Before the Independent Commissioner Hearing Panel

Under	the Resource Management Act 1991 (**RMA**)
In the matter of	an application by **Dunedin City Council** to develop a landfill at Smooth Hill, Dunedin.

Statement of evidence of Christopher Brent Henderson

29 April 2022

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Qualifications and experience

1 My name is Christopher Brent Henderson.

2 I have been employed as the Group Manager of the Waste and Environmental Solutions Group at Dunedin City Council (Council / DCC) for four and a half years.

3 I am an Aeronautical Maintenance Technician with a Bachelor of Applied Management and a Diploma in Wastewater Treatment.

4 I am a member of the Waste Management Institute of New Zealand.

Scope of evidence

5 My evidence covers the Council's overall approach to waste management, including the Waste Futures Programme. This includes:

(a) The Better Business Case process and ‘whole of system’ approach;

(b) Council’s commitment to reducing both waste to landfill and associated carbon emissions from waste;

(c) Overview of the site selection process for the proposed Smooth Hill landfill; and

(d) Summary of consideration of alternatives to the proposed Smooth Hill landfill.

Executive summary

6 The method that the Council adopts for solid waste disposal is an integral part of the overall solid waste strategy in that once every practical effort has been taken to minimise waste, the remainder must be disposed of safely.

7 Council requires sufficient control of both waste disposal and waste diversion facilities in order to achieve its waste minimisation and carbon emission reduction targets.

8 Council is committed to reducing waste that is sent to landfill, and to reducing associated carbon emissions from waste.

9 Council has engaged with the community in relation to key waste issues facing Dunedin, and community voices have contributed to key decisions on Dunedin's future waste management and minimisation.

10 The site selection process for the proposed landfill at Smooth Hill involved extensive investigation of potential sites by technical experts.

11 The process for proposing construction and operation of a landfill at Smooth Hill has included consideration of a range of alternatives, including extension of the Green Island Landfill, disposal of waste out of district, and incineration/waste to energy.

The Better Business Case process and 'whole of system' approach

12 The Waste Futures Programme was initiated in early 2018 and 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.

13 Council has used a business case process to identify a recommended waste and diverted materials system for Dunedin. This 'whole of system' approach includes waste collection systems, the diversion and disposal facilities needed to support the collection system, final disposal of residual waste, how these facilities will be provided, and Council's role in providing these.

14 In developing the business case, Council has followed the New Zealand Treasury's Better Business Case (BBC) process, which is good practice for public sector decision-making, as described in the evidence of Dunedin City Council Chief Executive, Sandra Graham.

15 The investment objectives used in the Waste Futures Programme can be summarised as follows:

(a) Identify, procure, and retain sufficient Council control of the optimal solid waste solution for Dunedin City to enable the city to move towards a zero-waste future; and

(b) Provide medium to long term assurance for the community to dispose of waste in a customer focused, cost-effective, and environmentally safe manner.

16 These investment objectives are supported by the following key performance indicators:

(a) Minimisation of waste;

(b) Minimisation of carbon dioxide emissions from waste;

(c) Cost-effectiveness of service to ratepayers;

(d) Reduced environmental impacts as a result of waste operations; and

(e) Refuse collection and kerbside recycling meet customer expectations.

The Waste Futures Programme detailed business cases

17 The Waste Futures Programme has evolved through three phases to date. Phases one and three are described in the evidence of Sandra Graham, Chief Executive of DCC. Here I provide specific details relating to phase two of the Programme, which is directly relevant to my role as Group Manager of the Waste and Environmental Solutions Group.

18 Phase Two of the programme commenced in late 2019 and included five interlinked workstreams focussing on the following:

(a) Preparation of Detailed Business Cases (DBCs) on the collection system (including kerbside collection) and the wider waste system (waste and diverted materials systems for Dunedin);

(b) Investigation of options to preserve or extend the capacity of Green Island landfill, plus contingency plans for managing waste if Green Island landfill capacity is exhausted before Smooth Hill landfill is operational;

(c) Confirmation of the technical suitability of the designated Smooth Hill site for a Class 1 waste facility, including site investigations and gathering necessary information to support a consent application;

(d) Service continuity, including extending the timeframes of current collection contracts to ensure service continuity; and

(e) Project management, communications and engagement.

19 The DBC for the Collection System covered the elements of the waste system that customers interact with directly through the waste and diverted services that are available to them. These are discussed below in paragraphs 30, 31 and 32.

20 The DBC for the wider waste system was prepared by consultants at Morrison Low. It set out:

(a) Facility options: including the facilities required, the sites on which the facilities should be located, and governance arrangements; and

(b) Partnership options: including scoring the partnership options against the objectives and critical success factors.

21 The wider waste system DBC recommended that:

(a) Council, in partnership with a private waste company, provide disposal and diversion facilities;

(b) The disposal facilities (i.e. the landfill) be located at Smooth Hill and diversion facilities be located mainly at the Green Island transfer station; and

(c) The disposal facilities at Smooth Hill should not be open to the public. The public should take their waste to Council's transfer stations and, any waste that could not be diverted, should then be transported to the Smooth Hill landfill.

Council's commitment to reducing both waste to landfill and associated carbon emissions from waste

22 Alongside the Waste Futures Programme, in early 2018 Council initiated a review of its existing Waste Management and Minimisation Plan (2013) in accordance with the requirements of the Waste Minimisation Act, 2008 (WMA). This process was supported by a district wide waste assessment conducted during 2018.

23 This process culminated in the Council formally adopting the revised Waste Minimisation and Management Plan (2020). The vision of this plan is:

> 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.

24 This vision is supported by five goals:

(a) Advocate, educate and enable waste minimisation, recycling, and resource recovery;

(b) Encourage social enterprise and commercial development;

(c) Collect information to enable informed decision making;

(d) Minimise the harmful effects of waste; and

(e) Provide infrastructure to meet goals and objectives.

25 The Plan also includes three key targets:

(a) Reduce the municipal solid waste generation per capita by at least 15% by 2030 compared to 2015;

(b) Reduce the amount of municipal solid waste disposed to landfill and incineration by at least 50% by 2030 compared to 2015;

(c) Increase the diversion rate away from landfill and incineration to at least 70% by 2030.

26 In June 2019, the Council voted to declare a climate emergency and accelerate efforts to become a net carbon zero city – bringing forward the city's target for achieving that goal by 20 years from 2050 to 2030.

27 The adoption of the Council's current city-wide emissions reduction target ('Zero Carbon 2030') included:

(a) Net zero emissions of all greenhouse gases other than biogenic methane by 2030; and

(b) 24% to 47% reduction below 2017 biogenic methane emissions by 2050, including 10% reduction below 2017 biogenic methane emissions by 2030.

Council's public engagement on key waste issues

The Waste Minimisation and Management Plan 2020

28 The final drafts of the Waste Assessment 2018 (WA2018) and Waste Minimisation and Management Plan 2020 (WMMP2020) were reported to Council's Planning and Environment Committee on 11 February 2020, and these documents were subsequently approved for public consultation using the Special Consultative Process alongside the 2020/21 Annual Plan.

29 Community engagement on the 2020/21 Annual Plan, WA2018, and WMMP2020 occurred over six weeks between 12 March and 24 April 2020. Following consideration of submissions, the WA2018 and WMMP2020 were adopted by Council on 25 May 2020.

Increased levels of service for kerbside refuse and recycling collection services

30 During the five week community engagement period on Council's 10 year plan 2021-31 (23 March to 29 April 2021), Council sought feedback from the community on two options for future kerbside collections:

(a) Option 1 – Four bins (separate collections for food waste, glass, mixed recycling, and refuse) plus an optional garden waste bin; and

(b) Option 2 – Three bins (separate collections for glass, mixed recycling, and refuse).

31 Following consideration of submissions, Council adopted Option 1, four bins plus one, as the new kerbside collection service, with these new services expected to begin in mid-2023.

32 Alongside adoption of the new kerbside collection service, Council also allocated funding of $29.2 million to the roll out of the new kerbside collection system and development of an associated Resource Recovery Park consisting of waste diversion facilities including:

(a) an Organics Processing Facility (OPF);

(b) a Material Recovery facility (MRF);

(c) a Construction and Demolition Recovery Facility (CDRF); and

(d) a Bulk Waste Transfer Station (BWTS).

33 Providing residents with options for the collection of both food and garden waste, separated from collections for general waste, will significantly reduce the amount of putrescible waste contained in the general waste stream.

34 In addition, there will be no public access for waste disposal at Smooth Hill landfill, and general waste from Council collections, commercial collections, and the general public will be deposited at the bulk waste transfer station prior to consolidation and transfer to Smooth Hill. This will enable physical intervention to remove residual putrescible waste from the general waste stream prior to consolidation and transport to Smooth Hill landfill.

35 The removal of the majority of organic wastes from the waste stream, combined with the additional waste diversion facilities, will result in an estimated 27% reduction in annual waste to landfill and a 24% reduction in associated annual carbon emissions.

Overview of the site selection process for the proposed Smooth Hill landfill

36 The issue of long-term waste disposal has been a consideration for Council for three decades.

37 In the early 1990s, 32 sites were investigated as potential sites for a future landfill. At the end of that process, Smooth Hill was identified as the preferred location of a future landfill upon the closure of the Green Island landfill. This selection process followed a public consultation process in March 1992, and again in November 1992 through to February 1993, with the final recommendation approved by Council on 21 April 1993.

38 The Dunedin landfill Study Refuse Working party assessed potential sites on the basis of site selection criteria in the following categories:

(a) Ecological (including vegetation, wildlife, aquatic life, habitat, bird strike, and the airfields exclusion zone);

(b) Physical (including available capacity, land use inventory classification, availability of cover material, geology/mass movement, topography/stability, climate, surface hydrology, proximity to water/catchment area, hydrogeology, leachate control, and gas control);

(c) Social (including residential area, recreation areas, traffic access and impact, public health, visual impact/screening potential, cultural/archaeological features, impact on local water, and end use of site); and

(d) Economic (including distance from refuse source, site purchase, establishment cost, and requirements for road upgrading).

39 The site selection process reduced the number of sites from 32 to 11 then down to a short list of five. Ultimately two alternatives - an extension of the Green Island landfill and construction of a new landfill at Smooth Hill were identified.

40 The identification of these two alternatives was the result of the work of BECA consultants, the Refuse Working party, Mana Whenua, and individual members of the public, regulatory bodies, Councillors and Council staff. The thirty other sites were ruled out for primarily technical reasons.

41 These two sites were recommended for detailed evaluation and Environmental Impact assessments.

42 The Environmental Impact Assessment for Smooth Hill concluded that:

(a) The construction of the landfill at Smooth Hill is technically feasible;

(b) The site allows for progressive development without high initial costs;

(c) The site has potential for a lifetime of some 50 years;

(d) The site is at the head of the catchment, meaning stormwater will not be an issue;

(e) The site is underlain by low permeability soils – providing a suitable landfill liner, and additional protection against contamination of ground and surface waters; and

(f) The isolation of the site means that there would be no traffic, noise, visual or property impacts from the operation.

43 Public input on the designation of the site at Smooth Hill for a future landfill and extension of the Green Island landfill was sought through five public meetings, telephone hotlines, written submissions, and personal interviews with affected residents. Four thousand residents identified as being "local" to the sites received five separate mail outs with information about the proposed landfill sites.

44 One hundred and forty three submissions were received on the proposals. These submissions raised issues regarding odour, noise, environmental controls, visual effects, and the need to investigate waste minimisation approaches, recycling and alternative technologies.

45 The Smooth Hill landfill site was designated in the District Plan in 1995. It was first notified on 24 July 1995, and then re-notified on 19 July 1999, with the District Plan becoming operative on 19 April 2004, including all designations within that plan.

46 The Smooth Hill designation was again consulted on through the Second Generation District Plan (2GP), and subsequently included within the 2GP. There were two submissions on the inclusion of the Smooth Hill designation in the 2GP. These were from Colin Weatherall and Waste Management (NZ) Limited. Colin Weatherall submitted that he was concerned that the proposal to roll the designation over to the 2GP may not have been noticed by people who may want to comment on it. Waste Management opposed Colin Weatherall's submission. The 2GP Hearings Panel decided to confirm the designation.

Consideration of alternatives to the proposed Smooth Hill landfill

47 Throughout the process of identifying Smooth Hill as the proposed site for the new landfill for Dunedin, alternative options have been considered. These are described below.

Extension of Green Island landfill

48 Extension of the Green Island landfill has been an option since the first assessment of potential landfill sites in 1992.

49 Council requested Stantec Consulting Limited to further consider an extension to Green Island Landfill in 2019. Stantec concluded that this would require landfilling waste over the main sewer pipework into Green Island Wastewater Treatment Plant to a depth of approximately 25 m. This would make future maintenance of the main sewer pipe extremely difficult and could ultimately result in the pipe collapsing.

50 Other consenting challenges identified by Stantec included: the need to implement operational changes to mitigate existing issues for continued operation; proximity to neighbours; inability to meet Class 1 landfill standards; and being located in a low lying area adjacent to an estuary of significant cultural and conservation value. For these reasons Stantec considered that an extension of Green Island was not a suitable medium term landfill option.

Out of district waste disposal

51 In addition to the DBC on the wider waste system, Council also requested and received an addendum report from Morrison Low regarding the option of disposing waste to an out-of-district landfill (e.g. AB Lime in Winton, Victoria Flats in the Queenstown Lakes area, Mt Cooee landfill in Clutha or Redruth's in Timaru).

52 The closest alternative class 1 landfill with capacity to accept waste from Dunedin is AB Lime landfill near Winton in Southland, which is approximately 200 km (2 ½ driving hours) South-West of Dunedin.

53 The out-of-district option would involve Council entering into a long-term contract for the disposal of waste prior to the closure of Green Island landfill, with security of gate rate for a fixed period; and arrangements for the bulk haulage of waste from Council owned and operated transfer stations.

54 Morrison Low concluded that the main advantages of an out-of-district option related to the divestment of any risks of ownership (including commercial, financial, health and safety, and compliance risks); coupled with the lack of need for capital investment to develop the landfill.

55 Ultimately, Morrison Low concluded that developing a landfill at Smooth Hill, in partnership with a private waste company remained the preferred option. This was because sending waste to an out-of-district landfill, would

result in Council losing its ability to control the full waste cycle, thereby limiting carbon emission reduction and waste diversion initiatives.

56 Further, any agreement with an out of district landfill would expose Council to risks of price increases for disposal, and changes in haulage costs, especially in relation to fuel prices. Morrison Low estimated that haulage costs could account for up to 60% of the cost of waste disposal to an out of district facility, with fuel costs accounting for approximately 25% of the total haulage costs.

Incineration / Waste to energy

57 As part of the Business Case process, Council also evaluated alternatives including the option of establishing a municipal waste incinerator in Dunedin as a waste to energy (WTE) facility (Stantec Programme Business Case, Part B). This option would involve Council separating diverted materials that have value, or are non-combustible, from combustible materials. It would also involve acceptance out-of-district waste and combustible materials up to the capacity of the facility.

58 Under this option, Council would arrange a supply agreement for ash disposal (about 20% of initial waste volume) to an existing landfill(s), as well as agreements for receipt of suitable waste from out-of-district.

59 Key outcomes from the assessment were:

(a) The establishment of a WTE facility had high indicative capital and operating costs and was reliant on securing large proportions of combustible waste (including from out-of-district) to be viable;

(b) The variability of the electricity market created uncertainty regarding any revenue that might be generated;

(c) Acceptance of non-local waste was unlikely to be culturally acceptable to mana whenua;

(d) Ash (~20% quantity of incoming waste) would still require disposal to landfill; and

(e) Establishment of a WTE facility would be unlikely to contribute positively to behaviour change with respect to reducing waste production.

60 For these reasons Council determined that the establishment of a waste to energy facility was not a preferred option for Dunedin City.

Responses to matters raised in relevant submissions

61 Two submissions requested changes to landfill operating hours.

62 Big Stone Forest Limited submitted that they would prefer 'More limited operating hours to reduce the impact on our rural amenity'.

63 Antony James Granger & Michelle Anne Granger submitted that operating hours should be limited to the following:

(a) During Summer: 7am-6pm, Monday to Friday;

(b) During Winter: 8am-5pm, Monday to Friday (note: no tipping rubbish after 4pm to allow time to cover dumped rubbish before close of business); and

(c) Ultimately, the landfill should not be running when it is dark.

64 The proposed operating hours for the Smooth Hill landfill are 7am-7pm, Monday to Sunday. These hours coincide with the operating hours for the Green Island landfill and include an allowance of one hour at the beginning of the day to remove cover and prepare the tipping face for the receipt of waste, and a maximum 1.5 hours to compact and cover waste at the end of the day. The existing Green Island Transfer Station is open to the public between 8:00am-5:30pm, Monday to Saturday, and 9:00am-5:30pm Sunday.

65 The proposed Smooth Hill landfill will be required to operate Monday to Sunday to receive bulk waste transferred from the Green Island Transfer Station; however, in response to these submissions the applicant is prepared to amend the normal operating hours from 7am-7pm, Monday to Sunday, to 8am-6pm Monday to Sunday.

66 It should be noted that operational staff may need to attend the landfill outside of these operational hours to perform monitoring, perform security checks, respond to alarms, or in the case of a civil emergency.

Conclusion

67 The proposal to construct and operate a landfill at Smooth Hill is an integral part of Council's overall solid waste strategy for Dunedin.

68 Council has set itself ambitious waste minimisation and carbon emission reduction targets. Achieving these targets requires sufficient control of both waste disposal and waste diversion facilities.

69 Council has engaged with the Dunedin community to seek feedback on key waste issues facing Dunedin; including potential future landfill options, waste minimisation targets, and changes to the kerbside collection services and associated waste diversion facilities.

70 Council has engaged technical experts to provide rigorous assessment of potential sites for a future landfill, as well as detailed consideration of a range of alternatives to constructing a new landfill, including extension of the Green Island Landfill, disposal of waste out of district, and incineration/waste to energy.

71 The current proposal to construct and operate a landfill at the proposed Smooth Hill site is the result of expert analysis of waste management issues, coupled with community feedback and contributions, within the context of Council's wider Waste Futures Programme.

Christopher Brent Henderson

29 April 2022