes to the

government waste levy and the ETS cost. However, the price in 10 years' time would be a matter to be decided closer to the expiry term. If Council did not have its own landfill, then it would have little negotiation power if it did not have another viable alternative for its disposal of waste.

99 If Council builds its own landfill, then it has autonomy over the waste collection process, from the kerbside collection right through to diversion and residual disposal.

Building a landfill at Smooth Hill alone vs in a 50:50 partnership with a private waste company

100 As set out above, the financial modelling shows that Option 1 (Council building Smooth Hill alone) provides the best financial position for Council ***if*** the annual waste tonnage to Smooth Hill Landfill remains the same or similar to the annual waste tonnage through Green Island Landfill. This is because, although Council has the full construction costs, it retains all profits from gate revenue.

101 It will be for Council to decide whether it is prepared to take the risk around the potential loss of annual tonnage if Council builds Smooth Hill alone.

102 However, Council staff note that:

a) The risk needs to be balanced against the loss of control that would inevitably arise through a 50:50 partnership arrangement (despite Council having more control over tonnage in a 50:50 partnership).

b) There is likely to be a tension in a 50:50 partnership with a private waste company because the private waste company will potentially be driven by profits whereas Council will be motivated by its waste reduction and carbon zero goals.

c) Council will need to dispose of its own waste (e.g. in relation to closed landfills, such as Kettle Park). If Council is disposing of 220,000 cubic metres of waste from Kettle Park, then essentially it would be paying half the profit from the gate rate to its joint venture partner.

d) It is unlikely that the commercial tonnage would drop by more than half, meaning that Council would still have its own tonnage of approximately 35,000 tonnes plus approximately 12,500 tonnes of commercial tonnage.

e) Even if there was a drop in tonnage by 10,000 tonnes per annum, there may be ways that any reduction in commercial tonnage could be mitigated. For example:

i) The waste from Kettle Park is likely to offset such a reduction, at least partially.

ii) It may be possible to incentivise a management contract, provide discounts to the gate rate or expand the waste catchment so that the Smooth Hill Landfill becomes a more regional facility. Any such arrangements would need to ensure that the facility retains an operating surplus once capital and operating costs are recovered.

f) If there was a drop in commercial waste tonnage being delivered to Smooth Hill Landfill, this would defer the need for capital expenditure (e.g., for new cells or for a new landfill). However, if the drop in tonnage was substantial, this could be problematic as it would result in increased gate rates which may turn some commercial tonnage away from Smooth Hill Landfill.

g) There would be costs associated with Council creating a 50:50 partnership. There would need to be a procurement process, probably the formation of a joint venture company/limited partnership and governance requirements. Under a 50:50 partnership, it is expected that Council would retain ownership of the land at Smooth Hill, but the facilities would be owned through a joint venture company.

103 There are examples of various partnerships regarding landfills. For example:

a) Kate Valley Landfill in Canterbury was initially a joint venture between the Canterbury councils, Enviro NZ and Waste Management NZ (WMNZ). During a sale process for Enviro NZ, the company's share in Kate Valley was sold to WMNZ, despite opposition from the councils at the time.

b) Bonny Glen Landfill in Rangitikei is jointly owned by Enviro NZ and WMNZ, through a limited partnership called MidWest Disposals Limited. The councils in the surrounding region have long term disposal agreements with Bonny Glen rather than an ownership stake.

104 If Council wants to build Smooth Hill in partnership with a private waste company, then this would require a detailed procurement strategy and a further report back to Council on the proposed structure of the partnership.

105 Some initial work has been done in this area to identify likely options. The two key options would be:

a) A standalone company; or

b) A build, own, operate and transfer (BOOT) contract.

106 Both options are complex (particularly given competing objectives) and would be expensive to establish. The arrangements would be for a period probably of at least 20 years.

107 The arrangements would be negotiated through a staged procurement process. A standalone company would probably involve Council and a private waste company (a joint venture partner) each owning half the shares in a joint venture company, with each party appointing 50% of the Board. The joint venture company could be a limited liability partnership or a limited liability company. Council would receive waste disposal from the joint venture company at agreed gate rates. There would be negotiations for a commitment for tonnage from the joint venture partner. The CEO of the joint venture company would be appointed and employed by the company. The extent to which the organisational structure below the CEO are employees of the joint venture company or out-sourced contracts would be negotiated with potential partners through the procurement process. The mechanism to ensure fair and transparent pricing is received for any physical works and services contracted to the joint venture partner would also be negotiated through the procurement process. Council would remain the owner of the underlying land at Smooth Hill but would lease the land to the joint venture company. All assets would transfer back to Council at the end of the partnership.

Staff recommendation

108 Staff recommend that Council decides in principle for inclusion in the draft 9 Year Plan 2025-34 that it would prefer to:

a) Build a landfill at Smooth Hill, rather than export waste out of district; and

b) Build a landfill at Smooth Hill alone, rather than in a partnership with a private waste company.

109 The reasons for recommending building a landfill at Smooth Hill rather than exporting waste include that:

a) The export of waste is not economically favourable when compared with the option of building at Smooth Hill.

b) The export of waste is unacceptable to mana whenua and does not align with Council's Carbon Zero Policy.

c) The export of waste does not have the economic benefits to Dunedin that would come with building Smooth Hill Landfill.

d) The export of waste does not provide Council with the same level of resilience that would come from owning its own landfill, particularly if there is a natural disaster.

e) There are contractual risks, such as the contract being for a specified period.

f) Council would be vulnerable to price increases if fuel costs increased.

110 The reasons for recommending building Smooth Hill Landfill alone rather than in partnership include that:

a) Council has a fully consented project for the development of Smooth Hill Landfill. With Green Island nearing capacity, the city needs an alternative site for the disposal of its residual waste stream and Smooth Hill provides Council with the opportunity to build a modern facility, within the city boundaries. This enables the city to have control over its own municipal waste, manage long term disposal of waste from other city facilities (eg Kettle Park) and provide revenue opportunities while at the same providing the best option for meeting zero carbon aspirations.

b) Council would have the greatest autonomy, and it would allow Council to focus on its waste minimisation goals.

c) Council would retain 100% of the revenue generated from the Smooth Hill Landfill, which creates the best financial position for Council ***if*** the annual waste tonnage to Smooth Hill Landfill remains the same or similar to the annual waste tonnage through Green Island Landfill. There may be ways to mitigate the risk of losing tonnage (such as having a management contract with appropriate incentives) and Council is likely to need to dispose of approximately 220,000 cubic metres of waste from Kettle Park.

d) Although it may be difficult due to Commerce Act implications and there would be consultation obligations, it may be possible to seek a partner at a later date (e.g., if Council found that it is not receiving sufficient tonnage to cover construction and operating costs, or if the construction costs escalated to a point where it makes more sense to share the construction costs and the revenue).

Council's consultation requirements

Consultation in the 10 Year Plan 2021-31

111 Council consulted on funding for the development of Smooth Hill Landfill as part of the 10 Year Plan 2021-31. The consultation document recorded that:

> *We've got $56 million in the budget (2024-25 to 28-29) to develop a new landfill at Smooth Hill, south of the city. Smooth Hill has been identified as a suitable site and we are working through the resource consent process.*
>
> *With the Green Island Landfill coming to the end of its life, we need to develop a new, modern landfill….*

112 The Long Term Plan 2021-31 was adopted with $56 million allocated for building Smooth Hill.

What decisions would trigger mandatory consultation through the 9 Year Plan 2025-34?

113 A decision by Council to export waste or to build a landfill at Smooth Hill in partnership with a private waste company would likely trigger mandatory consultation through the Long Term Plan.

114 This is because the decision to export waste or to enter a 50;50 partnership are decisions where section 97 of the Local Government Act 2002 is likely to apply. Section 97 relates to decisions to significantly alter the intended level of service provision for any significant activity or to transfer the ownership or control of a strategic asset to or from a local authority. Smooth Hill Landfill almost certainly falls within the statutory definition of "strategic asset", being an asset "that the local authority needs to retain if the local authority is to maintain the local authority's capacity to achieve or promote any outcomes that the local authority determines to be important to the current or future well-being of the community." This view is supported by Council's Significance and Engagement Policy which lists "Landfill Facilities" as strategic Council-owned assets.

115 Also, a 50:50 partnership would be a council-controlled organisation and section 56 of the Local Government Act requires the Council to consult before establishing a council-controlled organisation.

What are the consultation requirements if Council decides to build the Smooth Hill landfill alone?

116 A decision by Council to build Smooth Hill Landfill alone would not trigger mandatory consultation under section 97 of the Local Government Act 2002. However, the updated budget cost will need to be included in the 9 Year Plan 2025-34, which means that the decision and cost will be subject to the 9 Year Plan 2025-34 consultation process anyway.

117 Given that the decision on whether to build Smooth Hill alone is of at least medium significance under Council's Significance and Engagement Policy, staff recommend including information in the 9 Year Plan 2025-34 consultation document about Council's plans for Smooth Hill.

118 While the exact wording has not yet been determined, the consultation document would outline Council's intention to build a new facility at Smooth Hill, the budget that had been allowed and the likely timeframe. The consultation document would also explain that Council had looked at alternatives but that for all the reasons detailed in the advantages section, was building a new municipal landfill.

119 The exact wording will be developed and provided to Council as part of the 9-year Plan process for developing the consultation document noting Council's feedback that the document will provide more comprehensive information than the last consultation document.

Why is the decision recorded as being an "in principle" decision?

120 The staff recommendation is expressed as being an "in principle" decision because the decision will be subject to consultation through the 9 Year Plan 2025-34 process as the funding will need to be included in the draft 9 Year Plan budget.

OPTIONS

121 There are three shortlisted options for Council:

a) Build a landfill at Smooth Hill alone.

b) Build a landfill at Smooth Hill in a 50:50 partnership with a private waste company.

c) Export Dunedin's municipal waste out of district.

122 For a variety of reasons, exporting waste is not seen by Council staff as a feasible long-term solution for the Council's waste needs. However, it is included in the options assessment for completeness.

Option One – Recommended Option – Build a landfill at Smooth Hill alone

123 Under this option, Council would:

a) Decide in principle for inclusion in the draft 9 Year Plan 2025-34, it would prefer to:

i) Build a landfill at Smooth Hill, rather than export waste out of district; and

ii) Build a landfill at Smooth Hill alone, rather than in a partnership with a private waste company.

b) Note that this decision is subject to consultation through the 9 Year Plan 2025-34 process as the funding will be included in the draft 9 Year Plan 2025-34 budget.

Advantages

- Provides Council with the greatest autonomy.
- Allows Council to focus on its waste minimisation goals.
- Council retains 100% of revenue generated from Smooth Hill Landfill.
- This is the best option financially, provided the annual waste tonnage to the Smooth Hill Landfill remains the same or similar to current tonnages to the Green Island Landfill.
- Construction of a landfill at Smooth Hill:

i) Creates resilience, including in natural disasters.

ii) Is supported by mana whenua.

iii) Aligns with Council's Carbon Zero Policy.

iv) Has economic benefits to Dunedin.

v) Minimises risks around fuel price increases, as compared to the export option.

- Allows Council to dispose of its own waste and receive 100% of the revenue from that disposal (including from an estimated 220,000 cubic metres of waste from Kettle Park).
- Council has resource consents for the Smooth Hill Landfill, so the project has been de-risked from a consenting perspective.
- Council *may* be able to seek a joint venture partner later if it becomes necessary. This would be subject to any restrictions under the Commerce Act 1986, and a successful procurement process for a joint venture partner.

Disadvantages

- Council would pay all construction costs for the Smooth Hill Landfill.
- Carries the most financial risk if the volume of tonnes to Smooth Hill Landfill decreases below current tonnes to Green Island Landfill. However, there may be ways to mitigate that risk and Council will need somewhere to dispose of waste from Kettle Park.
- Carries the most financial risk if there are significant capital cost increases in building Smooth Hill Landfill.

Option Two – Build a landfill at Smooth Hill in a 50:50 partnership with a Private Waste Company

124 Under this option, Council would

a) Decide in principle for inclusion in the draft 9 Year Plan 2025-34, that it would prefer to:

i) Build a landfill at Smooth Hill, rather than export waste out of district; and

ii) Build a landfill at Smooth Hill in partnership with a private waste company, rather than alone.

b) Note that this decision is subject to mandatory consultation through the 9 Year Plan 2025-34. (Note: Any consultation would need to clearly specify Council's intent if negotiations with a facility partner were unsuccessful).

Advantages

- Construction costs are shared equally with a joint venture partner.
- A joint venture arrangement for Smooth Hill Landfill is likely to be an attractive proposition for a private waste company because the project has been de-risked through Council already having obtained the resource consents.
- Construction of a landfill at Smooth Hill:

i) Creates resilience, including in natural disasters.

ii) Is supported by mana whenua.

iii) Aligns with Council's Carbon Zero Policy.

iv) Has economic benefits to Dunedin.

v) Minimises risks around fuel price increases, as compared to the export option.

Disadvantages

- Profits are shared equally with a joint venture partner.
- Council has less autonomy under this option than building Smooth Hill alone.
- A joint venture partner is likely to be focused on profit, whereas Council will be focused on waste minimisation. This could create tension in the partnership.
- There would be costs and time associated with a 50:50 partnership, including procurement process costs, probably costs associated with forming a joint venture company and governance requirements.

Option Three– Export waste out of District

125 Under this option, Council would:

a) Decide in principle for inclusion in the draft 9 Year Plan 2025-34, that it would prefer to export its waste out of district rather than build a landfill at Smooth Hill; and

b) Note that this decision is subject to mandatory consultation through the 9 Year Plan 2025-34.

Advantages

- This option has the lowest capital requirement. Based on current budgets, there would be a reduction of $92 million to the capital programme over the next 9 years. This would have a corresponding cumulative saving of $23 million in interest costs and, assuming there is no change in Rates Revenue, Council debt would be $116 million lower by the end of the 9 year period. (However, there would be additional operating costs required to transport and dispose waste to another region/landfill).

Disadvantages

- Not economically favourable when compared with the option of building at Smooth Hill.
- Creates risk for Council because contracts will be for a limited term.
- Unacceptable to mana whenua.
- Does not align with Council's Carbon Zero Policy.
- Does not have the economic benefits to Dunedin that would come with building the Smooth Hill Landfill.

- Does not provide Council with resilience, including in natural disasters.
- Reduces Council's level of control over its waste.
- Council would be vulnerable to price increases if fuel costs increased.

NEXT STEPS

126 Council staff will include Council's decision in the draft 9 Year Plan consultation document and report back to Council in time for Council deliberations on the 9 Year Plan.

127 Staff are also considering the possibility bringing a public report on Smooth Hill to the 9 year plan meetings in January 2025. This would be aimed at providing as much information as possible for the community. This report would be a noting report but could include much of the material in this report. This report would also likely include possible wording for the consultation document.

Signatories

Author:	Chris Henderson - Group Manager Waste and Environmental Solutions Karilyn Canton - Chief In-House Legal Counsel
Authoriser:	Scott MacLean - General Manager, Climate and City Growth Sandy Graham - Chief Executive Officer

Attachments

SUMMARY OF CONSIDERATIONS

Fit with purpose of Local Government

This decision enables democratic local decision making and action by, and on behalf of communities. This decision promotes the social, economic, environmental, and cultural well-being of communities in the present and for the future.

Fit with strategic framework

	Contributes	Detracts	Not applicable
Social Wellbeing Strategy	✓	☐	☐
Economic Development Strategy	✓	☐	☐
Environment Strategy	✓	☐	☐
Arts and Culture Strategy	☐	☐	✓
3 Waters Strategy	☐	☐	✓
Spatial Plan	✓	☐	☐
Integrated Transport Strategy	☐	☐	✓
Parks and Recreation Strategy	☐	☐	✓
Other strategic projects/policies/plans	✓	☐	☐

The Waste Futures Project contributes to the Environment Strategy by enabling a robust evaluation of potential options for Council to continue to ensure effective reduction and management of solid waste to achieve the goals set out in its WMMP, and its Carbon Zero Policy.

Māori Impact Statement

Mana whenua have been identified as a stakeholder in the Waste Futures project and have been engaged during the Better Business Case options development phase, and the resource consenting processes for both the Smooth Hill Landfill and the Green Island Landfill. Mana whenua do not support the export of waste out of district. This has been stated as being unacceptable to mana whenua (as per Mr Ellison's evidence to the Smooth Hill Hearing on behalf of Te Rūnanga o Ōtākou).

Sustainability

The Council's overall objective for the Waste Futures project is to ensure effective reduction and management of solid waste to achieve the goals set out in Council's WMMP. Council's new kerbside collection service and Resource Recovery Park have been designed to assist in meeting Council's waste minimisation goals. Having a sufficient level of tonnage to provide revenue that funds the construction and operation costs of a landfill is not necessarily inconsistent with Council's waste minimisation goals. For example, Council could focus on reducing current waste streams, but seek to broaden its catchment area.

LTP/Annual Plan / Financial Strategy /Infrastructure Strategy

The consultation document for the Long Term Plan 2021-31 identified that Council had $56 million in the budget to develop a new landfill at Smooth Hill. The draft budget that will be considered by Council as part of the 9 Year Plan 2025-34 process currently has $92.4 million allocated for the Smooth Hill Landfill. The increased budget allocation is due to price increases in the construction sector and to manage contingencies.

Financial considerations

The financial considerations are fully considered in the body of the report.

SUMMARY OF CONSIDERATIONS
Significance The decision is considered medium to high in terms of the Council's Significance and Engagement Policy. Formal decision making will be part of the 9 Year Plan 2025-34 process, which will be formally consulted on using the special consultative process.
Engagement – external Smooth Hill has been discussed widely for many years. The previous 10 year Plan consultation document included commentary on Smooth Hill. The resource consent process for Smooth Hill was a fully notified public process. There has also been a community liaison group established as part of the consent process and that group has been formed and is meeting.
Engagement - internal There has been extensive internal engagement for the Waste Futures project, including Waste and Environmental Solutions, Legal Services, Finance, Transport, 3 Waters, Communications and Marketing.
Risks: Legal / Health and Safety etc. Legal advice has been undertaken on the various components of the Waste Futures Project to ensure statutory compliance and minimisation of legal risks.
Conflict of Interest There are no known conflicts of interest.
Community Boards Both the current landfill site at Green Island and proposed landfill site at Smooth Hill are of particular interest to the Saddle Hill and Mosgiel Taieri Community Boards. There have been periodic updates to these Community Boards and, as part of the 9 Year Plan 2025-34 consultation process, they will have the opportunity to make a submission to Council on decisions contemplated in this report. The Chair of the Saddle Hill Community Board is also the current Chair of the Community liaison group formed as part of the consent process.


2020
WASTE MINIMISATION AND MANAGEMENT PLAN 2020
TE MAHERE WHAKAMIMITI PARA
DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti


These items can go in your yellow-lidded recycling bin:
PUTTING ITEMS OUT FOR RECYCLING COLLECTION


LOVE FOOD HATE WASTE WORKSHOP
02 | Te mahere whakamimiti para | Waste Minimisation and Management Plan 2020

INTRODUCTION

Changes have occurred since the Dunedin City Council (DCC) last prepared a strategic document for better waste management and minimisation, including:

- the introduction of new services and facilities
- a change in Central Government and the establishment of a Resource Recovery Taskforce to further resource recovery efforts and assess infrastructure development needs
- the identification of national waste priorities which are outlined in the Local Government Waste Management Manifesto.

Priority 1: Changes to the Waste Disposal Levy

Priority 2: Better Waste Data

Priority 3: Introducing a Container Deposit Scheme

Priority 4: Mandatory Product Stewardship, tyres, e-waste, agricultural chemicals and plastics

In 2008, the Waste Minimisation Act came into law, followed by the New Zealand Waste Strategy in 2010.This legislation requires all territorial authorities to conduct a waste assessment in their districts and to review their operative Waste Management and Minimisation Plans (WMMP).

Following the review of DCC's Waste Management and Minimisation Plan 2013, this revised plan will be known as 'The Waste Minimisation and Management Plan 2020 (the plan)', ensuring waste minimisation is at the fore in decision making for the city.

The plan supports a more a detailed review of the waste and diverted material system, services and facilities. This will be executed via the Waste Futures project. Waste Futures aims to ensure a smart approach is taken in the investigation of options, to better inform decision makers into the foreseeable future.

The plan and Waste Futures were informed by the district-wide Waste Assessment in 2018. The assessment capitalises on what we already know and do well, identifies where data and information gaps exist and priority areas where we can improve.

The plan also casts the net wider than DCC facilities and services, taking a whole of city approach. DCC acknowledges the contributions of Kāi Tahu and WMMP stakeholder groups as they have provided valuable insight into the planning process.

The plan presents both a challenge and opportunity in considering how we (the DCC, waste and diverted material operators, businesses, and individuals) work together.

To achieve zero waste, inclusive of a circular economy, all parties must work together purposefully.

ABOUT THIS DOCUMENT

The DCC has prepared this plan in accordance with its statuary obligations under the Waste Minimisation Act 2008 (WMA) and in keeping with its civic responsibilities.

The plan includes:

High level strategic statements: vision, goals, guiding principles and targets

Implementation pathways: objectives, policies, and methods, how the plan will be funded, including waste levy grants and performance indicators by which to measure progress via the implementation of this WMMP, via the Waste Futures project

A summary of the Waste Assessment 2018:
Summary Forecast of Future Demand

Appendices:
- Glossary
- Full Waste Assessment 2018

This plan replaces the Waste Management and Minimisation Plan 2013.

Purpose

The DCC has a responsibility under the WMA to 'promote effective and efficient waste management and minimisation' and, for this purpose, to 'adopt a waste management and minimisation plan'.

The plan has been informed by a district-wide waste assessment. The full and final waste assessment report is appended to the plan.

As well as the waste assessment, the DCC has consulted widely with Kāi Tahu, stakeholders and, special interest groups to plan and prioritise actions which will progress waste minimisation efforts and make improvements to waste management practices.

The plan is supportive of a collaborative approach which will strengthen working relationships. The position taken understands that, to achieve zero waste, all parties must work together purposefully.

This plan will have a full review in 2024 to align with DCC's 10 Year Plan. It will include how the DCC will fund waste and diverted material services and facilities over this period.

Scope

The plan covers collection, reuse, recycling, resource recovery, treatment and disposal, services and facilities in Dunedin, including waste minimisation promotion and education.

As far as possible, the current level of waste minimisation and management activity has been assessed alongside the forecast demand for, and future provision of, services and facilities in the Dunedin district. This includes how existing and future activities will be funded.

It describes how the plan will be funded, allowing the allocation of waste levy grants, enabling business and community-led waste minimisation projects and initiatives to develop and evolve. DCC may also partner and/or endorse applications to the Ministry for the Environment contestable waste levy fund to further promote and develop projects of scale that have the potential to contribute significantly to building local capability or minimise the harmful effects of waste.

This plan and any amendments resulting from future reviews will be publicly notified in accordance with the Local Government Act section 83 Special Consultative Procedure.

LEGISLATIVE CONTEXT

The Waste Minimisation Act 2008

The purpose of the WMA, Section 3, is to encourage waste minimisation and a decrease in waste disposal 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 defines waste and diverted material as follows:

Waste

a) means anything disposed of or discarded; and

b) includes a type of waste that is defined by its composition or source (for example, organic waste, electronic waste, or construction and demolition waste); and

c) to avoid doubt, includes any component or element of diverted material, if the component or element is disposed of or discarded.

Diverted Material

a) means anything that is no longer required for its original purpose; and, except for commercial or other waste minimisation activities, would be disposed of or discarded.

The DCC's plan sits in alignment with the New Zealand Waste Strategy 2010 (NZWS).

The NZWS has two strategic goals:

Goal 1: Reducing the harmful effects of waste.

Goal 2: Improving the efficiency of resource use.

The NZWS recognises that to reach these goals, the responsibility is shared among all New Zealanders, Central Government, local government (regional councils and territorial authorities), the waste industry, businesses and communities.

The NZWS provides the high-level strategic direction for waste management and minimisation activities nationally, which underpins a suite of legislation, regulatory tools and best practice guidelines.

The following table shows the framework presented within the NZWS:

New Zealand Waste Strategy 2010 – reducing harm, improving efficiency					
Legislation and regulatory framework					
Waste Minimisation Act 2008	**Local Government Act 2002**	**Hazardous Substances and New Organisms Act 1996**	**Climate Change Response Act 2002**	**Resource Management Act 1991**	**Other Tools**
Waste minimisation and management plans	Bylaws	Regulations and group standards related to waste	Disposal facility regulations	Natural environmental standards	International conventions
Waste disposal levy	Long Term Plan (10 Year Plans)			Regional Policy Statement, Regional Plans, resource consents	Ministry guidelines, codes of practice, and voluntary initiatives
Waste minimisation fund	Annual Plan			District and regional plans, resource consents	Iwi Management Plan Kāi Tahu Ki Otago Natural Resource Management Plan 2005
Product stewardship				In addition to the above, the DCC must also meet its obligations under the Health Act 1956 and administer the Litter Act 1979.	
Other regulations					

Table 1: Toolkit for managing and minimising waste in New Zealand – New Zealand Waste Strategy 2010


RUMMAGE SHOP AT GREEN ISLAND LANDFILL
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VISION WAWATA

We have a duty to protect and enhance Dunedin's natural environment and resources for those generations who come after us (mō tatou, ā, mō kā uri ā, muri ake nei).

Dunedin is actively committed to zero waste, inclusive of a circular economy, to enhance the health of our environment and people by 2040.

GOALS WHĀIKA

Goal 1: Advocate, educate and enable waste minimisation, recycling and resource recovery

- advocate for a holistic approach to waste minimisation and management which embraces the concepts of kaitiakitaka (including the ethic of stewardship) and Ki Uta, Ki Tai.
- promote circular economies to maximise the use of products and resources
- promote the stewardship of resources and the diversion of waste from landfill (reduce, reuse, repurpose) to protect the natural environment for future generations

Goal 2: Encourage social enterprise and commercial development

Explanation

- build on initiatives to support circular economies
- reduce reliance on external markets for recyclable materials
- facilitate regional and national market development

Goal 3: Collect information to enable informed decision making

Explanation

- support and promote the National Waste Data Framework

Goal 4: Minimise the harmful effects of waste

Explanation

- protect both public health and the environment from the adverse effects of waste through regulation, and upholding best practice standards

Goal 5: Provide infrastructure to meet goals and objectives

TARGETS PĀRURE

1. Reduce the municipal solid waste generation per capita by at least 15% by 2030 compared to 2015.
2. Reduce the amount of municipal solid waste disposed to landfill and incineration by at least 50% by 2030 compared to 2015.
3. Increase the diversion rate away from landfill and incineration to at least 70% by 2030.

[1] Advancing Towards Zero Waste Declaration https://www.c40.org/other/zero-waste-declaration

GUIDING PRINCIPLES
MĀTĀPONO WHAKAARAHI

Zero Waste

Zero waste is an ethical, economic, efficient and visionary goal, to guide people in changing their lifestyles and practices to emulate sustainable natural cycles, where all discarded materials are designed to become resources for another use.

Zero waste means designing and managing products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, to conserve and recover all resources, and not to burn or bury them.

Implementing zero waste will eliminate all discharges to land, water or air that are a threat to planetary, human, animal or plant health.[2]

Circular Economy

A circular economy is an alternative to the traditional linear economy in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life.

Linear Economy

TECHNICAL AND BIOLOGICAL MATERIALS MIXED UP

ENERGY FROM **FINITE SOURCES**

Circular Economy

ENERGY FROM **RENEWABLE SOURCES**

When a product is designed for the longest use possible, and can be easily repaired, remanufactured or recycled (or used, composted and nutrients returned) we consider it to have a circular life cycle.

A circular economy is fuelled by renewable energy (e.g. solar, hydro, wind and tidal power, and biofuels).[3]

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[2] Zero Waste International Alliance ***http://zwia.org/standards/zw-definition/***

[3] Ministry for the Environment website ***https://www.mfe.govt.nz/node/24055/***

Leadership

The DCC will model good corporate citizenship by integrating zero waste practices into organisational culture and via supply chain management. The DCC will take a leadership role in establishing and embedding zero waste practices and systems in Dunedin.

Kaitiakitaka

Kāi Tahu see their existence as an integral part of Te Ao Tūroa (the natural world). For Kāi Tahu, all natural resources – air, land, water and indigenous biodiversity – are taoka, or treasures, derived from the atua (gods) and left by the tipuna (ancestors) to provide and sustain life. Kāi Tahu whānau have an inherited role as kaitiaki to ensure the life-supporting functions of the environment are maintained and protected for those who come after us. The stewardship of resources, development of circular economies and the diversion of waste from landfills safeguards the life-supporting capacity of Te Ao Tūroa.

Council's work and partnership with Kāi Tahu is guided by the Principles of Te Tiriti o Waitangi / the Treaty of Waitangi. Through the implementation of this plan Council will work closely with Kāi Tahu as the Treaty Partner and support their kaitiaki role.

Collaboration

To maximise the opportunities associated with the waste minimisation and resource recovery, the DCC will endorse, facilitate, or partner with groups and organisations to support the realisation of zero waste initiatives.

Precautionary Principle

Where there is a threat of serious or irreversible damage, lack of full scientific certainty should not be a reason for postponing cost-effective measures to prevent environmental degradation or potential adverse health effects, as it relates to waste and diverted material.

The Proximity Principle

Short supply chains with few long-distance transactions promote resilience and engagement. For resource recovery, the proximity principal suggest that we seek "the highest use (for used materials and products) with the shortest possible distance".

DCC STRATEGIC CONTEXT

The plan has been developed within the context of the DCC strategic framework, with the vision of Dunedin being one of the world's great small cities. The framework represents a collection of key outcomes, delivered by 10 Year Plan activity.

Our strategic framework guides how we work to improve the social, economic, environmental and cultural wellbeing of our communities. The principles of Sustainability and Tiriti o Waitangi/Treaty of Waitangi are embedded across our work.

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Environmental Wellbeing: The Waste Minimisation and Management Plan 2020 sits within the framework of Te Ao Tūroa – Dunedin's Environment Strategy – with goals relating to the reduction of waste, the preservation of resources for future generations and the reduction of greenhouse gas emissions. There are also direct linkages to building and contributing to Dunedin's climate resilience through better waste minimisation, namely:

GOAL 01: Dunedin is resilient and carbon zero (mō tātou, ā, mō kā uri ā muri ake nei): This goal will be achieved by minimising waste, developing resilient and sustainable supply chains, and by using natural resources with future generations in mind.

GOAL 02: Dunedin has a healthy environment (He ao tūroa, he ao hauora). This goal will be achieved through safeguarding the life-supporting capacity (mauri) of taoka species' habitats and protecting areas of importance to Kāi Tahu.

GOAL 03: Dunedin people care for the natural world (Tiakitaka): This goal will be achieved by honouring and supporting the kaitiaki role of Kāi Tahu and by advocating and collaborating for better environmental outcomes.

There are direct linkages to building and contributing to Dunedin's climate resilience through better waste minimisation.

Cultural Wellbeing: Kāi Tahu as kaitiaki have two responsibilities, protecting the life-supporting capacity of Dunedin's natural environment and resources and passing the environment to future generations in a state which is as good as, or better than, the current state. Council, through the implementation of the Waste Minimisation and Management Plan, will honour and support the kaitiaki role of Kāi Tahu.[4]

There are also direct linkages to building and contributing to Dunedin's climate resilience through better waste minimisation.

Social Wellbeing: providing support for community waste minimisation initiatives and the retention and repurposing of material resources within communities. Waste minimisation education programmes, workshops and availability of contestable funds.

Economic Wellbeing: in building local capability of our resource recovery sector to achieve greater material diversion and in support of businesses adopting resource efficiency programmes. Also, in support of design innovation that will reduce or eliminate waste, Waste Minimisation Innovation and Development Grants (commercial sector), supporting the Energy Plan in the beneficial use of landfill gas, or waste to energy solutions and availability of contestable funds.

10 Year Plan and Financial Strategy: demonstrating good corporate citizenship in practising waste minimisation, ensuring material resources are used efficiently, reused and recycled. Procurement practices encourage suppliers and contractors to do the same.

[4] Mana whenua introduction to Te Ao Turoa

IMPLEMENTATION PATHWAY
ARA WHAKATINANA

In addition to vision, goals, guiding principles, and targets, the plan considers DCC and others collection, recovery, recycling, treatment and disposal facilities and services. The DCC's role in promoting effective and efficient waste management and minimisation within Dunedin is inclusive.

The DCC has assessed the current and future demand for waste management and minimisation facilities and services to ensure future demand can be met and is supported by this plan.

Waste Futures will provide the detailed business case and financial feasibility over the short to long term to meet this demand.

The DCC may be directly or indirectly involved in bringing about the change that will lead Dunedin towards zero waste. To achieve the targets outlined in this plan the responsibility to better manage and minimise waste must be shared and includes working with Kāi Tahu as the Treaty Partner, Central Government, Regional and District Councils, commercial waste and recycling service providers, other commercial activities and embracing community and individual action and initiatives.

To best represent the role that the DCC, community and businesses and Kāi Tahu as kaitiaki have in implementing this plan, objectives, policies and methods have been presented in three sections.

Governance, leadership and engagement:

The DCC has direct responsibility for:

- engagement with Kāi Tahu as the Treaty Partner in the implementation of the Waste Minimisation and Management Plan
- planning and policy making within the DCC's strategic framework
- as a regulator via Solid Waste Bylaw and litter infringement policy
- provider of waste and diverted material facilities and services
- as a corporate citizen modelling best practice
- managing community needs and expectations via public consultation

Education, empowerment and collaboration:

- empower Kāi Tahu to give effect to their kaitiaki role by increasing their understanding of waste related issues and enabling them to act within homes and the wider community to minimise waste or to make better use of diverted material locally.
- empower the community to increase their understanding of waste related issues and enabling them to act within homes and wider community to minimise waste or to make better use of diverted material locally.

Design, innovation and building local capability:

Working collaboratively with Kai Tahu, Central Government, other councils, private operators, businesses and other organisations to create opportunities and build local capability in the resource recovery sector.

This section promotes the circular economy and cleaner production processes, innovation and design which will reduce the generation of waste and retain the value in material resources locally, giving effect to kaitiakitaka and the stewardship of resources for future generations.

THE WASTE HIERARCHY

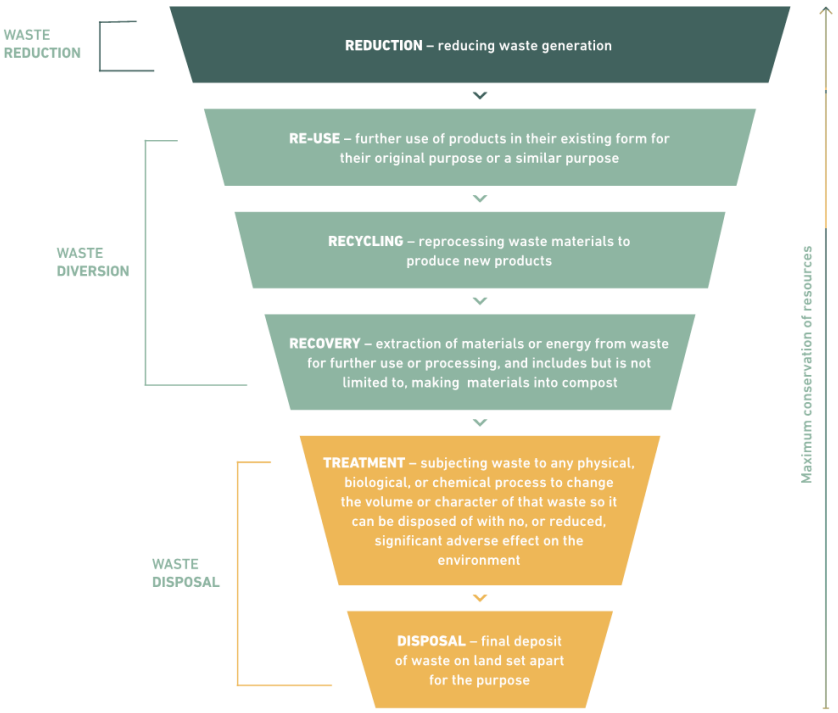
Many in our community are familiar with the term 'reduce, re-use, recycle' but often the focus of attention is on recycling and waste disposal services and facilities.

This plan supports a reduction in waste generation, the re-use of materials in our homes, communities and through lean business practices, challenging us all to take personal responsibility and to act accordingly.

It aims to build our local capability, to retain and repurpose valuable resources and to become more conscious in considering options and alternatives to landfill disposal.

The waste hierarchy is a decision-making tool which assists with determining the best approach to take during the assessment of options and the development of Council's amended Waste Minimisation and Management Plan 2020.

The Waste Hierarchy



GOVERNANCE, LEADERSHIP AND ENGAGEMENT

The DCC has an important role in minimising waste over and above the provision of waste management and minimisation facilities and services. Council will work with Kāi Tahu as the Treaty Partner in implementing this plan.

As regulator, the DCC has powers under section 8 of the Local Government Act 2002 to make bylaws. WMA section 56 gives the DCC additional powers to regulate the deposit, collection and transportation of waste. This includes the authority to license collectors and transporters of waste, requiring the reporting of quantity, type and destination of waste collected and transported under licence.

It is also important that the DCC practices the waste minimisation behaviour it espouses in its plan. This demonstrates good corporate citizenship, accountability for resource consumption and provides all the benefits of operating as a resource efficient organisation. The DCC can also encourage business best practice waste minimisation by considering the issues and opportunities within its supply chain.

The DCC will seek purposeful engagement and dialogue with Kāi Tahu and other regional, city and district councils, private waste and diverted material operators and the community so that a collaborative response ensures the adequate future provision of waste and diverted material facilities and services.

VISION: DUNEDIN IS ACTIVELY COMMITTED TO ZERO WASTE INCLUSIVE OF A CIRCULAR ECONOMY TO ENHANCE THE HEALTH OF OUR ENVIRONMENT AND PEOPLE BY 2040

OBJECTIVE 1: All DCC Policies and Plans clearly align with the vision, goals, guiding principles and targets of the Waste Minimisation and Management Plan

Policy	Method	Timeframe 1–2 years	Timeframe 3–4 years	Timeframe 5+ years
Account is taken of the Waste Minimisation and Management Plan during the preparation of DCC Policies and Plans	The Waste Minimisation and Management Plan is implemented across Council through various communication channels		Ongoing	
	The Dunedin City District Plan recognises the storage and access needs in the provision of services and land use (i.e. the management of best practice cleanfill operations in relation to city earthworks)	Align with Waste Futures Plan Ministry for the Environment and Waste Levy requirements National Environmental Standards	Embed	
	The Dunedin City District Plan recognises the storage and access needs in the provision of services provided in private roads	Requiring waivers for services provided on private roads		Input into next District Plan review
Each DCC activity is accountable for managing resources and minimising waste in accordance with the Waste Minimisation and Management Plan	Use of the DCC procurement toolkit to support the reduction of waste and increased resource efficiency		Ongoing	
Review and adopt a Solid Waste Bylaw under Section 56 of the Waste Minimisation Act 2008	• prohibiting or regulating the deposit of waste • regulating the collection and transportation of waste • prohibiting, restricting or controlling access to waste management and minimisation facilities owned by DCC • prohibiting the removal of waste intended for recycling from receptacles provided by DCC	Adopt Solid Waste Bylaw	Establish licencing protocol Provision of space for the sanitary collection of waste and recycling from multi-unit dwellings and residential apartment buildings	Ongoing administration of compliance
The DCC will collect information and data to inform future plans and reviews of DCC services and facilities in line with the National Data Framework	The DCC will report City waste and diverted material information and data to the community annually	Continuous improvement of reporting processes		

OBJECTIVE 2: The community has access to diverted material services

Policy	Method	Timeframe 1–2 years	Timeframe 3–4 years	Timeframe 5+ years
The DCC will continue to provide a kerbside collection service for diverted material which caters to a growing resident population, recognises the specific demands of our district demographic, and is inclusive of small businesses on collection routes	Continue and extend the DCC's kerbside collection service for recycling into selected areas	Engage with Kāi Tahu and the community on future kerbside collection model in Annual Plan 2020–2021 Proposed Kerbside Collection Service Engagement as part of 2021–2031 10 Year Plan	Establish new Kerbside Collection Service	Ongoing administration of contracts and bin audit programme
	Investigate a collection service for organic waste – food scraps and/or green waste	Engage with Kāi Tahu and the community on future kerbside collection model in Annual Plan 2020–2021 Proposed Kerbside Collection Service Consultation as part of the 2021–2031 10 Year Plan	Establish new Kerbside Collection Service	Ongoing administration of contracts and bin inspection programme
	Provide residents in the Central Business District and South Dunedin Shopping Precinct with a DCC collection service for recyclables	Engage with Kāi Tahu and the community on future kerbside collection model in Annual Plan 2020–2021 Proposed Kerbside Collection Service Consultation as part of the 2021–2031 10 Year Plan	Establish new Kerbside Collection Service	Ongoing administration of contracts and bin inspection programme
The DCC will continue to provide contracted services for the collection of mixed recycling and glass from the city's public places recycling network	The DCC maintains collection and maintenance contracts for servicing the city's public places recycling bins	Ongoing		
The DCC will introduce community events for household items that can be reused or recycled	The DCC will provide a service to the community and/or support and promote community events that divert household items from going landfill	Investigate	Initiate	Embed

OBJECTIVE 3: The community has access to diverted material facilities

Policy	Method	Timeframe 1–2 years	Timeframe 3–4 years	Timeframe 5+ years
The DCC will increase the capability and capacity of its resource recovery facilities	The DCC will continue to develop DCC-owned resource recovery parks at Green Island, Waikouaiti and Middlemarch	Future-proof design		
	The DCC will explore development of additional resource recovery parks	Assess and develop options (refer to Waste Futures project)	Embed	
	The DCC will expand the network of Rummage reuse stores	Investigate	Implement	
	The DCC will provide communities distanced from a DCC resource recovery park, with insufficient recycling capacity to meet local demand, or without a kerbside collection service, with a recycling hub	Extend the network of recycling hubs into new areas		
	The DCC will work in collaboration with businesses, not-for-profit organisations and social enterprise to establish a network of resource recovery centres for the collection of diverted material	Continually seek out opportunities		
The DCC will continue to grow a network of public places recycling bins in areas identified as community hubs or tourist hot spots	The DCC will continue to support the national 'LoveNZ' recycle with care' brand and engage stakeholder participation	Continually seek out opportunities		

OBJECTIVE 4: The community has access to services for waste management

Policy	Method	Timeframe 1–2 years	Timeframe 3–4 years	Timeframe 5+ years
The community continues to receive a kerbside collection service for waste	The DCC will ensure a suitable level of service for the kerbside collection of waste can be accessed or provided in both city and residential areas	Investigate	Establish service level model	
	The DCC maintains collection and maintenance contracts for servicing the city's litter bins	Continuous improvement		
	The DCC will collect illegally dumped rubbish deposited on public land under collection contracts	Regulate and monitor for compliance		

OBJECTIVE 5: The community has access to well managed waste disposal facilities

Policy	Method	Timeframe 1–2 years	Timeframe 3–4 years	Timeframe 5+ years
Dunedin waste disposal facilities remain operational until the expiry of current consents	The DCC will ensure all resource consent requirements for DCC owned operational waste facilities are complied with and kept current in line with both regional and district plans	Maintain best practice		
	The DCC will continue to meet its statutory obligations under the New Zealand Emissions Trading Scheme	Continuous improvements to mitigate landfill gas emissions		
	The DCC will investigate landfill disposal options in readiness for the closure of Dunedin landfills	Assess and develop options (refer to Waste Futures project)		
	The DCC will provide transfer station facilities at Green Island, Waikouaiti and Middlemarch	Assess other Dunedin sites for suitability (refer to Waste Futures project)		
The DCC will use economic drivers to minimise waste to landfill	The DCC will review and set gate charges for DCC owned waste facilities annually, ensuring that the true costs associated with landfill operations, future closure and aftercare are recovered	Continually review and adjust landfill gate charges to reflect the true cost of landfill disposal including introducing a second weighbridge at the Green Island facility		

OBJECTIVE 6: Hazardous waste is managed in accordance with best practice

Policy	Method	Timeframe 1–2 years	Timeframe 3–4 years	Timeframe 5+ years
The DCC will continue to support national regulation for the storage, collection, treatment and disposal of hazardous waste and, where necessary, regulate to protect the environment from identified hazardous waste products or practices not currently regulated	The DCC will work collaboratively with the Otago Regional Council to ensure standards for the safe treatment and disposal of hazardous waste are managed and monitored in accordance with the current legislation, regulation and best practice guidelines	Continuous improvements to mitigate the harmful effects of waste		
	The DCC will investigate options for the collection of hazardous household waste chemicals			
	The DCC will use provisions of a Solid Waste Bylaw to ban prohibited waste from landfill disposal	Investigate	Develop Options	Embed
		Continually review and adjust landfill acceptance criteria in-line with New Zealand legislation, regulation and best practice standards		

OBJECTIVE 7: All open and closed landfills in Dunedin District have been identified and are operating in accordance with industry best practice

Policy	Method	Timeframe 1–2 years	Timeframe 3–4 years	Timeframe 5+ years
The DCC will support a review of the Otago Regional Council Plan – Waste for Otago	The DCC will work collaboratively with Otago Regional Council to strengthen working relationship between DCC/ ORC and neighbouring Councils	Revise plans	Embed plans	

EDUCATION, EMPOWERMENT AND COLLABORATION

Recognising that everyone has a responsibility and role to play in meeting the plan's objectives, the DCC will encourage and support Kāi Tahu and the community in its endeavours to manage and minimise waste.

Zero waste education programmes and workshops will be delivered in the community by DCC staff, contracted facilitators or in collaboration with others. The DCC will evaluate participant feedback which will support programme development in line with the needs of the community.

A holistic DCC/ORC approach to the regional delivery of education for sustainability programmes will provide additional benefits as it draws on a breadth of knowledge, experience, funding and other resources.

The DCC will work collaboratively with, and in support of, Kāi Tahu and community groups empowered to act within their community to realise the potential of projects and initiatives that minimise waste and/or make use of diverted material locally.

Waste levy grants will be made available to community groups that have an organised approach and a prepared plan which meets the required criteria via an application process.

An informed community will drive waste minimisation from the grassroots, changing the mind-set from 'rubbish' to 'resource' and creating an increased demand for sustainable goods and services.

Over time, social behaviour will change and better align with waste minimisation and the retention of material resources for reuse and recycling.

OBJECTIVE 8: Dunedin communities and learning agencies are actively engaged in zero waste education and are empowered to act with local initiative

Policy	Method	Implementation Pathway		
		1–2 years	3–4 years	5+ years
The DCC will ensure zero waste education is accessible and available to learning agencies and community groups	The Enviroschools programme is supported and funded by both the Otago Regional Council through regional co-ordination and the DCC via local facilitation	Ongoing		
	DCC staff and contracted facilitators will work with community groups to deliver zero waste educational programmes	Ongoing		
The DCC will ensure zero waste action is promoted within communities	The DCC will encourage members of the community to practice waste minimisation in their homes and neighbourhoods and support the development of community-led initiatives that make beneficial use of diverted materials locally.	Ongoing		
The DCC will partner with community groups/ organisations and Kāi Tahu in providing local waste minimisation services and facilities for the city	Continued engagement with these stakeholders	To be included in the 10 Year Plan 2021/22		

DESIGN, INNOVATION AND BUILDING LOCAL CAPABILITY

The DCC may support businesses and other organisations to establish, develop, or design products, systems, services and facilities which minimise waste or divert a greater quantity and/or range of material from landfill. This could be through partnership, endorsement, facilitation or funding.

Encouraging local businesses to use cleaner production practices will enable them to operate more efficiently and reduce waste.

Tapping into the rich store of knowledge in Dunedin to design products and systems that reduce or eliminate waste will contribute to a zero waste future.

The DCC will work with Central Government, other councils, businesses and organisations to research and develop concept plans, projects and initiatives that could reduce the quantity and harmful effects of waste to landfill and to promote industry best practice.

To ensure that the increasing demand for accessible and affordable diverted material facilities and services are met, the DCC will encourage and support applications to the Contestable Waste Levy Fund.

Building local resource recovery capability will retain resources and create employment opportunities in Dunedin.

During the waste assessment process, a demand for services or facilities which would benefit from future development in Dunedin were identified. The specific areas were:

- construction and demolition waste recovery
- organic waste (including food waste) recovery
- rural services and facilities for recycling, resource recovery and safe disposal
- high demand for waste and recycling services in the tertiary area
- high demand for waste and recycling collection services in the Central Business District.

All the above have the potential to attract sustainable business market opportunities, create jobs in Dunedin and grow our local economy.

OBJECTIVE 9: Dunedin businesses minimise waste, are resource efficient and demonstrate innovation which grows or attracts sustainable market opportunities to the city

Policy	Method	Implementation Pathway		
		1–2 years	3–4 years	5+ years
The DCC encourages and supports businesses to minimise waste and promotes reuse, resource recovery and the circular economy.	The DCC, working with others, will develop and/or deliver a business education programme to assist and improve organisational performance and engagement with the circular economy	Initiate	Develop programme delivery model	Embed
The DCC will partner with industry, businesses, and neighbouring councils to build local capacity and capability that will increase the quantity and range of diverted material that can be collected and processed in the city/region/South Island.	The DCC will invest in infrastructure that aligns with the goals and objectives of its Waste Minimisation and Management Plan	Identify priorities for further investigation and development (Refer to Waste Futures)		
	The DCC will assess, partner, endorse or support Waste Levy Contestable Fund applications which minimise waste and/ or add value to recovered materials with the potential to create local employment opportunities	Ongoing		
	The DCC will work collaboratively with Central Government, other Councils, industry, businesses, associations and the community to establish, encourage and support the realisation of product stewardship initiatives	Actively support and encourage the introduction of product stewardship initiatives		
The DCC will support collaboration between local community groups/ organisations and Kāi Tahu partnering with commercial businesses in the delivery of waste minimisation education, projects (including feasibility studies), services and facilities for the city	Continued engagement with these stakeholders	To be included in the 10 Year Plan 2021/22		


STITCH KITCHEN WORKSHOP
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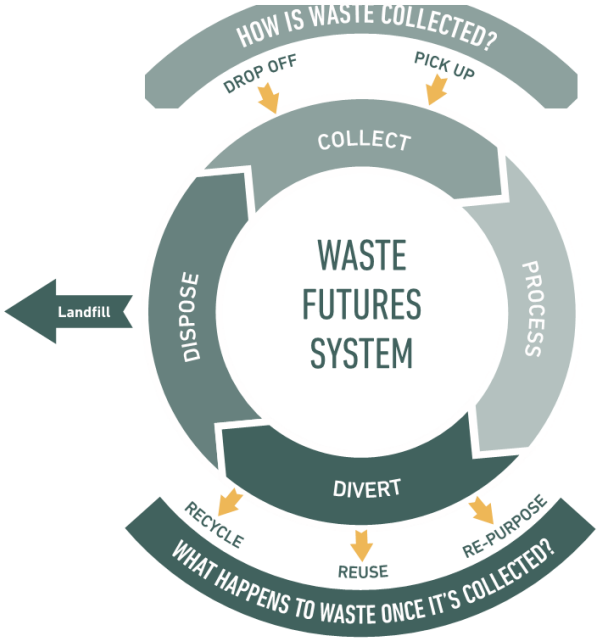
WASTE FUTURES

Waste Futures is an overarching programme of work aimed at identifying and procuring the best waste management system solution for Dunedin. The programme aims to establish a 'whole of system approach' i.e. collection, processing, diversion, and disposal of waste to landfill.



Waste Futures sits within a global and national context of zero waste and carbon reduction.

The whole of system approach is one example of what Council is doing to achieve zero-waste (circular economy) and net zero carbon for Dunedin. Carbon emissions from waste will be measured as a subset of Dunedin's total net carbon emissions.

The Waste Futures Programme supports the move towards a circular economy by increasing Council's influence over Dunedin's waste services. The programme will assist the DCC to:

- meet the targets of the Waste Minimisation and Management Plan 2020 (this plan)
- reduce Council's net carbon emissions from waste to zero by 2030
- increase customer satisfaction with Council's waste services to 90% by 2030
- provide waste services that reduce health and safety and environmental risks.

Mana whenua has a key role to play as a Treaty Partner in the delivery of the Waste Futures programme, as kaitiaki for Dunedin's natural environment and resources. The programme was presented to mana whenua, who supported Council's ambitious waste minimisation targets, the move towards new collection arrangements and the diversion of waste (re-use, re-cycle and re-purpose) from landfill.

FUNDING THE PLAN

Overview of the current funding methods. The DCC funds its waste management and minimisation facilities, services and educational programmes in a variety of ways.

User pays charges

The full cost associated with sending waste to landfill is recovered via user pays gate charges. This means that landfill users sending waste to DCC owned disposal facilities (inclusive of rural skip days) will pay for the loss of resources based on the amount of waste sent to landfill. This is commonly referred to as the polluter pays principle.

Landfill users are also paying for the on-going engineering, treatment and aftercare required to contain and control the environmental effects of landfill disposal such as the collection of leachate and gases, pest and odour control systems and Central Government levies and charges.

Landfill gate charges: cover the total cost of waste disposal and landfill operations at the Green Island Landfill. Waste delivered to this facility is either weighed on arrival (large vehicle loads) or based on average volume (small vehicle load to the transfer station) and charged accordingly.

Gate charges contribute a portion of the waste disposal and operational costs of the Waikouaiti and Middlemarch Transfer Stations. To recover the total costs of providing waste facilities in satellite communities, a funding contribution is required from general rates.

Rural skip days: are part-funded by user charges based on the size of the vehicle load and general rates.

City rubbish collection service: the cost of purchasing the DCC's rubbish bag covers the cost of providing a kerbside collection service for rubbish and the costs associated with landfill disposal.

General rates funded

General rates provide subsidised contribution to the community waste disposal facilities and rural skip day events as outlined previously. Further to this, general rates fund the following activities.

- **Plan delivery:** DCC Waste and Environmental Solutions staff and other resources deployed to deliver the objectives of the plan to the satisfaction of the community.
- **Litter and public places recycling bins:** contracted collection services for all litter and public places recycling bins.
- **Illegal dumping:** contracted collection services for the retrieval of household waste illegally deposited on public land. A small portion of the cost of collection may be recovered through infringement fines.

Litter Offences and Infringement Fees

On positive identification of a litter offender the DCC may take enforcement action and serve a litter infringement notice for litter or illegal dumping offence in accordance with the Litter Act 1979. Infringement fees may then be charged in relation to the severity of the event.

Waste levy

Landfill gate charges are levied by the Government under Part 3 of the WMA. A portion of the levy collected is returned to the DCC to promote or achieve waste minimisation in accordance with the plan. This is equal to 50% of the levy payment collected by the Government divided by Dunedin's population. The waste levy received by the DCC provides funding for the following activities.

Education for Sustainability programmes: Enviroschools local facilitation, resources and the Sustainable Living programmes are partially waste levy funded.

Waste minimisation initiatives:

- Educational workshops
- Diverted material collection events
- Promotion such as expos and advertising
- Diverted material infrastructure such as public places recycling facilities
- Hazardous waste collection, treatment, diversion
- Other initiatives that reduce waste or increase material diversion.

Waste Levy grants: The DCC has made funds available from its share of the waste levy for grants under section 47 of the WMA, to promote or achieve waste minimisation activities in accordance with this plan:

- Waste Minimisation Small Project Grants
- Waste Minimisation Community Projects/Initiatives Grant
- Waste Minimisation Innovation and Development Grants (Commercial Sector).

Waste Futures Project	Targeted rates funded	Potential future funding method
Implementation, where it aligns with this plan, supports waste minimisation, education and promotion, reuse, recycling or other forms of resource recovery.	Kerbside collection services for recycling: residents in the areas that receive the DCC's kerbside collection service for recycling pay for the service via a targeted rate. **Audit and enforcement activities** To improve quality and quantity of recycled materials DCC may audit yellow-lidded mixed recycling bins presented at kerbside and, if consistent bin contamination occurs at the same address, DCC may remove the bin/s from this address. Bins will be returned following a three-month stand-down period at the cost of the property owner. **Revenue generated from the sale of diverted materials** Recycling rebate: a proportionate amount of funds may be received from the sale of recyclable material collected at kerbside by DCC contractors and from the resource recovery centres at the DCC's facilities. **DCC Resource Recovery Centres:** revenue raised from the sale of re-usable household items contributes towards the on-going operation and development of the Resource Recovery Centres. The centres may also donate recovered materials to be reused or recycled via community groups/initiatives aligned with Objective 8 of this plan.	**Licensing of commercial waste collectors:** the DCC will consider creating a new Solid Waste Bylaw that better aligns with current strategies, legislation (specifically the WMA) and the plan. This includes licensing of waste collectors and operators for which the DCC will require a licensing fee. This fee would need to generate at least enough revenue to cover the costs of administration, monitoring and may be weighted to mitigate risk, providing sufficient funds to protect the environment from harm in case of negligence.

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PERFORMANCE INDICATORS

Measure	Activity	Reporting frequency
Reduce the municipal solid waste generation per capita by at least 15% by 2030 compared to 2015	Group Management Plan	Annually
Reduce the amount of municipal solid waste disposed to landfill and incineration by at least 50% by 2030 compared to 2015	Group Management Plan	Annually
Increase the diversion rate away from landfill and incineration to at least 70% by 2030	Group Management Plan	Annually
The DCC achieves 100% compliance with waste facility consent conditions under the Resource Management Act 1991	Group Management Plan	Annually
The composition of waste at the DCC's Green Island waste facility reflects a decrease in waste materials targeted by waste minimisation and resource recovery programmes	SWAP audits	Periodically
The quantity and quality of diverted material collected via the DCC's kerbside collection service for diverted material with > 2% annual growth in diverted material sold	Annual Plan	Quarterly
The number of customers with access to DCC diverted material facilities is increasing	Group Management Plan	Annually
Overall satisfaction with rubbish disposal services	Resident Opinion Survey	Annually
The quantity and quality of diverted material collected via the DCC's diverted material facilities is increasing	Gather, collate and summarise information	Quarterly
Zero waste education programmes and workshops provide valuable learning opportunities to participants	Feedback received and summarised, increasing participation	Quarterly
Number of businesses involved in a business education programme around circular economy is increasing	Case studies are produced	Annually
Number of successful waste levy grant applications is increasing	Applicants project outcomes reports are received	Periodic media releases

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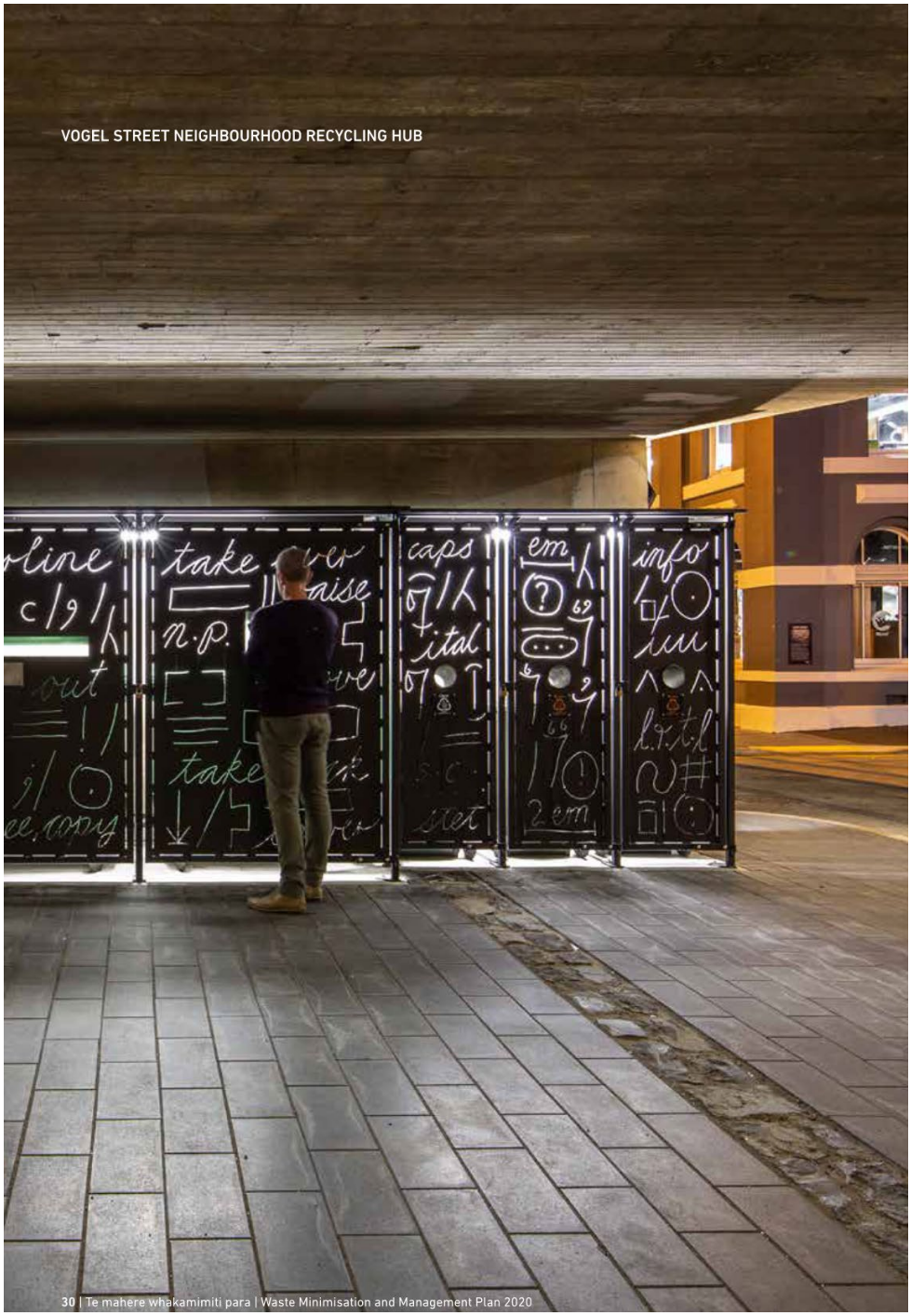
PLAN REVIEW PERIODS

DCC intends to have a mid-point review in 2024 to align with DCC's 10 Year Plan. The 2024 review will be preceded by a full waste assessment to inform and identify where more information and data is required to further progress. The DCC will then decide if the plan continues to be fit for purpose, needs to be amended, revoked or replaced. In any case, changes are notified via the special consultative procedure.


VOGEL STREET NEIGHBOURHOOD RECYCLING HUB
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SUMMARY OF THE WASTE ASSESSMENT

The waste assessment process gathers all available information and data on the current and future demand for waste and diverted material facilities and services within the Dunedin district. This includes the DCC's and other organisations' activities. The waste assessment is only as good as the information and data that can be accessed and used for this purpose.

In 2018, the DCC conducted a waste assessment to determine the existing provision of waste and diverted material facilities and services in Dunedin.

It also identified the issues, demands and options that can be further explored to address these, including the DCC's intended role in meeting the forecast future demand.

Available information, data and limitations: The DCC made every effort to obtain comprehensive data about waste and diverted material services and facilities in Dunedin to inform the plan.

Both the DCC and private operators provide waste and diverted material services and own waste and diverted material facilities. Because of this, detailed information from private operators is often hard to obtain due to perceived commercial sensitivity.

Therefore, some assumptions have had to be made for strategic planning purposes as they relate to the forecast of future demand for waste and diverted material services and facilities.

A detailed assessment of scrap metal dealers and second-hand traders and similar activities was not undertaken as the significance of gaining this information was weighed against the cost and difficulty of obtaining it. However, the DCC recognises and acknowledges the valuable contribution these activities make to waste minimisation and resource recovery via commercial operators, charity organisations, social enterprises and other community networks.

SUMMARY OF FORECAST FUTURE DEMAND

This summary is comprised of information and data from the Waste Assessment 2018, a Suitability of Options Assessment and the Waste Futures Programme Business Case – Part B FINAL

Education and Promotion

Waste / Diverted Material Issue	Further Comments on Issue/Demand	Potential Size of the Issue/Demand	Existing Council Mechanism	Potential Future Mechanism
	There is interest within community in waste minimisation; reduce, reuse and recycle and an increased demand for educational talks, tours and events that promote waste minimisation practice	There continues to be a demand for educational behaviour change programmes and promotions	***Delivered internally*** • University classes • OP classes • School classes, pre-schools • Organisations; Lions, Probus, Sports teams, clubs, community groups, and others • Businesses • Other promotions e.g. Plastic Free July ***Contracted Workshops*** • Waste Free Living and Waste Free Parenting or Foodlovers Masterclass (in support of Love Food Hate Waste) LFHW • Other LFHW workshops and promotions • Composting Made Easy workshops • Sustainable Living workshops	DCC will continue to deliver on current and future waste minimisation and educational opportunities to engage the community in behaviour change

Collection Services

Waste / Diverted Material Issue	Further Comments on Issue/Demand	Potential Size of the Issue/Demand	Existing Council Mechanism	Potential Future Mechanism
Waste Futures	There is a demand for kerbside collection services for rubbish and recycling to continue Rubbish Bag Collection pose a health and safety risk	There is a decrease in DCC rubbish bag sales as residents show a preference for commercial rubbish bin services	The Council kerbside collection service for rubbish and recycling is inclusive of a weekly DCC black rubbish bag collection, a mixed recycling wheelie bin and separate glass bottles and jars bin collection service which is collected on a fortnightly rotation Introduce recycling hubs to the areas with a high volume of recycling giving 24/7 access to recycling facilities e.g. tertiary precinct and central city area	Extend existing kerbside collection contract for waste and recycling Undertake a review of the level of kerbside collection services via the Waste Futures programme Engage the wider community with a short list of options and receive feedback Consult on Proposed Kerbside Collection Service during the 10 Year Plan period 2021–2031
Residential Kerbside Collection Service	There is a diminishing demand for Councils kerbside rubbish bag collection services in residential areas There is insufficient collection capacity in some areas e.g. campus area	***Kerbside rubbish audit*** • 18% black rubbish bags • 45% commercial rubbish bins • 37% no rubbish presented Student flats have a higher occupancy rate		
Organic waste and GHG emissions	Kerbside collection vehicles emit Green House Gases (GHG) There is a demand for a higher level of service for organic waste kerbside collection i.e.; food, garden or food and garden waste combined	Unknown = SWAP 2018 ***Organic waste to landfill*** • 13% food scraps • 9% garden waste • 7% other organics • 42% of the content of a DCC rubbish bag is organic waste	Contract does not specify carbon reduction outcomes DCC supports Kiwiharvest food collection from inner city businesses to redistribute in the community DCC supports and promotes the Love Food Hate Waste campaign	
Waste Futures – Central Business District	There is a demand for DCC to provide waste and recycling services for city residents and small businesses	A customer survey related to participation in CBD rubbish and recycling services revealed that satisfaction of these services rated; • 70% Inner City recycling hubs • 20% rubbish bag collection • 82% of those surveyed said the DCC collection service did not meet their needs	A twice weekly collection of bundled carboard from designated collection points There is an DCC rubbish bag collection service every evening in the Central Activity Area Most businesses in the CBD use commercial waste and recycling service providers	Discontinue the kerbside collection of cardboard in the inner city for health and safety reasons Introduce more recycling hubs to the Inner City area, giving 24/7 access to recycling facilities Consult on Proposed Kerbside Collection Service during the 10 Year Plan period 2021–2031

Waste / Diverted Material Issue	Further Comments on Issue/Demand	Potential Size of the Issue/Demand	Existing Council Mechanism	Potential Future Mechanism
Waste Futures – Rural Waste and Recycling Services	There is a demand for rural skip days to continue – There is a demand for transfer stations at both Middlemarch and Waikouaiti	Unknown Waste to Middlemarch transfer station decreased 26.4% over 10 yrs, while waste to Waikouaiti transfer station increased 38.7% since 2013	Waste Diversion Events are being trialled at Skip Day events Provide more community reuse and recycling opportunities Waste being disposed of in farm fills in rural areas	Support community involvement in resource recovery Extend a network of Rural Recycling Hubs Promote product stewardship

Processing Facilities

Waste / Diverted Material Issue	Further Comments on Issue/Demand	Potential Size of the Issue/Demand	Existing Council Mechanism	Potential Future Mechanism
Waste Futures – Recyclable Processing Facilities	DCC has little influence over the processing (sorting) and markets for post-consumer Mixed Recyclables collected in Dunedin	China has introduced a National the Sword and Blue Sky Policies which are affecting commodity markets for recyclable plastics globally. The size of the problem is being reviewed by the National Resource Recovery Taskforce however, it is thought to be significant	Contribute to national strategy dealing with constrained recycling markets, seek opportunities for onshore processing	Better Business Case Analysis – Waste Futures 2023 Contribute to national recycling strategy
Waste Futures – Organic Waste Processing Facilities	Green Waste Fills are currently permitted activities under the Otago Regional Councils – Regional Plan Waste Organic waste is being deposited in commercial rubbish bins as a means of disposal Organic waste to Green Island landfill	Unknown Unknown SWAP 2018 – Organic waste to landfill • 13% food scraps • 9% garden waste • 7% other organics	DCC has a small-scale windrow composting facility at Green Island Landfill DCC considering options for the diversion of organic waste away from landfill and green waste fills Establish an appropriate organic processing facility for Dunedin	A consultancy review of options for organic waste diversion was undertaken in 2017 which identified issues and opportunities on a range of organic collection and processing options Explore technologies for the diversion of organic waste, identifying best approach for Dunedin by the end of 2021/22 financial year

Waste / Diverted Material Issue	Further Comments on Issue/Demand	Potential Size of the Issue/Demand	Existing Council Mechanism	Potential Future Mechanism
Waste Futures & 3 Waters	There are no local organic waste faculties that can compost combined green waste, food scraps (organics), sludge's or biosolids in Dunedin	In addition to food scraps, green waste and other organics, sludges and biosolids account for around 6.8% of waste to Green Island Landfill	Waste and Environmental Solutions are co-ordinating with the 3 Waters Group on a feasibility study for the combined processing of organics and bio-solids	Explore technologies for the diversion of sludges and biosolids, identifying best approach for Dunedin by the end of 2021/22 financial year
Construction & Demolition Waste (C&D)	Significant quantities of construction and demolition materials are received at Green Island transfer station and landfill	SWAP 2018 – construction and demolition (C&D) waste to landfill by volume and activity source (C&D) waste (timber, 13%; and rubble 12%) totals 25% of the waste going to landfill.	DCC use procurement tools and project planning to encourage C&D waste minimisation Work with business and industry to increase the opportunity for waste reduction, reuse and recycling and reprocessing	Develop an online toolkit and present case studies to assist and promote best practice C&D waste minimisation; including reuse, redesign and recycling
Waste / Landfill	DCC is preparing for Green Island Landfill's closure sometime between 2023 and 2028 There is a demand for the future provision of a landfill for waste disposal	Export of waste to an alternative landfill out of district is both undesirable and cost prohibitive	Investigate the establishment of a modern landfill facility at the designated Smooth Hill site	Develop Smooth Hill Landfill to meet the future demand for landfill provision

GLOSSARY MĀORI PERSPECTIVES

He ao tūroa, he ao hauora: a natural world, a healthy world.

Kaitiaki: guardian

Kaitiakitaka: the exercise of customary custodianship in a manner that incorporates spiritual matters by takata whenua who hold mana whenua status for a particular area or resource. The concept of kaitiakitaka evolved as mana whenua responded to their impact on the natural environment.

Mahika kai: the customary gathering of food or natural materials, and the places where those resources are gathered.

Mātauraka Māori: Māori knowledge or wisdom.

Mana whenua: those who exercise customary authority or rakatirataka (chieftainship or decision-making rights).

Mō tātou, ā, mō kā uri, ā muri ake nei: for us and for our children after us.

Takata whenua: the iwi (tribe) or hapū (sub-tribe) that holds mana whenua in a particular area.

Taoka: a treasure, a thing of great value.

Te Tiriti o Waitangi: the Treaty of Waitangi.

Tiakitaka: the act of guarding or keeping.

Tikaka: customary values and practices


DUNEDIN CURTAIN BANK
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Wider Waste System Detailed Business Case

Final – February 2023

Document status

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2443 DRAFT	Ewen Skinner	22/12/2022
2443 DRAFT	Alice Grace	02/02/2023
2443 FINAL	Alice Grace	02/02/2023

MorrisonLow

Contents

Forward

Dunedin City Council embarked on its Waste Futures Project in 2018 to identify a recommended waste and diverted materials system for Dunedin. Morrison Low, in partnership with GHD and Boffa Miskell, prepared two detailed business cases in 2019 as part of the Waste Futures Project. Detailed Business Case 1 (DBC1) covered proposed changes to DCC's waste collection system and the recommended collection system is now being implemented through a procurement of a new waste services contractor appointed September 2022.

Detailed Business Case 2 (DBC2) covered the wider waste system; in particular the diversion and disposal facilities needed to support the collection system and how these facilities will be provided. The draft DBC2 report was updated in 2020 to support the economic assessment for resource consents for Dunedin's new landfill at Smooth Hill.

Also in 2020, a procurement strategy was developed for a waste facility partnership. The strategy explored the ownership structure and operating model for the diversion and disposal facilities in more detail than had been provided in DBC2.

Some 18 months have now passed necessitating the updating of all project costs and financial modelling. During this time there has also been rapid change to the Government's national direction on waste, with greater support for waste minimisation and resource recovery through its proposed changes to legislation and guidance. Council have awarded the development and operation of a Council-owned Resource Recovery Park Precinct (RRPP) at the Green Island Landfill to EnviroWaste.

Consent was granted for Smooth Hill Landfill in September 2022 and subject to the outcomes of appeals, it may be operational from around 2026. Council have also commenced the process of obtaining resource consents for the RRPP and also consents for the eventual closure of Green Island Landfill. While Dunedin City Council aims towards a zero waste, circular economy, it has recognised that it is essential to have a consented option that enables the city to take responsibility for dealing with its own waste for decades to come.

This report provides an updated draft Detailed Business Case for the Wider Waste System based upon these changes. The following is noted in regard to the update:

- There is a change in the recommended facility partnership option from Option 9 to Option 8. Option 9 included the diversion facilities, but these will now be Council-owned through development of Council's RRPP. As a result, information relating to the development of diversion facilities through a partnership and detailed analysis of Option 9 has been left out of this latest version of the DBC.
- The removal of the RRPP effectively focusses this version of the DBC on disposal options, with most of the other waste system components being the same across the differing options being considered.
- Option 12 has been included, which is the option to dispose of refuse out of district to AB Lime's landfill in Winton, Southland.
- Detailed information on different forms of partnership agreement have been removed from the business case as the introductory information presented is now superseded by the more detailed procurement strategy document.
- The updated business case includes substantial changes to the financial modelling as a result of changes to model inputs and refinements to the model itself. The financial model changes are described in further detail in Appendix 4.

- Given the time passed some of the earlier strategic case information has also been removed for ease of reading. For example, reference back to Waste Futures Stage 1 and the workstreams GHD, Boffa Miskell and Morrison Low were engaged to complete in Stage 2 have been removed.
- Information relating to the outcome of the DBC1, the collection system DBC, have also been removed as this process has now been concluded and is being implemented.

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Executive summary

Dunedin City Council (DCC or Council) has embarked on the Waste Futures Project, which includes using a business case process to identify a recommended waste and diverted materials system for Dunedin. A Better Business Case (BBC) approach is being developed for the Waste Futures System, including collections, diversion and disposal.

This report covers the development of the Detailed Business Case for the wider waste system that supports waste services delivery, including the transition to Smooth Hill (DBC2). DBC2 will confirm the diversion and disposal facilities needed to support the collection system, how these facilities will be provided and Council's role in providing these.

Drivers for change

- Green Island landfill consents expire in 2023: Depending on volumes of waste, it is estimated that the site will be full sometime between 2024-2029. With Smooth Hill having been granted consents in October 2022 and, subject to the outcomes of appeals, potentially operational from mid-2026. There is a need to ensure alternatives to out-of-district interim disposal, which could be expensive.
- A new kerbside collection contract commences from July 2023 with full implementation by July 2024: recycling and organics processing facilities are needed to support collections.
- External influences: central government's increased drive to minimise waste and promote the circular economy, including increases in the Waste Disposal Levy, changes to the Emissions Trading Scheme (ETS) and associated ETS cost increases, potential introduction of a Container Return Scheme, commitment to remove organic waste from landfill and proposed national standardisation of kerbside services. There is also ongoing uncertainty in recycling commodity markets. The waste system needs to be diverse and resilient through change.
- DCC zero-carbon and zero-waste targets: Require sufficient control of both disposal and diversion facilities to achieve targets.
- Landfill revenue is significant for DCC: Supporting affordability of DCC's services.
- DCC will control approximately 35,000 tonnes of waste disposed once the new bin system is implemented from mid-2024: remaining waste volumes are controlled by commercial waste companies. Modern landfills are not generally commercially viable with 35,000 tonnes and therefore additional commercial tonnes will be required.
- $56 million has been earmarked for the development of a new landfill at Smooth Hill, to replace the Green Island landfill on its closure, in the latest update to the 2021-31 Long Term Plan. This would cover at least the initial stage 1 capital works for Smooth Hill, were Council to pursue the sole ownership option.

Options assessment

Options for the wider waste system were identified and assessed using the BBC methodology, including the following steps:

- Identification of facility options: What facilities are needed to deliver the objectives? What governance arrangements can these realistically be included in? What sites could they be located on?

- Identification of partnership options: How do the partnership options score against the objectives and critical success factors? Which partnership options will be shortlisted?
- Shortlist of partnership options for the Economic Case

Initial shortlisted options

There were thirteen partnership options considered and assessed based on scope, scale, service delivery, implementation and funding options. There were four options initially shortlisted from the thirteen and these are described below.

Option	Option 1	Option 8	Option 9	Option 12
Description	Council alone, disposal facilities only.	Council in partnership with private waste company, disposal facilities only.	Council in partnership with private waste company, diversion and disposal facilities.	No DCC ownership of disposal facilities, waste sent to existing private out of district facilities
Landfill	DCC alone. Green Island and Smooth Hill owned by DCC. Construction, operations contracts outsourced	In partnership. Smooth Hill constructed, owned, operated by partnership.	In partnership. Smooth Hill constructed, owned, operated by partnership.	Out of district disposal. DCC enters disposal contract with private operator.
Diversion facilities (recycling and organics)	DCC alone. Recycling and organics processing outsourced	DCC alone. Recycling and organics processing outsourced	In partnership. New Materials Recovery Facility (MRF) and composting facility constructed, owned, operated by partnership	DCC alone. Recycling and organics processing outsourced

Option 9 removed from further analysis

In the original business case, the recommended option was Option 9. Council have now awarded a contract to develop and operate its Resource Recovery Park Precinct (RRPP) at Green Island Landfill, which means the diversion facilities will not be part of the facility partnership (or at least not initially).

There was a need for Council to proceed with RRPP development to ensure that the diversion facilities would be available when its new collection services commence in 2023. Council was also able to secure a Ministry for the Environment (MfE) grant to fund the purchase of kerbside collection bins for organic materials through the Covid Response and Recovery Fund (CRRF). The Deed of Funding has milestones that would not be met if Council were unable to proceed with RRPP development to support new kerbside collection services until other options had been considered and determined.

The financial modelling in the business case demonstrated financial benefits for a facility partnership with reductions in landfill revenue being offset by revenue through the diversion facilities making this a more resilient option. However, from a DCC perspective, if it owns the diversion facilities as part of the RRPP, then it can retain this benefit. This also enables Council to provide leadership on waste minimisation and resource recovery for Dunedin and ensures diversion facilities will be available.

In essence, with the development of the RRPP and the contracting of the diversion services, the focus of comparison between the options has become the prospective disposal models within the three remaining options, Option 1, Option 8 and Option 12, which are described below.

Final shortlisted options

Option 1: Council alone

- DCC solely responsible for construction and operating costs, fund all capital requirements and receive 100% of surplus (or deficit) from landfill.
- Landfill would compete with private landfills to secure commercial tonnes, which may result in lower tonnes or the need for a lower gate rate to attract customers. However most operating costs are fixed. A lack of commercial tonnes could significantly impact profitability.
- DCC would contract landfill expertise, but this expertise lies with commercial landfill operators who will be less engaged than if part of a partnership.

Option 8: Council in partnership with private waste company, disposal facilities only

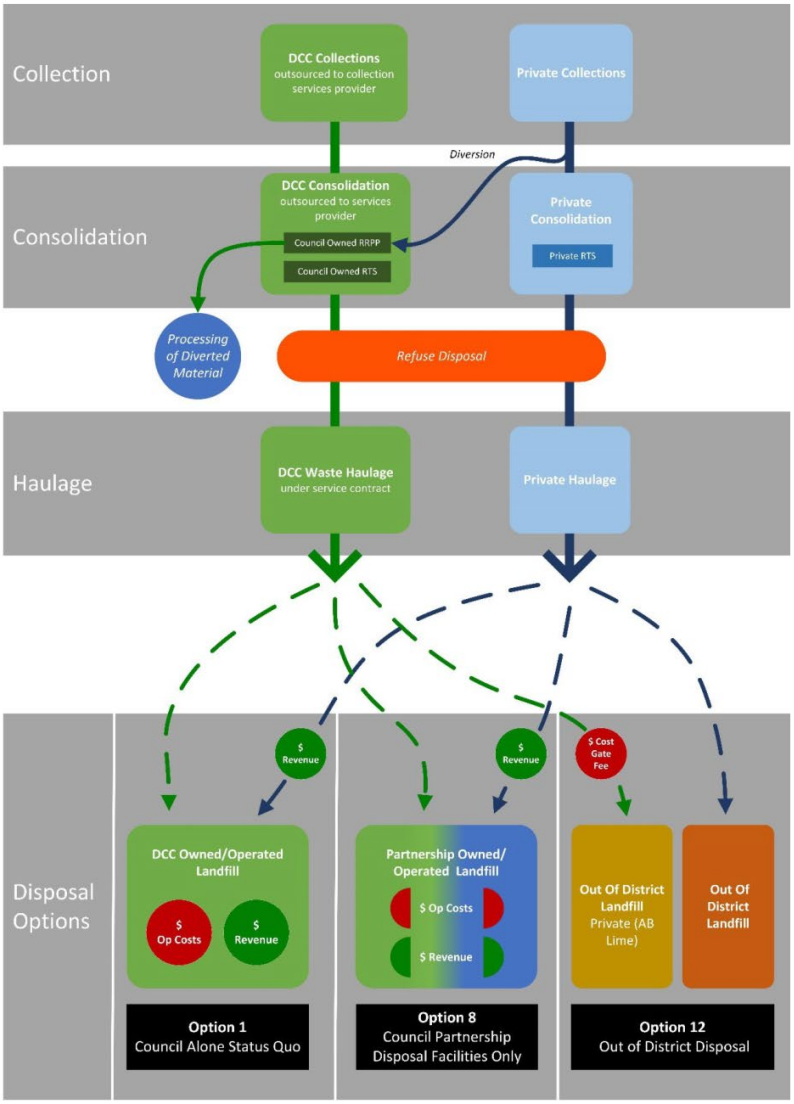
- DCC would form 50:50 partnership with private waste company that would construct, own and operate Smooth Hill Landfill. DCC would invest sufficient funds to cover its share of construction costs, matched by private capital contributions.
- Secures commercial waste streams, significantly reducing the risk of the landfill becoming unprofitable.
- DCC and commercial users would pay gate fees and DCC would receive 50% of the profit (or loss).
- Introduces business and efficiency drivers, and increases access to technical and commercial expertise, improving risk management. Council shares risks with partner (both short and long term).
- Clear governance structure required to ensure waste minimisation goals and profit-making objectives are balanced.

Option 12: Council alone, Council enters disposal contract for out of district disposal

- DCC would enter into a long-term disposal contract with private operator of landfill out of district (AB Lime's Winton landfill).
- A separate haulage contract would need to be entered into by DCC for the waste sent out of district.
- Without owning and operating a disposal facility in the district, all private waste disposal and the revenue from that would not be included in the wider DCC waste system, except to the extent that the private sector utilises the Resource Recovery Park Facility for the diversion of material.
- Reduces capital requirements significantly without the need to own and construct a landfill.
- DCC is not exposed to the commercial risk of operating a landfill, but it is exposed to changes on contract pricing over time for haulage and disposal of waste out of district, making this potentially a more expensive option.
- There is less opportunity for DCC to have control and influence over the entire waste stream exporting waste out of district, particularly in terms of environmental outcomes.

MorrisonLow

Final Shortlist Options Overview



COMMERCIALLY SENSITIVE AND IN CONFIDENCE
6

Financial modelling results

The results of the financial modelling for the three shortlisted options are provided below. The financial model has been updated substantially from the original business case, both with changes to input values and improvements to the structure of the model itself. A summary of the changes is included in Appendix 4.

The modelling presents average annual estimated rating impact, average annual cashflows, and NPV for the total cost of disposing of DCC's residual waste. Because disposal of residual waste will always be a net cost for DCC ratepayers, the NPV presented in the table is expected to be negative.

Owing to the substantial differences between an out-of-district option and a landfill ownership model this analysis compares options at a council total cost of disposal level (i.e., consolidation, bulk haulage and disposal costs). Additionally, we have modelled the average annual rates impact for each disposal option which offers useful comparisons for Council when considering a preferred approach.

Option	Option 1	Option 8	Option 12
DCC Capital requirement (10 years)	$83 million	$44 million	$5 million
Average annual cashflows	($13 million)	($14 million)	($18 million)
Net Present Value	($139 million)	($134 million)	($171 million)
Annual rates impact	$10 million	$13 million	$19 million

The results of the financial modelling and analysis do not present a clear-cut preferred option, as through different lens either option 1 or option 8 would appear to be the more favourable. The main reason for this is that option 1 is the moderately cheaper option in terms of annual rates impact, assuming that a certain level of revenue exists from commercial tonnages to offset the costs of disposal of waste and that DCC is retaining all gate fee revenue on a tax-free basis. The NPV of option 8 is more favourable to DCC because of higher overall assumed volumes of commercial tonnages and lower capital requirements, but even at higher volumes of commercial tonnages, the gate fee revenue is shared and subject to tax, so has less impact in reducing DCC's share of the costs that it passes through to the ratepayer.

Financial sensitivity scenarios have been run to assess the impact of changes to key variables, including annual disposal tonnes, landfill gate fees, capital costs and discount rate. The sensitivity testing highlights that DCC are most at risk to reductions in gate fees or volumes under option 1. The same rings true for increase in capital costs, which are shared under option 8 but entirely borne by DCC under option 1.

Out of district disposal under option 12 can be shown to be significantly more expensive under both NPV and annual rates impacts under the scenarios tested. The table below demonstrates the level of cost or volume reduction the out of district disposal would need to reach before it matches either of the in-district landfill options in terms of NPV. These gate rates are unrealistically low and far below what has currently been quoted to DCC by AB Lime for disposal out of district.

Recognising that there is a reasonable level of fixed costs to owning and operating a landfill, there would still need to be a significant reduction in volumes for the out of district option to be more cost effective than a landfill operation partially or wholly owned by Council. At the most extreme, the volume of DCC controlled waste would need to be reduced to zero before the out of district option has the same NPV as the landfill partnership option 8.

Base case	Option description	Option 1	Option 8
$183 per tonne	**Combined out of district gate rate and haulage rate to match NPV**	$100	$87
35,158	**DCC controlled waste volumes to match NPV**	21,074	0
60,900 [1]	**Total waste volumes to match NPV**	35,958	20,460

Recommended option

Based on the analysis in this report, the recommended option is that Council enters a partnership with a private waste company for disposal facilities (Option 8) at Smooth Hill, whilst developing diversion facilities for the city itself. Council may consider other factors which guide its decision making and it is noted that Option 1 is also a viable alternative (but presents greater financial risk to Council as sole owner).

- Option 8 enables Council to retain influence over the waste system and how material is diverted and disposed. This supports Council's waste minimisation goals, Council's establishment of a low carbon circular economy and overall carbon emission reduction goals.
- This option allows council to share capital development and operating risks with an experienced waste operator and share in commercial viability risk with a commercial partner that has greater access to commercial tonnes in the waste market to derive the revenue required to maintain commercial viability. Introducing a commercial partner that has industry capability and experience will address and manage the risks involved with constructing the landfill and managing the commercial waste stream. In terms of Council's relative capital contribution, it should be noted that Council has already invested in the land and is on the way to having clear consents for the landfill, which de-risks this for a commercial partner and potentially increases the value of the site over and above costs incurred to date.
- The Council alone option (Option 1) is a viable alternative option, but is not recommended over the partnership option due to higher capital requirements and higher risk levels for Council to own and operate the landfill alone - particularly associated with having to secure commercial tonnes (and associated revenue) in the likely scenario of reductions in disposal volumes from DCC controlled waste streams.
- Option 12, the out of district option, is not considered to be a viable alternative to developing and operating Smooth Hill landfill, as the gate rate levels that would need to be achieved to make this more attractive economically are unrealistic and far below what has currently been quoted to DCC by AB Lime for disposal out of district.

[1] 50,900 in Option 1

- The form of partnership under the recommended option will be considered as part of a detailed procurement strategy for the facility partnership (only high-level procurement considerations are included in DBC2). This detailed procurement strategy was drafted in 2020, so will need to be updated once procurement commences to focus on Council's chosen option.

Next steps

The following next steps are proposed to progress the waste facility partnership:

- Council consideration and approval of the preferred option.
- Consultation on the requirements for this option (e.g. partnership and funding through the Long-Term Plan).
- Procurement, starting with planning of procurement resources, programme, costs and risks (an updated procurement strategy).

1 Introduction

The Dunedin City Council (DCC or Council) has embarked on the Waste Futures Project, which includes using a business case process to identify a recommended waste and diverted material system for Dunedin. Council's overall objective with this project is:

> *To ensure effective reduction and management of solid waste to achieve the goals set out in its Waste Management and Minimisation Plan. Specifically, to identify and procure the best solid waste solution for Dunedin City to enable us to move towards a zero-waste future and a more circular economy.*

In 2018 Council completed a Programme Business Case for the Waste Futures Project (prepared by Stantec). In 2019 Council engaged a partnership between GHD, Boffa Miskell and Morrison Low to complete its business cases for future waste services, prepare a resource consent application for a new landfill at Smooth Hill, and also undertake community engagement. A Detailed Business Case for Dunedin's future waste collection system (DBC1) was completed in 2019. Procurement for a new kerbside services contractor was completed in October 2022, with new collection services for rubbish, recycling and food scraps commencing in July 2023 (in line with DBC1 recommendations). In October 2022 Council were granted consents for Smooth Hill Landfill, with the site operational by 2026, subject to the outcome of appeals.

This report covers the development of the Detailed Business Case for the waste system that supports waste services delivery, including the transition to Smooth Hill (DBC2). This DBC confirms the diversion and disposal facilities needed to support the collection system (recyclables and organics processing), how these facilities will be provided and Council's role in providing these. The relationship between the elements of the future waste and diverted materials system are shown in Figure 1.

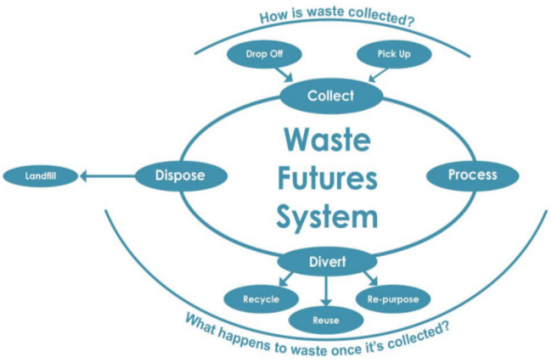


Figure 1: Future waste and diverted materials system

2 The Better Business Case approach

In developing DBC2, Morrison Low have followed the New Zealand Treasury's Better Business Case (BBC) process, which is good practice for public sector decision-making. The aim of this approach is to provide objective analysis and consistent information to decision-makers, enabling them to make suitable and smart investment decisions for public value. It is an ideal tool for the public sector to make long-term decisions regarding service delivery. It looks at financial measures but in a weighted, balanced context with four other factors (strategic, economic, commercial and management) as illustrated in Figure 2.

Figure 2: The Better Business Case approach

3 BBC assessment methodology

The following steps have been undertaken to complete the Detailed Business Case:

- Project initiation meeting and review of background information, including the Programme Business Case developed in Phase 1 of the Waste Futures project (the previous phase of the business case process), waste data and financial information, and previous studies looking at Council's whole waste system.
- Strategic Case Workshop on 4 June 2019 with key internal stakeholders to review and re-confirm the key strategic drivers and discuss potential options for consideration. It was confirmed that the collection system strategic objectives would continue to be used for DBC2.
- Completion of the strategic case for change including issues and opportunities to be addressed and the strategic context.
- Development of a longlist of options for the wider waste system as part of the transition to Smooth Hill, and assessment of these options against the strategic objectives and critical success factors.

- Shortlisting of partnership options and an economic assessment of these shortlisted options that includes a financial assessment (Net Present Value, NPV and annual rates impact) and non-financial assessment (risk assessment and review of strategic objectives assessment) to identify the preferred option.
- Economic Case Workshop on 26 July 2019 with key internal stakeholders to review the longlist assessment and draft economic case.
- Completion of the Financial Case, Commercial Case and Management Case for the recommended preferred option.
- Completion of a draft DBC2 report in 2019, updated in 2020.
- Completion of this further updated draft DBC2 report, based on recently updated costs and financial modelling, in November 2022.

4 Strategic Case

The Strategic Case sets out the compelling case for change and how this fits within the wider strategic context. The strategic investment objectives are confirmed as part of this step.

4.1 Strategic Context

4.1.1 Waste Futures Project Objectives

The Waste Futures Project is an overarching programme of work aimed at identifying and procuring the best solid waste solution for Dunedin, to enable the city to move towards a zero-waste future and a more circular economy. The investment objectives and associated KPIs developed during Phase 1 of the Waste Futures Project are shown in Table 1 below.

Table1: Waste Futures investment objectives and KPIs

Investment Objective	KPIs
Investment Objective 1: Identify, procure and retain sufficient Council control of the optimal solid waste solution for Dunedin City to enable us to move towards a zero-waste future	KPI 1: Minimisation of waste KPI 2: Minimisation of carbon dioxide emissions from waste.
Investment Objective 2: Provide medium to long term assurance for the community to dispose of waste in a customer focused, cost-effective and environmentally safe manner	KPI 3: Cost-effectiveness of service to ratepayers KPI 4: Reduced environmental impacts as a result of waste operations KPI 5: Refuse collection and kerbside recycling meet customer expectations

These overarching objectives have been considered when establishing the strategic objectives for DBC2 and the wider Waste Futures programme.

A key outcome from Phase 1 of the Waste Futures Project was confirmation that Smooth Hill was a strategic asset enabling Council to retain sufficient influence of solid waste outcomes for Dunedin and also to provide long-term assurance for the community in terms of waste disposal.

4.1.2 Programme Business Case (PBC)

As part of Phase 1 of the Waste Futures Project, a Programme Business Case (PBC) was completed. The PBC looked at options for the programme of work required to deliver the medium to long-term waste and diverted material system for Dunedin.

The investment objectives identified for the PBC were:

- Reduce the volume of waste to landfill
- Reduce Council's carbon emissions generated from waste
- Increase the proportion of material diverted from landfill
- Increase Council's influence and provide assurance for Dunedin's waste and diverted materials market
- Enable the community to easily and affordably reduce, re-use and recycle
- Reduce the harmful effects of waste

The Programme Business Case identified two programme options for the waste and diverted material system:

- Option 1: Business as Usual (BAU)
  - the status quo (existing collection services and facilities)
- Option 2: Towards a Circular Economy (TCE)
  - a more ambitious programme aligned with Council's zero waste and low carbon objectives.

In their report on the programme options (PCN5, Waste Futures Two Programmes, April 2019), Stantec identified that implementing Option 2: TCE would achieve a 27% reduction in annual waste to landfill and a 24% reduction in annual carbon emissions once the initiatives are fully implemented. Costs for the provision of collection and diverted material services would more than double from $48 million to $104 million (based on 30-year NPV of DCC costs), and while waste disposal costs would be lower, the overall programme would cost approximately $35 million more to deliver over the next 30 years. The NPV is for service delivery costs over a 30-year period and did not recognise any revenue associated with facility ownership.

These findings have been taken into account when considering the detailed options for the transition to Smooth Hill. There are a range of options which can be implemented that fit along a spectrum from BAU to TCE. The extent to which Council trades off the cost and benefits of these options will be assessed in the DBCs. The PBC strategic objectives have been refined for use in DBC2.

4.1.3 Waste Minimisation and Management Plan (WMMP) 2020

Alongside the Waste Futures Project, Council has undertaken a review of its Waste Management and Minimisation Plan (WMMP). The draft WMMP was consulted on as part of the 2020/21 Annual Plan consultation process and was subsequently adopted by Council on 25 May 2020.

The WMMP sets the strategic direction for waste management and minimisation in Dunedin. The vision, goals and targets from the WMMP are shown in Table 2.

The WMMP targets have been adopted as part of the strategic objectives for both the collection system DBC and the wider waste system DBC.

Table 2: WMMP Vision, Goals and Targets

	Vision: *Dunedin is actively committed to zero waste inclusive of a circular economy to enhance the health of our environment and people by 2040*	
Goal 1	Advocate, educate and enable waste minimisation, recycling, and resource recovery	**Targets** • Reduce the municipal solid waste generation per capita by at least 15% by 2030 compared to 2015. • Reduce the amount of municipal solid waste disposed to landfill and incineration by at least 50% by 2030 compared to 2015. • Increase the diversion rate away from landfill and incineration to at least 70% by 2030.
Goal 2	Encourage social enterprise and commercial development • build on initiatives to support circular economies • reduce reliance on external markets for recyclable materials • facilitate regional and national market development	
Goal 3:	Collect information to enable informed decision making • support and promote the National Waste Data Framework	
Goal 4:	Minimise the harmful effects of waste • protect both public health and the environment from the adverse effects of waste through regulation, and upholding best practice standards	
Goal 5:	Provide infrastructure to meet goals and objectives	

4.1.4 Otago Regional Solid Waste Collaboration

The Councils in the Otago region (namely Central Otago District Council (CODC), Queenstown Lakes District Council (QLDC), Clutha District Council (CDC), Dunedin City Council (DCC), Waitaki District Council (WDC) and the Otago Regional Council (ORC)) jointly considered their requirements under Section 17A of the Local Government Act and identified a number of services where there would be benefit in undertaking the review at a regional level. Solid waste was identified as one of these services and in 2017 the Councils completed this review. A map of the Council boundaries in the South Island is provided in Appendix 1.

Through this process, current solid waste service arrangements were documented and potential options for regional collaboration identified. A number of sub-regional groupings were identified based on common use of key waste facilities, both now and in the future. The sub-regional groupings were: CDC, DCC and WDC; and CODC and QLDC.

A clear preference to consider increased sharing of waste services in future was identified through the Section 17A Review. Potential collaboration opportunities were identified either at a regional or sub-regional level:

- Regional waste planning, e.g., joint WMMP
- Joint procurement, contract management and logistics, e.g., alignment of collection contract expiry dates
- Joint facilities, e.g., sub-regional transfer station networks, regional or sub-regional organics processing facilities, regional or sub-regional landfill, leveraging the sub-regional groupings identified.

The Councils have continued to collaborate on solid waste services, with initiatives coordinated through the Otago Mayoral Forum offices.

4.1.5 Stakeholder engagement and communication

Council will need to present to its stakeholders and the wider community the options for future governance and ownership of waste facilities, including Smooth Hill and the associated disposal facilities and the diversion facilities. DBC2 will inform the options consulted on through this process. This is discussed further in the Management Case section.

4.1.6 Legislation and global considerations

In considering the whole waste system for Dunedin, Council must give regard to the New Zealand Waste Strategy 2010 (NZWS) and any future changes to this as a result of the current review. Further, there is a range of applicable legislation which includes the Waste Minimisation Act 2008, Local Government Act 2002, Hazardous Substances and New Organisms Act 1996, Climate Change Response Act 2002, and the Resource Management Act 1991.

DCC also consider global initiatives such as the C40 Cities climate change actions and plans, and the United Nations Sustainable Development Goals 2015.

National direction has evolved rapidly over the last two years. There are several signalled changes in legislation and the wider waste industry that are likely to impact the way waste services are delivered by Dunedin City Council. These include:

- A revised New Zealand National Waste Strategy (NZWS), now due to be released in early 2023, setting targets for waste reduction that councils will need to align with when preparing their WMMPs. The targets to be implemented by 2030 that were published in the consultation draft of the NZWS are:
  - reduce waste to landfill from households by 60-70 per cent
  - reduce waste to landfill from businesses by 30-50 per cent
  - reduce biogenic waste methane emissions by at least 30%
- Proposed standardisation of the kerbside collection system.
- Establishment of a Container Return Scheme (CRS) for beverage containers.
- Banning of specific grades of plastics for packaging and some single-use plastics.
- Introduction of priority product stewardship schemes e.g., tyres, e-waste.
- Government investment in diversion infrastructure via the Waste Minimisation Fund and Climate Emergency Response Fund (CERF), with the current funding round focused on organic waste diversion and specific funding for council kerbside collection of food waste.
- Ongoing implementation of increases to the Waste Disposal Levy and Emissions Trading Scheme (ETS) costs. See Section 4.1.7 for further details.
- Introduction of transfer station reporting using an agreed National Waste Data Framework.
- Implementation of the Government's Climate Action Plan, which includes diversion of organic waste (food, green, timber wastes) from landfill.
- Subsequent revisions to the Waste Minimisation Act 2008 and the Litter Act 1979 to support the changes above.
- Wider Government reform impacting Councils will also impact waste service delivery. This includes (but is not limited to) Resource Management Act (RMA) reform, three waters reform and the future for local government review.

4.1.7 Waste Disposal Levy and NZ Emissions Trading Scheme Costs

Landfills in New Zealand are levied for waste disposal under the Waste Minimisation Act 2008. The Waste Disposal Levy is currently $30/tonne (up from $10/tonne in 2020) and the levy will increase to $50/tonne in July 2023 and then to $60/tonne in July 2024. The levy has also been expanded to include Class 2-4 landfills, but at a lower levy rate.

Landfills are also charged for greenhouse gas emissions under the New Zealand Emissions Trading Scheme. ETS charges vary from landfill to landfill, depending on the composition of waste disposed and whether the landfill has an effective gas capture system. ETS charges have increased in recent years with a phasing out of the two-for-one deal for surrendering emissions units, an increase in the trading price for emission units and the introduction of the ETS auction. The government auction in September 2022 had a clearing price of $85/tonne CO2-e, compared with a levy of $25/tonne in 2020.

Landfill operators in New Zealand pass on the cost of the Waste Disposal Levy and ETS to their customers. Increases in the Waste Disposal Levy or ETS will reach a tipping point at which the high cost of landfill disposal will incentivise diversion of waste. This will in turn impact revenue from landfill operations and drive waste company investment in diversion facilities to retain overall waste stream control and revenue.

Less waste disposal will also result in the life of the landfills being extended and landfill operators will be able to defer capital expenditure associated with cell development.

4.2 Strategic investment objectives for DBC2

The strategic objectives developed for the collection system DBC were reviewed and confirmed as appropriate for use in DBC2. These strategic objectives are shown in the table below.

Table 3: Collection System and Wider Waste System DBC Strategic Investment Objectives

Move towards a circular economy by increasing Council's influence over Dunedin's waste services through:

- *Meeting Dunedin's waste minimisation targets:*
  - *Reduce municipal solid waste generation per capita by at least 15% by 2030 (when compared to 2015)*
  - *Reduce municipal solid waste disposed to landfill by at least 50% by 2030 (when compared to 2015)*
  - *Increase diversion from landfill by at least 70% by 2030 (when compared to 2015)*
- *Reducing Dunedin City Council's net carbon emissions from waste to zero by 2050*
- *Increasing customer satisfaction with Council's waste services to 90% by 2030*
- *Providing waste services that reduce health and safety and environmental risks*

5 Current services and drivers for change

This section provides both a summary of Council's existing facilities as well as considerations for the future waste system based on what is happening in other parts of New Zealand and observations from current service delivery in Dunedin.

5.1 Disposal facilities

A key driver for the Waste Futures project is the expiry of the Green Island Landfill consents in 2023 and the need to provide for secure, long-term waste disposal for Dunedin. Green Island Landfill is also running out of space for waste disposal and is predicted to be full in 2024-2029 depending on tonnes received. With consents granted, but subject to appeal, the new Smooth Hill Landfill could be operational mid-2026.

5.1.1 Previous partnering assessments and procurement

The future of Dunedin's waste and diverted materials system has been under consideration by DCC for some time. The designation for a new landfill at Smooth Hill has been in place since the mid-1990s. In 2010 DCC began to consider the future of Green Island Landfill and the need to secure waste disposal for Dunedin beyond the expiry of the landfill's consents in 2023.

Morrison Low undertook an assessment of options for the governance and management of Green Island Landfill as well as a new landfill, which could be Smooth Hill (Future Waste Disposal Governance Options Phase 2, Morrison Low, November 2011). The formation of a partnership with a private waste company was recommended for operation and management of Green Island and the next landfill. The partnership was recommended because:

- it provided an opportunity to separate operational and financial risks of long-term disposal from DCC as well as the associated costs.
- it introduced a joint venture partner with industry experience and the commercial skills to drive efficiencies in landfill operation, reduce operating risks, and provide security over the volume of waste delivered to the facility.
- The partner would also bring a capital contribution.

In 2014, DCC commenced a procurement process for a partnering arrangement for solid waste disposal. This process was cancelled in 2016 without a joint venture partner being appointed. Since that time, DCC have continued to manage Green Island Landfill without a private sector partner.

In 2016, DCC undertook procurement to renew its waste facilities services contract that had been held by Delta Utility Services Limited since 2003. For the re-tendering process, the Delta contract was split into three contracts: landfill monitoring and reporting, rural services, and the Green Island Landfill and Transfer Station. Some Delta functions also transferred to DCC, increasing DCC's direct control over waste facility operations. The landfill monitoring and reporting contract was awarded to GHD, and the other two contracts were awarded to Waste Management.

5.1.2 Managing transition from Green Island

There is a risk that Green Island Landfill runs out of capacity for waste disposal before Smooth Hill Landfill can be consented and constructed. As part of their work, Stantec have investigated ways to operate Green Island more efficiently and preserve space and have also looked at out-of-district disposal options for some or all of DCC's own waste. Ongoing management of Green Island to align with the eventual disposal option coming on stream is key to minimising cost to Council long term.

5.1.3 Landfill revenue

DCC relies on the significant revenue it receives from Green Island Landfill to fund Council services. With the closure of the Waste Management owned Fairfield Landfill in 2017, the volume of waste received at Green Island Landfill increased from approximately 50,000 tonnes per year to approximately 87,000 tonnes per year, with annual revenue increasing from approximately $5.9 million in 2014/15 to $13.7 million in 2017/18.

There is a risk that landfill revenue will not be maintained at that level when the future waste and diverted materials system is delivered. In more recent times the volume of waste received at Green Island has reduced again with the facility receiving 60,900 tonnes in 2020. This latter volume has been applied in the financial modelling in DBC2. Future options for the wider waste system need to consider the potential revenue impacts.

5.1.4 Waste stream control

In 2020, DCC only controlled 14,000 tonnes of the 60,900 tonnes of waste disposed at the Green Island Landfill. With the introduction of a Council kerbside refuse bin collection service in 2023 this is anticipated to increase by 21,000 tonnes to 35,000 tonnes. The remaining tonnes are controlled by private waste companies, who have a choice to use the Green Island Landfill or make arrangements for disposal at an alternative landfill, with this choice generally being price driven.

Private waste companies will generally direct waste to disposal facilities that they own as they benefit financially from the disposal. In future, there is a risk that private waste companies stop using DCC's Green Island or Smooth Hill landfills.

Although Waste Management's Fairfield Landfill is now closed, there are other landfills that may offer a competitive disposal price including the privately-owned AB Lime Landfill is Southland, Timaru District Council's Redruth landfill and Queenstown Lakes District Council's Victoria Flats landfill. It is possible that the recent reduction in tonnes to Green Island is a result of other landfills providing a more competitive disposal price rather than any meaningful waste minimisation or diversion from landfill.

The larger private waste companies in New Zealand, e.g., Waste Management or EnviroWaste, have significant financial backing and could develop their own landfills in competition with DCC in future.

5.1.5 Other disposal facilities

In addition to the two landfills, there are other waste disposal services and facilities that are needed to support the disposal system including:

- Transfer station network:
  Being close to the city, current landfill customers visit Green Island landfill direct. DCC currently operates a small transfer station at Green Island landfill to isolate residential and small commercial customers from the main landfill disposal area. For Smooth Hill, the landfill will be located approximately 30 minutes from the city and therefore a network of transfer stations will be required to consolidate waste ahead of bulk transportation of waste to the landfill. DCC transfer stations (Green Island, Middlemarch and Waikouaiti) and private transfer stations, such as Waste Management's Wickliffe Street facility, would be part of this network. DCC will need to expand the Green Island transfer station to cater for bulk waste consolidation.
- Bulk waste haulage:
  A fleet of bulk haulage vehicles will be required to transport waste from the transfer stations to Smooth Hill Landfill. For the Kate Valley Landfill in Canterbury, this fleet is part of the joint venture that owns and operates the landfill, and the fleet has been standardised to align with the landfill operations approach used at the facility.
- Landfill gas to energy plants:
  For Green Island Landfill, the landfill gas collected is piped to a gas to energy plant located at the adjacent Green Island Wastewater Treatment Plant. For Smooth Hill, the landfill gas collected will most likely be treated at an onsite gas to energy plant (subject to final design).

Provision of these facilities has been considered in DBC2.

5.2 Diversion facilities: for the collection system

Processing facilities are required to support the delivery of DCC's future collection system.

5.2.1 Recyclables processing

A recycling sorting facility is needed to process materials from the mixed recycling bins into different recycling products ahead of transportation to end-markets. In Dunedin this facility is currently provided by OJI Fibre Solutions at a site next to Green Island Landfill that OJI lease.

Glass is sorted by colour at kerbside and delivered to the recycling processing facility where it is unloaded into colour-separated bunkers ahead of consolidation and transportation to Visy's furnace in Auckland.

Once constructed, these activities will take place at DCC's new RRPP at Green Island.

A key risk with recycling is the volatility in the recycling commodities market, which has recently been highlighted with the impact that both the China National Sword policy and Covid-related supply chain and shipping challenges have had on commodity prices.

5.2.2 Organics processing

When food scraps and green waste collection services are introduced in Dunedin, an organics processing facility will be required that can handle approximately 11,000 tonnes of residential food and green waste annually.

Compost operations that include food waste need to have suitable odour control in place as well as sorting facilities at the start of the process to remove contamination (e.g., plastic bags, recyclables, general waste). Consequently, capital investment would be required to upgrade Green Island to a food and green waste composting facility.

A new food and green waste composting facility will be built at Green Island as part of the RRPP.

A key risk with organics processing is the need to identify and manage end-markets for the compost produced. A deliberate focus on the management of end-markets has seen Living Earth in Canterbury successfully deliver all of the compost they produce to end-markets since the facility commenced operation in 2009. EnviroWaste, who will develop and operate the RRPP, have relationships with end markets for the material produced.

5.2.3 Supporting the wider waste system

Introducing recyclables and organics facilities to support DCC's collection system will mean that these facilities will also be available to support diversion from the wider waste system. Indicatively, 50% of material that passes through MRFs is sourced from commercial users and 50% from councils. Organics processing facilities are relatively new and therefore the split of commercial and council quantities is difficult to estimate. A new organics processing facility may be predominantly processing council material at first, with the amount of commercial organic material processed increasing with time. The increases in Waste Disposal Levy and ETS, and commitments under the Government's ERP and NZWS are expected to encourage more commercial recycling and organics diversion than current levels.

5.3 Future diversion facilities: for the wider waste system

In addition to material diverted through the recyclables and organics processing facility, there is also an opportunity to establish facilities that specifically target diversion from the wider waste system. For example, construction and demolition (C&D) sorting facilities can be developed to divert concrete, timber, steel, plasterboard, cardboard, etc from landfill. Space has been identified within the RRPP for C&D sorting.

The increases in Waste Disposal Levy and ETS, and commitments under the Government's ERP and NZWS are also expected to drive increasing demand for other diversion facilities over time, such as landfill pre-sorting or targeted waste to energy. There may be technological advancements in alternative waste treatment systems that DCC may wish to adopt as these become viable. Provision for these future diversion facilities has been included in DBC2.

5.4 Local facilities

DCC also manage a number of smaller local facilities including rural transfer stations in Middlemarch and Waikouaiti that it is looking to transform into resource recovery centres. This includes the rummage shop at Green Island, other potential community recycling centres and closed landfills. These facilities generally provide local services as opposed to contributing to a wider network of waste facilities.

5.5 Other waste services

5.5.1 Policy, planning, education and enforcement

Alongside waste service delivery, DCC also undertakes waste planning for the Dunedin area, delivers waste education and behaviour change programmes, develops and enforces bylaws, and advocates for change at a

regional and national level. Regardless of what changes are made to Dunedin's waste and diverted materials system, DCC will continue to provide these services, and enhancements may need to be made to support the future waste system, such as a revision of DCC's solid waste bylaw.

5.5.2 The collection system

The collection system was the focus of DBC1 and includes kerbside collections and drop-off points. Council and private waste companies have their own collection systems that they provide to their customers. In addition to their collection systems, private waste companies also tender for council waste services contracts. There is healthy competition from the market for council waste services contracts.

6 Identification of options and longlist assessment

A longlist of options was developed for the delivery of the wider waste system as part of the transition to Smooth Hill. The standard BBC longlist assessment approach was followed which develops the longlist by considering options against five dimensions: service scope (what), service solution (how), service delivery (who), implementation (when) and funding. The facilities included in the service delivery arrangement are intrinsically linked to the type of service delivery arrangement. Likewise, the funding approach and implementation timeframe are governed by the service delivery arrangement. Therefore, the options assessment was divided into two parts: scope options (facilities to be included in the wider waste system), and wider waste system options. This process and the key questions are presented in Figure 3.

Figure 3: Two-part longlist assessment approach

6.1 Scope longlist options assessment

The following facilities were included in the assessment of scope options:

1. Disposal facilities:
   Landfill disposal, landfill gas to energy plant, haulage to landfill, urban transfer stations
2. Diversion facilities to support the collection system:
   Recyclables processing, organics processing
3. Future diversion facilities to support the wider waste system:
   C&D processing, landfill pre-sort, waste to energy
4. Local facilities:

Rural transfer stations, community recycling centres, closed landfills

5. Other (non-facility) waste activities:
   Waste policy, planning, education, enforcement; the collection system.
   Although these are not facilities, some partnership models could include these activities.

The scope options were assessed against the strategic investment objectives from Table 3 and were also screened against the Critical Success Factors.

As part of the assessment, consideration was given to which facilities could be delivered under the different partnership options (council alone, shared services, private sector partnerships) and service delivery options (in-house versus outsourced contracts). Consideration was also given to which sites could be used for providing the facility options, including the use of Smooth Hill, Green Island or privately-owned sites.

The outcome of the scope options assessment is presented in Table 6 below and the full assessment is provided in Appendix 2.

In general, the facilities that have been included in the wider waste system options are the disposal facilities and the diversion facilities needed to support the collection system. The ability to add other diversion facilities in future to support wider diversion has been allowed for. Local facilities and other waste activities could be included in shared service arrangements with other councils but do not align as well with commercial partnerships.

All wider waste system options assume diversion facilities (recyclables processing and organics processing) will be built to support delivery of DCC's collection system, however only some options include these in the partnership. For Options 6, 7, 9, 10,11 the diversion facilities were included in the partnership. In these options, it is also assumed that commercial waste would also be processed through the diversion facilities, with DCC and its partners benefiting from greater scale and profits from gate fees charged to both DCC and commercial users.

For the remaining options it is assumed the diversion facilities would still be built and DCC (or the shared service) would have a contract with a privately owned and operated facility with an agreed gate fee for the service.

Note that the longlist assessment was initially undertaken in 2019, prior to DCC undertaking its collection and RRPP procurement. The RRPP includes recyclables processing, organics processing, bulk waste transfer and the potential for C&D waste sorting. The RRPP will be owned by DCC and will be developed and operated by EnviroWaste, and therefore will not be included in a facility partnership (at least not initially). For completeness, Options 6, 7, 9, 10 and 11 that included the diversion facilities have been retained in the business case, but ultimately these options would no longer be possible or would need to be refocused solely on disposal facility aspect. Note, Option 8 is the same as Option 9, with the diversion facilities removed.

Option 12, the out-of-district option was included in the long list later in light of competitive offers for disposal into existing landfills seen elsewhere in New Zealand. Such an offer was presented to DCC by AB Lime which, in light of the merits of the offer, required full examination of the out-of-district disposal option alongside other longlisted options.

Table 4: Qualitative assessment of scope options for inclusion in the wider waste system options

Facility Options		Overall Assessment	Inclusion in wider waste system options
Disposal facilities	Landfill disposal	Retaining influence over these facilities ensures Council retains sufficient control to drive waste minimisation and carbon reduction targets. These facilities are of most interest to a commercial partner.	Include (all options except Options 12 and 13)
	Landfill gas to energy plant		
	Haulage to Landfill		
	Urban transfer stations		
Diversion facilities: for collection system	Recyclables processing	These facilities are required to deliver Council's collection system. Including these in the partnership provides economies of scale and ensures the partnership is focused on diversion as well as disposal as part of its financial objectives.	Include (all options except Option 8 and Option 13)
	Organics processing		
Future diversion facilities: for wider waste system	C&D sorting	These facilities are needed to deliver Council's diversion and carbon reduction targets across the whole waste system, however they may not be economically feasible in the initial stages of the partnership. Sufficient land use flexibility should be retained at the sites included in the partnership to allow these to be introduced in future, when economically viable.	Future provision only (possible with all options except Options 12 and 13)
	Landfill pre-sort		
	Waste to Energy		
Local facilities	Rural transfer stations	These facilities provide local outcomes and are less likely to be of commercial interest in a partnership, but could be part of a shared service with other councils.	Shared services only (Option 1, Option 4, Option 5 only)
	Community recycling centres		
	Closed landfills		
Other waste activities	Waste policy & planning, education, enforcement	Policy and regulatory functions not aligned to commercial partnership, however could be included in shared service with other councils.	Shared services only (Option 1, Option 4, Option 5 only)
	Collection System	Including collection system in partnership would limit competition for these services, particularly if the partnership is with one commercial party only.	

6.2 Wider waste system longlist assessment

The second part of the longlist assessment was to score wider waste system options against the strategic investment objectives in Table 5 and the critical success factors. These critical success factors are considered standard practice for BBC analysis:

- Strategic fit and business needs: alignment with District Plan, 30-year Infrastructure Strategy & Regional Plans
- Potential value for money: right solution, right time, at the right price
- Supplier capacity and capability: is it a sustainable and viable arrangement (external)
- Potential affordability: are there any significant funding constraints
- Potential achievability: ability and skills to deliver (internal)

For each partnership option, detail was provided regarding the scope, service solution, service delivery, implementation, funding and out-of-scope services, that is:

- Scope (what): facilities included in option
  (brought forward from the scope options assessment, see Section 6.1)
- Service solution (how): sites included in option
- Service delivery (who): outsourced contracts required
- Implementation (when): when the option can be delivered
- Funding: funding model associated with option
- Out of scope: services outside option, delivered by DCC alone

Thirteen options were identified for consideration in the longlist assessment. These are outlined in Table 5, along with the details for each option. The partnership options cover governance and asset ownership. Service delivery will be a mixture of in-house resources and outsourced contracts for all options.

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Table 5: Wider waste system options and associated detail

Option	Scope	Service solution	Service delivery	When	Funding	Out of Scope
Option 1: Council alone (status quo)	All facilities and services	All sites	Collection contracts and facility construction and operation contracts	Immediately	Council fees and charges and rates. Council funding of capital	None
Option 2: Shared service with Clutha DC or Waitaki DC	Disposal and diversion facilities only	Green Island, Smooth Hill	Overseen by joint committee. Facility construction and operation contracts	Five plus years	Council fees and charges and rates. Council funding of capital	Policy, planning, education & enforcement, local facilities, collection system
Option 3: Regional shared service: disposal and diversion facilities	Disposal and diversion facilities only	Green Island, Smooth Hill	Overseen by joint committee. Facility construction and operation contracts	Five plus years	Council fees and charges and rates. Council funding of capital	Policy, planning, education & enforcement, local facilities, collection system
Option 4: Regional shared service: all facilities and services	All facilities and services	All sites	Overseen by joint committee. Collection contracts and facility construction and operation contracts	Five plus years	Council fees and charges and rates. Council funding of capital	None
Option 5: Regional waste CCO	All facilities and services	All sites	Overseen by joint committee. Collection contracts and facility construction and operation contracts	Five plus years	Council fees and charges and rates. Council funding of capital	None
Option 6: Regional partnership between councils and private waste company	Disposal and diversion facilities only	Green Island, Smooth Hill, other council RTS, private sites	Facility construction and operation contracts	Five plus years	Partnership fees and charges. Council and private funding of capital	Policy, planning, education & enforcement, local facilities, collection system

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Option	Scope	Service solution	Service delivery	When	Funding	Out of Scope
Option 7: Regional partnership between councils and multiple private waste companies	Disposal and diversion facilities only	Green Island, Smooth Hill, other council RTS, private sites	Facility construction and operation contracts	Five plus years	Partnership fees and charges. Council and private funding of capital	Policy, planning, education & enforcement, local facilities, collection system
Option 8: Council in partnership with private waste company : disposal only	Disposal facilities only	Green Island, Smooth Hill, private RTS	Facility construction and operation contracts	Up to three years	Partnership fees and charges. Council and private funding of capital	Policy, planning, education & enforcement, diversion facilities, local facilities, collection system
Option 9: Council in partnership with private waste company : disposal and diversion facilities	Disposal and diversion facilities only	Green Island, Smooth Hill, private RTS	Facility construction and operation contracts	Up to three years	Partnership fees and charges. Council and private funding of capital	Policy, planning, education & enforcement, local facilities, collection system
Option 10: Council in partnership with private funder	Disposal and diversion facilities only	Green Island, Smooth Hill, private RTS	Facility construction and operation contracts	Up to three years	Partnership fees and charges. Council and private funding of capital	Policy, planning, education & enforcement, local facilities, collection system
Option 11: Council in partnership with private waste company and private funder	Disposal and diversion facilities only	Green Island, Smooth Hill, private RTS	Facility construction and operation contracts	Up to three years	Partnership fees and charges. Council and private funding of capital	Policy, planning, education & enforcement, local facilities, collection system
Option 12: No DCC landfill ownership, waste sent to existing private out of district facilities	Out of district disposal contract	AB Lime Winton, council RTS.	Bulk haulage contract and long-term disposal contract	Immediately	Council fees and charges and rates.	Policy, planning, education & enforcement, local facilities, collection system
Option 13: No council involvement – private sector only	None	None	None	Up to three years	Private funding	Policy, planning, education & enforcement, local facilities, collection system

Options that did not meet the strategic objectives or critical success factors were discarded from further analysis. The outcome of the longlist assessment of the partnership options is shown in Table 6 and the full options assessment table can be found in Appendix 2.

For the wider waste system options, the ability to implement the option is critical to it being a realistic option. Therefore, the sensitivity of the option ranking was tested by placing a higher weighting on critical success factors (75%) than strategic objectives (25%). This analysis confirmed Option 9 as the highest scoring option. Option 12 moved from fifth to second under this scenario, confirming it is more easily achievable to contract for the export of waste out of district in the first instance. Option 8 also improved in rank to third, reflecting that single partnering relationship with just a commercial waste company was a more achievable proposition than entering into multiple relationships. This analysis is provided in the full options assessment table in Appendix 2.

Table 6: Assessment of wider waste system options

Option	Overall assessment	Score	Rank	Shortlisted option
Option 1: Council alone (status quo)	Unable to leverage commercial waste control	5.1	12	Yes – status quo
Option 2: Shared service with Clutha DC or Waitaki DC	Waste control remains limited while adding complexity of shared service	5.4	10	No
Option 3: Regional shared service: disposal and diversion facilities	Providing facilities that service wider regional needs but complexity of shared service and no commercial partner tonnes	5.9	7	No
Option 4: Regional shared service: all facilities and services	Economies of scale, servicing wider regional needs but complexity of shared service and no commercial partner tonnes	5.6	8	No
Option 5: Regional waste CCO	Economies of scale, but CCO offers little benefit over shared service with additional establishment and ongoing administrative costs	5.6	8	No
Option 6: Regional partnership between councils and private waste company	Introduces private funding and commercial partner's tonnes and industry expertise, but complexity with multiple councils	7.3	4	No – but future option to include other partners
Option 7: Regional partnership between councils and multiple private waste companies	Introduces private funding and commercial partner's tonnes and industry expertise, but complexity with aligning multiple parties and associated additional cost	7.3	4	No – but future option to include other partners
Option 8: Council in partnership with private waste company: disposal only	Introduces private funding and commercial partner's tonnes and industry expertise, but less control of diversion facilities	7.5	3	Yes – basis of previous partnering procurement, common JV arrangement and good representation of an enhanced status quo approach
Option 9: Council in partnership with private waste company: disposal and diversion facilities	Introduces private funding and commercial partner's tonnes and industry expertise and only one partner relationship to manage	9.4	1	Yes – highest scoring partnership option, common JV arrangement and good approach moving towards a circular economy

Option	Overall assessment	Score	Rank	Shortlisted option
Option 10: Council in partnership with private funder	Introduces private funding but no commercial partner tonnes or industry expertise	5.4	10	No
Option 11: Council in partnership with private waste company and private funder	Introduces two sources of private funding which adds complexity and reduces value for money, however the commercial partner's tonnes and industry expertise are beneficial	7.3	4	No – but future option to include other partners
Option 12: No DCC landfill ownership, waste sent to existing private out of district facilities	Lower funding requirements because no capital required, no need for commercial tonnes as a source of revenue to offset costs, easily achievable Limits DCC's influence over carbon reduction	7.8	2	Yes – highest scoring DCC alone option. Low capital requirements and achievability with agreed o-o-d contract make it a good alternative enhanced status quo option
Option 13: No council involvement – private sector only	Limits DCC's influence over waste and carbon reduction	4.7	13	No

7 Shortlisted options

Based upon the longlist assessment, four wider waste system options were shortlisted for the Economic Case. As with the collection system DBC, the options aligned with the status quo, an enhanced status quo or more advanced options that moved DCC towards a circular economy (TCE). The shortlisted options are:

- Status quo
  - Option 1: Council alone
- Enhanced status quo
  - Option 8:
    Council in partnership with private waste company, disposal facilities only with option for DCC to partner with other councils or a private funder for its share
  - Option 12:
    Council alone, no DCC landfill ownership, waste sent to existing private out of district facilities
- Towards a circular economy
  - Option 9:
    Council in partnership with private waste company, diversion and disposal facilities, with option for DCC to partner with other councils or a private funder for its share

Option 9 was part of the initial shortlist and assessment but was subsequently discounted. The commentary on option 9 detailed later in this section provides the background on this option and why it was subsequently removed from inclusion as a viable short-list option.

7.1 Potential partnership models

The partnership between Council and a private waste company has been assumed to be a CCTO for assessment purposes. It is acknowledged that there are other partnership models that could be used, such as an unincorporated joint venture or a limited partnership. This is further discussed in the commercial case section.

7.2 Diversion facilities

7.2.1 Diversion Facility Options Considered

At the time the options were originally developed there were multiple possibilities for the inclusion of diversion facilities that supported residential diversion through the collection system, i.e. the organics processing facility and recyclables processing facility.

Under the scope of the original options Option 1, Option 8 and Option 12, the diversion facilities could have been delivered by DCC alone or outside the partnership arrangement. DCC would enter a contract with a service provider, who would either use existing facilities (e.g. the existing OJI MRF) or build new facilities to support the new services e.g. a new food plus green waste processing facility. There are a range of contract options for these facilities from services only through to Design, Build, Own, Operate and Transfer (DBOOT).

For Option 9, the diversion facilities were included in the partnership arrangement, which had the potential benefit of commercial investment by the partner and the corresponding incentive to use the diversion facility for divertible materials from its commercial customers, with both DCC and the commercial partner getting a financial return on their investment in diversion facilities.

Removing the diversion facility from consideration as part of the wider waste system model also potentially makes option 1 – DCC Alone a more viable option from a disposal only perspective. The initial long list assessment of this option, particularly in terms of affordability and value for money, would have probably scored higher in terms of overall score and rank if disposal had been the only dimension being examined at the time.

7.2.2 RRPP development and a modified shortlist

There was a need for Council to proceed with RRPP development to ensure that the diversion facilities would be available when its new collection services commence in 2023. Council was also able to secure a Ministry for the Environment (MfE) grant to fund the purchase of kerbside collection bins for organic materials through the Covid Response and Recovery Fund (CRRF). The Deed of Funding has milestones that would not be met if Council were unable to proceed with RRPP development to support new kerbside collection services until other options had been considered and determined.

In October 2022, Council decided to award a contract to EnviroWaste to develop and operate its Resource Recovery Park Precinct (RRPP) at Green Island Landfill, with Council retaining ownership of the facility. Organics and recycling processing are now to be carried out at the DCC owned Resource Recovery Park Precinct (RRPP) under this contract.

In the original business case, the recommended option was Option 9. This was largely because the financial modelling in the business case demonstrated financial benefits for a facility partnership with reductions in landfill revenue being offset by revenue through the diversion facilities making this a more resilient option. However, from a DCC perspective, if it owns the diversion facilities as part of the RRPP, then it can retain this

benefit. This also enables Council to provide leadership on waste minimisation and resource recovery for Dunedin and ensures diversion facilities will be available.

As a result of DCC proceeding with the development of the RRPP alone, outside a facility partnership, Option 9 is no longer an option, as without the RRPP included option 9 is essentially identical to Option 8. For this reason, no further analysis of Option 9 is included in this updated version of the Business Case.

7.3 Services delivered by DCC Alone

For all options, the following services would continue to be delivered by DCC alone: policy, planning, education and enforcement, local facilities (rural transfer stations, closed landfills, community recycling centres) and the collection system. These will be delivered through a mix of in-house delivery and outsourced contracts, managed by DCC.

7.4 Inclusion of other parties

Although the options for including other councils and separate private funders have been excluded for the time being in this business case shortlist, there is an opportunity for DCC to partner with other councils or private funders in the future. This is of primary relevance if DCC were to invest in its own landfill, either alone or with a commercial partner.

The most likely scenario is a contractual arrangement with other councils to secure tonnes (and therefore revenue/funding) from them.

However, regional partnerships with other councils remain a possibility:

- Like Green Island, Clutha District Council's Mt Cooee Landfill consents expire in 2023. Clutha are currently considering reconsenting Mt Cooee but an alternative option for them could be to join a regional landfill partnership.
- Waitaki's waste has been disposed of at Green Island Landfill in the past through Waste Management's private Oamaru transfer station. This arrangement could be modified if Waitaki and Waste Management were in a regional landfill partnership.

Both the abovementioned councils could be invited to join DCC in a regional landfill partnership, either with DCC alone or jointly along with a private waste company.

There are other investors, such as iwi, ACC and superannuation funds, that may also be interested in investing alongside DCC in long-term infrastructure projects such as Waste Futures.

It should be noted that partnering with other councils or investors does carry the risks of complicating any existing partnership structure with a private party and diluting the financial and non-financial benefits for DCC. A simpler and more likely scenario for DCC to include other councils in any investment by DCC in a landfill facility is via a contractual arrangement to secure tonnes (and therefore revenue/funding).

8 Analysis of shortlisted options

The shortlisted options have been further assessed in the sections below. The key considerations for Council in relation to future governance structures are:

- likely future capital costs for landfill facility development
- likely returns from a partnership or internal business unit
- security of access to disposal facilities
- control of disposal facilities
- impact on waste minimisation behaviour
- security of volumes to make council-owned facilities economic

The costs for the RRPP, collections and transfer station operations are common to all short-listed options and therefore these costs have been excluded from our modelling.

8.1 Status quo: Option 1 – Council alone

For this option, the Smooth Hill landfill would be owned by DCC. DCC would contract out the facility construction and operations. DCC would charge landfill users (commercial and residential) a rate per tonne for the disposal costs for the landfill.

Any surplus (or deficit) from the landfill would be returned to Council. For the purposes of this analysis it has been assumed that the landfill would be operated as a separate business unit (with overhead costs and facility revenue fully recognised against the business unit), however they could also operate as a typical council department or other structures within Council.

8.1.1 Analysis

Under this option, DCC would be solely responsible for the construction and operating costs and risk associated with the Smooth Hill landfill. DCC would need to fund all capital requirements of the landfill however would also receive 100% of the surplus (or deficit) from the landfill.

The landfill would have to compete with private landfills to secure commercial tonnes, potentially resulting in lower tonnes received or a lower gate rate having to be set to attract commercial tonnes. As most landfill operating costs are fixed, this could have a significant impact on the profitability of the landfill.

DCC would contract in landfill expertise for design, construction, and operation of its facility. However, given that most of this expertise lies with the commercial landfill operators in New Zealand, this expertise would not be as readily available or engaged as when this expertise is brought in by a joint venture partner. The joint venture partner would also bring greater commercial discipline than DCC alone.

8.2 Enhanced status quo: Option 8 – disposal facility partnership

For this option, DCC would form a partnership with a private waste company, by creating a jointly owned entity, which could be a Council Controlled Trading Organisation (CCTO). It has been assumed that DCC and the private waste company would each have a 50% shareholding in the partnership. DCC could, in future, look to partner with other councils or private funders for its 50% share.

The partnership would construct, own, and operate the Smooth Hill landfill and be responsible for its aftercare. DCC would have to invest sufficient funds into the partnership to cover DCC's share of the Smooth Hill landfill initial construction costs. Bulk haulage to the landfill would also be part of the partnership.

DCC and commercial users of the landfill would pay the partnership a gate rate per tonne for their disposal costs. 50% of the partnership profit (or loss) would be returned to DCC. As the intention of the partnership is to make a profit, the partnership would be required to pay tax on its profits at the corporate tax rate. There are other joint venture options that could be considered as part of the Commercial Case that may have advantages from a tax perspective.

DCC would continue to own the Green Island landfill and be responsible for its aftercare. It would sit outside the partnership.

8.2.1 Analysis

A joint CCTO (or similar entity, generally referred to as the partnership in this report) is a common form of organisation used in the development of new landfills in New Zealand. It provides an opportunity to operate the landfill as a profit-making entity with that profit or a share of it being returned to Council.

This separates the operational and financial risks from Council and introduces business and efficiency drivers that should lead to improved risk management.

Most landfill Joint Ventures in New Zealand are 50% council-owned and 50% privately owned, signalling equal say in the governance and operation of the entity. A private party may not be willing to have less than 50% ownership, with this needing to be negotiated with any selected partner.

Introducing a private partner to the partnership provides greater access to industry experience and commercial skills; it provides private capital contributions; and it provides the security of larger commercial waste streams.

Care would be needed to implement a strong governance structure and Statement of Intent to reflect the targets and goals for waste minimisation set by Council. DCC waste minimisation initiatives to reduce the amount of waste going to landfill would reduce the partnership's profitability as the majority of operating costs are fixed. There would be a tension between the waste minimisation and profit-making objectives which would need to be carefully managed.

8.3 Enhanced status quo: Option 12 – Out-of-district disposal

The out-of-district option involves the closure of the existing Green Island landfill when it is full. Rather than investing in a new landfill site at Smooth Hill, DCC would enter a long-term disposal contract with an out-of-district landfill operator (for example, AB Lime Ltd in Winton).

The disposal contract would fix the gate rate for several years (with escalation clauses and waste levy and ETS unit price increases). These were outlined in a draft offer of service provided by AB Lime following a request for pricing from Council. Arrangements for the bulk haulage of waste from DCC owned and operated transfer stations would need to be arranged separately by DCC.

DCC would continue to invest in and operate transfer stations and recovery parks within its district and would provide the same kerbside services that it proposes to provide under all options.

8.3.1 Analysis

The main advantages of an out-of-district option relate to the removal of any risks associated with ownership. These include the commercial and financial risks, as well as health and safety and compliance risks that would otherwise have to be assumed by DCC as a partner for the waste facilities. An out-of-district option also substantially reduces the need for DCC to contribute capital towards the development of a landfill.

Under an out of district option, Council is exposed to price increases in haulage costs and gate fees that it would need to pass directly to ratepayers to avoid providing the service at a deficit. Any agreement with an out-of-district landfill would need to include some insulation to the risk around disposal rates increasing over time through the contractual arrangement.

Under the out of district option DCC would no longer receive a revenue stream from its landfill once Green Island Landfill is closed. A revenue stream from commercial tonnages running a landfill allows any increases in operating costs to be mitigated for ratepayers (to the degree the commercial market will absorb additional costs through increased pricing).

Contracts for out of district disposal and haulage are relatively easy to negotiate and manage by an in-house Council team. Council does not have to resource operational and commercial oversight to the level it would running its own disposal facility.

By diverting waste to an out-of-district landfill, DCC loses its ability to control the full waste cycle and the associated mitigation of carbon emissions or waste diversion. Council would also need to be mindful of any restrictions placed on disposal at the out-of-district council when negotiating an offer for disposal.

The distance to the facility is also a major consideration. Haulage costs present a significant risk of increase, and in this case make up over 30% of the overall cost. These costs are very sensitive to changes in fuel costs which in our experience could account for around 25% of the total haulage cost. It is extremely difficult to quantify the risks around these costs particularly in a 20+ year arrangement. Recent fuel price volatility and government policy on transport-related carbon emissions highlight the potential risk.

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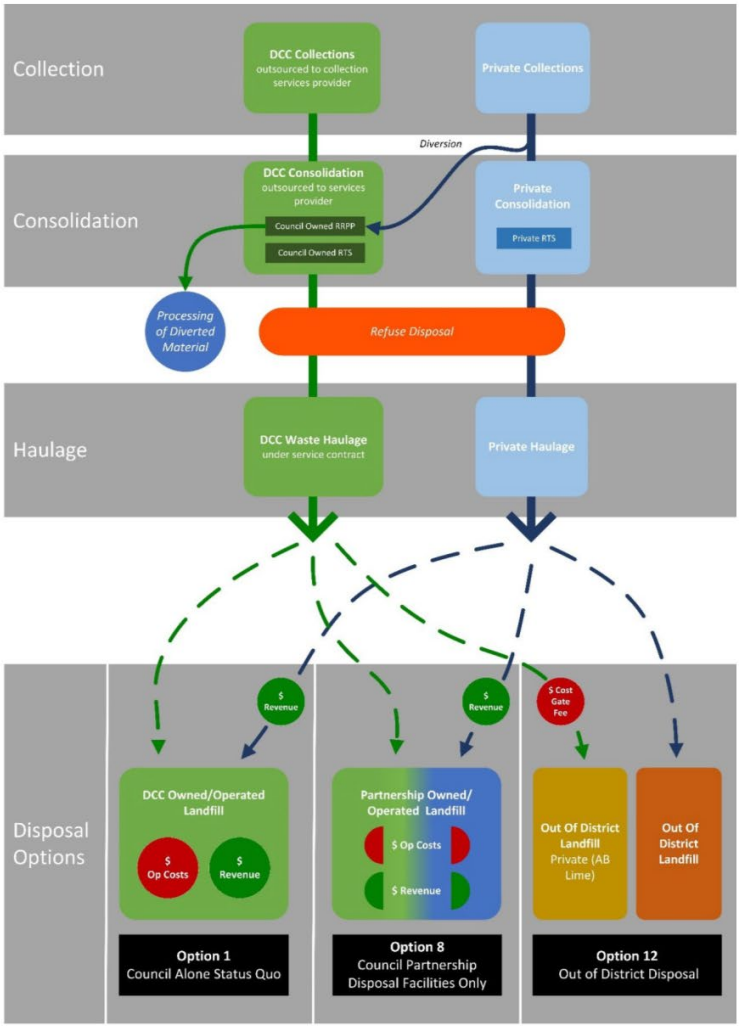
8.4 Summary of options

The following table provides a summary of how the facilities have been treated in each of the wider waste system options. In essence, with the development of the RRPP and the contracting of the diversion services, the focus of comparison between the options has become the prospective disposal models.

Table 7: Summary of options

Option Description	Landfill	Recycling	Organics	Bulk haulage
Option 1: Council alone	**DCC alone** Green Island and Smooth Hill owned by DCC. Construction and operations contracts outsourced	**DCC alone** Recycling processing outsourced (could be new or existing MRF)	**DCC alone** Composting outsourced (new facility needed)	**DCC alone** Bulk haulage outsourced
Option 8: Council in partnership with private waste company, disposal facilities only	**In partnership** Smooth Hill constructed, owned, operated by partnership. Green Island aftercare managed by DCC	**DCC alone** Recycling processing outsourced (could be new or existing MRF)	**DCC alone** Composting outsourced (new facility needed)	**DCC alone** Bulk haulage outsourced
Option 12: No DCC landfill ownership, waste sent to existing private out of district facilities	**DCC alone** Disposal contract outsourced To out of district landfill (AB Lime Winton facility) Green Island aftercare managed by DCC	**DCC alone** Recycling processing outsourced (could be new or existing MRF)	**DCC alone** Composting outsourced (new facility needed)	**DCC alone** Bulk haulage outsourced

Figure 4: Shortlist Options overview



9 Key facility information

9.1 Key assumptions

Owing to the substantial differences between an out-of-district option and a landfill ownership model this analysis compares options at a council total cost of disposal level (i.e. consolidation, bulk haulage and disposal costs). Additionally, we have modelled the average annual rates impact for each disposal option which offers useful comparisons for Council when considering a preferred approach.

The following assumptions have been made:

- In the base year, 2023, the landfill will receive 60,900 tonnes, 35,158 tonnes from DCC and the balance commercial waste (25,900 tonnes). The profitability of the landfill is highly sensitive to the gate rate and tonnes received (refer Section 11.2 Sensitivity analysis for more details).
- Commercially controlled waste in the region is higher than the 25,900 tonnes currently disposed at Green Island. It is assumed that commercial customers will be incentivised to use diversion facilities due to the Waste Levy and ETS increases and volumes will therefore remain low when Smooth Hill commences operation. Other commercial waste is also currently disposed at out-of-district landfills.
- For Option 1, where DCC owns the landfill alone, commercial tonnes will be 10,000 tonnes per annum lower than the partnership option 8.
- Under the out-of-district option, DCC would only be responsible for the tonnes that it controls (35,000 tonnes).
- Waste tonnage from all sources will grow at 2.0% per annum from the 2023 baseline. This is based on a standard assumption for combined long-term population and commercial activity growth. Note that short term, local growth may fluctuate, but in general this tonnage growth rate is suitable for long-term financial modelling. Waste tonnage includes both residential and commercial sources.
- For the Smooth Hill landfill, the modelled gate rate for general waste is $150 per tonne (plus waste levy and ETS). This compares favourably with current charges for disposal at Green Island Landfill ($140 per tonne, plus waste levy and ETS). Any increase in the waste levy or ETS charges would be recovered through a higher gate rate, with no added margin.
- Neither the landfill options or the out of district option include a profit mark up on ETS or waste levy charges.
- Special waste has been modelled with a gate rate of $195 per tonne (plus waste levy and ETS charges) for the DCC landfill options, and $301 per tonne (plus waste levy and ETS charges) for the out of district model. DCC controlled special waste is assumed to only relate to wastewater sludge for modelling purposes. No additional operating cost allowance has been made for the disposal of special waste at Smooth Hill landfill as these costs are low relative to the overall landfill operating costs and would be absorbed into these operating costs. Special waste comprises 20% of DCC's controlled waste streams, and under our base case for the out-of-district proposal, with a gate rate that is significantly higher than general waste disposal ($102 per tonne plus waste levy and ETS charges).
- Bulk haulage costs of $25 per tonne to transport waste to Smooth Hill landfill have been included. This is based on similar contract rates observed by Morrison Low for similar haulage distances. The rates used are consistent with the DBC.

- The modelled gate rate for out-of-district landfill is $123 per tonne (plus waste levy and ETS). It does not include the $5 per tonne mark-up that was previously indicated as applying to a long-term agreement, however it does include a 10% ETS margin.
- In addition to the gate rate, $60 per tonne has been allowed for bulk haulage in the out-of-district model, based on the advice from AB Lime. This rate is based on indicative rates highlighted in the latest AB Lime offer which is similar to rates that we have seen in other similar contracts. An allowance of 0.5% per annum has been made in the base case for increases in fuel costs outside of standard inflationary costs, some sensitivity testing has also been completed to illustrate the impacts. This rate differs from the rates used previously by Stantec.
- It is assumed that DCC would have no additional upfront capital costs in relation to bulk haulage to an out-of-district landfill, noting that the development of the RRPP with a bulk waste transfer station, is common to all options and therefore not modelled.
- Capital and operating costs for Smooth Hill are based on the modelling by GHD using the Full Cost Accounting Model for Smooth Hill. Operating costs for Smooth Hill landfill are estimated to be approximately $3.5 million per annum as per GHD landfill cost modelling. Operating costs have not been scaled to reflect lower or higher volumes of waste in the sensitivity testing.
- Inflation has been included in the model based on LGCI rates from the 2021 long term plan process. The discount rate used (5%) has been adjusted to reflect this and is based on Treasury's public sector discount rates. This approach is consistent with a change to the modelling outputs, which have been amended to compare total cost of disposal (i.e.it reflects an appropriate discount rate for public utility rather than investment).

This updated business case includes substantial changes to the financial modelling from previous versions as a result of changes to model inputs and refinements to the model itself. These changes are described in further detail in Appendix 4.

9.2 Financial impact on Council

Under the landfill ownership options, from a whole-of-council point of view, waste services are both a cost centre (waste services provision) and a profit centre (council owned disposal facilities).

This provides a clear contrast with the out-of-district option, which sees waste services purely as a cost centre for Council, as it will receive no revenue (other than targeted rates or user charges) from the service provision. Our modelling excludes targeted rates and user charges, as they are assumed to be the same under each model.

To reflect these differences, and allow a like for like comparison of options, financial modelling is presented in terms of the total cost of disposing of DCC controlled waste steams rather than consideration of return on investment in a landfill business.

The financial impacts are depicted in Figure 5 below. Note that CCTO entity is shown as an example only and could be another entity type.

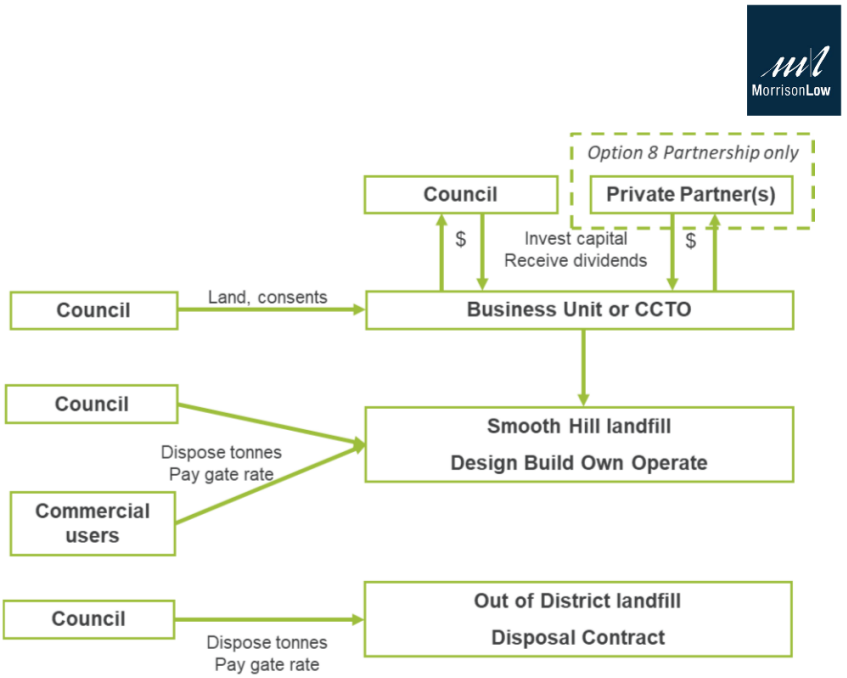


Figure 5: Money flows between council, partnership (CCTO), private partner(s) and commercial users.

9.2.1 Waste services provision

Participating households pay a targeted rate for their waste services. This is collected by Council and covers operating and capital costs paid to the collections contractor, the disposal (landfill) owner and the diversion (recycling and organics) owner or operator. How these costs will be funded has not been confirmed by Council. Service provision costs are not considered in the financial modelling, however an indicative cost to ratepayers for disposal of residual waste at a landfill have been (whether that be Smooth Hill or AB Lime).

10 Economic case – identifying the recommended option

The aim of the economic case is to determine the cost-effectiveness of the shortlisted options from both a financial and non-financial perspective and to identify a recommended option.

This was determined through the following assessments:

- Net Present Value (NPV):
  - This is an assessment of the lifetime cost of disposing of residual DCC controlled waste streams at a landfill over a twenty-year period. A twenty-year operating period is a standard financial assessment period used for NPV, even for landfills, as costs and operating conditions beyond a twenty-year period are difficult to predict and costs have diminishing impact on the NPV.

- The assessment covers the total cost of residual waste disposal over the period, including total cost of disposal at landfill (NPV), average annual rating requirement and the total cash flow (undiscounted). The assessment includes all operating and capital costs associated with the operation and construction of new facilities, where these are owned by the Council or the partnership. Only direct costs have been considered for this business case. The assessment also includes the impact of profit or revenue derived from council owned landfill operations.
- Sensitivity analysis showing the impact of changes to key assumptions over the twenty-year assessment period.
- The NPV assessment excludes any non-cash expenses such as depreciation, and any borrowing costs (these are effectively addressed with the discount rate), other than to the extent that they impact the amount of taxation paid. However, any capital costs are included.
- The annual rating impact assessment assumes a rates funding requirement based on covering all cash costs plus depreciation and borrowing costs (interest). It does not include the impact of upfront capital or periodic debt repayments.

- Multi criteria analysis:
  - Non-financial risk analysis: identifying risks associated with the different shortlisted options, covering:
    - Political: negative media coverage or negative community feedback
    - Economic: unexpected cost increases, or loss of revenue
    - Social: risk to public health or working safety
    - Technical: untried technology or process
    - Legal: council decisions legally challenged
    - Environmental: risk of discharge to environment

11 Analysis of options

11.1 Economic analysis

The output of the model is presented below. The Net Present Value (NPV) has been calculated over a twenty-year landfill operation, plus four years of establishment. Capital requirements for the first ten years are also presented in the table to reflect the total expenditure over a Long Term Plan timeframe.

Capital and operating costs used in the model reflect GHD's 2022 estimates and are based upon their base case plus 20% contingency. Sensitivity analysis has been undertaken to compare the impact of estimates at "base case with no contingency" and "base case plus 45%". The contingency amounts are applied to capital costs only.

Treasury's recommended public sector discount rate of 5% has been used to determine NPV.

Table 8 NPV, total cash flow, average rating requirement and total capital for compared options

Option	Council (Option 1)	Landfill partnership option (Option 8)	Out-of-district option (Option 12)
Description	Council alone. (Smooth Hill landfill) owned, operated by DCC.	Council in partnership with private waste company. (Smooth Hill landfill) owned, operated by partnership.	No DCC ownership, all waste sent to existing out of district facilities. This option is referred to as 'Scenario 2A' in the model.
Net Present Value (total cost of disposal over 20 years)	($139 million)	($134 million)	($171 million)
Average annual rating requirement	$10 million	$13 million	$19 million
Total capital requirement (DCC share, over 10 years)	$83 million	$44 million	$5 million
Total cash flow (undiscounted)	($319 million)	($348 million)	($444 million)

Option 1 has a less favourable NPV to Option 8 primarily due to the reduced commercial tonnes at the landfill that would be expected without partnering with a private waste company. This is partially offset by the fact that Council does not need to pay tax on its own activities. Option 12 presents as the most expensive option under all metrics except capital requirement because there is no revenue from third party waste streams.

A graphical representation of the capital requirements over a ten-year period is shown in Figure 5 below. There is a large capital outlay at the start of the period for the development of Smooth Hill and then another spike in capital five years into the landfill's operation for stage 2 development (GHD cost model).

While this has not been included in the model, any recognition of DCC's land and consent contribution via an upfront capital contribution by a private partner over 50% would further reduce DCC's capital requirements and have a positive impact on the NPV for DCC, to the amount of that capital contribution. It should be noted that Council has already invested in the land and is on the way to having clear consent for the landfill, which potentially increases the value of the site over and above costs incurred to date.

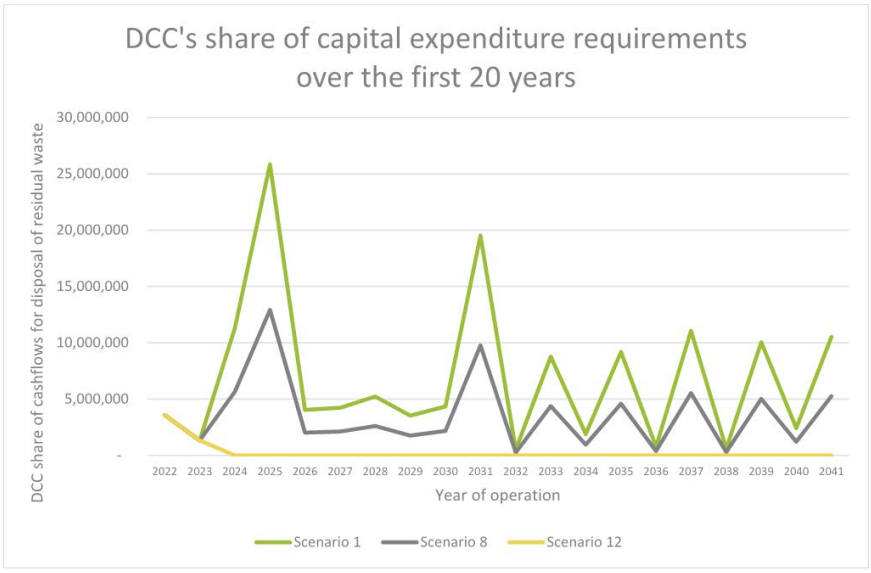


Figure 5: DCC share of capital requirements over a ten-year period

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11.2 Sensitivity analysis

A number of scenarios have been modelled to identify how sensitive the results are to the key input parameters. The results are presented in tables 9, 10 and 11 including commentary.

Table 9: Results of sensitivity analysis (NPV)

Scenario Description	Option 1: NPV of Council Alone Landfill Business Unit ($million)	Option 8 NPV of Partnership Option ($million)	Option 12: NPV of out of district ($million)	Comments
Base case (GHD base estimate including 20% contingency)	($139)	($134)	($171)	Landfill partnership has best NPV
Out of district gate rate decreases to $103/t plus levy and ETS	($139)	($134)	($164)	No material impact
Out of district gate rate increases to $143/t plus levy and ETS	($139)	($134)	($179)	No material impact
DCC waste decreases 25%	($122)	($106)	($135)	A reduction in DCC's waste effects the out of district model more than other options
Third party landfill tonnes increase by 25%	($99)	($114)	($163)	DCC keeps all potential landfill gains under option 1
Discount rate increased to 6%	($131)	($124)	($156)	No material impact
Haulage costs double in year 1	($149)	($144)	($202)	Significantly impacts option 12
Haulage costs increase 2% above CPI per year	($141)	($136)	($178)	No material impact
Landfill gate rate increases 10% to $165/tonne, no volume change	($136)	($135)	($171)	No material impact
GHD base Capex estimates without allowance for contingency	($127)	($129)	($171)	Reduced costs have greatest benefit for option 1
GHD base Capex estimates with 45% allowance for contingency	($154)	($140)	($172)	Partnership limits exposure to price increases

The following is noted in relation to the sensitivity testing:

- DCC are most at risk from changes to gate fees or tonnes disposed under Option 1, DCC alone. DCC carries all the risk if landfill tonnes are lower than anticipated.
- DCC's exposure to capital or operational cost increases is reduced in Option 8 where this is shared with a commercial waste company, who has the commercial and operational expertise to further mitigate this risk.
- The modelling assumes a gate rate of $150/tonne plus ETS and waste levy. This represents a modest increase over gate rates for Green Island in 2020 ($140/tonne plus ETS and waste levy). Even modest changes in the gate fee have a significant impact on NPV. Increases in the gate rate for Smooth Hill represent a cost to DCC, as well as a potential increase in landfill operations profit. Potential commercial gains from increased volumes or gate rates are wholly retained by DCC if it 100% owns the landfill.
- Significant decrease in the gate rate charged by an out of district landfill would be required to reduce the total cost of waste disposal to be better than either landfill ownership model.
- The analysis is not sensitive to discount rate.

Additional sensitivity testing was also undertaken to determine the "break even" points for the out of district option (Option 12). The table below shows the combined gate and haulage rate, total waste volume, and DCC controlled waste volumes required under Option 12 to match the relevant alternative options.

Table 10: Sensitivity analysis on Option 12 costs and volumes

Base case	Option description	Option 1	Option 8
$183 per tonne	**Combined out of district gate rate and haulage rate to match NPV**	$100	$87
35,158	**DCC controlled waste volumes to match NPV**	21,074	Zero
60,900 [2]	**Total waste volumes to match NPV**	35,958	20,460

The analysis shows that:

- Combined gate and haulage rates for Option 12 would have to reduce by at least 45% from the current offer from AB Lime of $183/tonne to be a more cost-effective option than landfill ownership and development in district.
- There is no circumstance where, without a reduction in gate rates and a significant reduction in third party waste volumes, the option for sending DCC's controlled waste out of district would be more cost effective than the partnership option.
- Recognising that there is a reasonable level of fixed costs to owning and operating a landfill, there would still need to be a significant reduction in total waste volumes of at least 25,000 tonnes for the out of district option to be more cost effective than a landfill operation partially or wholly owned by Council.

[2] 50,900 in Option 1

11.2.1 Average annual ratepayer costs

In addition to the sensitivity testing in table 9 above, which focuses on the Net Present Value of waste disposal, we have also completed sensitivity testing on the impact on average annual rates. This is important additional analysis, as NPV typically focuses on investment returns and does not consider underlying funding structure.

Table 11: Results of sensitivity analysis (annual ratepayer costs)

Scenario Description	Option 1: Annual Rates Impact ($million)	Option 8 Annual Rates Impact ($million)	Option 12: Annual Rates Impact ($million)	Comments
Base case (GHD base estimate including 20% contingency)	($9.6)	($12.5)	($18.5)	Sole Council ownership most favourable due to share of revenue and tax implications.
Out of district gate rate decreases to $103/t plus levy and ETS	($9.6)	($12.5)	($17.6)	No material impact
Out of district gate rate increases to $143/t plus levy and ETS	($9.6)	($12.5)	($19.4)	Only impacts out of district option 12
DCC waste decreases 25%	($8.0)	($9.5)	($14.5)	All options more beneficial in this scenario. Option 12 affected the most but still most expensive.
Third party landfill tonnes increase by 25%	($5.4)	($10.8)	($18.1)	Most benefit to option 1 due to increase in revenue all going to DCC
Total landfill waste decreases 25%	($9.7)	($10.3)	($14.6)	DCC retains volume risk, but option 1 still holds lower ratepayer cost
Haulage costs double in year 1	($10.8)	($13.8)	($22.2)	Negative impacts primarily on out of district option due to larger haulage cost component.
Haulage costs increase 2% above CPI per year	($9.9)	($12.9)	($19.4)	No material impact
Smooth Hill Landfill gate rate increases 10% to $165/tonne, no volume change	($9.3)	($12.7)	($18.5)	Benefits Council primarily through Option 1 because of level of return offsetting additional cost.
GHD base Capex estimates without allowance for contingency	($9.0)	($12.3)	($18.5)	DCC alone option 1 sees greatest cost reduction due to all benefit of reduced Capex flowing to Council.
GHD base Capex estimates with 45% allowance for contingency	($10.3)	($12.8)	($18.5)	Partnership limits exposure to Capex increases

This analysis shows that:

- Option 1 is consistently the cheapest of the options in terms of the impact on annual rates under most of the different scenarios, although in lower revenue or higher cost scenarios the overall difference with option 8 is relatively low.
- Decreases in volumes of waste have a less favourable impact on option 1 over other options, as the loss of revenue is 100% worn by DCC in these instances without a corresponding reduction in costs. In the scenario where the capital allowances are higher, this also brings the annual rates impact of option 1 closer to option 8, because the liability for that additional capital cost is not shared by DCC under option 1 as it would be under option 8. This illustrates that increasing capital costs would at some point mean that option 8 has a lower annual rates impact than option 1.

11.3 Summary of financial analysis

The results of the financial modelling and analysis do not present a clear-cut preferred option, as through a different lens either option 1 or option 8 would appear to be the more favourable. The main reason for this is that option 1 is the moderately cheaper option in terms of annual rates impact, assuming that a certain level of revenue exists from commercial tonnages to offset the costs of disposal of waste and that DCC is retaining all gate fee revenue on a tax-free basis. The NPV of option 8 is more favourable to DCC because of higher overall assumed volumes of commercial tonnages and lower capital requirements, but even at higher volumes of commercial tonnages, the gate fee revenue is shared and subject to tax, so has less impact in reducing DCC's share of the costs that it passes through to the ratepayer.

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11.4 Multi-criteria analysis

An assessment has been made in Table 12 against the following risk categories: political, economic, social, technical, legal and environmental.

Table 12: Risk assessment for shortlisted options

Option	Political risk – negative media coverage or negative community feedback	Economic risk – unexpected cost increases or loss of revenue	Social risk – risk to public health or worker safety	Technical risk – untried technology or process	Legal risk – successful legal challenge of Council decisions	Environmental risk – discharge from landfill and carbon emissions	Overall risk assessment
Option 1: Council alone. Disposal facilities owned, operated by DCC.	Low risk – continuation of current service	High risk – DCC tonnes may be insufficient for economic operation of Smooth Hill landfill. DCC responsible for all costs.	Medium risk – physical operations have inherent risk, mitigated only partially by contracting to experienced landfill operator	Low risk – approach is common in NZ	Low risk – unlikely to be legally challenged	High risk – DCC solely responsible for landfill through transition to zero carbon. Environmental compliance costs likely to increase	High
Option 8: Council in partnership with private waste company, disposal facilities only	Medium risk – potential concern regarding landfill ownership and control of a partnership entity	Medium risk – DCC exposure limited to landfill operation, but operation may be uneconomic if tonnage insufficient.	Low risk – physical operations have inherent risk, mitigated through partnering with experienced landfill operator	Low risk – approach is common in NZ	Low risk – unlikely to be legally challenged	High risk – DCC co-owner of landfill through transition to zero carbon. Environmental compliance costs likely to increase	Medium
Option 12: No DCC landfill ownership, waste sent to existing private out of district facilities	Medium risk – optics of "shipping problem elsewhere" may raise concerns	Medium risk – costs can be managed to a degree through long term contract, but still no ultimate control by Council.	Low risk – risks associated with physical operation of landfill is divested	Low risk – approach is common in NZ	Low risk – unlikely to be legally challenged	High Risk – DCC unable to control environmental measures used at landfill and has limited control on waste diversion/reduction schemes outside of waste it controls directly. Greater carbon emissions due to haulage distances.	Medium

12 The recommended option

The recommended option is Option 8, the partnership option, primarily because it minimises exposure to external risk and means DCC are best placed to move towards a circular economy. It creates a more resilient partnership because DCC and its commercial partner share commercial risk and DCC leverage the technical knowledge and commercial experience of the facility partner, with a higher probability of leveraging commercial volumes as a result.

Option 1 is less expensive than option 8 in terms of the annual rates impact (because of the potential level of revenue from third party waste streams flowing directly to DCC) and as such is a realistic and viable option as a disposal solution. However, this is not the recommended option due to the higher risk levels for Council to own the landfill alone and the significantly greater capital requirements if DCC were to invest in developing a landfill on its own. In a scenario where volumes decrease by more than 25% than the modelled projection based on current volumes, the annual rates impact comparison between option 1 and option 8 become very similar. This is a likely scenario, so having a commercial partner on board provides the right industry expertise and commercial motivation for accessing more of the wider disposal market to keep volumes at an economically viable level.

Option 12, the out of district option, is not considered to be a viable alternative to developing and operating Smooth Hill landfill, as the gate rates that would need to be achieved to make this more attractive economically are unrealistic and far below what has currently been quoted to DCC by AB Lime for disposal out of district. Likewise, total volumes of waste would need to drop well beyond 50% of current projected volumes before sending waste our of district becomes competitive with investing in a landfill.

The partnership between Council and a private waste company that is proposed under option 8 has been assumed to be a CCTO for assessment purposes. It is acknowledged that there are other partnership models that could be used (discussed further in the commercial case section).

Any proposed ownership and operating model will need to be approved by Council and consulted on with the community. The following sections provide commentary for either a facility partnership or DCC maintaining 100% ownership of Smooth Hill.

13 Financial case

The NPV model for Option 8 developed for the Economic Case provides the basis for the Financial Case and can be found in Appendix 3. Overall the total cost of disposal for DCC's residual waste under the partnership proposed with Option 8 is expected to result a net present value to DCC of ($134 million) over the 20-year (+4 establishment years) NPV assessment period in the base case.

If Council owns the waste facilities through a partnership arrangement, Council will need to invest capital and will receive dividends from the waste facility operations. This is a separate profit centre for Council. Any dividends received will be treated as financial revenue in Council's financial statements.

It is assumed that tax is paid at the corporate tax rate on net profit before tax (after depreciation and interest costs). The actual tax payable will depend on a number of factors including the type of partnership entity established to own the waste facilities.

There is a risk that the waste facilities partnership does not make a profit in either the short or long term.

13.1 Council cashflow

Council's share of net cashflow and capital requirements are shown in the figure below. This shows the impact of the significant investment required to establish the landfill.

Based on the base case, it is anticipated that it will take 6 years of operation for the waste facilities partnership to consistently generate a positive cashflow. Sufficient capital investment will be required to fund construction of Stage 1 of the landfill over the first two-three years, with Stage 2 being funded from operating surpluses in the first few years of operation. Stage 2 construction can be seen in the figure as a small second spike in expenditure in Year 5 of operation.

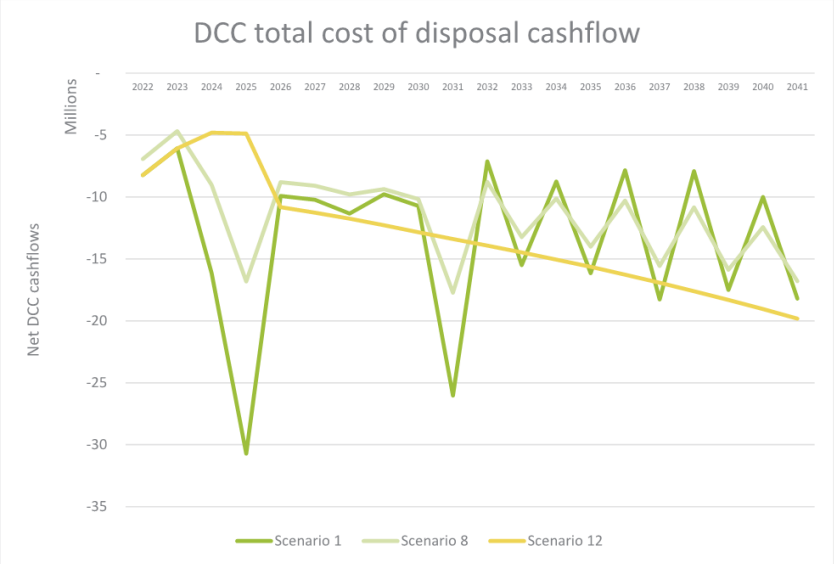

Figure 6: DCC's share of cashflow

13.2 Operational funding

Operating expenditure is expected to be fully funded from user charges or targeted rates for waste disposal. The significant difference in annual cash flows between the landfill ownership and out-of-district models means that user charges or targeted rates would need to be much higher under an out-of-district option.

13.3 Capital funding

It is anticipated that DCC will need to fund a 50% share of the initial capital expenditure required to construct the waste facilities. This would include costs associated with obtaining the resource consent, facility design, site development (including the new access road, leachate management system and weighbridge) and construction of the first landfill cell.

These costs are incurred in Years -1 and 0 (2024/25 to 2025/26) in the NPV model, with operating revenue commencing in Year 1 (2026/27) when the facility opens. These costs are based on the landfill whole-of-life modelling developed by GHD. Future capital requirements beyond Year 3 could be predominantly funded from the retained earnings from the facility operating revenue.

The initial capital requirement is based on GHD's capital cost estimates and include a 20% contingency (GHD have provided costs with 0%, 20% and 45% contingency). These costs need to be further refined through the consenting and detailed design processes and through ongoing landfill operation and development. Procurement for a facility partner would also assist in refining these costs.

DCC is funding the costs associated with obtaining the resource consent and it owns the land at the Smooth Hill site. Therefore, through the partnership procurement process the value of DCC's contribution to the partnership will need to be assessed and subtracted from its initial capital contribution. This value would then be negotiated with DCC's waste facility partner.

DCC may choose to fund its share of capital from loan funding or by partnering with a private funder (separate from its waste facility partner), or with other councils.

DCC have indicated the waste facilities capital requirement in their 2021-2031 Long Term Plan, which has a total budgeted capital allowance of $56 million for the development of Smooth Hill. This capital allowance allows for DCC to at cover the initial capital to develop Smooth Hill in stage 1 as sole owner with no capital from a private partner. Indicatively, if Smooth Hill were operational from 1 July 2027 then initial capital requirements would be funded in FY2025 through to FY2027, however this is subject to the time required to obtain resource consents.

Table 13: Initial capital expenditure requirements (FY2024/25 to FY2026/27) – option 8

Capital requirements ($million)	Year -1 (approx. FY2024/25)	Year -0 (approx. FY2025/26)	Year 1 (approx. FY2026/27)	Total initial capital
Capital expenditure	$11.3	$25.8	$4.1	$41.2
DCC's 50% share of capital (if facility partnership)	$5.6	$12.9	$2.1	$20.6

14 Commercial case

The commercial case considers engagement with potential waste facility partners. It also considers whether the recommended partnership model is commercially viable. For this business case, the key considerations are:

- What form of partnership is likely to be attractive to the private waste companies, while appropriately sharing profits and risks between Council and the partner?
- What are the appropriate forms of procurement to identify a private partner, and which is recommended?
- What other services will be required from the private sector? How should these be procured?

14.1 Form of partnership

Should the recommended partnership option be pursued, typically this would take the form of a 50/50 joint venture with a private sector partner who has experience in developing and operating landfills and diversion facilities. Historically, the most common form of joint venture between local government and private companies is through a jointly owned Council Controlled Trading Organisation (CCTO) or similar entity. This is a well-established type of organisation with clear governance rules established through the Local Government Act 2002.

CCTOs, primarily the Limited Liability Company and the Limited Partnership options, have been used for waste facility partnerships in New Zealand that include landfills. As these are the most common partnership models, further detail on these is provided in the following sections. However, it is noted that there are other types of partnership that could be considered.

A number of Council waste joint ventures in New Zealand have been established as CCTOs, including Auckland Council's Waste Disposal Services partnership with Waste Management for operation of the Whitford Landfill; and Transwaste Canterbury, a partnership of five territorial authorities and Waste Management, who operate the Kate Valley landfill.

The form of partnership will also be explored further during the detailed procurement strategy development and during the procurement process itself.

The Limited Liability Company and Limited Partnership options are both examples of standalone businesses, which is the most common approach to joint venture landfill development to date in New Zealand. As an alternative, a Built Own Operate Transfer (BOOT) contract arrangement could be used to deliver the partnership arrangement. The options of a standalone company or a BOOT arrangement has been explored further in the detailed procurement strategy, which is a separate document. Further details on ownership and operating models have been removed from DBC2 as the more up to date information is contained in the procurement strategy.

14.2 Procurement strategy

This section provides the high-level procurement strategy for a waste facility partnership or long-term landfill operator. The detailed procurement strategy develops the approach further.

There are a number of ways to procure a waste facility partner. These are the same regardless of the type of partnership model with the decision to proceed with a particular entity model explored through the partnership procurement process. The procurement options for sourcing a partner are not dissimilar to that which would be used to procure a long-term operator under contract with Council as sole owner (albeit that the considerations and detail of the offer and proposal would be substantially different). The most likely procurement approaches are an open Request for Proposal (RFP) process and direct negotiation. Both of these options can be preceded by a Request for Expressions of Interest (REOI) process. These are described in more detail in the following sections.

14.2.1 Open Request for Proposal process

The standard approach for a procurement of this type would be to utilise a full RFP process. Council's Procurement and Contract Management Manual states:

> "6.4.2 Market scoping and the evaluation of potential goods or service suppliers shall at a minimum reflect the following methodologies (value):
>
> (c) Sourcing with a cumulative value of more than $100,000 requires an open and competitive process (RFP/ RFT) and Tender Board approval"[3]

The procurement would likely be a two-stage process, with an REOI used to identify the potential partners/operators who have the capability and experience to enter into a joint venture of this type. A short-list of two or three potential partners would be identified through the REOI and these parties would then be invited to respond to the RFP.

An REOI is also required to enable Council to share its confidential information relating to the waste facilities partnership with parties shortlisted through the REOI process. Shortlisted parties would need to sign a confidentiality agreement prior to accessing this information.

This process would need to commence once Council have had the opportunity to consider and approve the preferred ownership/operating model. Council's requirements for the landfill and diversion facilities would need to be developed and formally documented to ensure all proposers were pricing the same requirements. These requirements need to be detailed enough to set out minimum requirements and allow a level playing field, whilst providing sufficient room for proposers to bring best practice and innovation to their proposed solution. In a partnership the level of detail would be anticipated to be similar to that required for the Principal's Requirements document in a traditional design and build procurement exercise.

A two-stage process of this type typically takes at least 18 months, once the preferred waste facility operating model option has been approved by Council. This would include the development of the Principal's Requirements and the REOI and RFP documentation, the REOI period and subsequent evaluation, the RFP period and subsequent evaluation and negotiation with the preferred respondent.

14.2.2 Direct negotiation

The other procurement option would be through direct negotiation. Council's Procurement and Contract Management Manual states:

> "6.7.1 Deviation from the DCC's procurement and contract management processes may be necessary due to circumstances beyond the control of Council. Such instances include:
>
> (a) A limited number of suppliers available in the market
>
> (b) A different procurement methodology or process is stipulated by legislation or a professional/ regulatory body
>
> (c) An exceptional, urgent or emergency situation where immediate Council decision-making is required and is in the best interests of ratepayers.
>
> 6.7.2 In such instances, two members of ELT shall authorise the deviation prior to adoption, and if appropriate the decision ratified (retrospectively) by the Tenders Board."

[3] Dunedin City Council Procurement and Contract Management Policy, April 2020
https://www.dunedin.govt.nz/__data/assets/pdf_file/0006/529503/Procurement-and-Contract-Management-Policy.pdf

Direct negotiation would only be appropriate for this procurement if there was an urgent need or if there was only one suitable organisation able to partner or contract with Council to deliver the work. Neither of these currently apply. The programme (as set out in the Management Case) provides sufficient time to run an open procurement process between finalisation of the Detailed Business Case and award of the landfill resource consent.

There are a number of organisations that would be expected to be able to partner or contract with Council for its landfill waste services (market interest in discussed in the following section). If only one organisation was identified through the REOI process, the project could then progress to a direct negotiation process.

14.3 Market interest

There are currently two waste companies who are joint venture partners in a waste facility partnership. Waste Management Limited are involved in two (Transwaste Canterbury Ltd, Waste Disposal Services). In the Transwaste arrangement there was originally another private partner, EnviroWaste, but they subsequently sold their share to Waste Management. The other is Northland Waste Limited (Northland Regional Landfill Ltd). There are other waste companies across New Zealand operating council-owned landfills and diversion facilities. AB Lime Ltd and Scope Resources Ltd also operate landfill facilities in the lower South Island.

Five companies expressed interest in Council's previous procurement process to find a joint venture partner for its waste services. EnviroWaste and Waste Management were shortlisted and priced a partnering agreement. AB Lime was also shortlisted to provide a comparative price for an out-of-district disposal option. Fulton Hogan and Veolia were not shortlisted, primarily because they did not control any of the commercial waste stream.

A similar level of interest could be anticipated for a future procurement exercise although the actual parties registering an interest may be different. Some of the previous tenderers may not now be interested. The inclusion of the recyclables processing facility, the organics processing facility and the potential to develop further diversion facilities in future may attract a different mix of potential partners.

Council has not engaged with the market at this point in time. The timing of supplier engagement will need to be considered in the context of wider community engagement and the formal consultation requirements for the different Waste Futures workstreams.

15 Management case

15.1 Project plan

A project plan has been developed for the Waste Futures Project. This includes a project charter, governance structure, responsibilities matrix and timeline. As the project moves into the next phase, this will need to be updated to reflect the partnership procurement requirements.

15.2 Project governance structure

A Steering Group has been established for the Waste Futures Project. This Steering Group is primarily for project decision making and ensuring ongoing project support and alignment. Any significant issues, risks or changes in scope in the project will be reported to the Steering Group. Engagement with Councillors will occur through the Project Sponsor.

The Steering Group is supported by a Project Control Group, consisting of leads from each of the workstreams to ensure programme coordination.

The structure of the Steering Group and Project Control Group will need to be reviewed and updated as the project moves into the next phase.

15.3 Programme

Indicative timing of key activities is provided below.

The procurement for the preferred ownership and operating model is likely to be a two-stage process with an REOI followed by an RFP. This will take at least 18 months to complete and therefore will likely overlap with detailed design for Smooth Hill.

In order to commence the procurement, the ownership and operating model needs to be approved by Council. . Once the p model is approved, the procurement can commence. The procurement period is anticipated to be from mid 2023 to late 2024. Funding for the procurement and initial capital works for Smooth Hill is already in place through the 2021-2031 LTP process.

Once the ownership and operating model has been selected and established, the next phase of the programme will be detailed design and construction of the landfill. The Smooth Hill Landfill will only be operational from 2026 thus requiring an application for consents for operation of Green Island Landfill to be extended. If a landfill facility is not available for disposal operations, Council will have no in-district disposal option and will need to negotiate an out-of-district disposal option or seek a short-term extension to the Green Island consent.

15.4 Consultation requirements

A communications and engagement plan has been developed for Phase 2 of the Waste Futures Project. This focuses on the public engagement for the collection system changes and consultation for the consenting of Smooth Hill Landfill. Consultation on the facilities partnership will take place in 2023.

15.5 Risk management framework

Ongoing risk assessment is undertaken by the Waste Futures Project team in compliance with Council's risk management framework. Key risks that will need to be assessed and mitigated are:

- Green Island Landfill full before Smooth Hill is ready to accept waste
- Unable to obtain an extension to the Green Island consents
- Smooth Hill construction delayed
- Competition with Smooth Hill
- Limited private sector partners for Smooth Hill development
- Change in regulation affects waste quantities to Smooth Hill

- Partnership procurement delays
- Partnership opposed by the community or not approved by the Council

15.6 Next steps

The following sections describe at a high level the next steps proposed to progress the waste facility procurement phase. .

15.6.1 Project planning

An existing project plan, governance structure, programme and risk register exist for the Waste Futures project. These will need to be updated for the next phase and outline the critical steps required to implement the preferred form of ownership and operating model.

Specialist advisors will need to be identified and procured to support delivery of the procurement. These advisors are likely to include legal (commercial and governance), finance (including tax), technical (landfill design, construction and operation), waste procurement, probity, communications and engagement.

15.6.2 Consultation on ownership/operating model

The form of ownership/operating model will need to be approved by Council. Once the model is approved and tested with the market through procurement. funding of Council's initial capital investment and the associated budgets will need to be reviewed, revised and consulted upon as part of the 2024-2034 Long Term Plan.

15.6.3 Procurement planning

A detailed procurement strategy was developed in 2020, but will need to be updated to reflect the preferred ownership and operating model approved by Council. The procurement strategy currently outlines the procurement objectives, form of partnership and partnership considerations, proposed REOI and RFP process, procurement timeline, supplier market analysis, evaluation approach and weightings, procurement team and communication during the procurement process. Following approval of the procurement strategy, procurement documentation would be developed.

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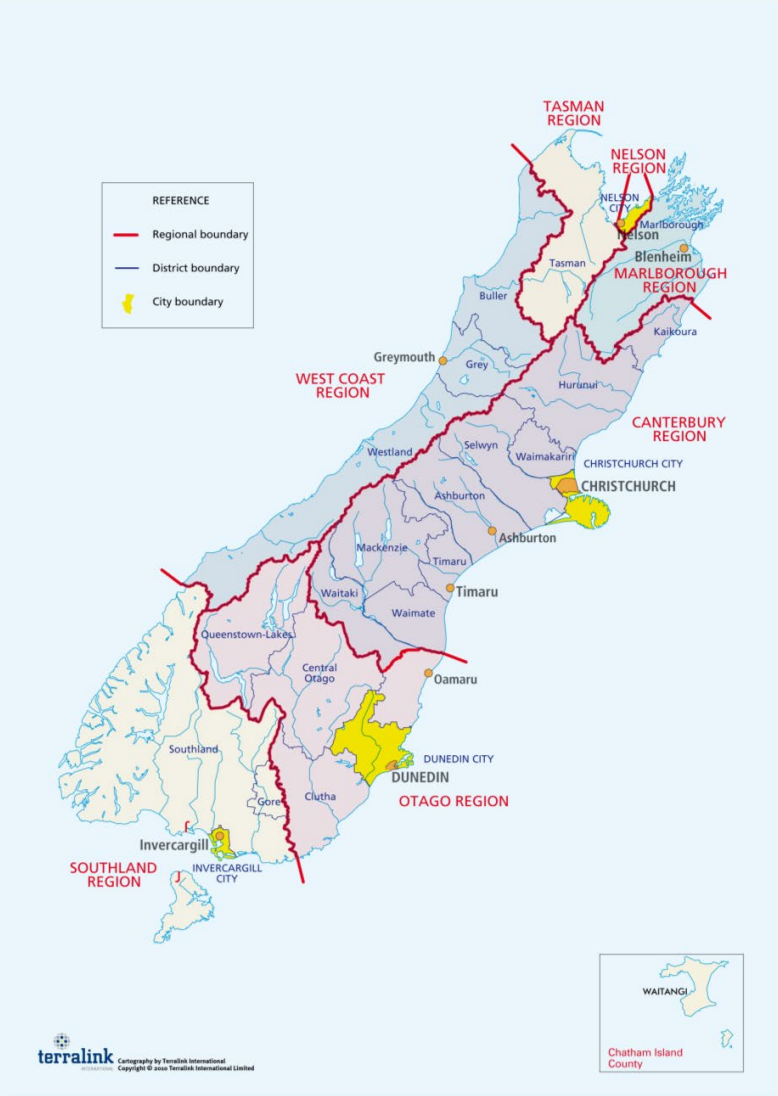
Appendix 1 South Island Council Boundaries



Appendix 2 Longlist options assessment

Partnership options

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	Partnership Options Note, these options cover governance and asset ownership. Service delivery will be a mixture of in-house resources and out-sourced contracts for all options									
	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8	Option 9	Option 10
nvestment Objective:										
Meet Dunedin's waste minimisation targets through: *Reduce municipal solid waste generation per capita at least 15% by 030 (when compared to 2015)* *Reduce municipal solid waste disposed to landfill by at least 50% by 030 (when compared to 2015)* *Increase diversion from landfill to at least 70% by 2030 (when ompared to 2015)*	3	3	4	4	4	5	5	3	5	3
Reduce Dunedin City Council's net emissions to zero by 2050	3	3	4	4	4	5	5	3	5	3
ncrease customer satisfaction with Council's waste services to 0% by 2030	3	3	4	4	4	5	5	3	5	3
Provide waste services that reduce health and safety and nvironmental risks	3	3	4	4	4	5	5	3	5	3
Average Investment Objective Score	**3.0**	**3.0**	**4.0**	**4.0**	**4.0**	**5.0**	**5.0**	**3.0**	**5.0**	**3.0**
Critical Success Factors (as these CSFs are crucial (not just desirable) any options that score a 'no' are automatically discounted from further analysis:										
Strategic fit and business needs - *Alignment with LTP and other Council and regional strategic plans*	5	4	4	4	4	3	3	3	4	4
Potential value for money - *right solution, right time at the right rice*	2	2	2	2	2	2	2	3	5	2
Supplier capacity and capability - *is it a sustainable rrangement (external)*	3	3	3	3	3	5	5	5	5	3
Potential affordability - *are there no funding constraints*	1	2	2	2	2	4	4	5	5	2
Potential achievability - *ability and skills to deliver (internal)*	1	2	2	1	1	2	2	4	4	2
Average Critical Success Factor Score	**2.4**	**2.6**	**2.6**	**2.4**	**2.4**	**3.2**	**3.2**	**4**	**4.6**	**2.6**
Overall Assessment:										
Summary of Advantages and Disadvantages	Unable to leverage commercial waste control	Waste control remains limited while adding complexity of shared service	Providing facilities that service wider regional needs but complexity of shared service and no commercial partner tonnes	Economies of scale, servicing wider regional needs but complexity of shared service and no commercial partner tonnes	Economies of scale, but CCO offers little benefit over shared service with additional establishment and ongoing administrative costs	Introduces private funding and commercial partner's tonnes and industry expertise, but complexity with multiple councils	Introduces private funding and commercial partner's tonnes and industry expertise, but complexity with aligning multiple parties and associated additional cost	Introduces private funding and commercial partner's tonnes and industry expertise, but less control of diversion facilities	Introduces private funding and commercial partner's tonnes and industry expertise and only one partner relationship to manage	Introduces private funding but no commercial partner tonnes or industry expertise
Overall Score (out of 10)	**5.4**	**5.6**	**6.6**	**6.4**	**6.4**	**8.2**	**8.2**	**7.0**	**9.6**	**5.6**
Rank	**12**	**10**	**7**	**8**	**8**	**2**	**2**	**6**	**1**	**10**
Sensitivity test: greater emphasis on implementation and achievability, weighting on CSF increased										
Overall Score - weighting 25% Objectives, 75% CSF	**5.1**	**5.4**	**5.9**	**5.6**	**5.6**	**7.3**	**7.3**	**7.5**	**9.4**	**5.4**
Rank - weighting 25% Objectives, 75% CSF	**12**	**10**	**7**	**8**	**8**	**4**	**4**	**3**	**1**	**10**
Short-listed options:										
Option 1: Status quo	**status quo**									
Option 2: Business As Usual (enhanced status quo)						future option to include other partners in disposal only partership	future option to include other partners in disposal only partership			
Option 3: Towards Circular Economy						future option to include other partners	future option to include other partners		**highest scoring partnership option**	

DCC Wider Waste System DBC Long List 20221201

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Kaunihera-a-rohe o Ōtepoti

Partnership options

	Option 11	Option 12	Option 13
nvestment Objective:			
Meet Dunedin's waste minimisation targets through: *Reduce municipal solid waste generation per capita at least 15% by 030 (when compared to 2015)* *Reduce municipal solid waste disposed to landfill by at least 50% by 030 (when compared to 2015)* *Increase diversion from landfill to at least 70% by 2030 (when ompared to 2015)*	5	3	1
Reduce Dunedin City Council's net emissions to zero by 2050	5	3	1
ncrease customer satisfaction with Council's waste services to 0% by 2030	5	3	1
Provide waste services that reduce health and safety and nvironmental risks	5	3	1
Average Investment Objective Score	**5.0**	**3.0**	**1.0**
Critical Success Factors (as these CSFs are crucial (not just desira			
Strategic fit and business needs - *Alignment with LTP and other Council and regional strategic plans*	3	5	1
Potential value for money - *right solution, right time at the right price*	3	3	2
Supplier capacity and capability - *is it a sustainable arrangement (external)*	4	5	5
Potential affordability - *are there no funding constraints*	4	3	5
Potential achievability - *ability and skills to deliver (internal)*	2	5	1
Average Critical Success Factor Score	**3.2**	**4.2**	**2.8**
Overall Assessment:			
Summary of Advantages and Disadvantages	Introduces two sources of private funding which adds complexity and reduces value for money, however the commercial partner's tonnes and industry expertise are beneficial	Lower funding requirements because no capital required, no need for commercial tonnes as a source of revenue to offset costs, easily achievable. Limits DCC's influence over carbon reduction	Limits DCC's influence over waste and carbon reduction
Overall Score (out of 10)	**8.2**	**7.2**	**3.8**
Rank	**2**	**5**	**13**
Sensitivity test: greater emphasis on implementation and achiev			
Overall Score - weighting 25% Objectives, 75% CSF	**7.3**	**7.8**	**4.7**
Rank - weighting 25% Objectives, 75% CSF	**4**	**2**	**13**
Short-listed options:			
Option 1: Status quo			
Option 2: Business As Usual (enhanced status quo)	future option to include other partners in disposal only partership	**Lower facility funding option**	
Option 3: Towards Circular Economy	future option to include other partners		

DCC Wider Waste System DBC Long List 20221201

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Appendix 3 Financial modelling for Economic Case (NPV)

Financial models were prepared but are not included as they have been overtaken by the financial modelling in the Comparison Of Disposal Costs (September 2024).

Appendix 4 Changes to financial model

As the business case has developed, there have been changes made to the financial model. The following list summarises the modelling changes up to December 2022:

- Calculations of the Net Present Value, cashflows, and annual ratepayer costs are based on the total cost of disposing DCC's controlled waste streams. Previous versions of financial modelling presented an NPV of the investment in Smooth Hill landfill as a business. Under the proposed approach a negative NPV is expected.
- Modelling period extended from a total of 20 years to an operating period of 20 years plus four years of development prior to operation.
- For clarity, operating costs and capital costs for the organics and recyclables processing facilities and transfer stations have been removed from the modelling as all options include the same delivery model. . Earlier model versions included operating revenue, operating expenditure and capital costs in calculations of NPV.
- Base case landfilled tonnes reduced from 87,000 tonnes to 60,900 tonnes to align with Green Island landfilled tonnes in 2020.
- Revised the out of district disposal rate to $117 plus ETS and waste levy for general waste and $301 plus ETS and waste levy for special waste to algin with the agreement with AB Lime signed on 22 November 2022.
- Increased Waste Levy from $10/tonne to $60/tonne and ETS costs from $25/tonne to $59/tonne ($88.75 per unit multiplied by a unique emissions factor of 0.67), included in both gate fees and operating costs, to match government changes. The ETS charges and UEF applied have been extracted from Schedule 1 of the agreement with AB Lime signed on 22 November 2022. We have assumed Smooth Hill will be capable of obtaining a UEF that is the same, or better, than AB Lime.
- Increased base rate for landfill disposal from $105/tonne to $150/tonne to reflect cost escalation and align with Green Island gate fee increases.
- Increased capital costs and reduced operating costs to reflect more detailed cost modelling by GHD.
- Removal of transfer station consolidation and bulk haulage from the model as this is common to both shortlisted options and associated with DCC's RRPP, not the landfill.
- Increase in CCTO debt from $20 million to $35 million, due to overall increases in capex.
- Aftercare provision increased from $1.57/tonne to $1.72/tonne based on GHD cost modelling.

Comparison of disposal costs

Smooth Hill versus out-of-district

September 2024

Document status

Job #	Version	Written	Reviewed	Approved	Report Date
2443	1, DRAFT	Alice Grace	Ewen Skinner	Ewen Skinner	15 August 2023
2443	2, DRAFT	Alice Grace	Ewen Skinner	Ewen Skinner	15 September 2023
2443	3, FINAL	Alice Grace	Ewen Skinner	Ewen Skinner	15 February 2024
2443	4, UPDATED	Alice Grace	Ewen Skinner	Ewen Skinner	18 September 2024

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Contents

1 Introduction

This report has been prepared to provide Dunedin City Council (DCC) with an updated comparison of its total cost of waste disposal for three waste facility options:

- DCC build and own Smooth Hill alone (DBC Option 1)
- DCC build and own Smooth Hill via a 50:50 partnership with a commercial operator (DBC Option 8)
- DCC dispose of waste out-of-district (AB Lime Landfill) and do not build Smooth Hill (DBC Option 12)

For all options, Green Island is used for disposal until June 2030 at the latest. Likewise, the Green Island Resource Recovery Park Precinct (RRPP, owned by DCC alone) is operational in all options, with DCC maximising its waste diversion through this facility and its kerbside collections. The residual waste quantities that DCC disposes are based upon DCC achieving its waste diversion targets, particularly as they relate to kerbside collected waste.

The analysis uses Morrison Low's financial model developed for DCC's waste facilities Detailed Business Case (DBC, Morrison Low, February 2023). Cost inputs in the financial model have been updated to reflect the most recent out of district disposal costs (AB Lime contract rates) and GHD's updated Smooth Hill development and operating costs, which have been peer reviewed by the Quantity Surveyors, WT.

While the benefits of DCC investing in waste disposal facilities go beyond disposal costs and revenue, this report only presents the cost comparison of the three waste facility options. All three options provide the same level of influence over the waste stream to encourage waste diversion. Other non-financial considerations include:

- Transport-related emissions, particularly in relation to the out-of-district disposal option
- Long-term security of access to a disposal facility at a fair price
- Resilience of access routes to the disposal facility following a natural disaster
- DCC's ability to influence how its disposal facility is operated to enable resource recovery and safe disposal of fluctuating volumes over time and when different types of waste require disposal

Commentary on the relative benefits of the options and how these address DCC's strategic objectives can be found in the DBC. A brief summary on the background to the DBC's development is provided in Appendix A.

2 Financial model inputs and assumptions

The financial model looks at the total cost DCC pay to dispose of its waste over a 20-year period. This includes:

- The gate fee DCC pay at the disposal facility (either Smooth Hill or the out-of-district landfill)
  - As well as the transport cost to get it to the disposal facility
- Revenue DCC receive from customers at the DCC-owned Green Island and Smooth Hill landfills
  - Including any sharing of revenue in a Smooth Hill partnership
- DCC's capital costs to continue operating Green Island until 2030
- The costs to build and operate Smooth Hill, including any sharing of capital costs in a partnership
- Waste levy and emissions trading scheme costs, which are passed through to customers in gate fees. ETS costs are consistent across all options and therefore the ETS reduction presented by AB Lime on 15 May 2024 (see next section) was applied to the Smooth Hill options as well.
- Inflation of costs over 20-year assessment period

The following sections provide details on the cost updates for the AB Lime option (out-of-district disposal) and the build costs for Smooth Hill, as well as other adjustments made to the model to make the comparison as clear as possible.

2.1 AB Lime contract rates

In 2021, DCC signed a contract with AB Lime for disposal of DCC's waste at AB Lime's landfill in Southland. The contract term is ten years, expiring in 2031, which was the maximum contract term AB Lime were willing to enter into. The AB lime contract rates have been used in the financial modelling for out-of-district disposal. DCC's contract has an annual cost review provision. In July 2023, AB Lime notified DCC of its first price adjustments and were able to demonstrate a reduction in cost of disposal of $18/tonne, from $212/tonne to $194/tonne. A further price update was provided to DCC on 15 May 2024. This resulted in further increases to the base disposal rate, and a further reduction in ETS costs. This is shown in Table 1 below.

The price reduction was due to AB Lime having reduced its ETS cost liabilities. This followed a successful application to the Environmental Protection Authority (EPA) to prove that they were capturing more of the methane generated from waste decomposition than previously assessed. The ETS cost reductions were offset by an increase in the waste disposal levy and escalation of the base price of 8.65%. Note that while general waste disposal costs reduced overall, sludge disposal costs increased due to greater impacts from the base price escalation.

For our financial modelling, it is changes to AB Lime's base price that impact the comparison to other disposal options. The government's waste disposal levy is the same for all three options and therefore does not impact the comparison. Likewise, to simplify the financial modelling, we have assumed ETS costs are the same for all three options. This is a fair assumption given that all landfill operators have the opportunity to demonstrate high gas capture from their landfill and they all purchase ETS units from the same market with the same opportunities to hedge prices.

Therefore, we have increased the cost of out-of-district disposal from $123/tonne to $129/tonne (base price plus ETS margin) in our financial modelling. We included the ETS margin on top of the base price because this is a cost specific to AB Lime, not a government levy.

Table 1: AB Lime out-of-district disposal contract rates

Waste type	Base price[1]	Govt Levy	ETS unit price	UEF[2]	ETS Cost	ETS margin[3]	Gate Price	Modelled Disposal Rate[4]
General Waste								
Price at 14 Nov-21	$117.00	$30.00	$88.75	67%	$59.46	$5.95	$212.41	**$122.95**
Price at 1 Jul-23	$127.12	$50.00	$51.00	29.7%	$15.15	$1.51	$193.78	**$128.63**
Price at 15 May-24	$133.11	$60.00	$62.25	9.1%	$5.66	$0.56	$199.34	**$133.67**
Sludge								
Price at 14 Nov-21	$301.00	$30.00	$88.75	67%	$59.46	$5.95	$396.41	**$306.95**
Price at 1 Jul-23	$327.04	$50.00	$51.00	29.7%	$15.15	$1.51	$393.70	**$328.55**
Price at 15 May-24	$342.44	$60.00	$62.25	9.1%	$5.66	$0.56	$408.67	**$343.00**

(1) Base price is subject to annual review. Escalation 14 Nov-21 to 1 Jul-23 was 8.65%
(2) UEF = Unique Emissions Factor. AB Lime had a reduced UEF approved by the EPA in 2024 of 9.1%
(3) The ETS margin on ETS costs is 10%.
(4) In financial modelling, the base price plus ETS margin was used for out-of-district disposal rate.

2.2 Smooth Hill revised costs

GHD have developed a whole of life cost model for construction and operation of both Green Island and Smooth Hill landfills. These are based on their concept designs submitted as part of the sites' resource consent applications. Over time GHD have updated their costs to reflect design changes and cost escalation in the construction market.

In July 2023, GHD obtained a peer review of their latest cost model. The peer review concurred with GHD that operating costs had increased by 10-15% since GHD's last costing was prepared in October 2022, and capital costs had increased by 15-20% since that estimate was prepared. In July 2023, GHD also revised capital works tasks (deleting some tasks) and timing (bringing some tasks forward), which has impacted the financial modelling. Based on these findings, we have increased costs in our financial model as follows:

- Landfill operating costs increased by 15%
- Landfill construction costs increased by 20%. The capital costs include a 20% contingency
- Bulk haulage costs increased by 15%. The bulk haulage costs modelled are:
  - AB Lime haulage cost $69/tonne
  - Smooth Hill bulk haulage cost $16/tonne
  - No bulk haulage cost for Green Island

- Smooth Hill and Green Island gate fee increased by 15% (passing on price increases). The gate fees modelled are:
  - General waste $172.50/tonne (plus waste levy plus ETS plus GST)
  - Special waste $224.25/tonnes (plus waste levy plus ETS plus GST)

- To reflect the known price movements since July 2023, we have further updated:
  - Operating costs and gate fees increased by 8% to reflect movements in the Producers Price index for waste services since 30 June 2023.
  - Capital costs increased by 2% to reflect movements in the Producers Price index for civil works since 30 June 2023.
  - Haulage costs increased by 5% to reflect movements in the Producers Price index for road transportation since 30 June 2023.
  - ETS costs in line with AB Lime adjustment.

Note, costs incurred to date to secure the land and consent for Smooth Hill (sunk costs) have not been included in the model. These are common to all three options, but it is noted that in the case of Smooth Hill not being constructed, these costs would not be recovered through future revenue from operating a landfill.

2.3 Other model adjustments

In order to make the financial comparison as clear as possible, the following changes were also made to the financial model:

- The 2023/24 financial year was used as Year 1
  - The AB Lime rates and Smooth Hill costs have been updated to the current year and none of the development costs for Green Island or Smooth have yet to be incurred

- Green Island was used for disposal for a maximum of six years, to June 2030
  - Impacts of earlier transition to Smooth Hill also considered in modelling to confirm whether or not this changed the recommended option

- Assessment period of 20 years
  - Not 4-year construction plus 20-year operating period for Smooth Hill
  - The model is not just about construction and operation of Smooth Hill, it takes into account 3-6 years of operation at Green Island as well. As opposed to making the model period vary between options, we have fixed the model period but changed the number of years operating Green Island within this period

- Total tonnes disposed of 61,000 per annum
  - DCC 35,000 tonnes and commercial waste 26,000 tonnes
  - The 2020 total tonnes disposed at Green Island were used over more recent disposal tonnes as they represent a more likely volume of commercial tonnes for a new landfill

- No penalty for loss of commercial tonnes in the DCC alone option
  - Previously the DCC-alone option was for 35,000 tonnes DCC-waste plus 16,000 tonnes commercial waste
  - As opposed to making a fixed assumption about commercial tonnes in the DCC-alone option, this allows the impact of different commercial waste volumes to be compared

3 Financial model outputs

The updated financial comparison of options is shown in Table 2 below. The outputs presented are the same as those used in the DBC and present the results from a project perspective and ratepayer perspective. Overall, the ranking of the options has remained the same as in the DBC.

The modelling shows that Option 1, DCC alone, provides the best financial position for DCC, because it has the lowest total cashflow, net present value (NPV) and rates impact. This is because DCC retains 100% of the gate fee revenue from the use of its Green Island and Smooth Hill landfills, which off-sets the cost of DCC's own waste disposal and the high capital costs associated with this option. Overall, Option 1 is the preferred option from a financial perspective.

Option 8, the partnership, is the second ranked option. It offers DCC and its ratepayers a better financial position than Option 12, out-of-district disposal, due to the revenue generated from gate fees. With this revenue shared 50:50 with the commercial partner, and the partnership paying tax as a commercial entity, the revenues are lower in Option 8 than in Option 1. Capital costs are also shared with the commercial partner, off setting the lower revenues.

Option 12 is the lowest ranked option. It has the highest total cost to DCC and its ratepayers. DCC has to pay higher costs to transport and dispose of its waste at an out-of-district landfill. This option has the lowest capital costs, but the loss of commercial revenue is not sufficient to offset this cost.

To provide further explanation on the costs and how these are incurred over time, Appendix B contains graphs that compare the cashflows and capital costs for the three options for the 20-year modelling period.

Table 2: Financial modelling outputs

Options	Option 1: 100% Council owned	Option 8: 50:50 partnership	Option 12: Out of District
Description	Closure of GI for landfilling by Jun-30. SH built and operated by DCC alone	Closure of GI for landfilling by Jun-30. SH built and operated by DCC entering 50:50 partnership with private operator	Closure of GI for landfilling by Jun-30. DCC transport council-controlled waste to out-of-district landfill (AB Lime)
NPV ($million)	(89)	(103)	(120)
Whole of Life Cashflow 20-Year Total Cost ($million)	(151)	(218)	(296)
Average Annual Cashflow ($million)	(7.6)	(10.9)	(14.8)
Annual Rates Impact Average ($million)	(4.8)	(9.3)	(14.8)
Capital Requirements 20 years ($million)	(143)	(74)	(6)
Capital Requirements 10 years ($million)	(97)	(51)	(6)

4 Sensitivity analysis

Option 1 has been shown to have the best financial outcome for DCC, however there are financial risks and other considerations that also need to be assessed. These have been explored through a sensitivity analysis and the results discussed in the sections below.

4.1 Securing commercial tonnes

Option 1 assumes DCC is able to secure 26,000 commercial tonnes for disposal at its own facilities in addition to disposing of its own waste. This is in line with the current waste volumes disposed at Green Island. However, there is a risk that once DCC commits to building its own landfill without a partnership, commercial waste companies will seek to secure their own disposal arrangements that compete with DCC's landfill. For example, AB Lime have already signalled they would look to develop their own transfer station in Dunedin, attract commercial customers away from DCC and transport waste to their landfill in Southland.

There is a tipping point where Option 8, the facility partnership, is preferred over Option 1, DCC alone. A key driver for the facility partnership is the ability for the partner to secure commercial tonnes that maintain the viability of Smooth Hill. It only takes a small reduction in the commercial tonnes DCC is able to secure, from 26,000 tonnes to 21,000 tonnes, for the facility partnership to be the preferred option based on an NPV comparison.

4.2 Further capital cost increases

In updating the financial model, a 20% uplift in cost was applied to both Green Island and Smooth Hill capital costs. There is a point at which capital cost increases are sufficiently high that out-of-district disposal (Option 12) is preferred to either of the build and own options (Options 1 or 8). If capital cost increases are 70% instead of 20% then out-of-district disposal is preferred on an NPV comparison. This assumes that these cost increases are specific to Smooth Hill and not general cost increases that apply to either Smooth Hill or AB Lime's landfill. However, based on DCC's recent experience with build costs for the organics consolidation facility, there is a real possibility of Smooth Hill specific cost increases in the order of 70%.

4.3 Reductions in out-of-district disposal gate fee

If capital costs stay the same and DCC were able to secure 26,000 tonnes per annum commercial tonnes, then the Smooth Hill options are preferred over out-of-district disposal. However, AB Lime may look to further reduce their gate fee to attract DCC. Based on our financial modelling, AB Lime would need to reduce their disposal rate (base rate plus ETS margin) by almost half, from $134/tonne to $72/tonne, for out-of-district disposal to be favoured over Smooth Hill based on an NPV comparison.

Although this would appear to be a significant price reduction, it remains a possible option, even as a backup to the facility partnership, if favourable terms cannot be agreed with the commercial partner. AB Lime would also need to offer a longer-term contract (20 years or more) with agreed cost escalation provisions to give DCC long term security of access to a waste disposal facility and have price certainty.

4.4 Green Island operating period

Green Island is used for disposal in the first six years of the 20-year assessment period, which means the NPV calculation is weighted towards Green Island costs (costs in early years are less discounted). In order to check that this was not having a significant impact on the financial risks highlighted above, the analysis was repeated with a three-year operating period for Green Island. In all cases, the use of a shortened Green Island period further reinforced the arguments presented, as opposed to changing the ranking of the options. The point at which out-of-district was preferred was at a gate fee of $70/tonne instead of $72/tonne or if the capital cost increase was 87% instead of 73%. The secured commercial tonnes at which a partnership was preferred over the DCC-alone option reduced from 21,000 tonnes per annum to 20,000 tonnes per annum.

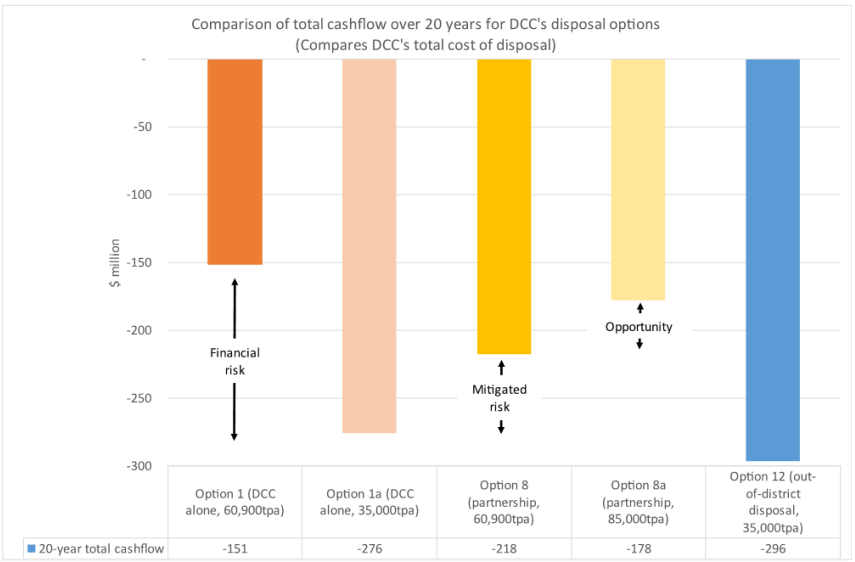
4.5 Financial risk

When assessing the financial impacts of the options, consideration needs to be given to the financial risk as well as the total cost of disposal associated with the option. Financial risk is generally relates to the possibility of losing money on an investment or business venture. The overall preferred option will be the one that balances DCC's overall disposal cost and DCC's exposure to financial risk.

The figure below presents the total cost of disposal over 20 years for the three options as well as two additional scenarios that are included for comparative purposes:

- Option 1a with only 35,000tpa disposed at Smooth Hill (only DCC's waste)
- Option 8a with 85,000tpa disposed at Smooth Hill (historic commercial waste volume to Green Island)

Figure 1: comparison of total cashflow for DCC's waste disposal options



The risks associated with each of the three options are:

- Option1, DCC alone: lowest cost of disposal but highest financial risk
  - While DCC has the highest potential to generate revenue from waste disposal if it builds Smooth Hill alone, it is also exposed to the greatest financial risk. This risk arises from DCC being dependent on commercial customers continuing to use Smooth Hill, which is not guaranteed
  - DCC are also responsible for 100% of the capital costs and the associated risk of capital cost increases

- Measures to mitigate this risk might include:
  - Entering longer term relationships with commercial customers to secure their tonnes, which could be part of negotiating an operating contract for Smooth Hill (noting this may require DCC to offer reduced gate fees, which would increase DCC's costs)
  - Negotiating disposal contracts with neighbouring councils, noting their volumes are lower and that these councils may already have long-term disposal contracts in place at the time DCC commence Smooth Hill operation
  - Requiring the use of Smooth Hill for disposal of waste from capital projects that cannot be avoided or diverted, such as the remediation of Kettle Park (which requires disposal of 220,000m3 of contaminated material)

- Option 8, facility partnership: lowers the financial risk, but increases cost to DCC
  - This option involves a trade-off between lowering financial risk (which will include upfront capital and securing commercial tonnes) but also reducing DCC's revenue through sharing this with the commercial partner
  - The commercial partner has invested upfront capital in Smooth Hill, meaning they have a long-term commitment to the financial success of Smooth Hill, which will in term drive them to ensure there are sufficient commercial tonnes being delivered to the site to maintain financial viability
  - However, there is a risk that DCC are unable to secure a commercial partner without significantly eroding DCC's share of revenue through the negotiation
  - Measures to mitigate this risk might include:
    - DCC have already invested in the land and consenting of Smooth Hill, which de-risks this for the commercial partner, increasing the value of the site over and above costs incurred to date. This in turn supports DCC obtaining favourable terms with a commercial partner
    - Having a back-up plan if terms favourable to DCC cannot be secured. If negotiation on a facility partnership cannot be agreed DCC can still build Smooth Hill alone or dispose of waste out-of-district
    - Requiring a commercial partner to deliver more than 26,000 tonnes commercial waste (shown in Figure 1 as Option 8a)
    - As for Option 1, negotiating disposal contracts with neighbouring councils and requiring the use of Smooth Hill for disposal of waste from capital works

- Option 12, out-of-district disposal: highest cost of disposal but lowest financial risk
  - The cost of out-of-district disposal is significantly higher than the cost of disposal at Smooth Hill and there is a risk that once DCC has committed to this option, DCC has limited control over the disposal costs charged by the out-of-district landfill

 Commercially sensitive and in confidence 9

- There are also risks associated with increases in bulk haulage costs, with these being heavily dependent on fuel prices and labour costs
- Measures to mitigate this risk might include:
  - Introducing more waste minimisation initiatives to minimise the volume of waste that needs to be transported for out-of-district disposal. For example, identifying alternatives to landfill disposal for biosolids from DCC's WWTPs or resourcing at DCC's transfer stations to encourage customers to separate waste
  - Negotiating longer term disposal contracts with agreed escalation provisions
  - Retaining the option of exercising the resource consents and building Smooth Hill at a future date

To summarise, the key financial risks associated with the three options are shown in the following table.

Table 3: Financial risks

Option	Financial risks
Option 1: DCC alone	Unable to secure sufficient commercial tonnes Significant capital cost increases
Option 8: facility partnership	Unable to secure commercial agreement without significantly eroding DCC's share of operating revenue
Option 12: out-of-district disposal	Significant increases in haulage costs or gate fees at out-of-district disposal facility

5 Summary and way forward

All three options have risks associated with them. Overall, it is DCC's risk appetite that will decide which option is preferred by council from a financial perspective, with these risks weighed against non-financial considerations and how the options best address DCC's waste minimisation and carbon emission reduction targets.

Overall, if DCC is uncertain about its ability to attract commercial tonnes, then a commercial partner would help to provide this. However, this should only be considered if DCC can negotiate terms that address this risk without significantly impacting DCC's cost of disposal.

Out-of-district disposal remains a back-up option, although an expensive one. Continuing discussions with AB Lime would enable DCC to understand AB Lime's appetite for reducing disposal costs and entering a longer-term contract as DCC's level of commitment to building Smooth Hill increases.

Appendix A Background to the Detailed Business Case

This appendix provides some background and context for the development of DCC's Detailed Business Case, from which the shortlisted options were selected for the financial modelling presented in this report.

DCC embarked on its Waste Futures Project in 2018 to identify a recommended waste and diverted materials system for Dunedin. Morrison Low, in partnership with GHD and Boffa Miskell, prepared two detailed business cases in 2019 as part of the Waste Futures Project. Detailed Business Case 1 (DBC1) covered proposed changes to DCC's waste collection system and the recommended collection system is now being implemented through a procurement of a new waste services contractor appointed in September 2022.

Detailed Business Case 2 (DBC2) covered the wider waste system; in particular the diversion and disposal facilities needed to support the collection system and how these facilities will be provided. The draft DBC2 report was updated in 2020 to support the economic assessment for resource consents for Dunedin's new landfill at Smooth Hill.

Also in 2020, a procurement strategy was developed for a waste facility partnership. The strategy explored the ownership structure and operating model for the diversion and disposal facilities in more detail than had been provided in DBC2.

In October 2022, some 18 months later, a further update was initiated to DBC2, to update all project costs and financial modelling. During that time there had also been rapid change to the Government's national direction on waste, with greater support for waste minimisation and resource recovery through its proposed changes to legislation and guidance. Council also awarded a contract the development and operation of a Council-owned Resource Recovery Park Precinct (RRPP) at the Green Island Landfill to EnviroWaste during that time.

Consent for Smooth Hill Landfill was granted in May 2023, which means it could be operational from around 2026. Council have also commenced the process of obtaining resource consents for the RRPP and also consents for the eventual closure of Green Island Landfill. While Dunedin City Council aims toward a zero waste, circular economy, it has recognised that it is essential to have a consented option that enables the city to take responsibility for dealing with its own waste for decades to come.

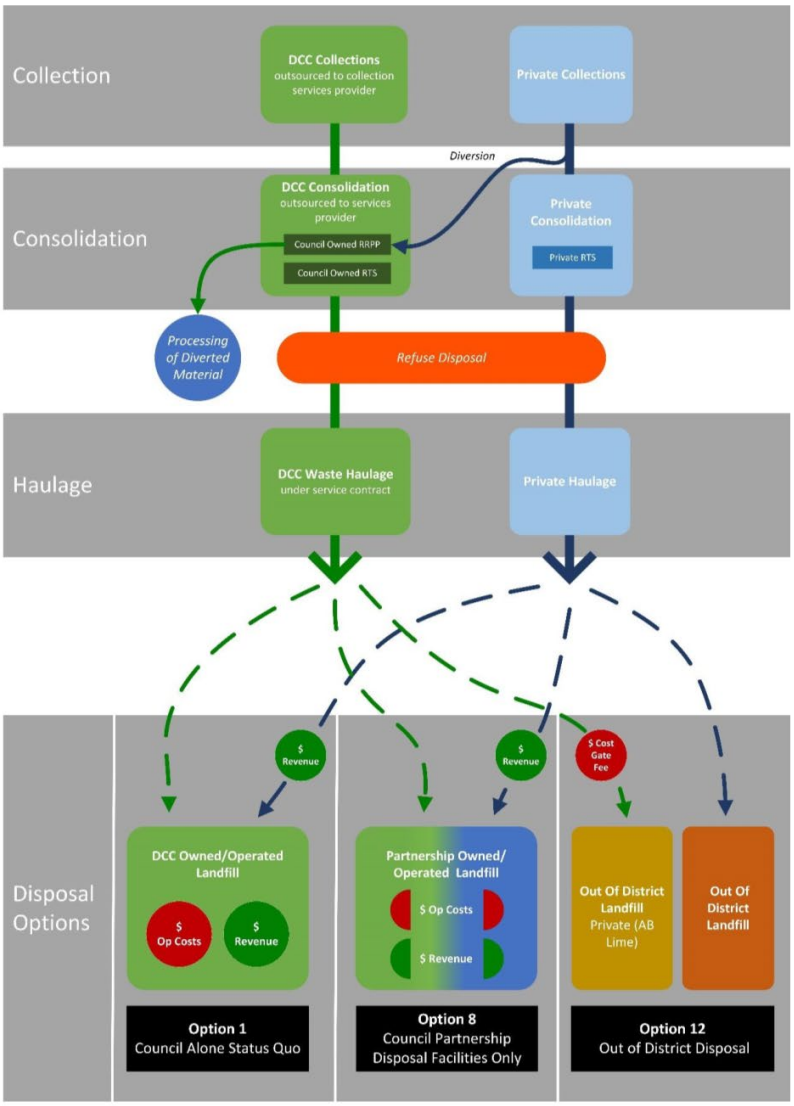
Options assessed

DBC2 considered three options for its long-term waste disposal arrangements:

- DCC build and own Smooth Hill alone (DBC Option 1)
- DCC build and own Smooth Hill via a 50:50 partnership with a commercial operator (DBC Option 8)
- DCC dispose of waste out-of-district and do not build Smooth Hill (DBC Option 12).

Figure A.1 below shows these options diagrammatically.

Figure A.1: DBC Shortlist Options Overview

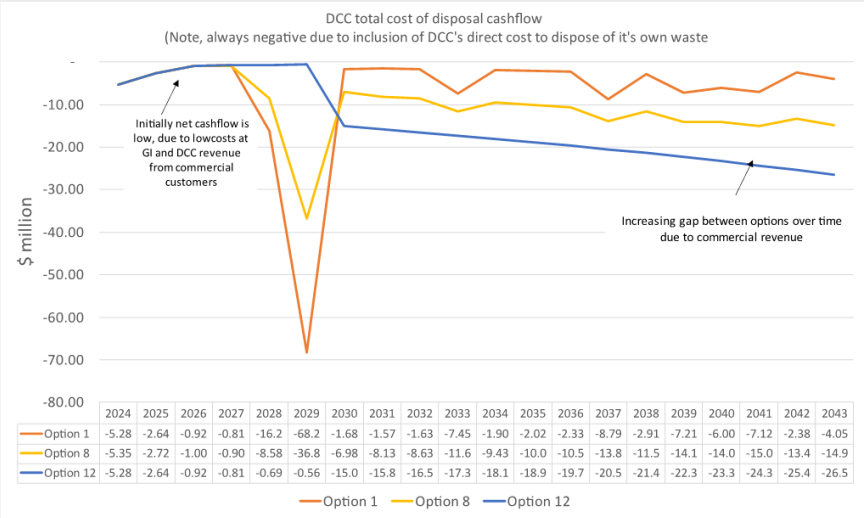


Appendix B Financial model outputs

The outputs from the financial modelling were presented in Table 2 (Section 4 of this report). In this appendix the cashflow and capital costs for the options are graphed to demonstrate where the key differences in cost occur between the options.

Figure B1 compares the net cashflow over time for DCC's three waste disposal options. Initially, DCC benefits from the low cost of operating Green Island when compared to Smooth Hill, along with retaining all revenue from commercial customers during this phase. Once Green Island's consents expire, there is a significant increase in DCC's net disposal costs, either due to the cost to build Smooth Hill or transporting waste out of the district. Higher costs are offset by commercial revenue in the two options where Smooth Hill is constructed, with lower DCC revenues in the partnership options where these have to be shared with the commercial partner.

Figure B1: Comparison of net cashflow for DCC total cost of disposal options

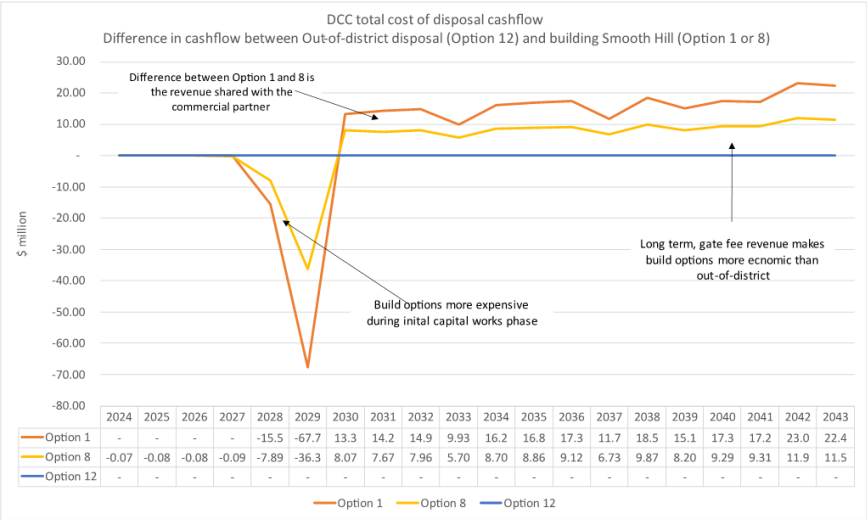


	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Option 1	-5.28	-2.64	-0.92	-0.81	-16.2	-68.2	-1.68	-1.57	-1.63	-7.45	-1.90	-2.02	-2.33	-8.79	-2.91	-7.21	-6.00	-7.12	-2.38	-4.05
Option 8	-5.35	-2.72	-1.00	-0.90	-8.58	-36.8	-6.98	-8.13	-8.63	-11.6	-9.43	-10.0	-10.5	-13.8	-11.5	-14.1	-14.0	-15.0	-13.4	-14.9
Option 12	-5.28	-2.64	-0.92	-0.81	-0.69	-0.56	-15.0	-15.8	-16.5	-17.3	-18.1	-18.9	-19.7	-20.5	-21.4	-22.3	-23.3	-24.3	-25.4	-26.5

Figure B2 below plots the difference between a straight disposal option for DCC's waste (Option 12, out-of-district), with the cashflows generated by building and owning a landfill and generating revenue from commercial customers using the site alongside DCC. All three options use Green Island for the first six years of disposal, which means Green Island development costs and off-set from commercial revenue are the same for all three options in these years.

In the initial Smooth Hill build phase (2028-2029), the build options are more expensive than out-of-district disposal, but this is offset by gate fee revenue over the longer term. The longer Smooth Hill operates, the more the build options are preferred over out-of-district disposal. The difference between Option 1 and Option 8 curves represents the revenue that DCC shares with its commercial partner.

Figure B2: Offsetting disposal costs with revenue in build options

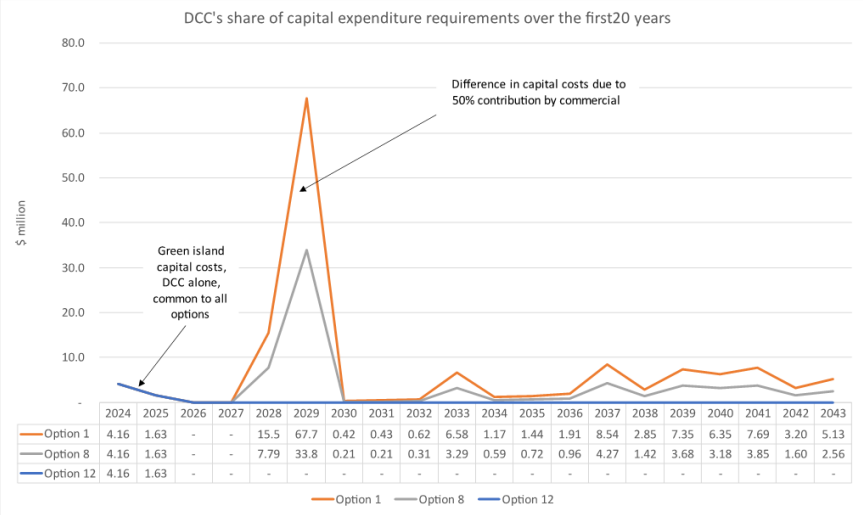


	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Option 1	-	-	-	-	-15.5	-67.7	13.3	14.2	14.9	9.93	16.2	16.8	17.3	11.7	18.5	15.1	17.3	17.2	23.0	22.4
Option 8	-0.07	-0.08	-0.08	-0.09	-7.89	-36.3	8.07	7.67	7.96	5.70	8.70	8.86	9.12	6.73	9.87	8.20	9.29	9.31	11.9	11.5
Option 12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Figure B.3 below compares DCC's capital expenditure for the three disposal options. It is noted that the graph shows the inflated capital costs, which may need to be adjusted for inclusion in DCC's Long Term Plan.

In the first two years, DCC will incur capital costs to enable ongoing use of Green Island landfill. From 2028, Smooth Hill is under construction, with large upfront capital costs to enable the commencement of waste filling in 2030. There is a second smaller spike in capital costs in 2033, with the expansion of the liner system. The difference between Option 8 and Option 12 reflects capital cost sharing with the commercial partner under this option.

Figure B.3: Comparison of DCC capital expenditure for three disposal options



	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Option 1	4.16	1.63	-	-	15.5	67.7	0.42	0.43	0.62	6.58	1.17	1.44	1.91	8.54	2.85	7.35	6.35	7.69	3.20	5.13
Option 8	4.16	1.63	-	-	7.79	33.8	0.21	0.21	0.31	3.29	0.59	0.72	0.96	4.27	1.42	3.68	3.18	3.85	1.60	2.56
Option 12	4.16	1.63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

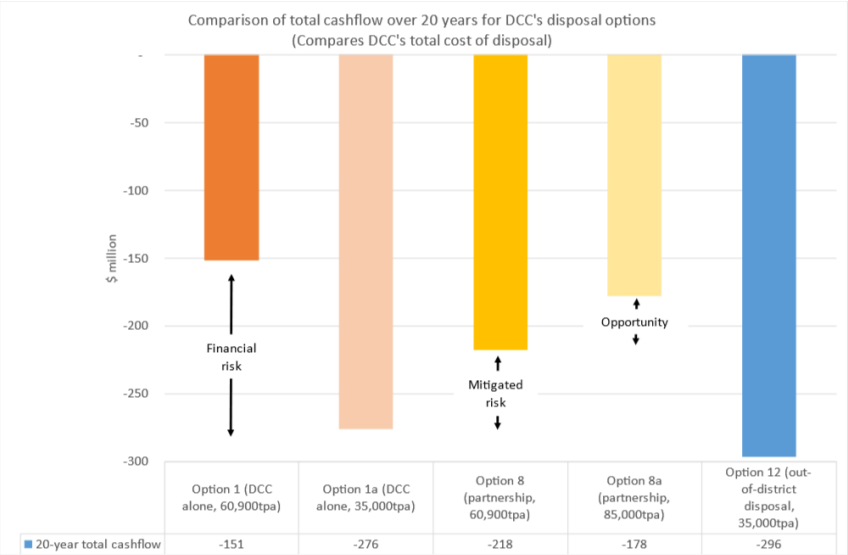
MorrisonLow

Waste Facilities Business Case: Questions & Answers
Dunedin City Council
November 2024

1. What is the order of preference for the three options and why?

The overall preferred option is the one that balances DCC's overall disposal cost and DCC's exposure to financial risk. The figure below presents the total cost of disposal over 20 years for the three options as well as two additional scenarios:

- Option 1a with only 35,000tpa disposed at Smooth Hill (only DCC's waste)
- Option 8a with 85,000tpa disposed at Smooth Hill (historic commercial waste volume to Green Island)



Overall, the three options are ranked in the following order:

- Option 8, facility partnership (preferred option): balances cost and financial risk
- Option1, DCC alone: lowest cost of disposal but highest financial risk
- Option 12, out-of-district disposal (least preferred): highest cost of disposal but lowest financial risk

While **Option 1** has the lowest overall cost of disposal ($151 million over 20 years), it requires DCC to secure commercial waste to make Smooth Hill financially viable. While DCC has the highest potential to generate revenue from waste disposal if it builds Smooth Hill alone, it is also exposed to the greatest financial risk. This risk arises from DCC being dependent on commercial customers continuing to use Smooth Hill, without them having the skin in the game that a partnership arrangement provides. Although DCC could offer reduced gate fees this does not give the same degree of certainty as an upfront capital investment by the commercial partner.

Landfills are capital intensive infrastructure. **Option 1** requires DCC to carry all of the financial risk associated with the capital costs, presenting a risk of a significant financial burden for the city. While these costs would be passed onto landfill customers through gate fees, there is a risk that high gate fees are not competitive and commercial customers choose to use other, cheaper disposal options (such as AB Lime). Capital costs would then need to be spread across a smaller customer base (lower annual tonnes).

If DCC were only disposing of its own waste to Smooth Hill, **Option 1a** (35,000 tonnes per annum), the overall cost of disposal would increase to $276 million (over 20 years), a significant financial burden for the city (on average $12.6 million per annum). If DCC were only disposing of its own tonnes, the option of disposing DCC's waste at an out-of-district landfill (Option 12) becomes more attractive ($296 million over 20 years, 10% higher than Option 1a), assuming DCC have not already invested in the development of Smooth Hill.

Option 12, out-of-district disposal, eliminates DCC's risk of capital cost increases and needing to attract commercial waste. However, this comes at a high cost ($296 million over 20 years). Regular gate fee increases would be passed onto DCC despite the price certainty for the operator from the landfill already being constructed and fully operational. Having entered a long-term disposal contract to secure a more favourable initial gate fee, DCC would have limited options to minimise its exposure to these costs (apart from resource recovery and diversion away from landfill). For this reason, it is the least preferred option.

Option 8, the facility partnership, costs DCC more than Option 1, DCC alone, but is less expensive than Option 12, out-of-district disposal. The total cost of disposal for Option 8 is approximately halfway between Option 1 and Option 12, a middle-ground option from a cost perspective.

Having a commercial partner involved, who has invested upfront capital in Smooth Hill, means they have a long-term commitment to the financial success of Smooth Hill, which will in turn drive them to ensure there are sufficient commercial tonnes being delivered to the site to maintain financial viability. A commercial waste company has greater access to commercial tonnes that DCC due to their existing relationships with commercial customers. This significantly reduces the financial risk for DCC, but does not eliminate it as DCC will have made an upfront investment in the facility that it needs to cover.

Option 8, the facility partnership, also offers DCC the opportunity to generate more revenue and reduce its cost of disposal, if the facility partner is able to attract more commercial tonnes. At 85,000 tonnes per annum (35,000 tonnes per annum DCC and 50,000 tonnes per annum commercial waste), **Option 8a**, the total cost of disposal for DCC is $178 million over 20 years, which is getting close to the potential revenue from Option 1.

It is noted that DCC's revenue is favourable in the short term due to the revenue it gains from continuing to operate Green Island alone for the first six years of the modelling period. This makes it difficult for an uplift in tonnes for Option 8a to match the revenue potential from Option 1.

While the facility partnership (Option 8) balances cost and financial risk, recent contract negotiations between councils and the private waste sector have highlighted the deficiencies in contractual arrangements (both standard and bespoke contracts) to protect councils from financial risk in the way the councils anticipated when the contracts were signed. Therefore the difference between DCC alone (Option 1) and the facility partnership (Option 8) is highly dependent on the commercial model and associated contracts that can be negotiated with the private waste sector. Overall, the difference between these options is small.

2. What capital costs have been used in Morrison Low's financial modelling?

Figure B.3. presents the capital costs used in the modelling, with a table of costs per year included with the graph. Capital costs include a 20% contingency (aligns with GHD baseline costs plus 20%). In 2023, capital costs were increased by 20% on recommendation by GHD, to reflect recent construction cost inflation (with 20% contingency applied on top of these to cover unforeseen scope). Future capital costs are then inflated to reflect future inflation rates, 2.3-3.0% depending on the year. These were further updated in September 2024, with the table below updated to reflect these changes.

If uninflated capital costs were needed for the LTP, the following figures would be used:

Year	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34
Green Island ($m)	$4.16	$1.63	$0	$0	$0	$0	$0	$0	$0	$0
Smooth Hill ($m)	$0	$0	$0	$0	$13.99	$59.27	$ 0.35	$0.35	$0.50	$5.16

3. What tonnage assumptions are used in the financial model?

Total tonnes disposed is 60,900 per annum as per the following table.

Waste source	Tonnes per annum
DCC waste:	35,000
Kerbside collections (after recycling and organics diversion)	*21,000*
Green Island public transfer station	*6,800*
Wastewater treatment plant solids	*7,000*
Rural transfer stations	*200*
Commercial waste:	25,900
Total	**60,900**

Note, the financial model assumes 2% tonnage growth, in line with long term population growth. This means that in 20 years, the annual tonnage disposed to Smooth Hill landfill will be in the order of 90,000 tonnes per annum.

4. ***What changes have been made to the financial modelling assumptions from the February 2023 business case to the September 2023 disposal cost comparison report, and how material are these to the selection of a preferred option?***

Changes to the financial modelling were described in Section 2 of the disposal cost comparison report. These included changes to AB Lime's rates, the 20% increase in capital costs discussed in Question 2 above, and other model adjustments (Section 2.3). A further 2% increase in capital costs, an 8% increase in operating costs, and a 5% increase in transportation costs have also been included to reflect known movements in prices since July 2023.

5. ***Do the Morrison Low reports cover the resilience of DCC having its own landfill versus relying on anyone else?***

The business case recognises that DCC having its own landfill meets DCC's objectives of retaining influence over the waste system to support Council's waste minimisation and carbon emission reduction goals, which could be described as a resilient solution for meeting these goals.

Although the business case does not specifically focus on the landfill availability aspect of resilience, retaining sufficient influence over the waste stream also ensures landfill availability. Therefore, the assessment effectively covers this aspect with the build Smooth Hill options (Option 1 and Option 8) scoring higher than out-of-district disposal (Option 12).

The business case focuses on financial resilience, with the risks associated with not securing commercial tonnes outweighing the risks associated with landfill availability, and therefore being the focus of discussion in the report.

6. ***How long will Smooth Hill last if all DCC's reduction targets are met?***

The base case, 60,900 tonnes per annum, allows for DCC meeting its waste reduction targets for kerbside collected waste. The landfill is expected to last 40 years in the base case.

7. ***How long will Smooth Hill last if DCC don't have commercial tonnes coming in?***

Removing commercial tonnes, the landfill tonnes would reduce to 35,000 tonnes per annum, meaning the landfill could last in excess of 70 years.

8. ***Are there any examples in NZ of two or more commercial partners being part of a JV with a Council?***

Kate Valley landfill in Canterbury was initially a joint venture between the Canterbury councils, EnviroNZ and Waste Management NZ (WMNZ). During a sale process for EnviroNZ, the company's share in Kate Valley was sold to WMNZ, despite opposition from the councils at the time.

Bonny Glen landfill in Rangitikei is jointly owned by EnviroNZ and WMNZ, through a limited partnership called MidWest Disposals Ltd. The councils in the surrounding region have long term disposal agreements with Bonny Glen rather than an ownership stake.

Although these arrangements have not been challenged by the Commerce Commission to date, this does not preclude them from challenging a future joint arrangement based on the commercial conditions specific to the location.

9. ***In Appendix A of the Disposal Cost Comparison report, what does it mean by "…it is essential to have a consented option…"?***

Regardless of where DCC dispose their waste (Smooth Hill or out-of-district), the facility must have long-term resource consents to assure DCC can access disposal regardless what volume needs to be disposed (degree of success with waste diversion initiatives).

The following additional questions and answers have been added following a Council meeting in October 2024.

10. Where are the major landfills in New Zealand (as shown on a map)?

There are currently 40 registered Class 1 landfills in New Zealand. The Ministry for the Environment now has an interactive dashboard that maps these, Waste facilities and disposal | Ministry for the Environment. The following map is extracted from their dashboard.

There are 17 landfills in the South Island, but most of these receive less than 10,000 tonnes per annum. The main South Island landfills are:

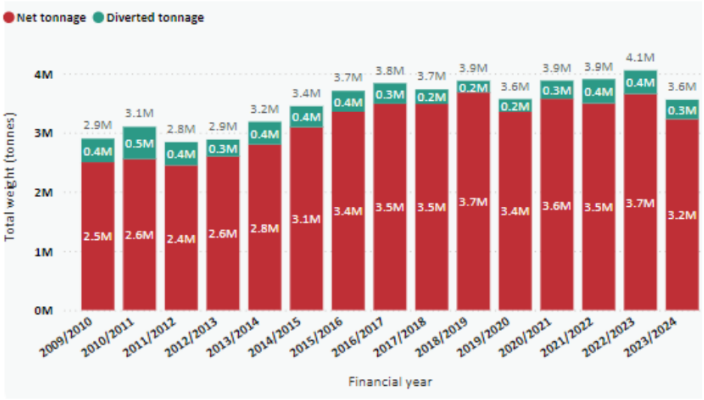
- York Valley Landfill, Nelson (owned by Nelson City Council)
- Marlborough Regional Landfill (Bluegums), Marlborough (owned by Marlborough District Council)
- McLean's Pit Landfill, West Coast (owned by Grey District Council)
- Kate Valley Landfill, Canterbury (owned by Canterbury Waste Services Joint Venture)
- Redruth Landfill, Canterbury (owned by Timaru District Council)
- Green Island Landfill, Otago (owned by Dunedin City Council)
- Victoria Flats Landfill, Otago (owned by Queenstown Lakes District Council)
- AB Lime Limited, Southland (owned by AB Lime)

11. Will there be an ongoing need for landfills in NZ?

The number of Class 1 landfills continues to decline. In 1995, just after the introduction of the Resource Management Act 1991, there were 327 landfills. By 2014 this had reduced to 48 landfills, with a further eight closures since then.

While the number of facilities has reduced, the volume of waste disposed has not. MfE's interactive dashboard (see extract below) shows that in 2009/10, when the waste levy was introduced, there were 2.5 million tonnes of waste disposed to Class 1 landfills. By 2022/23 this had increased to 3.7 million tonnes. While a lower volume was disposed in 2023/24 (3.2 million tonnes), this may be due to economic conditions as much as levy increases.

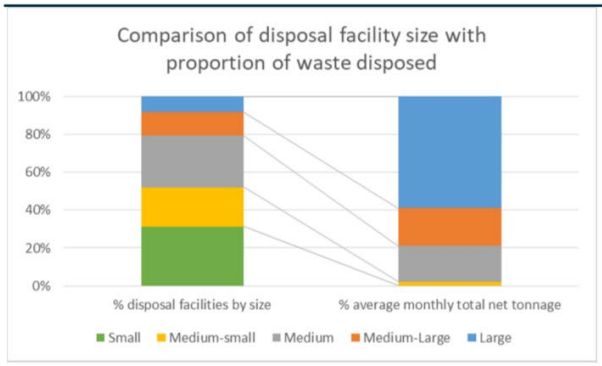
While it is difficult to predict the future need for landfills, particularly over the 30-50 year life of a particular facility, ongoing closure of small landfills matched by disposal volumes remaining static suggest landfills will still be required.



12. What are the catchment areas for the major landfills (as shown on a map)?

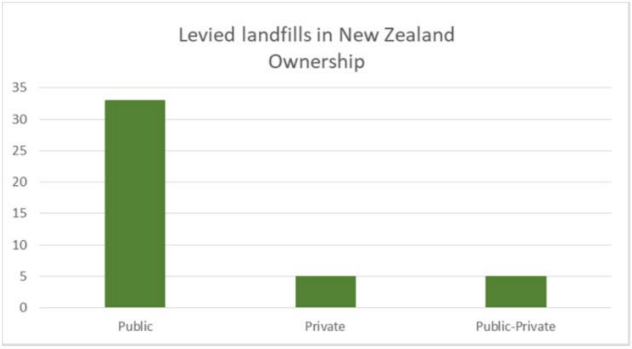
The catchment area for a landfill is hard to define – there is no travel distance or travel time formula that can be applied. Like the roads we drive on, district boundaries do not restrict waste flows. Data from MfE from 2014 showed that the four largest landfills (Kate Valley, Bonny Glen, Redvale and Hampton Downs) receive 59% of all waste disposed in New Zealand. The six medium-large landfills receive a further 20%. The small landfills only received 0.2% of the waste. While this data is from 2014, we have not seen significant changes since then. If anything, the four largest landfills now receive a greater proportion of the waste and there have been further closures of small and very small landfills.

Factors that impact where waste is disposed include negotiated discounts on gate fees, disposal restrictions on some types of waste (e.g. wastewater treatment plant sludge) and cost-efficiencies in transport arrangements (e.g. backloading).



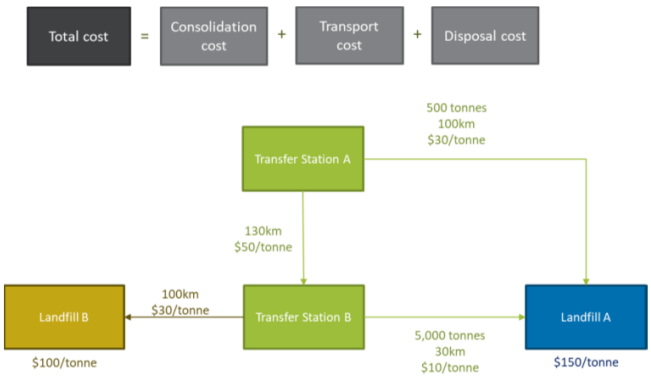
13. How are other landfills owned in NZ?

The following diagram was produced in 2017, when there were 43 landfills in New Zealand. The majority of the landfills in New Zealand are publicly owned, although the four large facilities (which handle most of the waste) are privately owned or public-private partnerships. Bonny Glen, Redvale and Hampton Downs are privately owned and Kate Valley is a public-private partnership.



14. What are typical gate fees at major landfills in New Zealand

Generally landfills are not directly open to the public. Instead waste is received at transfer stations from where it is consolidated and transported to landfill for disposal, as shown schematically in the diagram below.



Establishing a typical gate fee is difficult and there are no consistent formulas to apply. Some examples of transfer station gate fees are shown in the following table.

Transfer station	Landfill	Distance to landfill	Transfer station gate fee (incl GST)
EcoCentral	Kate Valley	70km	$405.75/tonne
Invercargill	AB Lime	36km	$313/tonne
Waitakere	Redvale	34km	$245/tonne
Queenstown	Victoria Flats	30km	$440/tonne

15. What would be the impact on SH if an incineration plant was built in the Waimate region?

The facility proposed in Waimate is a waste to energy plant as opposed to an incinerator, the difference being the generation of electricity (or other fuels) from the burning of waste. An incinerator would pay the waste levy while a waste to energy plant would not. A review of the waste levy is looking at what circumstances the levy should apply to waste to energy plants in future.

The Waimate facility would be a competitor to Smooth Hill and the other main landfills in the South Island. The extent to which its gate fee would be competitive relative to these landfills is unknown. Typically waste to energy plants have higher capital and operating costs compared with landfills, however as waste levy and ETS costs increase for landfills, waste to energy becomes a more competitive disposal solution.

16. Could DCC operate an incineration plant at Smooth Hill?

An incineration plant was discounted as a disposal for Smooth Hill back in 2018 due to high operating and capital costs, the technology being unproven and significant consenting risks under the RMA settings at the time. Smooth Hill is consented as a landfill. The consents would need to be varied to enable an incinerator to be developed at the site.

In future, there may be resource recovery facilities that Council want to develop at Smooth Hill such as a sorting line for general waste prior to disposal in the landfill. These would also require consent variation. It is also noted that Council has committed to development of its resource recovery facilities at Green Island for the foreseeable future.

Like a landfill, an incinerator would only be used for the disposal of materials that cannot be recovered i.e. Council would continue to divert as much as possible from the waste stream prior to incineration.

17. What do you consider resilience to be?

Resilience is a broad term. Resilience of infrastructure refers to the ability of infrastructure systems to withstand, adapt to, and recover from disruptive events. This includes natural disasters like floods, earthquakes, and storms, as well as human-made challenges such as cyber-attacks or economic crises.

When considering Smooth Hill, resilience is a term that has been used to represent the benefits of having a disposal facility close to the major city of Dunedin following a natural disaster (less transport links that could be impacted). It is also a term that has been used to describe its financial sustainability under different revenue (waste disposal tonnage) scenarios.

18. Could rail be used to transport waste out of Dunedin? If so, what effect would that have on your modelling?

Transport via rail is quite common for waste overseas, but is not currently used by any of the landfills in New Zealand.

While waste could be transported from the Green Island resource recovery park onto rail nearby, additional infrastructure would need to be established to enable this. Once at Smooth Hill, again, it would need to be offloaded from rail onto trucks for disposal at Smooth Hill.

The AB Lime landfill is at least 50 km from the nearest rail line. Therefore, a rail option would have to include a reasonable road transport distance in addition to rail.

While transport by rail has not been assessed in the modelling, it is likely to be less efficient.

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MorrisonLow

19. What non-financial considerations do you think DCC should consider when deciding whether to build SH (alone or in partnership)?

In Morrison Low's view, the non-financial considerations include:

- Ensuring **long-term access** to disposal facilities for waste generated by Council operations, including kerbside-collected waste and difficult waste such as WWTP sludge or closed landfill remediation projects.
- Council maintaining sufficient **control** over the waste system so that it can have an active role in an what happens to waste in the city, driving resource recovery and carbon emission reduction.
- Access to landfill **technical and commercial expertise** to support council managing the complex health, safety and environmental risks and financial risks associated with landfill construction, operation and waste acceptance.
- Complexity of **partnership arrangements** and the need to address the objectives of both Council and its partners.

20. What level of bond is usually set for landfills?

Landfill bonds, which are usual requirement under a landfill's resource consent, are set based on the cost to apply final cover to the landfill, then maintain and repair the final cover, operate and maintain leachate and gas management systems, monitor the landfill and undertaken any remedial works for a period of thirty years. As such, the value of the bond depends on the size of the landfill and increases over time as new cells are opened and as inflation increases the cost of these closure and aftercare activities.

The bond for Smooth Hill could be in the order of $5 million.

21. Can you please confirm that your modelling has factored in on-going operational costs?

The Morrison Low modelling includes ongoing operating costs. The modelling is based on the capital and operating costs developed by GHD. An allowance for aftercare costs is also included.

22. Can you please advise what interest rate has been assumed?

An interest rate of 7% was applied in the modelling, based on advice from DCC's finance team. The impact of changing the interest rate to 5% on the financial modelling results would be minor – the relative costs of the options would remain about the same as they are now.

Minutes – confidential section from Council meeting 5 August 2020

Moved (Cr David Benson-Pope/Cr Mike Lord):

That the Council:

a) **Approves** the lodgement of resource consent applications for the development of the Smooth Hill Landfill.

b) **Lodges** the Smooth Hill Resource Consent Application for Smooth Hill as soon as reasonably possible.

d) **Delegates** to the Council's Chief Executive Officer/Acting Chief Executive Officer or their nominee, in consultation with Council's solicitors, the power to decide on any changes to the proposal or to conditions during the resource consenting process, as well as any decisions needed on the resource consenting pathway to be followed.

Division

The Council voted by division

For:	Crs Sophie Barker, David Benson-Pope, Rachel Elder, Christine Garey, Doug Hall, Carmen Houlahan, Marie Laufiso, Mike Lord, Jim O'Malley, Jules Radich, Chris Staynes, Steve Walker, Andrew Whiley and Mayor Aaron Hawkins (14).
Against:	Cr Lee Vandervis (1).
Abstained:	Nil

The division was declared CARRIED by 14 votes to 1

Motion carried (CNL/2020/066)

Moved (Cr David Benson-Pope/Cr Mike Lord):

That the Council:

c) **Asks** staff to further investigate the financial implications of exporting waste of district and present this information at Council's meeting of 25 August 2020.

Motion carried (CNL/2020/067) with Crs Marie Laufiso and Steve Walker recording their votes against.

Moved (Cr David Benson-Pope/Cr Mike Lord):

That the Council:

e) **Appoints** the Council's Chief Executive Officer/Acting Chief Executive Officer or their nominee as the Council's spokesperson on the resource consent applications.

Motion carried (CNL/2020/068)

A new city landfill at Smooth Hill

We work hard to help you reduce and reuse waste, but there will always be rubbish that must go to a well-managed landfill.

While the DCC already has resource consent to replace GIL with a modern, top-class landfill at its Smooth Hill site on Big Stone Road, we have investigated options to:

- export waste to another district's landfill
- build Smooth Hill Landfill in a partnership with a private waste company, or
- build a landfill at Smooth Hill alone.

Council has decided in principle to build a landfill at Smooth Hill alone because:

- Council maintains control
- it allows Council to focus on its waste minimisation goals
- Council retains 100% of the landfill's revenue
- financially, it is the best option in the long term
- it provides resilience and self-sufficiency, including in natural disasters
- mana whenua supports this option
- it aligns with Council's Zero Carbon Policy
- there are economic benefits to Ōtepoti Dunedin
- it minimises risks around fuel price increases, as compared to the export option.

Smooth Hill Landfill will be designed to service the city for up to 70 years depending on rubbish tonnage amounts. We are monitoring the empty site's air, water, soil, and ecology (including pests such as southern black-backed gulls) for three years ending in late 2025. This baseline data will help us maintain high environmental standards when the new landfill is operating.

$92.4 million has been allocated in the 9 year plan for landfill construction and upgrading roads to improve access for trucks travelling from the Green Island RRP transfer station. Construction is planned for completion before Green Island Landfill closes around 2029/30.

Attachment C – 9 year plan Smooth Hill submissions

Thirty-nine comments were received in relation to the proposed Smooth Hill Landfill. These included thirty-one comments opposed to the construction of Smooth Hill landfill based on either cost, environmental concerns, or both. Many of these comments also suggested other priorities for Council spending and supported the export of waste to AB Lime in Southland as a cheaper alternative. Two comments also requested that Council invest in a Waste to Energy facility instead of Smooth Hill.

Six comments supported the construction of Smooth Hill under Council ownership and opposed the export of waste out of district.

There were an additional two neutral comments that did not support or oppose Smooth Hill but expressed concern regarding the danger to wildlife (particularly sea lions) from heavy vehicle traffic on Brighton Road, and the potential for increased danger of bird strike at Dunedin Airport.

#	id	Date	Submitter	Submission excerpt relating to Smooth Hill
1	1132908	30/04/2025	Sarah Davie-Nitis	Smooth Hill dump should be abandoned
2	1132645	30/04/2025	Rachel Brazil	I do not support proceeding with Smooth Hill as proposed. The reasoning for being the very concerning cost which is likely to end up being more than what was proposed. There should be more consultation on this, with further investigation and discussion with mana whenua to see if there is a workable option that doesn't increase the city debt so drastically. Alternative options need further consideration.
3	1132597	30/04/2025	Terry Wilson	The Smooth Hill Landfill should proceed to ensure a reliable service and consistent user costs.
4	1128898	04/04/2025	Joshua Perry	We shouldn't be increasing the roadside pickup rate by 25% and we should be focussing on the basics when it comes to rubbish in terms of picking up regularly for the residents of the city and not spending 92 million on a landfill. We should be putting some of that 92 million into creating apartments for people to live in, and in innervating our economy by trying to attract more of the world here.
5	1132688	30/04/2025	(anonymous)	Costs to be removed: Creating a new landfill is an archaic method of refuse disposal when there are modern means, for example, incineration which can also be used to produce energy. I feel the moving refuse to another site is preferable to enable investigation of landfill alternatives.
6	1132680	30/04/2025	Paul Weir (Saddle Hill Community Board)	The SHCB continues to advocate on behalf of the community that the construction of a Rubbish Dump in our community is not supported. We support the investigation of alternatives waste disposal in the various alternatives already offered by our community rather than the unnecessary spending of 92 million dollars