Overview

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Three waters

- Aotearoa New Zealand’s drinking water, wastewater, and stormwater services are collectively described as the “three waters”.
- A social and economic enabler, fundamental to the wellbeing of our communities and the quality of our environment.
- The need to recognise Te Mana o te Wai – the cultural value of water and water bodies to mana whenua.
- A vast and diverse sector, large number of providers, large number of assets across a wide geographic spread, heavily influenced by topography and natural features such as drinking water sources and discharge options.
- Primarily owned and provided by local authorities.
- Multiple Ministerial portfolios and government agencies. Key departments include: Internal Affairs, Environment, MBIE and Health.
- One of NZ’s core infrastructure sectors – very large investment: the combined local government assets have a $51.4 billion replacement value, with $12.8 billion planned expenditure from 2016 – 2025.
We are facing a number of challenging questions relating to the three waters – so government asked us to look at the system.

**How do we ensure communities and visitors across the country have access to safe and affordable drinking water, and swimmable rivers and coastal waters?**

**How can communities with small or declining rating bases fund renewals of ageing infrastructure? Or cope with the pressure placed on water services by tourists?**

**How much will it cost to meet national directions and community aspirations for fresh and coastal water quality – and how can communities pay for this?**

**How can we achieve our housing aspirations and meet the increasing demand for water infrastructure driven by urban growth?**

**How do we meet increasing community expectations relating to drinking water quality, and wastewater and stormwater treatment and management?**

**How do we respond to big issues like emergencies and natural hazards, climate change, and infrastructure resilience?**
The Three Waters Review is exploring these challenges, and ways to address them

- **Three Waters Review established mid-2017 to:**
  - look into the challenges facing New Zealand’s three waters system; and
  - develop options and recommendations for system-wide performance improvements.

- **Cross-government initiative** – led by Department of Internal Affairs, working with many other agencies including: Business, Innovation and Employment; Health; Environment; Treasury; Transport; MCDEM; Primary Industries

- **Initial work ran in parallel to Inquiry into Havelock North Drinking Water:** Stage 1 reported May 2017; Stage 2 reported December 2017

- **Three Waters Review ‘key findings’ provided to new Minister of Local Government and broader group of interested Ministers in November/December 2017**
  - These findings were consistent with Havelock North Inquiry’s Stage 2 findings, but were not confined to drinking water (see next slides)

- **Three Waters Cabinet paper in April 2018 – agreement to further work:**
  - Regulatory arrangements for all three waters, including system oversight and transparency of information
  - Service delivery arrangements – funding and financing; capability and capacity – including Havelock North Inquiry recommendations for aggregated suppliers
  - Interconnected with work to respond to the Havelock North Inquiry’s other recommendations, and broader work (such as Inquiry into Local Government Funding)
Key findings and unpicking the issues
Our key findings point to a range of national and local issues, covering both the three waters regulatory regime and service delivery:

- Risks to human health and the environment in some parts of the country
- Low levels of compliance, monitoring and enforcement of drinking water and environmental regulations
- Minimal central oversight and poor connections across the system
- Lack of protection, transparency and accountability for consumers, especially compared with other infrastructure sectors and overseas water systems
- Affordability issues, driven by a range of funding pressures and financial challenges
- Capacity, capability and sustainability challenges – particularly outside large scale organisations
- Variable asset management and governance practices, and a lack of good asset information to support effective decision making
Unpicking the issues: **drinking water safety and public health risks**

- The Inquiry into Havelock North Drinking Water concluded there is widespread systemic failure of water suppliers to meet the standards required to ensure the safe supply of drinking water.
- Many suppliers do not meet the drinking water standards.
- **Risks of further failure** – driven by inadequacies in regulatory settings, capability and funding challenges, and compounded by contributory factors such as ageing water infrastructure, climate change, and intensive farming.
- **The consequences of failure can be significant**
  - Havelock North – estimated 5500 people got sick; 45 hospitalised; up to 4 associated deaths; plus people with serious ongoing conditions.
  - Poor quality or untreated drinking water are the possible source on ongoing risks of contamination and ongoing low level outbreaks of illnesses (Inquiry estimated 18,000 to 100,000 people fall ill every year from drinking water).
  - Direct and indirect economic costs (Inquiry estimated $12.4 to $23.7 million per year).

The Havelock North Inquiry argued there is a compelling case for aggregated, dedicated drinking water providers being established as an effective and affordable means to improve compliance, competence and accountability. It also recommended establishing an independent drinking water regulator.

*These recommendations are both being considered as part of the Government’s response – but with a broader three waters lens, to ensure a system-wide approach is taken.*
Unpicking the issues: environmental challenges and wastewater systems

- Information on environmental monitoring on the performance of the three waters system is patchy – giving scope for debate on performance and ‘facts’
  - Lack of good quality, national-level information about the wastewater system, and its environmental impacts
  - Some regional environmental monitoring information available – but not consistent and hard to access
  - Wide variation in conditions set on resource consents across the country

- However, the best available evidence indicates the wastewater system is facing considerable challenges, which are more significant and complex than for drinking water, and will be costly to address – e.g.
  - Bow wave of upgrades to treatment plants – at least 1 in 10 plants estimated to be operating on expired consents, and 1 in 5 have consents due to expire in the next 4 years
  - 60% of councils use oxidation ponds to treat sewage, which can be problematic – moving to modern treatment systems would result in significant capital costs and higher operating costs, and involve more technical capability
  - Reduction of wastewater overflows – significant environmental/funding challenge, becoming unacceptable to many communities

- Issues with compliance and enforcement
  - Low level of formal action taken in relation to wastewater discharges
  - If compliance and enforcement are tightened, councils will come under pressure to comply with existing consent conditions and rising environmental standards

There are questions about whether the current regulatory regime is providing good environmental outcomes in respect of water services

We think the environmental performance of the three waters is going to be much more challenging and expensive to address than drinking water alone
The three waters system has a complex regulatory environment, and many organisations have a role in regulation, monitoring and/or service delivery.

**National**
- **Ministry for the Environment**
  - Sets the national environmental direction under Resource Management Act, through tools such as the National Policy Statement for Freshwater, national environmental standards, and regulations.

- **Ministry of Health**
  - Responsible for national level regulation of drinking water, including setting standards, appointing drinking water assessors, and reporting annually on compliance.

- **Department of Internal Affairs**

- **Controller and Auditor General**
  - Conducts annual audit of local authorities, and ad hoc inquiries.

**Regional**
- **16 regional & unitary authorities**
  - Have responsibility for regional environmental planning, issuing consents, monitoring compliance and enforcement.

- **36 Drinking Water Assessors**, employed by 20 DHBs provide regional level inspection for compliance with standards and water safety plans.

- **Ministry of Civil Defence and Emergency Management**
  - Has national level responsibility for civil defence emergencies.

- **Fire and Emergency NZ**
  - Is the national fire service.

- **Water New Zealand (NGO)**
  - Sector organisation that conducts an annual performance review of local authority services.

**Local**
- **67 territorial & unitary authorities**
  - Provide drinking water, stormwater, and wastewater services to their communities, meeting planning and reporting requirements under the Local Government Act.

  - **600,000 people** on very small, tanker & self-supplied drinking water.
  - **270,000 people** on private wastewater systems (e.g. septic tanks).

**NOT GOVERNMENT POLICY**
Unpicking the issues: **lack of central oversight and protection for consumers**

- A complex regulatory environment, with poor connections between regulatory functions and minimal central oversight of the three waters system
- A lack of information to allow consumers and other interested parties to assess the performance of three waters services – and a lack of transparency about the prices they are paying for those services
  - This means consumers cannot easily assess things like: whether there are risks associated with their drinking water; whether environmental standards are being met; levels of monitoring and enforcement; or how well publicly-owned assets are being managed on their behalf
- **Three waters networks have strong natural monopoly characteristics**
  - New Zealand is unusual in not having an economic regulation regime to protect water consumers from the exercise of monopoly power (this is common internationally for water, and in New Zealand for other utilities)
  - Monopoly risks have traditionally been managed via public ownership and local government democratic arrangements – utilising the overlap of owners and consumers
  - Absence of economic regulation means we don’t have good information on the condition of assets and whether the right levels of investment are being planned and delivered

Our work is exploring the potential for an economic regulatory regime, including whether an information disclosure regime would improve outcomes

We are also looking to improve central oversight, and connections across government and the wider system
Unpicking the issues: funding challenges – drinking water and wastewater infrastructure upgrades

Proceeding with Havelock North Inquiry recommendations for mandatory compliance with the Drinking Water Standards and mandatory treatment carries significant costs – according to research by Beca

- Estimates of at least **$309 to $574 million in capital costs** to upgrade 611 water treatment systems (serving 1.4 million people), plus estimated annual operating costs of $11 to $21 million
- Councils own only about two-thirds of the infrastructure that would need upgrading – the rest is owned by other organisations, such as community and private providers, which tend to serve very small communities

Councils are facing even bigger costs for wastewater infrastructure upgrades to meet the National Policy Statement for Freshwater Management – according to a draft report by GHD and Boffa Miskell

- A range of **$1.4 to $2.1 billion overall estimated capital costs** to upgrade councils’ wastewater infrastructure to reach Grade B attribute levels for E. coli, nitrogen and ammonia, plus national ongoing operating costs estimated at $60 to $90 million per year
- In both cases, households in some parts of the country would face much higher costs than others – affordability could be particularly challenging for smaller councils and communities, in certain regions

This is only part of the picture regarding drinking water and wastewater infrastructure costs

- Likely to be far greater costs associated with upgrading wastewater services and underground pipes to reduce wastewater overflows to rivers and beaches
- Excludes costs of discharging to the marine environment – over half of wastewater treatment plants discharge in this way

NOT GOVERNMENT POLICY
Unpicking the issues: other funding and financing challenges

Climate change is predicted to have a major impact on three waters infrastructure/services, but the costs associated with responding to this challenge are unknown

- Different places will face different challenges – e.g. increasing droughts, intense rainfall, and sea level rise
- Responses will also differ – such as providing for additional water storage, repairing and replacing wastewater and stormwater reticulation, and investing in stormwater pumping facilities. All of these activities will be costly

Tourism pressures affect a number of ‘hot spots’ around the country

- Infrastructure should be designed to service peak capacity, while being paid for largely by the ratepayer base – this can be challenging for smaller communities in areas that receive a lot of visitors

A future large-scale emergency would result in significant rebuild and repair costs

- The Crown and councils would be exposed to a significant liability if a large-scale emergency occurred

High growth councils are facing financial constraints, which may be inhibiting their ability to provide water infrastructure needed to support development

- Debt can be used to finance growth-related infrastructure, but the level of borrowing by NZ councils is being constrained by both behavioural and mandated factors

Other councils and communities are also facing affordability constraints relating to water infrastructure

- This can mean only the most pressing work is undertaken, while other work is delayed or not done
Unpicking the issues: **three waters asset management capability**

Our research indicates that asset management capability across the system is mixed – and relatively low in some places.

While most councils have the basic, underpinning ‘architecture’ of sensible asset management:

- the quality of asset management plans, frameworks and strategy documents varies considerably across councils.
- above this basic level, **asset management ‘maturity’ is commensurate with the scale of the organisation** – greater capability and capacity are found in CCOs and larger councils, while smaller councils tend to have minimal or core capabilities only.

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*Based on a sample of 22 councils (6 rural, 10 provincial, 6 metro/unitary). Of this sample, 1 is ‘advanced’; 4 ‘intermediate’; 12 ‘core’; and 5 ‘minimal’*
Unpicking the issues: **three waters asset management information and data quality**

*Understanding asset performance is an essential part of good asset and risk management. A lack of robust data means we do not have a comprehensive, reliable picture of the state of water assets, how much renewal/improvement is needed, or timing and costs*

- Councils generally have low confidence in their understanding of the condition of their assets, but this is less severe in larger councils
- Councils have attempted to understand asset criticality, but maturity of understanding varies by scale
- Many councils do not have mature data, information or quality management systems and processes; in smaller councils, there is a particularly strong reliance on the knowledge of a few individuals
- There are examples of councils of all sizes that do not conduct frequent asset condition assessments

**According to the Office of the Auditor-General’s 2016/17 local government audits, “Relevant and reliable information about assets remains a challenge for local authorities”**

- About 45% of the potable and wastewater networks, and 52% of stormwater networks, are categorised as “ungraded”
- “We continue to be concerned that local authorities might not be investing enough to ensure ongoing delivery of services. ... This trend is most concerning in some of the local authorities’ core infrastructure assets, such as water supply and flood protection assets.”
- There is systemic underspend of capital expenditure: in 2016/17 capital expenditure was $3.8 billion, which was 78% of the budgeted $4.8 billion
Local authorities categorised by actual capital expenditure as a percentage of their budgeted capital expenditure, 2012/13 to 2016/17

OAG: Local government: Results of the 2016/17 audits, March 2018 – Figure 1
Local authorities categorised by renewal and replacement capital expenditure as a percentage of depreciation, 2012/13 to 2016/17

OAG: Local government: Results of the 2016/17 audits, March 2018 – Figure 3
Unpicking the issues: governance capability

**Looking here at processes, tools and ways of interaction, decision-making and monitoring.**

- The standard of governance is variable (especially regarding understanding of technical issues) – but strength of governance generally correlates with scale.
- The separation of governance and management is generally blurred, which weakens accountability.
- The governance agenda is often driven by council officers, rather than elected members.
- Councillors are elected to represent community interests, not for their governance skills – therefore, they may not have the mix of skills and experience to deliver best practice governance of these complex, critical water assets.
- Professionalisation of governance of 3 waters is below that of other infrastructure assets (such as electricity and gas) despite equal or greater challenges.
- The standard of governance matters less in a stable context with few critical decisions and risks to manage – but councils are facing a range of challenges and risks, placing a increasing emphasis on effective governance and decision making.
Clarifying the scope of the Review
Taking a system-wide approach is essential

What happens in one part of the three waters system has implications for the quality and outcomes related to other parts of the system.
Clarifying the scope of this stage of the Review

- The Government is taking a broad, system-wide perspective – covering:
  - issues and options relating to the regulatory regime and service delivery arrangements
  - all three waters – drinking water, wastewater, and stormwater

- Regulatory scope is:
  - Public health / safe drinking water
  - Environmental performance of water services
  - Economic regulation / information disclosure and system oversight

Service delivery is looking at how the system organises itself to respond to the capability and financial challenges in front of us.
What outcomes is the Government looking for?
What outcomes is the Government seeking for the three waters system?

Specific outcomes are still being discussed with Ministers – but likely to relate to:

- ensuring safe, reliable, fit-for-purpose drinking water
- better environmental performance
- three waters services that contribute to the wider social (eg housing), environmental and economic outcomes that are important to New Zealand
- achieving the above outcomes in ways that are affordable for our communities

Delivering the water infrastructure needed to support growth

Protecting/enhancing our reputation as a tourist destination and export market

Continuity of water services in the face of climate change and natural disasters
What options are being explored?

An integrated regulatory system for three waters services

- Regulation for health outcomes
- Regulation for economic outcomes
- Regulation for environmental outcomes
- 3 waters service provision settings
The three waters system is complex and interdependent

Regulatory design will take time, and needs to happen at the same time as development of options for service delivery arrangements.

- Design and implementation of an effective whole of system approach to drinking water regulation
- NES for sources of drinking water
- NPS for fresh water quality
- RMA compliance monitoring & enforcement
- Improving information on performance of 3 waters services
- Potential monopoly pricing and access discrimination issues
- Service delivery arrangements
- Mechanisms to improve capacity, capability and funding of service delivery entities

System oversight and institutional settings

- Options for lead Minister
- Options for lead agency
- Options for coordination and accountability arrangements
- Options for regulatory institutional arrangements

NOT GOVERNMENT POLICY
The HNI recommended moving to a system of aggregated, dedicated water providers. If we were to consider a new model, what might the options look like?
Next steps

- This is an ongoing conversation
  - LGNZ reference group established to have high trust conversation with officials. Also engaging directly with local government through a variety of other channels – Metro Sector, Rural and Provincial, Mayoral Forums, National Council
  - Governance of the Review is provided by a large group of Ministers with interests in three waters services and outcomes

- Next milestone is Cabinet consideration of high level options in October 2018

- Will be further public engagement in 2019 on the challenges and options for how the system can respond to them

- Work on a future regulatory regime likely to seek government decisions in 2019. Clear priority is public health, safe drinking water
Looking for comprehensive engagement with the sector.

- Utilise existing networks e.g. LGNZ forums, CE groups etc.
- Through the LGNZ Three Waters Review Reference Group.
- With the DIA Review Team – happy to come to you.

We need your views on:

- Information to help refine or clarify the problem.
- The key issues or questions that need to be addressed in developing options.
- The viable options to create a strong and sustainable three waters system.
Key findings of the review to date show that our current three waters system has a number of challenges and the status quo is not sustainable.

The Government is actively engaged in a conversation with the local government sector and associated communities on defining the challenges and scoping the solutions.

The conversation includes which regulatory arrangements, service delivery models and funding arrangements are best suited for the delivery of three waters services.

The work is at an early, high level conceptual policy stage and options and discussion will continue into 2019.

Continued public ownership of existing three waters assets is a bottom line.
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