Before the Freshwater Hearing Panel

Under	the Resource Management Act 1991 (**RMA**)
In the matter of	The Otago Regional Council Proposed Otago Regional Policy Statement 2021 (freshwater planning instrument)

Submission by Dunedin City Council

Evidence of Zoe Moffat for Dunedin City Council

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1 Introduction

1 My name is Zoe Aroha Moffat. I am employed by the Dunedin City Council (Council or DCC) as the Planning Manager in 3 Waters.

2 I have held my current position at the DCC for four years, which includes oversight of strategic and investment planning for DCC's drinking water, wastewater and stormwater infrastructure.

3 I have a Bachelor of Science with First Class Honours in Chemistry from the University of Otago (2006) and a Master of Administrative Law and Policy from the University of Sydney (2019).

4 Prior to my role at DCC, I worked as a Principal Analyst at the Independent Pricing and Regulatory Tribunal in Sydney for five years in the areas of water licensing, water pricing and local government regulation. I also have over six years' experience in consulting in the water industry including environmental assessment, strategic planning and process engineering.

2 Code of conduct

5 I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2023. This evidence has been prepared in accordance with it and I agree to comply with it. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

3 Scope of evidence

6 I prepare this evidence from the perspective of a planning manager involved in managing Council's infrastructure and explaining some of the factual issues involved in managing the drinking water, stormwater and wastewater networks, and not as an independent expert witness. My evidence includes:

a) background information on:

- DCC drinking water, wastewater and stormwater (three waters) systems
- DCC three waters strategic planning

b) a description of the key challenges for DCC:

- water allocation
- ensuring stormwater discharges allow waterways to meet quality standards set for FMUs
- reducing direct wastewater discharges to freshwater

- ensuring wastewater discharges allow waterways to meet quality standards set for FMUs

- requiring wastewater discharges to reticulated systems where made available.

4 Background

4.1 DCC Three Waters Systems

DCC three waters systems: introduction

7 The DCC provides drinking water, wastewater and stormwater (three waters) services to domestic and non-domestic users across Dunedin. The DCC's 3 Waters Group manages the delivery of these services.

8 A more detailed overview of each of the DCC's three waters systems is provided later in my evidence.

9 The provision of well-managed drinking water, wastewater and stormwater services promotes the health and wellbeing of communities and the environment. These services are lifeline utilities and, as such, the infrastructure assets that enable them are regionally significant.

10 The DCC undertakes three waters activities in three of the five Freshwater Management Units (FMU) included in the pORPS: Taiari, Dunedin & Coast, and North Otago. The DCC submitted on the boundary between the Dunedin & Coast and North Otago FMUs, and Mr Taylor's evidence will speak to this matter in more detail.

11 As one of New Zealand's earliest metropolitan centres, Dunedin's three waters infrastructure pre-dates that of other centres. Some assets are older than 150 years and still operate as essential pieces of the network today.

12 The nature of Dunedin's growth over time has meant that large portions of three waters infrastructure assets were built over a short time period. Assets that were built at the same time generally require renewal at the same time, causing peaks in renewal costs.

13 Over 50% of the DCC's three waters systems is expected to reach the end of its useful life and require renewal by 2060. The DCC has determined that there is a need for $3.6 billion to be invested in three waters infrastructure to maintain current levels of service for the next 30 years. It is not possible to replace the entire system at once.

14 In addition to aging infrastructure, the DCC's ability to maintain current levels of service from its three waters systems faces challenges from the effects of climate change, population growth and rising energy and construction costs.

DCC three waters systems: legislative and regulatory drivers

15 As a territorial local authority, the DCC must adhere to several legislative requirements to ensure it manages three waters services in a safe and environmentally friendly manner. In addition to the requirements of New Zealand's resource management system derived from Te Tiriti o Waitangi and the Resource Management Act 1991, the following legislative requirements are pertinent:

(a) the **Local Government Act 2002** (LGA 2002) establishes the purpose of local government to:

(i) enable democratic local decision-making and action by, and on behalf of, communities; and

(ii) promote the social, economic, environmental, and cultural well-being of communities in the present and for the future.

(b) the **Water Services Act 2021** (WSA 2021) sets out the duties of the DCC as a drinking water supplier, including the duties to supply safe drinking water, to comply with drinking water standards, to provide sufficient quantity of drinking water, and to prepare and implement a drinking water safety plan that includes a source water risk management plan. When exercising or performing a duty under the WSA 2021, the DCC must give effect to Te Mana o te Wai, as set out in clause 1.3 of the National Policy Statement for Freshwater Management 2020 (NPS-FM) to the extent that Te Mana o te Wai applies to the duty.

(c) The **Health and Safety at Work Act 2015** (HSWA 2015) sets out duties of the DCC to protect the health, safety and welfare of people working with DCC three waters systems.

16 In addition to regional planning documents made within the context of New Zealand's resource management system, local authorities are subject to national direction. In the context of managing large municipal three waters systems like those managed by the DCC, the National Policy Statement for Urban Development 2020 (NPS-UD) and the NPS-FM are particularly pertinent.

17 The objectives of the NPS-UD include enabling all people and communities to provide for their social, economic, and cultural wellbeing, and for their health and safety, now and into the future via well-functioning urban environments. The NPS-UD categorises Dunedin as a tier 2 urban environment, bringing into effect through district plans a range of provisions relating to the amount of development capacity required to be serviceable with infrastructure (including three waters infrastructure). Dunedin's 10 Year Plan 2021/31 provides for over $77 million of capital funding for three waters infrastructure to provide for growth to implement the NPS-UD.

18 The objective of the NPS-FM is to ensure that natural and physical resources are managed in accordance with the hierarchy of obligations in Te Mana o te Wai. The hierarchy of obligations gives first priority to the health and well-being of water bodies and freshwater ecosystems, second priority to the health needs of people (such as drinking water), and third priority to the ability of people and communities to provide for their social, economic and cultural well-being, now and in the future. The Freshwater Planning Instrument parts of the pORPS are intended to give effect to the objective and policies of the NPS-FM.

19 Considered together, there is a balance for council infrastructure services providers to strike between the objectives and policies of the NPS-FM, which prioritise the health and well-being of water bodies and freshwater ecosystems, and the objectives, policies and other requirements of the NPS-UD and legislation such as the LGA 2002 and WSA 2021.

20 Balancing obligations such as protecting the environment while providing for urban growth to provide for communities' social, economic, and cultural wellbeing, and for their health and safety, now and into the future, can be complex.

21 Mr Taylor will provide evidence on recommended changes to the pOPRS to better balance the objective and policies of the NPS-FM with other legislative, regulatory and policy requirements as they relate to the provision of three waters services.

<u>DCC three waters systems: strategic drivers and performance measures</u>

22 The DCC is committed to improving Dunedin's environment, including the quality of Dunedin's freshwater environments.

23 The DCC 3 Waters Strategic Direction Statement 2010-2060 sets out an integrated approach to the sustainable management of drinking water, wastewater and stormwater in Dunedin. The Strategic Direction Statement identifies seven key strategic priorities, including that the DCC will:

(a) meet the water needs of the city for the next 50 years from existing water sources;

(b) improve the quality of its stormwater and wastewater discharges to minimise impacts on the environment; and

(c) adopt an integrated approach to management of three waters and embrace the concept of kaitiakitaka.

24 Other key strategic priorities relate to adapting to climate change and population growth, maintaining service levels, and maintaining affordable services.

25 In 2016, the DCC adopted Te Ao Tūroa – The Natural World – Dunedin's Environment Strategy. Te Ao Tūroa takes a partnership approach to delivering on the city's environment ambitions, with stakeholders including the Otago Regional Council (ORC) and Kāi Tahu working together with the DCC to facilitate and secure a healthy environment now and into the future. Te Ao Tūroa identifies reducing wastewater overflows and reducing polluting discharges to land, air and water as actions the DCC will take to achieve a healthy environment in Dunedin.

26 I provide further information on current long-term, holistic three waters strategic system planning work being undertaken by the DCC later in my evidence.

27 The DCC tracks the performance of its three waters infrastructure and services against a range of regulatory requirements and performance measures, including mandatory performance measures established by the Department of Internal Affairs. These include, for example:

(a) Measures related to drinking water safety, drinking water aesthetic properties and pressure, and the efficient and sustainable use of water resources;

(b) Measures related to the impacts of stormwater services on the quality of the receiving environment, and the DCC's response to relevant service calls;

(c) Measures related to the impacts of wastewater services on the quality of the receiving environment, and the DCC's response to relevant service calls.

<u>DCC three waters systems: funding</u>

28 The DCC collects rates from its drinking water, wastewater and stormwater customers to fund the ongoing operational and capital expenditure required to provide those services. This is done in accordance with the DCC's Financial Strategy, which is set through the 10 year plan process every three years (and amended through annual plans if needed). The 2021-31 Financial Strategy sets limits on debt and rates rises. It recognises the competing tensions of affordability, maintaining assets and investing for the future.

DCC three waters systems: market delivery

29 The DCC has an extensive three waters capital delivery programme that includes renewing aging infrastructure and upgrading infrastructure to meet new standards and additional demand.

30 Delivery of capital projects requires capability and capacity in the local construction market (and supporting specialties). The DCC has been increasing its capital spend over time, supporting associated growth in the construction market.

31 Successive DCC 10 year plans have focused on replacing and renewing Dunedin's aging infrastructure. The 2018-28 10 Year Plan capital programme for the 3 Waters Group proposed a steadily increasing budget profile, off the back of a successful increase in annual capital delivery capacity from $19.3M to $36.6M over the three years to 2020/21.

32 Since 2021/22, the DCC has further enhanced its ability to deliver by establishing long term contracts with delivery partners aligned with the principals of the Construction Sector Accord. This has provided the market with surety to increase capability and capacity in the three waters replacement and renewals space across both reticulation and treatment plant assets. In 2022/23, the DCC delivered over $90 million in three waters capital projects.

33 While the Dunedin three waters construction market is growing in response to the DCC's investment, the gradual increase over a number of years demonstrates that it is not possible to renew an entire system at once. Any acceleration of renewals and/or upgrades required to meet new standards would be limited by the local construction market capacity.

4.2 Drinking water system overview

34 The DCC operates four registered drinking water supplies. These provide treated drinking water via reticulated networks to over 40,000 properties for a range of domestic and non-domestic purposes. Among other things,

these community water supplies provide water for drinking, sanitation and fire-fighting purposes to protect public health and safety.

35 The large Dunedin City supply services a population of approximately 112,000 people. Water is abstracted from surface water takes in the Taiari and Port Chalmers catchments, the largest of which are at Deep Creek, Deep Stream and Silverstream. Three water treatment plants (Mount Grand, Southern and Port Chalmers) treat the water to make it safe for human consumption. From the treatment plants, treated water is distributed to consumers via a complex network of pipes, treated water storage reservoirs, pumps and valves. The Dunedin City supply's treated water network infrastructure covers a large geographic span, from Seacliff in the north, to East Taiari in the south.

36 An additional three registered drinking water supplies service communities in Waikouaiti and Karitāne, Outram, and West Taieri (including Dunedin International Airport). Each supply has its own source, water treatment plant and distribution network. Together, these three supplies provide community water supply to a population of approximately 3000 people.

37 The DCC holds more than 50 resource consents that enable it to provide the community water supply services detailed above. These consents, which permit activities such as taking, diverting, and damming water, and discharging backwash water from water treatment plants to waterways, all expire between 2037 and 2045.

38 The DCC Water Bylaw 2011 manages the use of the DCC water supply system, including by:

(a) Establishing rules and requirements to protect the system against damage, misuse, interference, or contamination that can pose a risk to public health and safety and/or levels of service;

(b) Defining who is entitled to use the system, the mechanisms for charging for different uses of the system, and the roles and responsibilities of both customers and the DCC in relation to use of the system; and

(c) Identifying offences and to take enforcement action if offences are committed.

39 In addition, the DCC's management of the drinking water system is informed by the DCC Water Conservation and Management Plan 2017-2027. As part of implementation of the Plan, the DCC implements leak detection and pipeline renewals programmes.

40 DCC staff currently estimate that approximately 95% of water produced by the DCC for community water supply is provided for urban land uses.

41 In future, the DCC expects that the effects of population growth and climate change will impact its drinking water supply activities. As it plans for the future of its community water supplies, the DCC will need to balance the objectives and requirements of the NPS-FM and lower order freshwater planning instruments with a range of other objectives and requirements, including those established by:

(a) LGA 2002;

(b) WSA 2021; and

(c) NPS-UD.

4.3 Stormwater system overview

42 The DCC provides stormwater drainage services to over 40,000 properties via a reticulated stormwater system.

43 The stormwater system collects rainwater from the roofs of houses and buildings, hard surfacing (such as carparks, driveways and patios), as well as footpaths and roads, and diverts it to the ground, into waterways, or into the harbour or the ocean.

44 The DCC holds resource consents RM11.313.01-RM11.313.10, which provide for the discharge of contaminants to the Otago Harbour (nine catchments) and the Pacific Ocean (one catchment) for the purpose of stormwater disposal. These consents expire in 2048. The DCC also holds resource consent RM19.261.01 to discharge stormwater to land in circumstances where it may enter Tomahawk Lagoon. This consent expires in 2027. Other discharges to the environment from the DCC stormwater system are permitted activities under relevant regional plans.

45 The Dunedin City Council Stormwater Quality Bylaw 2020 manages and regulates the quality of discharges to the DCC stormwater system. The purpose of the Bylaw is to protect people, the environment and the stormwater system from the effect of the discharge of contaminants to the stormwater system.

46 As it plans for the future of its stormwater system, the DCC will need to balance the objectives and requirements of the NPS-FM and lower order freshwater planning instruments with a range of other objectives and requirements, including those established by:

(a) LGA 2002; and

(b) NPS-UD.

4.4 Wastewater system overview

47 The DCC provides wastewater drainage services to over 40,000 properties via its reticulated wastewater systems collection, treatment and disposal systems.

48 The DCC operates seven wastewater treatment plants: three 'metropolitan' plants at Tahuna, Green Island and Mosgiel, and four 'community' plants servicing smaller populations at Middlemarch, Waikouaiti/Karitāne, Seacliff and Warrington. The DCC holds 15 resource consents that relate to the operation of wastewater treatment plants, including permits for discharges to the coast, land (including discharges to land in a manner that may enter water) and air. The majority of these consents expire in 2032, however some expire sooner or later than this date.

49 The Dunedin City Council Trade Waste Bylaw 2020 controls non-domestic wastewater discharges into the wastewater system. Under the Bylaw, some trade waste dischargers are required to obtain a trade waste consent. The Bylaw sets limits for acceptable discharge characteristics, identifies pre-treatment requirements for some discharges, and also lists prohibited substances.

50 Sometimes during heavy rain, the capacity of Dunedin's wastewater network is exceeded because stormwater and/or groundwater enters pipes. To avoid wastewater backing up and being discharged onto private property (and impacting public health), outlets were historically constructed to direct wastewater overflows into the stormwater network or directly to water bodies.

51 The DCC holds four resource consents to discharge wastewater overflow to waterways or the coast for the purpose of managing the wastewater network. These consents expire between 2032 and 2042.

52 As it plans for the future of its wastewater system, the DCC will need to balance the objectives and requirements of the NPS-FM and lower order freshwater planning instruments with a range of other objectives and requirements, including those established by:

(a) LGA 2002; and

(b) NPS-UD.

4.5 DCC three waters systems: strategic planning

53 The DCC is undertaking a holistic, system-wide strategic planning exercise to inform future investments in its three waters system. An overarching purpose of the exercise is to ensure that the investments in three waters systems are properly prioritised to achieve optimal outcomes (including environmental outcomes and giving effect to Te Mana o te Wai) from a system-wide point of view.

54 The holistic, system-wide approach recognises the interconnected nature of three waters systems and seeks to avoid investment decisions being made on a narrow, case-by-case basis. For example, it seeks to avoid investment decisions being driven solely by regulatory factors such as consent expiry, or by a narrow focus on one part of the system. In relation to wastewater overflows, for example, a system-wide view considers: the impact of network overflows on receiving environments, the impact that the absence of overflows could have on network performance, treatment process performance, and – ultimately – the quality of discharge from wastewater treatment plants to the environment. This holistic approach can also optimise investment across the wastewater and stormwater networks to target where these improvements would have the biggest impact on the receiving water quality.

55 The DCC's three waters strategic planning work is being undertaken in partnership with mana whenua. It is underpinned by objectives that relate to a range of drivers, including levels of service, Te Mana o te Wai, cultural values, affordability, regulatory compliance and responding to impacts of climate change and population growth. The exercise also incorporates an adaptive planning approach designed to provide flexibility in the DCC's plans to adjust to changes in the operating environment (including, for example, regulatory and policy changes, changes in community expectations, and climate change).

5 Key challenges arising for DCC

56 The following sub-sections of my evidence set out five key challenges expected to arise for DCC from the FPI parts of the pORPS as notified:

(a) Water allocation;

(b) Ensuring stormwater discharges allow waterways to meet quality standards set for FMUs;

(c) Reducing direct wastewater discharges to freshwater;

(d) Ensuring wastewater discharges allow waterways to meet quality standards set for FMUs; and

(e) Requiring wastewater discharges to reticulated systems where made available.

57 Revisions to the provisions of the pORPS that relate to these matters are required to enable the DCC to meet objectives and policies in a practicable way informed by holistic, system-wide strategic planning. System-wide strategic planning is an appropriate vehicle for providers of regionally significant three waters infrastructure like the DCC to prioritise investment decisions in a way that balances a range of drivers, including (but not limited to) mana whenua values, levels of service, environmental outcomes, affordability, regulatory compliance and responses to the impacts of climate change and population growth.

58 As service providers transition their activities into the regional planning framework established by the pORPS, it is important to make allowances for a transition that takes into account the affordability of services for consumers. Significant costs related to system improvements are anticipated and these need to be spread over time to maintain affordability.

59 While the remainder of my evidence provides broad comments on the challenges expected to arise for DCC, Mr Taylor's evidence provides specific recommendations on planning solutions to address these challenges.

5.1 Water allocation

60 The DCC supported LF-FW-P7 in its submission (FP1001.018). In response to other submissions the s42A report writer (para 1407) proposes deletion of the water allocation provision LF-FW-P7(6) and replacement with new LF-FW-P7A. DCC does not fully support these proposed provisions. DCC's concerns on the new proposed section are outlined below and amendments to address these concerns are outlined in Mr Taylors' evidence.

61 DCC takes water for the purpose of providing dinking water as part of community water supplies. Community water supplies support both the health needs of people and the social, economic, and cultural well-being of people and communities.

62 In relation to water allocation in the Taiari FMU and new LF-FW-P7A the RPS needs to recognise that water takes are for the public health and wellbeing of the community, and therefore there needs to be allowance for

the volumes associated with providing these services. Drinking water demand in Dunedin is expected to increase by about 10% between now and the 2060s, with the majority of that growth occurring in the next twenty years (*Beca Limited 2023, DCC Yield Analysis – Stage 2 Catchment and Supply-Side Network Yield*).

63 Proposed new policy LF-FW-P7A states that "over-allocation should be phased out or avoided" (s42A para 1417). Several catchments are currently over-allocated, and the demand on community water supplies is increasing. If the RPS limits allocation of water for community water supplies, as proposed in new LF-FW-P7A (1)(a) it will become increasingly difficult to provide sufficient drinking water to support the social, economic, and cultural well-being of people and communities in Dunedin. There could be significant periods of demand shortfall under future consents, where minimum flows and/or reduced allocations result in consent conditions requiring reduction or ceasing of takes in certain circumstances.

64 Provision LF-FW-P7A, as proposed, sets community drinking water supplies at the same priority level as renewable electricity generation and land-based primary production. In addition to recognising that the health of the water is the highest priority, the planning framework should provide for community drinking water supplies to be prioritized in accordance with their status as the second tier priority under Te Mana o te Wai when allocation decisions are made. Drinking water suppliers may struggle to adequately service their communities and meet all legislative obligations if the importance of community water supply is not specifically recognised in water take allocation provisions of the pORPS.

65 Mr Taylor's evidence regarding water allocation in the Taiari FMU and new LF-FW-P7A will provide detail of current over-allocation in catchments in Dunedin and identify possible amendments to LF-FW-P7A to address DCC's concerns.

5.2 Ensuring stormwater discharges allow waterways to meet quality standards set for FMUs

66 The DCC submitted on stormwater and wastewater discharge provisions in LF-FW-P15 (FP1001.021, .025 and .027) requesting that these discharges be separated into separate sections. The s42A report (para 1490) supports this and recommends separating these discharge types with the creation of new LF-FW-P16 for wastewater discharges and LF-FW-P15 remaining just for stormwater discharges. The DCC supports the s42A writer's proposed split of stormwater and wastewater policy provisions.

67 However, the concerns raised in DCC's submission about some of the original provisions not being relevant to stormwater discharges remain. Although the provisions have been separated, some of the proposed provisions in LF-FW-P15 are still not relevant to stormwater discharge, and/or the wording proposed in the s42A report is not supported.

68 There is potential that existing discharges to the environment from DCC stormwater systems could prevent the water bodies from meeting water quality standards set for the relevant FMUs, depending on the specific standards set. The stormwater system is complex. Roads and recreational spaces make up critical parts of the system in addition to piped infrastructure. In parts of Dunedin, the DCC's stormwater system makes use of piped and open watercourses in private ownership. Contaminants from roads, commercial or industrial sites, farmland, residential properties, and many more areas or activities can enter the stormwater system and be discharged to the environment. While the DCC can take steps to control contaminant ingress and improve stormwater quality over time, it may not be practicable to do this to the extent that these discharges do not prevent the water bodies meeting water quality standards over the short to medium term.

69 The DCC Stormwater Quality Bylaw 2020 manages and regulates discharges to the DCC stormwater system to protect freshwater and coastal water from contaminants and maintain water quality. Managing discharges into the DCC stormwater system also assists the DCC to comply with the stormwater discharge consents it holds and other relevant requirements for discharge of contaminants to the environment. The Bylaw restricts the discharge of contaminants and requires the pre-treatment of discharges to the stormwater system from specified activities.

70 The DCC Second Generation District Plan (2GP) contains provisions to manage stormwater from developments in specified, newly rezoned residential areas. The rules in the 2GP require the preparation and implementation of stormwater management plans in some circumstances to ensure stormwater is appropriately managed.

71 Although both regulatory tools aim to achieve improved stormwater quality and/or quantity outcomes, it is difficult to quickly improve stormwater quality in existing urban areas, particularly when growth is resulting in increased development, more roads and impermeable surfaces, and expansion of urbanised areas. Improvements will be incremental over time and will need to involve changes in land use management.

72 Mr Taylor will detail proposed amendments to address the DCC's concerns in his evidence.

5.3 Reducing direct wastewater discharges to freshwater

73 The DCC submitted on stormwater and wastewater discharge provisions in LF-FW-P15 (FP1001.021, .025 and .027) requesting that policies on these discharges be separated into different provisions. The s42A report (para 1490) supports this and recommends separating these discharge types with the creation of new LF-FW-P16 for wastewater discharges. The DCC supports the s42A writer's proposed split of stormwater and wastewater provisions.

74 However, the concerns raised in DCC's submission about some of the original provisions not being relevant to discharges containing animal effluent, sewage, and industrial and trade waste remain. Although the provisions have been separated, some of the proposed provisions in LF-FW-P16 are not relevant to discharges containing animal effluent, sewerage, and industrial and trade waste, and/or the wording proposed in the s42A report is not supported. These concerns are discussed further below, and Mr Taylor will detail proposed amendments to address the DCC's concerns in his evidence.

<u>New LF-FW-P16</u>

75 The s42A report writer (para 1552) suggests the inclusion of new LF-FW-P16(1) requiring "phasing out existing discharges containing sewage or industrial and trade waste directly to water to the greatest extent possible".

76 The s42A report writer (para 945 and 1548) acknowledges that some discharges cannot be phased out, including existing ones, and that phasing out should only be required to the greatest extent possible. It is also acknowledged by the s42A report writer that in some cases the discharge to water may have fewer adverse effects than discharge to land.

77 Wastewater overflows (generally during wet weather) are the only direct wastewater discharges to freshwater in the DCC's existing wastewater systems. The DCC is committed to reducing wastewater overflows (as outlined in paragraph 25). However, in order to meet the proposed LF-FW-P16(1), the DCC would either have to direct these overflows to land, or eliminate them to the greatest extent possible.

78 While directing wastewater overflows to land is possible, it is not practicable without introducing risks to public health that the wastewater system as a whole is designed to avoid. Wastewater network overflows were historically

constructed to direct wastewater overflows into the stormwater network or directly to water bodies. This was done to protect public health by stopping wastewater backing up into people's homes, or spilling onto land where it is more likely people will come into contact with it. These overflow points are located in urban environments, where it is not practicable to overflow onto land without creating a public health risk and are still used today for the purpose of effective management of the wastewater system.

79 Global best practice in wet weather overflow management has demonstrated that wet weather wastewater network overflows require significant investment system-wide and a long period of dedicated effort before there are tangible positive outcomes. Even then, in extreme weather events, network surcharging and overflows may still occur. This is because there are several ways that stormwater and/or groundwater enters the wastewater system. These include unauthorised private connections of stormwater drainage to the wastewater network, infiltration through old leaky pipes both within the DCC network and private laterals (the pipe from the public wastewater pipe to the house/property), or through manhole lids during surface flooding.

80 To reduce the volume and frequency of wet weather overflows, the DCC can take steps to reduce the amount of stormwater and groundwater getting into the wastewater network and/or upgrade the wastewater system to handle the additional water without overflowing. However, given the magnitude of the current issue (wet weather flows of over 10 times the dry weather flow in some areas), completely eliminating overflows is unlikely. Network renewals (source control) and storage solutions would require significant capital investment (hundreds of millions of dollars) and take decades to deliver, due to customer affordability and construction market capacity (as outlined in paragraphs 28-33). As outlined in paragraphs 53-55, the DCC is using a holistic, system-wide strategic planning approach to prioritise investment across stormwater and wastewater discharges to deliver optimal environmental benefits and give effect to Te Mana o te Wai. In some cases, the provision of an overflow may be the best practicable option with minimal environmental effects.

5.4 Ensuring wastewater discharges allow waterways to meet quality standards set for FMUs

81 DCC submitted (FP1001.027) seeking amendments to LF-FW-P15 to separate stormwater and wastewater provisions and address concerns with the provisions proposed in the PORPS. Proposed provisions (s42A para 1552) LF-FW-P16 (2)(f) "that any discharges do not prevent water bodies

from meeting any applicable water quality standards set for FMUs and/or rohe".

82 There is potential that existing wastewater overflows from DCC infrastructure would prevent receiving water bodies from meeting water quality standards set for the relevant FMUs, depending on the standards set. As described in paragraph 80 above, the DCC an can take steps to reduce the frequency and volume of overflows. However, it is not practicable to completely eliminate them. LF-FW-P16 2(d) and LF-FW-AER9 require implementation of methods to progressively reduce the frequency of wet weather overflows, more appropriately reflects the practicalities of wastewater system management.

5.5 Requiring wastewater discharges to reticulated system where made available

83 The DCC submitted (FP1001.022-027) on the provisions now included in LF-FW-P16 (old P15) promoting reticulation of wastewater in urban areas. The s42A writer proposes (para 1550 and 1552) new LF-FW-P16 (2)(c) "that all discharges containing sewage or industrial and trade waste are discharged into a reticulated wastewater system, where one is made available by its owner, unless alternative treatment and disposal methods will result in improved outcomes for fresh water", and new LF-FW-P16 (3) "to the greatest extent practicable, requiring the reticulation of wastewater in urban areas".

84 The term "where available", as proposed in new LF-FW-P16 (2)(c) can have major consequences for cost for the DCC. Services can be "made available" in many cases but may be accompanied by a significant price tag or conditions to protect the wastewater system and the environment.

85 The DCC restricts the type and volume of discharges accepted to the reticulated wastewater system through requiring trade waste consents from industrial and trade waste customers and placing conditions and charges on the trade waste consents issued. Trade waste consents are required to ensure the wastewater system is protected from customer discharges and to ensure DCC can comply with its own wastewater discharge consents and protect the environment.

86 The DCC's *New Reticulated Utility Services (Water, Wastewater, and Stormwater) Policy 2010*, provides the framework for considering servicing and allocating costs to customers in new areas to be serviced by the reticulated network. Services can be made available to new customers, but this service comes at a price and certain conditions may need to be met.

6. Conclusion

87 My evidence provides background information about the nature and importance of the DCC 3 waters systems, DCC's responsibilities as a service provider, and the DCC's strategic approach to infrastructure planning and provision.

88 It also details some of the DCC's concerns with the pORPS and how I see proposed provisions impacting on DCC's ability to service customers and meet its obligations under the variety of requirements it operates under.

89 Further evidence and specific solutions to address the DCC's concerns or issues are provided by Mr Taylor in his evidence.

Zoe Moffat

28 June 2023