

Under The Resource Management Act 1991

In the matter of an application for resource consent to discharge wastewater overflows from Queenstown Lakes District Council's wastewater network

Statement of Evidence of Peter Jonathan Hansby

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**MEREDITH
CONNELL**

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Statement of Evidence of Peter Jonathan Hansby

1 Introduction

Qualification and experience

- 1.1 My full name is Peter Jonathan Hansby. I hold the position of General Manager Property and Infrastructure at Queenstown Lakes District Council (**QLDC**). I have held this role since July 2014.
- 1.2 I have a New Zealand Certificate of Engineering (Civil) and a Bachelor of Engineering Civil from the University of Canterbury. I am a member of Engineering New Zealand and a member of the Institute of Directors.
- 1.3 I have over 30 years' experience in engineering, and have a background in Infrastructure management maintenance and construction. I have worked as a contractor, a consultant and a client within the infrastructure environment.
- 1.4 I commenced my engineering career with the Ministry of Works in 1984. I worked predominantly in the survey office and in construction supervision before attending University in 1989. I completed my degree in Civil Engineering in 1991, then returned to Works Consultancy. I spent a year in the Hamilton bridge design office before returning to Christchurch and eventually moving to Queenstown in 1994.
- 1.5 I held a number of roles within the Queenstown Lakes District Council from 1994 to 2004 including Consents Engineer and Roding Engineer. In the role of Roding Engineer I looked after both operations and maintenance and capital works delivery. I was part of the Civil defence response team during the 1999 Floods and managed the subsequent reinstatement projects.
- 1.6 In 2004 I accepted a role with City Care Ltd, a Council Controlled Organisation and part of the Christchurch City Holdings Ltd group. I eventually became the Southern Regional General Manager for City Care Ltd. In this role I was responsible for the City's network maintenance contracts including; parks and reserves, three waters network, building facilities maintenance management and two of the five Christchurch City Council's roading network maintenance contracts. In addition to these operational contracts I also ran City Care's construction activities. Total turnover for these contracts and constructions projects prior to the Christchurch earthquakes was approximately \$180 Million per annum.
- 1.7 I was appointed Emergency Response Manager for City Care following the 2010 and 2011 earthquakes. This role was responsible for emergency reinstatement of water and wastewater services leading up to the establishment of the Stronger Christchurch Infrastructure Rebuild Team (SCIRT). During this time City Care's turnover increased to \$350 Million per annum.
- 1.8 As Emergency Response Manager for City Care I had responsibility for resources, reinstatement strategy and integration into the Christchurch City Council

Emergency Response Centre. I was part of the establishment team for the SCIRT and retained an over view of resourcing and delivery through the start up.

1.9 In 2013 I resigned from City Care to take up a short term role with AECOM before returning to Queenstown in 2014 as General Manager Property and Infrastructure for QLDC, the role I currently hold.

1.10 My Role as General Manager Property and Infrastructure with QLDC involves:

- (a) leading the Property and Infrastructure team including both internal and external resources;
- (b) compliance with relevant Acts and legislation in undertaking property and infrastructure activities;
- (c) strategic planning for Property and Infrastructure assets through a business case framework;
- (d) maintenance and operation of the Property and Infrastructure assets; and
- (e) delivery of the property and infrastructure components of the Ten Year Plan 2018-2028, He Mahere Kahurutaka(TYP) under the Local Government Act 2002 (LGA).

Purpose and scope of evidence

1.11 I am the Project Sponsor for QLDC's application for resource consents to authorise occasional overflows from its sewerage network. That means I am the person with overall responsibility for delivery of the project. I report directly to the Chief Executive on delivery of this project. In this role my responsibilities have included:

- (a) project initiation and strategy;
- (b) chair of the project control group;
- (c) acting as a link between the Chief Executive, executive leadership team, elected members in their governance capacity and the project team;
- (d) overview of the project plan including programme, budget and stakeholder management;
- (e) ensuring adequate resourcing and expertise is available to the project team;
- (f) coordination and integration of the project with wider organisational programmes; and
- (g) overview of media and stakeholder interactions.

- 1.12 The purpose of my evidence is to outline the project and explain how this consent application relates to QLDC's wider strategic wastewater networks plan and investments. My evidence is set out as follows:
- (a) Project Overview;
 - (b) Wastewater Network Strategy;
 - (c) Long Term Plan for wastewater Infrastructure;
 - (d) Delivery approach for three waters Capital Works Programme;
 - (e) Network operations and maintenance;
 - (f) Why a Network Discharge Consent;
 - (g) Term of consent;
 - (h) Consideration of the submissions received relevant to my evidence; and
 - (i) An assessment of matters raised in the ORC's Planner's s 42A Report.

2 Executive summary

- 2.1 QLDC is the owner and operator of the district's network of wastewater infrastructure. These networks enable the protection of public health and the environment. From time to time blockages, breakages and storm events result in overflows from these networks. These overflows cannot be entirely prevented and are currently not authorised under the Resource Management Act 1991 (RMA). A key focus of the consent application is on how the actual and potential effects from an overflow will be managed.
- 2.2 QLDC is underway in the delivery of a \$105M wastewater capital works programme. The programme of works is aimed at minimising our impact on the environment, managing growth, reducing risk and improving resilience.
- 2.3 Alongside the capital works programme is our on-going committed to continual improvement in our network operations. The identification and implementation of new technologies and approaches is integrated into our network maintenance contracts. An outcome of this consent process will be the implementation of a comprehensive response protocol for wastewater overflows.
- 2.4 QLDC has chosen to apply for a network discharge consent because it wants to be open and transparent with its communities and the Otago Regional Council (ORC) about how wastewater networks operate including the occurrences of overflows.

3 Project Overview

Wastewater overflows

- 3.1 The public wastewater network enables the protection of public health of the wider community and environment.

- 3.2 QLDC already holds a number of treated wastewater discharge consents. These consents allow for discharges from QLDC’s wastewater treatment plants, being Project Shotover (covering Queenstown and the Wakatipu Basin), Project Pure (covering Wanaka and parts of the Upper Clutha area), Luggate, Hāwea and Cardrona. With the exception of Hāwea, all discharges of treated wastewater from wastewater treatment plants are to land.
- 3.3 This consent application is independent of these existing consents.
- 3.4 Blockages and breakages occur in the wastewater pipes when foreign objects such as fats, sanitary items, wet wipes, construction offcuts and debris are put into the network at pipe openings (in houses, businesses or at manholes). External influences such as tree roots invading pipes are also another cause of pipe damage. Storm events can also cause overflows from the network through capacity exceedance, but this is an uncommon occurrence in the Queenstown Lakes District.
- 3.5 In some instances, the pressure caused by blockages in turn causes wastewater to build up and overflow into the environment at the nearest “fuse”, which is typically a manhole or a pump station. If these overflows cannot happen at these localised “fuses” there is a risk that, instead, wastewater would blow back into private property through toilets, showers, and sinks.
- 3.6 This type of overflow has the potential to result in greater direct adverse effects on human health than if a release occurs at a manhole, pump stations or gully traps. Having occasional overflows at these “fuse” locations also protects the structural integrity of the public network by releasing pressure.
- 3.7 Such wastewater overflows cannot be entirely prevented, can occur anywhere within the entire QLDC wastewater network and currently occur occasionally from the QLDC wastewater network.

Network Discharge Consent application

- 3.8 Such overflows are currently not authorised under the Resource Management Act 1991 (**RMA**) and require consent as a discretionary activity under the Otago Regional Plan Water.
- 3.9 As these overflows cannot be entirely prevented, QLDC has applied for district wide resource consent to authorise them.
- 3.10 The consent application covers overflow discharges from existing QLDC owned and/or managed wastewater collection networks in Queenstown, Arthurs Point, Frankton, Shotover Country and Lakes Hayes Estate, Lake Hayes, Arrowtown, Wanaka and Albert Town; part of Cardrona Lake Hāwea, and part of Luggate. It also covers Kingston, Glenorchy, Cardrona, Hāwea Flat, Glendhu Bay, Luggate, Jacks Point and Village, Hanley Farms, Coneburn (industrial zoned area), and Millbrook Resort, which are areas in which QLDC plans to develop a wastewater network or take over the ownership or management of existing private wastewater networks.
- 3.11 A key focus of the consent application is on how the actual and potential adverse effects from an overflow will be managed (avoided, remedied, or

mitigated). There are two parts to the management of potential adverse effects from overflows:

- (a) physical response – how QLDC responds to an overflow and what action is undertaken to minimise temporary and permanent adverse effects on public health, the environment, and cultural values; and
- (b) operational and maintenance improvements to the network that, over time, are intended to reduce the likelihood of overflows occurring and therefore reducing the likelihood of adverse effects occurring.

3.12 QLDC is proposing conditions of consent that reflect both the physical response and the operational and maintenance improvement approaches to managing potential adverse effects.

4 Existing wastewater infrastructure

4.1 Our towns are constructed alongside our lakes. Historically our wastewater networks (totalling 421km of mains pipework) were designed to gravity feed wastewater to the low points, being the lake edges. At the low points we have pumping stations which move the wastewater through a series of pressure and gravity mains to other pump stations and eventually to our treatment plants.

4.2 In part this historic approach protected public health by relying on waterways and lakes to manage overflows from failures in the network either as a result of blockages or in civil defence emergencies such as the Canterbury earthquakes. Such an engineering response is no longer appropriate in 2019. We still need to respond to our public health responsibilities, but also to recognise our environmental and cultural obligations as well.

4.3 Over time QLDC has continually increased the capacity of these mains and pumping stations to align with growth. The result of this approach is that we have significant volumes of wastewater passing alongside our lakes and waterways. We need to manage these existing, expensive capital works in a way that responds to the broad range of cultural and environmental values that we now recognise in our waterways. The importance that we place on ecology, contact recreation opportunities, amenity and tourism has driven QLDC's strategy to remove and redirect large volumes of wastewater from near the lake fronts. It has also engendered this application, which seeks to authorise and place appropriate controls around these occasional discharges from system "fuses".

5 Thirty Year infrastructure asset management strategy

5.1 The provision of infrastructure is a core function of Council. QLDC is required to ensure infrastructure is effective and efficient. To achieve this requires replacement and repair of existing infrastructure, and also installation of new infrastructure networks to meet both natural (resident) growth and tourism growth.

5.2 While QLDC is not experiencing overflows due to capacity issues at present, the need to respond to growth pressures is driving heavy investment in new infrastructure and facilities to service development, and to ensure any potential

effects on the environment are identified and where possible, avoided. Growth is expected to contribute to an increase of \$70M in operating costs for the district's infrastructure.

- 5.3 QLDC's 2015 – 2045 Infrastructure Strategy was released in March 2015, as required under the 2014 LGA reforms. The Infrastructure Strategy covers all of the QLDC's infrastructure, specifically transport and the three waters infrastructure.
- 5.4 QLDC's adopted its current Infrastructure Asset Management Strategy 2018-2048 (**IAMS**) in June 2018. The IAMS documents a second generation of QLDC's understanding and approach to tackling the strategic issues facing our region's core infrastructure over the next 10 years.
- 5.5 QLDC has been independently assessed over the last 5 years as part of an improvement programme. Through this we have significantly improved our understanding of the network. This work is fundamental to the development of renewals programmes and the understanding of how new technologies may assist us in the preventing overflows in the future.

6 Long Term Plan for wastewater infrastructure

Local Government Act 2002 obligations

- 6.1 One of QLDC's key strategic planning mechanisms is its long term plan which is required to be prepared under the LGA. The LGA provides the framework and requirements for the operation and strategic planning of local authorities. This includes the requirement for local authorities to operate in democratic and cost effective ways and to provide good quality local infrastructure, both now and in the future.
- 6.2 A critical part of QLDC's ongoing commitment to delivering on its obligations under the LGA is its ability to manage projected growth through integrated planning in a way that accords with sound financial management principles. The effective and efficient provision of water, wastewater and stormwater systems relies on strategic planning that includes careful spatial planning. This is fundamental to support our growing community, as well as maintaining the quality/features that are valued by our communities and that are crucial to providing a world-class visitor experience.
- 6.3 The long term plan sets the budget for future development of infrastructure, services and assets, and also for the replacement and upgrade of the same. Sections 100 and 101 of the LGA, relating to sustainable and prudent financial management, are particularly relevant. The balance between meeting service demands of the community, while satisfying financial requirements is a highly relevant factor in the long term plan. QLDC needs to prioritise its investments in infrastructure in a way that both reduces the risks of environmental harm and that responds to QLDC's fiscal constraints.

Ten Year Plan 2018-2028

- 6.4 In June 2018 the Council completed its latest long term plan process as required under the LGA. The result of this process is the current Ten Year Plan, 2018-2028 Naia Te Mahere Kahurutaka 2018-2028 (**TYP**).
- 6.5 The TYP represents an agreement between the Council and the community. The Council has set a bold plan that will address the key infrastructural gaps and invest in enhanced capacity to meet anticipated growth forecasts.
- 6.6 To implement the strategic plan as set out in the TYP, funding is essential. The TYP sets a budget of \$990M over its ten year life. Of this, \$326M is specifically identified as meeting the impact of growth. This is an ambitious budget that is three times greater than has previously been set by QLDC.
- 6.7 Achieving these outcomes is a considerable financial challenge for the district and relies on both internal and external funding streams. Direct funding streams are primarily rates and development contributions, and the Council has signalled strong rates rises in the coming years. In addition, Council has worked to establish its credit rating to lift the borrowing rate from the current level of \$85M to \$443M within five years. The Council is also a leading proponent of a local visitor levy to ensure that the beneficiaries of the infrastructure QLDC is constructing contribute to its funding and delivery.
- 6.8 The TYP sets out the first ten years of investment plans to deliver the interventions that are required under the IAMS. Wastewater capital projects for the next 10 years total approximately \$105M¹ (excluding renewals) and includes new schemes in Cardrona and Kingston, upgrades and connection of Luggate and Hāwea townships to Project Pure, addressing reticulation in central Queenstown and a number of pump station upgrades.

Key wastewater projects

Project Shotover

- 6.9 The most significant of QLDC's wastewater network projects is Project Shotover. Project Shotover involves the construction of a new wastewater treatment plant, land dispersal field and additional treatment reactors on the Shotover Delta in Queenstown. The wastewater treatment plant services all the major communities in the Wakatipu Basin and was the QLDC's largest infrastructure project in the past 20 years.
- 6.10 Stage one of Project Shotover was commissioned in 2016 delivering a significant improvement in the quality of the treated wastewater. Stage two, to eliminate the discharge of treated wastewater to water, was completed in 2019. Planning work is already under way for stage three, which will double the plant's capacity and allow the decommissioning of pond based treatment completely. Stage three will again significantly improve the quality of treated wastewater discharged to land.

¹ As approved in the Ten Year Plan, but not including Project Shotover, which was brought forward following approval of the Ten Year Plan.

Project Pure

- 6.11 The next most significant wastewater treatment plant in the district is Project Pure. Project Pure is the wastewater system for the townships of Wanaka and Albert Town. Project Pure is also in planning for a significant upgrade to provide for growth and to allow for the connection of Luggate and Hāwea (which is already authorised by the Project Pure resource consent). This project, once completed, will allow the decommissioning of Luggate and Hāwea wastewater treatment plants.

Cardrona Treatment Plant

- 6.12 QLDC is progressing an alternative wastewater treatment plant for Cardrona. This work is in partnership with the private sector with the aim being to consolidate a number of private schemes in the area.

Recreation Ground pump station

- 6.13 QLDC is planning for a new Recreation Ground pump station, which is a TYP project aimed at better protecting our lakes by consolidating wastewater away from waterbodies. This project will see significant volumes of wastewater from Arrowtown, Arthurs Point and Queenstown Hill intercepted by a pump station at the recreation ground reserve on Gorge Road. The reserve will act as a natural basin in the event of a significant failure from an event such as the Alpine Fault earthquake.

Kelvin Heights

- 6.14 The current project at Kelvin Heights involves an upgrade of the Willow Place pump station, construction of a new rising main along the track connected to the new pipeline over the new Kawarau bridge, up Robertson Street, Hawthorne Drive to Project Shotover. This project increases resilience by diverting wastewater flows away from Frankton Beach pump station.

Network discharge consent application

- 6.15 This network consent application is one of QLDC's key wastewater infrastructure projects. The proposed conditions of consent will establish a framework for ongoing monitoring and reporting on QLDC's performance in relation to planned network upgrades to the network and how QLDC is responding to overflow events. Section 9 of my evidence explains the reasons why QLDC is seeking a network discharge consent.

7 Delivering the three waters capital works programme

- 7.1 QLDC's experience from delivering Project Shotover was that if we undertake one construction project and then move on to another there will be peaks and troughs in workflow for contractors. This type of uneven workflow makes it difficult to resource and maintain the required level of contractor engagement and investment. QLDC's Infrastructure Strategy and TYP programmes are ambitious. This means that QLDC needs to sustain a level of investment and

construction that is sufficient to attract contractors to the district on an ongoing basis.

- 7.1 QLDC identified that it is likely that delivery capacity will peak at about \$6 million across the three waters programme in any single month. Accordingly, QLDC's three waters programme aims increase up to this limit and then maintain this expenditure level over the programme.
- 7.2 QLDC considered the first three to four years of the TYP programme and came up with an approach that bundles projects (not necessarily geographically, but potentially by the type of work) in a way that is attractive to the market and gives contractors and consultants the confidence to bring resources into the area.
- 7.3 The result is that QLDC now has a group of four consultants (Beca, Aecom, Fluent and Stantech) on its design panel for the three waters projects and four contractors (HEB, McConnell, Fulton Hogan and Downer) on its construction panel. These experienced engineering companies are committed to the area.
- 7.4 To ensure that continuing commitment, QLDC needs keep to the programme and, to date, it has generally done. I am confident that given the commitment to the district exhibited by the design and contractor panels, QLDC can continue to deliver its TYP three waters network improvements programme as scheduled.

8 Network operations and maintenance

- 8.1 QLDC is committed to continual improvement in its network operations and maintenance of the wastewater network. Maintenance of the network reduces the risk of overflow and network operations (including the response to overflows) can reduce their duration and volume thereby minimising their adverse effects on the environment.

Network operations - overflow response

- 8.2 QLDC outsources its overflow response to specialist contractors, however, QLDC is very clear that ultimate responsibility for responding to overflows rests with it. In practice this means that QLDC works in partnership with its contractors to ensure that they have everything they need to respond appropriately to overflow events:
 - (a) The network maintenance contract core group is made up of five people, two from the contractor, two from QLDC, with the QLDC chief engineer (Mr Glasner) being the fifth person having a casting vote. This core group arrangement allows for partnership and decision-making regarding network operations and maintenance.
 - (b) The contractor is required to report early warnings to the core group which are considered at core group meetings and the core group is obliged to take action. If the recommended action is outside of the scope of the network maintenance contract it becomes a point of entry for a business case that then feeds into our strategy for renewals or capital works on the wastewater network. This means that what is happening on the ground directly drives QLDC's investment strategy for wastewater.

- (c) A key aspect of our contractual arrangements is that both QLDC and the contractor collectively own the contract Key Performance Indicators (KPIs). This means that the contractor is incentivised to keep QLDC on track for its responsibilities under the contract. For example under our contracts:
- (i) The contractor can indicate weaknesses in the system that require action by QLDC.
 - (ii) Where there are new developments and new wastewater systems being constructed, the contractor is required to certify new infrastructure (after visually inspecting all the lines via camera). In other words, the entity undertaking the operations and maintenance has a stake in determining whether that new infrastructure is constructed to an acceptable standard from the outset. This means the contractor cannot later complain about the quality of that infrastructure should there be problems.
 - (iii) The core group model allows the contractors to bring innovation to the operations and maintenance programme. For example in Kelvin Heights, the contractor introduced a new device to check and clean pipes and also a device called an S Wrap to predict sewer overflows. Kelvin Height's sewer line is in a remote location where it would otherwise not be easy for contractors to undertake preventative cleaning or for members of the public to observe a sewage overflow and report it to QLDC.
- (d) In terms of responding to particular overflow events, we work with our contractors to design sampling and testing regimes, make any media releases required as part of the overflow response (for example not to use facilities such as toilets in a particular area until the overflow has been resolved and the lines fixed). QLDC employees will front the response with affected parties such as going door-to-door and advising of an overflow and authorising any public health advice that needs to go to the community. QLDC also takes an active role in ensuring that any remediation undertaken by our contractors is to a good standard.

- 8.3 Ms Moogan's evidence will address how QLDC and its contractors respond to overflow events including the notification and escalation processes. However, I do want to note that overflows to water are treated seriously by QLDC and that I am required to notify the chief executive (or the Mayor if the chief executive cannot be contacted) of such incidents.

Network operations review

- 8.4 Shortly after I joined QLDC in 2014 I instigated a review of our network operations and maintenance programme. Key practices that were introduced included regular CCTV and camera inspections and cleaning of existing drains. I established a core group to overview our wastewater network operations and maintenance contract. This will in the future include quarterly reports with the Commercial and Procurement manager providing regular updates to the Chief Executive.

Stormwater system redundancy

- 8.5 QLDC has recently reviewed its stormwater network to better understand whether its stormwater assets have the capacity to hold back a wastewater overflow to prevent it reaching water. If stormwater assets such as catchpits become clogged with sediment then their capacity to hold back a wastewater overflow is reduced. QLDC now has its catchpits being cleaned out by our three waters network contractor. That contractor is paid for the removal of sediment by volume as proactive approach to keeping catchpits clean to provide a barrier to prevent/delay overflows of wastewater reaching the lake.

Technological improvements

- 8.6 Overflows can also be predicted through SCADA and sensors on pumps and wet wells that trigger alarms, particularly in remote areas. For example following the overflow from an engineered overflow point to the Shotover River, QLDC has now installed sensors that will send an alert if wastewater levels begin to rise above expected levels.
- 8.7 These types of technological innovations, combined with CCTV inspections provide information to QLDC about the vulnerabilities in the wastewater network system and this information drives QLDC's investment in the network.

Risk identification

- 8.8 Another way of learning and improving is identifying geographical areas of land uses that pose a higher risk to the wastewater network. For example in commercial areas with a large number of restaurant and food service businesses, there is a higher risk of fat, oils and grease entering the wastewater network.
- 8.9 In order to have the greatest effect on reducing these types of materials entering the wastewater network, QLDC's trade waste education programme focuses on businesses in these areas.

Maintenance and renewals

- 8.10 The operations and maintenance team also runs a renewals programme for the wastewater network. This is separate from capital works and involves ongoing maintenance such as replacing pumps or portions of pipe as required.
- 8.11 Generally renewals do not increase capacity but replacing older parts of the network with new materials will increase resilience in the network and therefore assists to reduce the risk of overflows.

9 Why a network discharge consent

Public health

- 9.1 Public health and sanitation is a core function of local government. QLDC's infrastructure and funding policies priorities reflect that.

- 9.2 In an individual dwelling, the Building Code requires you to have gully traps because, if there is a blockage, it is better for wastewater to come out your gully trap outside your house than inside – ie the gully traps are like a fuse in an electrical system. If you apply that model to QLDC’s wastewater network then the manholes and pump stations serve that same function. While the hope is that they are not needed, it is better to have them than to not.
- 9.3 Without those “fuses” wastewater goes backs up behind a blockage. So, if the network blocks eventually wastewater will go up lateral pipes to people’s houses. If QLDC operated a completely sealed network there is always going to be a point at which a blockage will come out. That would normally be a low lying house within a reticulated network (i.e. it would usually be their gully trap but if that is blocked off it will be into the house via toilets and sinks). Obviously that is a real public health issue. So there have to be releases or “fuses” within the network to avoid that situation.
- 9.4 Wastewater networks are always going to have discharges and QLDC needs to consider public health in how it manages those. It is not acceptable to have houses filling up with sewage, so there needs to be a way that wastewater, when blocked, gets away from the network.
- 9.5 While overflows are unavoidable and, in some cases necessary to prevent a human health risk, they are not authorised under the RMA or the Otago Regional Plan: Water. This means that QLDC needs to seek a resource consent to authorise the overflows.

Transparency and partnership

- 9.6 QLDC wishes to be open and transparent with its communities and Otago Regional Council (**ORC**) about how wastewater networks operate and the inherent limits in those networks that mean that overflow events cannot be entirely avoided.
- 9.7 QLDC’s preferred approach is to continue developing a partnership with ORC so that both authorities can discuss more collaboratively how QLDC is going to respond to overflows and the two authorities can work together to get the best outcomes for the community.
- 9.8 A network discharge consent application is a key part of QLDC’s preferred open and transparent approach. It allows QLDC to share its approach to preventing overflows with ORC, receive ORC’s views on those approaches and facilitate conversations about ORC’s views on QLDC’s infrastructure investment priorities.
- 9.9 That input and partnership with ORC comes from the reporting requirements in QLDC’s proposed conditions. I expect that the reporting will be to a level of detail that ORC has not seen before from either QLDC or any other of the district councils in the region. My expectation is that that this level of information will allow ORC to better understand wastewater investment in its region and how that investment can best be prioritised - either by building network resilience and protecting against significant events or by focusing on the immediate reactive response.

Building resilience in the wastewater network

- 9.10 Protecting lakes and rivers in Queenstown is extremely important. One of the key challenges for QLDC is whether, if there were a significant event (such as an Alpine Fault earthquake), QLDC has invested the money in the right places so that the network is sufficiently resilient to protect human health and the environment.
- 9.11 Attempting to create an entirely spill proof network would be prohibitively expensive and would mean less funding was available for increasing network resilience. Seeking a network discharge consent allows QLDC to start a conversation with the community on the need to balance our investment between network resilience and reducing or responding to one-off overflow events.

Community engagement and education

- 9.12 One of the key reasons for seeking a network discharge consent is to engage with the community around the challenges that QLDC faces with materials entering the wastewater network that the network is not designed to cope with and cannot cope with.
- 9.13 The community may not be happy about the fact that QLDC is applying for a network discharge consent but the public can be part of the solution by making sure that the foreign objects that cause overflows do not enter the wastewater system in the first place.

Residents and visitors

- 9.14 I think for many people, flushing the toilet, is the end of it, and it is no longer their problem any more. We need to shift this thinking because, when it comes to reducing overflows, QLDC cannot solve this problem on its own. If we cannot get the community to understand these issues and change their behaviours we cannot reduce the risks to our sewers.
- 9.15 If we can get people to understand how important this is, and that QLDC is in a situation where it needs to apply for a network discharge consent in part because of the impacts the community is having on the network, then hopefully we can start to shift thinking and behaviours around what goes into the network.

Commercial operators

- 9.16 We need commercial operators to understand that the way that they treat fats, oils and greases determines whether QLDC will be successful in the management of the network and reducing overflows.
- 9.17 We need commercial operators to understand that visitors and the public do not accept the risk of our lakes being contaminated and that contamination could detrimentally affect tourism and their businesses.

Construction industry

- 9.18 The construction industry needs to understand that when a sewer is open, foreign objects (such as construction materials, bricks, asphalt, wood, building materials) falling into it has significant consequences. Eventually the waste flows into QLDC wastewater systems causing blockages and overflows. Educating the construction industry around how to properly work on or around our networks is important to preventing overflows

Tree roots

- 9.19 QLDC works to identify if tree roots are causing blockages and overflows by inspecting the lines via camera. If QLDC identifies a tree root through camera work or through blockages we remove the tree root within the sewer. QLDC then notifies the owner that while the problem has been solved for the moment it will come back unless the tree is removed or the sewer relocated away from the tree.
- 9.20 While QLDC can do a certain amount around inspecting the lines we also need the community to recognise that where trees are planted can potentially cause problems both to the property and the wastewater network.

10 Term

Public health

- 10.1 Given the risk to public health (previously explained) of a completely sealed network, QLDC does not intend to operate a completely sealed system and anticipates that it would need to exercise the network discharge consent for the foreseeable future. In that context QLDC considers that it is appropriate and more efficient to seek the maximum available consent term.

Integrating infrastructure works takes time

- 10.2 Infrastructure takes a long time to plan, fund and deliver. Changes to the existing network to remove it from waterways are complex long term projects. For example, the Recreation Ground pump station will significantly reduce wastewater from Marine Parade (there still will always be a smaller volume of wastewater near the lake from the houses that sit below the pump station). However, the main wastewater line to Frankton still goes along the Frankton track. QLDC would like to see that wastewater from the Recreation Ground pump station separated from the existing sewer. This would allow a sealed pumping main constructed from modern materials to transfer bulk wastewater to Frankton. The existing main could be upgraded to continue to provide for properties generally along or above Frankton Rd but at a significantly reduced volume.
- 10.3 Projects like the Recreation Ground Pump Station rely on alignments along urban state highways and can have planning periods of up to 10 years. QLDC works on a 10 year planning horizon but NZTA works on a three year programme so there are challenges around co-ordinating QLDC's three waters investment programme with the potential investment in roading networks. I think that Central and Local Government changes (like the Way to Go Collaborative

working partnership including ORC and NZTA) that are underway will enable us to work in more of a partnership around State Highway roading and three waters projects in the near future.

QLDC is responding to these planning challenges by future proofing its infrastructure so that we can integrate related projects that will take place concurrently with roading works. For example, QLDC is currently planning for the building of the sewer to intercept flow coming along Mann Street and divert it down to the Recreation ground. This will again eliminate more wastewater from Marine Parade. However, QLDC cannot get an alignment through there until the road is built. So QLDC is building the pipe, capping it for the future, so that when and if that section of the arterials is built, we can take wastewater from that point.

Infrastructure lifespan

- 10.4 Wastewater infrastructure has long lifespans. The infrastructure that QLDC is putting in place now has an expected lifespan of 50 years (although materials can fail earlier). Similarly there are also pipes that we expect to last for 50 years but are still in the ground 80 or 100 years later. In my experience in Christchurch some of the cast iron water mains through the CBD responded extremely well through the earthquake whereas some of the newer pipe materials did not.
- 10.5 Regardless of the exact lifespan, it is still a matter of decades before newer parts of the network are due for replacement and that is why QLDC is seeking a longer consent term.

Continuous improvement

- 10.6 Although QLDC is not able to completely eliminate the risk of overflows it is keen to improve and wants the opportunity to demonstrate to the community that it can continue to reduce overflows over time. QLDC considers that the best way to achieve that is to seek a longer term of consent but with robust conditions that require QLDC to audit its network and report to ORC on how it plans to improve the network to reduce the risk of overflows. Compliance with these conditions will require operational change and increased resourcing. This is why reporting and reviews are staged over time. A longer term consent will provide certainty as to our consenting obligations and enable us to confidently invest in systems and tools required to serve maintenance, response and reporting requirements.
- 10.7 QLDC's infrastructure investment programme cannot not eliminate overflows, only reduces the risk of overflows occurring. We are going through the process of being open with the community around applying for a network consent. Having to do that every 10 years is a significant process and from an efficiency perspective we would rather demonstrate our performance over a longer period and show that actually every year performance is getting better.

Overflow Response procedure

- 10.8 The proposed consent conditions also require QLDC to submit a detailed overflow response procedure to ORC and report to ORC on overflows to water

and QLDC's response. In this way, ORC is able to have oversight of QLDC's response to overflows is satisfactory and monitor how it is improving over time. This oversight by the regional council is intended to give both ORC and the community greater comfort about a longer term of consent.

11 Submissions

Need for a network discharge consent in a properly maintained network

- 11.1 As I have explained, any wastewater network that is open to the public is at risk of inappropriate materials being put in it. These materials will inevitably cause problems for the network's functions. Proper maintenance helps avoid problems caused by tree roots and additional causes, such as aged materials or lack of capacity. However, proper maintenance can do little to ward off the problems caused by the introduction of inappropriate materials to the network.
- 11.2 Some of the submissions also suggest that an overflow should ever be able to reach water.
- 11.3 That is aspirational and I think something we want to work towards but historically the networks have been constructed around the waterways and lakes because they are gravity fed to a low point. That is not to say QLDC should not work on preventative measures, camera inspections, renewals, education of contractors and the public in terms of what can and cannot be or put down a sewer or how you should work around sewers. That must be a big focus and I think QLDC is demonstrating that through the trade waste by-law in which we're trying to educate the community as well as through the proposed education and communication conditions on this resource consent.

Licence to pollute

- 11.4 I disagree that this consent is a "licence to pollute". We have no intention to pollute. We want to eliminate overflows.
- 11.5 If all our money was to go into CCTV inspections and cleaning of lines then we would not be able to protect ourselves from large events. We need to prioritise our spend in so that we first reduce where the wastewater can get to the waterways and then secondly reduce overflows to land. That is a long process. Our networks are quite well established and so those changes are going to take many years to implement and even then those changes will only reduce the risks not eliminate them.

Global best practice

- 11.6 Some of the submitters have said that we understand that there will always be overflows but that QLDC should not be granted consent for these overflows, unless it can demonstrate that its is operating its network to a global best practice standard.
- 11.7 I agree that we need to protect our lakes and rivers. But it comes back to that wastewater systems need to have the ability to release and that cannot be eliminated. I am not sure that even at a global level best practice network could ever achieve nil overflows. Mr Glasner will elaborate on this point.

- 11.8 QLDC's situation is not uncommon - overflows occur from wastewater networks in New Zealand and across the world. We have a difference in that we have contained water sources, lakes, whereas a lot of networks across New Zealand discharge to the ocean or large rivers but this is not uncommon in networks across New Zealand and across the world.

Capacity and wet weather events

- 11.9 In reference to the submission by Anna Simmonds and Matthew Evrard, QLDC does not currently have overflow events associated with wet weather events. Climate change and the impact on the severity and frequency of storm events is being considered as part of our future wastewater planning

12 Section 42A Report

- 12.1 Limited options are available for QLDC in how we manage wastewater reticulation across the district.
- 12.2 QLDC could step back from being responsible for wastewater and leave individual households to manage wastewater on site. This is not practical in terms of existing urban areas nor is it recommended in developing urban areas.
- 12.3 QLDC could develop fully sealed networks. This would generally require replacement of the entire public and private networks, which is likely to be cost and time prohibitive. Overflows would still occur but would be contained within houses and their surrounds (gully traps). This would create an unacceptable public health risk
- 12.4 QLDC could adopt a status quo approach resulting in prosecutions, on-going reactive responses and no transparency around network improvements.
- 12.5 None of these alternatives are viable alternatives in QLDC's opinion.
- 12.6 Bunding in some situations is a practical approach and is being applied. The most relevant example is kerb and channel which primarily catches stormwater from roads, transfers the stormwater to catch pits where sediments are contained before discharging to waterways and or lakes. As explained in paragraph 8.6 above, the same system can be effective as a short term containment for wastewater.
- 12.7 More significant bunding as a second barrier after the extensive monitoring systems in place at pump stations can be applied to pump stations. However, such bunding is not practicable in all situations nor is it desirable from an amenity perspective.
- 12.8 QLDC's approach to developing future networks is generally to separate the wastewater transfer function from the wastewater collection function. This approach allows for the construction of pumping mains using welded polyethylene pipe which is sealed and more resilient. The gravity collection systems can then operate with significantly lower volumes and corresponding risk. Where practicable these transfer networks are being located away from water receiving bodies. An example of this is the Recreation Ground Pumping Station and Transfer Pipeline which is currently in design. The Frankton site to

which wastewater will be pumped has the advantage of being away from the lake and naturally bounded by the sports field.

- 12.9 QLDC has been working for two years now on trade waste education programme having dedicated resources to this work as part of the 2018 Long Term Plan. QLDC is keen to extend its education programme across the community, the construction industry and visitors in the near future.
- 12.10 The Queenstown Lakes District's economy is dependant on tourism. Protecting our waterways and lakes is fundamental to being a desirable destination. We are committed to this objective. QLDC is committed to improving and working with ORC and stakeholders to achieve as few discharges as possible. The random nature of overflows and their cause make it difficult to set a volume or event limit on the consent. QLDC is however proposing a set of conditions that would allow better understanding of discharges and their responsibilities. QLDC accepts that if it acts responsibly it should be prosecuted. QLDC is not seeking to be exempted from acting irresponsibly through this consent.

13 Conclusions

- 13.1 Public wastewater network enables the protection of public health of the wider community and environment.
- 13.2 Infrequently, blockages and breakages within the network result in overflows. These overflows can also occur when the network is inundated during storm events. These overflows cannot be entirely prevented.
- 13.3 Such overflows are currently not authorised under the Resource Management Act 1991 (**RMA**) and require consent as a discretionary activity under the Otago Regional Plan Water.
- 13.4 A key focus of the consent application is on how the actual and potential adverse effects from an overflow will be managed.
- 13.5 QLDC has a Thirty Year Infrastructure Strategy and a Thirty Year Infrastructure Asset Management Strategy. These document guide our investment in infrastructure and inform the Long Term Plan.
- 13.6 Wastewater capital projects total \$105M over the ten year duration of the Long Term Plan. The plan is an ambitious programme of investment and is aimed at minimising our impact on the environment, managing growth, reducing risk and improving resilience. QLDC is well progressed in the delivery of this programme.
- 13.7 QLDC is committed to continual improvement in its network operations. The structure of the contract enables the identification and implementation of new technologies and approaches to managing the network.
- 13.8 As part of this consent application, QLDC has developed a response procedure for wastewater overflows.
- 13.9 QLDC has chosen to apply for a network discharge consent because it wants to be open and transparent with its communities and ORC about how wastewater networks operate including the occurrences of overflows.

13.10 The term of the consent acknowledges the investment life of infrastructure assets, the way the network operates and in case of blockages, breakages and storm events the way in which it is designed to fail so that public health is protected.

Peter Jonathan Hansby

18 October 2019