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NEW ZEALAND INFRASTRUCTURE COMMISSION
Te Waihanga

Special Report

Waters Reform in New Zealand

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This report has been prepared for Te Waihanga – the New Zealand Infrastructure Commission by David Hall of Mott MacDonald (NZ).

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1. Executive Summary

The purpose of this report is to provide Te Waihanga – the New Zealand Infrastructure Commission, with a broad examination of the current state of New Zealand's three waters infrastructure in the context of the government's proposed reforms, and an emphasis on future regulatory settings.

1.1. Te Waihanga and our role in waters reform

Te Waihanga is an Autonomous Crown Entity that was established in 2019 as the Government's lead advisor on infrastructure by the 'New Zealand Infrastructure Commission / Te Waihanga Act 2019'. The main function of Te Waihanga is to co-ordinate, develop and promote an approach to infrastructure that improves the wellbeing of New Zealanders

The proposed waters reform is a once in a generation opportunity to make a step change in the delivery of waters and to address an area that contributes significantly to New Zealand's infrastructure deficit. We have prepared this special topic report to provide independent insights on this important infrastructure-related reform and to support our advice on the Government's waters reform process.

1.2. Background

Water is an essential resource, arguably the most important on the planet. It is critical to life and to the way we live. Without access to potable water and the ability to treat and cleanse it before releasing it back into the environment, human life and civil society would be impossible. The consequences of failing to provide these core services, and even the potential for failure, have a deservedly high public profile. This is evidenced by the intense interest in the current Auckland drought and Wellington sewage spills.

For the majority of New Zealanders, territorial authorities are the primary water services providers. However, Councils face a growing number of challenges which are stretching their financial, physical and human capital resources. These include:

- Enhancing network resilience in response to climate change and seismic risk
- Investing in networks to achieve carbon neutrality
- Renewing ageing infrastructure
- Meeting increasing community expectations with respect to the quality (health) and aesthetics of water and the expectation of a secure and plentiful supply
- Achieving more stringent environmental standards, including Te Mana o te Wai
- The significant cost implications of expanding services in high growth communities
- The equally challenging implications of coping with a static or declining population base
- Challenges in accessing specialist technical skills, particularly for small and remote Councils
- Managing financial affordability
- Political pressure to adopt artificial pricing structures.

The challenges territorial authorities are grappling with have been compounded by historical institutional settings, which have led to an industry which lacks meaningful regulation and is fragmented into a multiplicity of often very small suppliers. As of 2019 there were 403 registered drinking water

suppliers in New Zealand, providing 677 supplies. Most of the population (3,434,362 people) is served by 36 publicly owned suppliers.[1] The state of the remaining infrastructure is largely unknown.

1.3. Tāngata Whenua

The living relationship between Māori and water must be recognised. Waterbodies are integral to iwi, hapu and marae identity. The ongoing health and vitality of water and the importance of leaving a worthy inheritance for future generations is considered important kaitiakitanga – an intergenerational obligation to care for the environment. Water is a taonga – of paramount importance – and its whakapapa incorporates the full range of wellbeings – social, cultural, environmental and economic.

The design of a new framework for the waters sector provides a rare opportunity for Te Ao Māori to be embedded at a foundational level in new utility organisations (e.g. in Boards of Directors) and in new Economic, Environmental and/or Consumer Protection agencies (as has already occurred with Taumata Arowai).

1.4. Need for Reform

Over past decades the waters sector has been the subject of numerous studies motivated by the concerns listed above. These include reports published by the Parliamentary Commissioner for the Environment in 2000; the Office of the Auditor-General in 2010; a Local Government Infrastructure Efficiency Expert Advisory Group appointed by the Minister of Local Government in 2013; the Government Inquiry into Havelock North Drinking Water, which published their final report in 2017; and the NZ Productivity Commission in 2019.

The warnings raised by these and other bodies manifested in a manner that could no longer be ignored when in 2016 contaminated groundwater entered Havelock North's drinking water supply. Four deaths and thousands of illnesses have been attributed to this avoidable incident.

The Government Inquiry into Havelock North Drinking Water concluded that:

> *"(32) Given the existence of a compelling case for dedicated and aggregated suppliers being established as an effective and affordable means to improve compliance, competence and accountability, the Government should make a decisive and definitive assessment of whether to mandate, or persuade, suppliers to establish aggregated dedicated water suppliers.*
>
> *(33) Given the long history of equivocation on this issue …, a review and decision by the Government should be actioned as soon as practicable."*[2]

1.5. Opportunities and Concerns Arising from Consolidation

1. The Havelock North contamination event created a 'burning platform' for reform. However, there are many other benefits associated with increased economies of scale. The following table lists a range of

[1] The Institute of Environmental Science and Research Ltd, *Register of Drinking Water Suppliers for New Zealand PART ONE: Networked Supplies Serving 25 or More People* (The Institute of Environmental Science and Research, April 2019), https://www.esr.cri.nz/assets/Uploads/RegisterOfSuppliers-PartOne-NetSupplies-2019a.pdf.

[2] Government Inquiry into Havelock North Drinking Water, *Report of the Havelock North Drinking Water Inquiry: Stage 2* (Department of Internal Affairs, December 2017), 228. https://www.dia.govt.nz/diawebsite.nsf/Files/Report-Havelock-North-Water-Inquiry-Stage-2/$file/Report-Havelock-North-Water-Inquiry-Stage-2.pdf.

opportunities and concerns of consolidation, grouped into themes. Each of the listed components is explained in greater detail in Part A.

Table 1 – Themed List of Opportunities and Concerns of Consolidation

Theme	Criteria
Social Wellbeing (Consumer / Customer Focus)	• An Effective Regulatory Regime • Drinking Water Compliance • Health Outcomes • Centres of Excellence • Volumetric Charging • Rural-Urban Drift
Environmental Sustainability	• Environmental Compliance • Responsiveness to Regulatory Requirements • Volumetric Charging • Impact on Source Water (Abstraction)
Financial Impact	• Ability to Achieve Cost Efficiencies • Financial Capacity • Debt Optimisation • Risk Aversion • Cross Subsidisation • Procurement
Tāngata Whenua Perspectives	• Te Ao Māori • Te Tiriti o Waitangi and its principles • Holistic Approach • Valuing Water • Te Mana o te Wai • Whakapapa
Asset Management Planning	• Rationalisation of Infrastructure • Unlocking Strategic Opportunities by taking a Long-Term View • Enabling a Targeted Focus on Water • Providing for Growth • Developing Robust Asset Management Plans
Resilience	• Financial Capacity • Network • Resourcing • Organisational • Risk Management
Governance	• Governance Expertise • Financial Accountability • Consumer Accountability • Responsiveness to Regulatory Requirements • Privatisation • Political Independence
Staff Development & Welfare	• Technical Capability • Staff Development • Staff Rationalisation • Rural Urban Drift
Council Operations & Viability	• Re-focus Councils on Community Wellbeing • Council Revenue (Dividends) • Urban Design and Community Wellbeing • Coordination with other Infrastructure Development • Stranded Overheads • Corporate Cross-subsidisation

Theme	Criteria
	• Viability of Councils

Based on the list of opportunities and concerns listed above, a multi-criteria analysis has been undertaken, as shown below.

Table 2 – Qualitative Assessment from Multicriteria Analysis

ID	Scheme	Asset Management	Financial Impact	Resilience	Consumer & Customer Focus	Governance	Environmental Sustain ability	Council Operations & Viability	Staff Development & Welfare	Tangata Whenua Values	Total Score	Assessed Suitability
1	Status Quo - Rural & Provincial	-10.00	-10.00	-6.67	-10.00	-7.50	-10.00	0.00	-5.00	-5.00	-7.13	Low
2	Status Quo - Metro Councils	-3.33	-5.00	0.00	5.00	-5.00	5.00	0.00	5.00	-5.00	-0.37	Neutral
3	Consolidated Water Entities	6.67	10.00	10.00	10.00	7.50	15.00	0.00	7.50	10.00	8.52	Very good

The outcome of the MCA demonstrates a clear transition from low scoring to high scoring as scale is added. It also emphasizes that reform is not solely about the financial benefits of scale. There are important social (particularly health), environmental and cultural advantages that should also be acknowledged.

Figure 1 - Water's contribution to Community Wellbeing

1.6. Why hasn't change already occurred?

The benefits of structural reform are compelling. Nonetheless, it has proven difficult to motivate Councils to take advantage of them. Having an appreciation of the factors that lead to this is important, because it allows policy makers to understand why push-back is likely and therefore to consider mechanisms to overcome institutional inertia.

Resistance to change is a natural reaction. It is arguably compounded for local authorities due to inherent institutional settings. These include:

- The monopolistic position of Councils (which leads to weak consumer feedback loops and a lack of competitive tension)
- Their multi-functional nature (which clouds consumer transparency and accountability)
- A fear of the unknown, exacerbated when the ultimate decision makers (politicians) have little or no experience or expertise in the activity they are being asked to determine
- Lack of a joined-up approach, which manifests when an issue of concern at one Council is not a priority topic for potential partners, at a particular point in time
- A fear of failure, particularly in a highly visible public setting and even more so when public funds are at issue. In this context the status quo represents a 'safe' optionThe pride (parochialism) of elected members in their own communities and, in the absence of a 'burning platform', the sense that no change is necessary.

1.7. Need for an Economic Regulator

Economic regulation is a common characteristic of almost all global waters jurisdictions, however there is currently no independent economic regulator for waters in New Zealand. This is partly explained by the difficulties of cost-effectively regulating a multiplicity of suppliers, with very different levels of capability but also reflects the public-sector nature of current waters suppliers.

International studies have demonstrated that inherent inefficiencies of natural monopolies apply irrespective of whether services are in public or private control. By reducing these inefficiencies economic regulation has been shown to generate positive benefits for consumers – irrespective of ownership.

The role of an economic regulator is much broader than just price-setting and can include:

- Limiting sector revenues to no more than what is considered reasonable
- Placing downward pressure on prices where analysis indicates that inefficiencies can be removed and/or that innovation can be incentivised
- Ensuring that cross-subsidisation in public sector entities is removed or, at the very least, is transparent
- Ensuring that investment decisions are made with a long-term perspective
- Providing confidence for private investors that returns will not be unreasonably constrained for political purposes or placed at risk by arbitrary policymaking (i.e. managing 'regulatory risk')
- Avoiding over-investment (and therefore higher consumer costs) in publicly managed organisations driven by a fear of reputational damage
- Constraining artificial over-investment in infrastructure in circumstances where that justifies an increase in price, and therefore revenue
- Avoiding under-investment in infrastructure (in the private and public sectors) as a mechanism to reduce cost, and/or allow expenditure to be re-directed to other projects or investment opportunities
- Correcting the asymmetry of information between suppliers and consumers which makes it difficult for consumers to hold suppliers accountable for sub-standard service performance
- Managing the allocation of water, which has intensely social, cultural and economic components, particularly in catchments reaching their minimum flow
- Ensuring water utilities are adequately investing in network resilience and security of supply
- Protecting the public good. Water has elements of both private and public good. The public good components (such as protecting vulnerable individuals and fire-fighting) must be maintained for community wellbeing and the cost of doing so spread equitably
- The quality and reliability of marae, and some rural, water supplies is considered to be of concern. The cost of swiftly bringing these supplies up to an acceptable level will be an important consideration.
- Developing frameworks for incentivising positive outcomes and dis-incentivising negative or declining performance
- Fostering competition between supply entities and ensuring that new competitors are not excluded from markets
- Enabling competition can also help to drive a circular economy, where there is a focus on recovering waste streams as resources.

As markets for water mature, examples of competition are beginning to emerge. In Scotland a water market has been created by the Scottish Parliament, which has mandated that Scottish Water must compete against other providers for the retail sale of water to non-residential customers. There are now several private companies competing against Scottish Water's commercial arm, 'Business Stream'. In Australia, the New South Wales 'Water Industry Competition Act 2006' includes provisions to encourage competition, particularly in relation to 'sewer mining' and third-party licensing. To date the uptake of these provisions has been limited.

1.8. Need for a National Environmental Regulator

Regional councils hold the most direct responsibility for environmental regulation in New Zealand. Their authority is granted through various statutory mechanisms, most importantly the Resource Management Act 1991. Under this statute Regional Councils are provided the ability to establish Regional Policy

Statements, to articulate specific Rules in Regional Plans and to consider, and impose conditions on, applications for water use and discharge.

The role of Regional Councils has come under scrutiny in the aftermath of the Havelock North drinking water contamination event. Various reports, including the Havelock North Government Inquiry, have identified limitations in the existing environmental regulatory framework, including:

- An internal conflict for Unitary Authorities (Councils which have the functions of both regional councils and territorial authorities)
- A wide variance of policy aspirations between regions (albeit mitigated by subsequent updates to the National Policy Statement on Freshwater Management)
- A lack of consistency in the terms and conditions of Regional Policy Statements, Regional Plans and resource consents, between and within regions
- Uncertainty about consent timeframes affecting substantial capital investment decisions
- Consent holders are often required to monitor and report on contaminants which have no regulatory limits defining what is acceptable or not[3]
- There are also often 'narrative' limits included in resource consents (such as, 'No adverse effects on the environment') which provide no clarity for enforcement[4]
- Source water protection is regulated through Regional Council policies and plans and therefore de-coupled from the direct oversight and control of drinking water suppliers
- The current 'first in – first served' water allocation framework results in essential applications for water abstractions being held in limbo, often for years
- The allocation of water has historically been an environmental consideration, normally based on minimum flow needs for catchments. However, in catchments approaching, or exceeding, the assessed minimum desirable flow allocation decisions have considerable social, cultural and economic implications
- Less than half of all Councils have a stormwater quality management plan and/or catchment management plan despite stormwater discharges being a recognised source of surface water pollution[5]
- Only eight participants in the National Performance Review survey had all stormwater discharges consented. Most commonly, participants had consents for less than 10% of their network, and six had no stormwater discharge consents at all [6]
- There were 627 non-conformances for wastewater treatment consents in the 2018/19 reporting year, however these led to only eleven compliance actions[7]
- Full resource consent compliance was achieved at only 27% of wastewater plants, while 25% of plants recorded significant non-compliance (2017/18 data for 170 out of 321 plants).[8]

Based on the above it is reasonable to question whether New Zealand's current environmental framework for waters is fit for purpose.

More work is required to assess what the optimal arrangement for environmental regulation could be, however there would seem to be merit in empowering an existing centralised agency to provide an

[3] GHD, *National Stocktake of Municipal Wastewater Treatment Plants: Final Report* (Department of Internal Affairs, December 2019), 12. https://www.dia.govt.nz/diawebsite.nsf/Files/Three-waters-documents/$file/Report-1-National-Stocktake-of-Municipal-WWTPs.pdf.
[4] Ibid
[5] Water New Zealand, *National Performance Review 2017 - 2018* (Water New Zealand, 2018), 40. https://www.waternz.org.nz/Attachment?Action=Download&Attachment_id=4270.
[6] Ibid, 34
[7] Ibid, 33

[8] GHD Limited, *National Stocktake of Municipal Wastewater Treatment Plants: Final Report* (Department of Internal Affairs, December 2019), 25. https://www.dia.govt.nz/diawebsite.nsf/Files/Three-waters-documents/$file/Report-1-National-Stocktake-of-Municipal-WWTPs.pdf

overview of waters management across New Zealand. This would have the advantages of bringing national consistency to the design of environmental standards, providing consistent enforcement and resolving issues of perceived conflict for unitary authorities.

The acknowledgement and provision for Te Ao Māori will be an essential component of any new regulatory regime. It is noted that Taumata Arowai has been created with a statutory Māori Advisory Group and that the Environmental Protection Authority Act 2011 establishes a statutory 'Māori Advisory Committee' to provide advice and assistance to both the Environmental Protection Authority and the Marine Consent Authority. There are other approaches that should be considered to embed Te Ao Māori into any new regulatory agencies, such as the requirement for knowledge of Te Ao Māori on governance boards.

1.9. A New Regulator for Drinking Water

The need for a dedicated entity to regulate the quality of New Zealand's drinking water was incorporated into the terms of reference of the Government Inquiry into Havelock North Drinking Water and addressed in the Board's second report.[9]

After hearing submissions both for and against the formation of a new, dedicated drinking water regulator the Board recommended that:

> *"**(9)** A dedicated drinking water regulator … should be established early and promptly."*[10]

and further recommended that:

> *"**(11)** Without defining or limiting the matters for which a regulator might be responsible, a regulator should have responsibility for licensing and qualification of supplies, the standards and practices of water suppliers, DWAs [Drinking Water Assessors], laboratories and samplers, compliance and enforcement, and the approval and monitoring of WSPs [Water Safety Plans]."*[11]

Taumata Arowai – the Water Services Act 2020 was introduced to Parliament in December 2019 and received Royal Assent on 6 August 2020.

1.10. Need for Consumer Protection Oversight

The monopoly nature of the waters sector means that public accountability and consumer preference are weak. This leads to a prima facie view that there would be merit in enabling a forum in which the consumer's voice can be heard.

In a global context the most common role for consumer protection agencies for water services, where these exist as separate entities, is to receive and mediate consumer complaints. In many countries this also includes a focus on protecting the interests of vulnerable consumers.

Further work would be required to determine the potential role of a consumer protection agency in New Zealand. Important considerations include the role played by tāngata whenua; whether it is a stand-alone agency or incorporated into the role of an existing agency (such as 'Utilities Disputes');

[9] Government Inquiry into Havelock North Drinking Water. "Report of the Havelock North Drinking Water Inquiry: Stage 2." Department of Internal Affairs, December 2017. https://www.dia.govt.nz/diawebsite.nsf/Files/Report-Havelock-North-Water-Inquiry-Stage-2/$file/Report-Havelock-North-Water-Inquiry-Stage-2.pdf.
[10] Government Inquiry into Havelock North Drinking Water. "Report of the Havelock North Drinking Water Inquiry: Stage 2." Department of Internal Affairs, December 2017. https://www.dia.govt.nz/diawebsite.nsf/Files/Report-Havelock-North-Water-Inquiry-Stage-2/$file/Report-Havelock-North-Water-Inquiry-Stage-2.pdf, 222
[11] Ibid

and/or whether it is established as a time-bound entity with a specific focus (as in the case of the Scottish Customer Forum).

Timing should also be a consideration. New utility structures will take time to become embedded and for the economic regulator to be confident they are operating at optimal efficiency. This suggests that the vehicle for providing consumer protection should be designed to mature alongside the industry.

1.11. Form of Regulation

There are many different forms of regulation, ranging from self-regulation through to fully independent and transparent regulatory frameworks. Internationally there appears to be a general consensus that it is important that regulators have, and are seen to have, independence from the functions of the network operator and its shareholder(s). It is also considered desirable for the regulator to operate at arms-length from political direction, particularly when it comes to price setting. Final determinations on work programmes and tariffs, and enforcement and penalty provisions may be subject to judicial review, but they should not be subject to political influence.

Optimal outcomes appear to emerge from an environment where the intrinsic tensions between regulatory agencies (particularly health and environmental regulators on one side; and economic and consumer protection agencies on the other) can be robustly and transparently debated, ideally with the involvement of the utility entities and owners, and therefore, where trade-offs are understood and agreed by each of the parties.

Global scans show that the role of economic regulator for the waters sector tends to be combined with economic regulation of other sectors, most commonly energy. There are however many factors, such as the total number of entities to be regulated, that will influence the final form.

1.12. Observations and Recommendations

1. The case for waters reform has been made repeatedly by many different, independent bodies. There is little value in re-litigating these debates, notwithstanding that the local impacts, particularly on territorial authorities requires better understanding.
2. Early engagement with Iwi Māori should be considered to ensure Te Ao Māori is incorporated into the design of new corporate water utilities and regulators from the foundation.
3. The benefits of consolidating water and wastewater service providers into fewer, larger entities are compelling. They include:
    a. Cost efficiencies
    b. Rationalisation of infrastructure and greater resilience
    c. Better financial accountability and improved regulatory compliance
    d. Improved asset management
    e. Development of employees.

    Nonetheless there are areas of concern which must be acknowledged in order that they can be mitigated or avoided where that is possible.

4. Three waters reform is not just about economic efficiencies. There are also very tangible social (particularly health), environmental and cultural benefits which should not be lost sight of.

5. It is unlikely that all territorial authorities will voluntarily aggregate water and wastewater services. The introduction of incentives, or dis-incentives, may lead to some voluntary reform. It is however likely that some form of compulsion will be required if comprehensive, nationwide reform is desired.

6. It is not unusual for reform to occur in phases – Scotland and Tasmania are examples. Multiple re-structuring is expensive and disruptive, for consumers and for employees. In order to avoid this it is necessary to clearly understand the essential elements of an optimal solution. There are some matters, such as the number / size of new entities that would be expensive to retrofit, whereas others could be relatively easily retrofitted later.

7. A strong regulatory framework is essential. Even if structural reform was not achieved, consumers (and New Zealand as a whole) would benefit from robust environmental, economic, health and consumer protection regulators. The form of regulation will vary depending on factors such as the number of entities to be regulated and the maturity of the industry.

8. The optimal regulatory environment is one in which the tensions between economic, environmental, public health and consumer protection trade-offs are resolved in a robust and transparent manner. This suggests that the core water regulators should have independence from each other, as well as being independent from the utility organisations and their owners / shareholders.

9. The framework that best achieves robust regulatory transparency is one in which independent agencies meet alongside water utility operators (and owners / shareholders) to debate and agree trade-offs, and ultimately adopt a work programme and set of tariffs that meet the needs of each and achieve the best transparency possible for consumers.

10. The existing framework for environmental regulation has led to fragmented and inconsistent policy and decision-making, inconsistent discharge standards and a lack of consistent enforcement. It is recommended that the national framework for environmental regulation be reviewed, with one possible solution being to extend the role of an existing central agency to provide a national overview and enforcement.

11. Consideration should be given to the introduction of a consumer protection agency for waters, as is common in many international jurisdictions. There are many forms this could take, including a stand-alone entity; incorporation into the role of other regulatory agencies or, as is the case for the Scottish Customer Forum, a voluntary arrangement between the economic regulator and the utilities. It is likely that the form of the regulator will change over time, as the industry matures.

2. Introduction

The purpose of this report is to provide Te Waihanga – the New Zealand Infrastructure Commission, with a broad examination of New Zealand's three waters infrastructure in the context of the government's proposed reforms. A particular emphasis on future regulatory settings has been requested. The goal of the report is to support an informed debate on the future of waters in New Zealand and to assist Te Waihanga develop policy positions and recommendations.

There are six classes of water infrastructure as shown in Table 3 below.

Table 3 – There are six classes of water infrastructure

Potable (drinking) water	Wastewater (sewerage)	Stormwater
Productive water (Irrigation, Hydro-generation)	Flood protection works	Rural drainage

In addition, the importance of recycled water is growing, particularly in countries where water is scarcer than in New Zealand. This is likely to require a separate, dedicated focus in future years.

The primary focus of this report is on drinking water and wastewater as these services are the primary focus of current and proposed government reform. They are also inextricably interlinked, from environmental, social, cultural and economic perspectives.

Reform of drinking water and wastewater will also impact stormwater. Stormwater services are provided by territorial authorities, almost always within the same civil engineering teams that provide water and wastewater services. Stormwater is an area of growing concern, particularly in relation to the quality of discharge (stormwater is often heavily contaminated through contact with road surfaces) and climate change. Local government has a valid concern that if water and wastewater services are no longer directly provided by territorial authorities their capacity to deal with increasing stormwater concerns will be compromised, particularly in small and medium sized Councils. This is an issue that will need to be addressed as water reforms are progressed. One option, which was proposed in the Waikato waters study, would be for Councils to contract this service to the proposed new water utility entity.

2.1 Legislative Background

Te Waihanga – the NZ Infrastructure Commission is an autonomous crown entity established by the 'New Zealand Infrastructure Commission / Te Waihanga Act 2019' ('the Act'). Te Waihanga is the Government's lead advisor on infrastructure. The main function of Te Waihanga is to co-ordinate,

develop and promote an approach to infrastructure that improves the well-being of New Zealanders.

A key document currently under development by Te Waihanga is their first Infrastructure Needs Assessment[12]. The Infrastructure Needs Analysis will be used as the foundation of a statutory 30 Year Strategy, due to be published in September 2021. The completion of the Infrastructure Needs Analyses and the formulation of a 30-year Strategy will allow the Infrastructure Commission to take an informed and considered position across the diversity of New Zealand's critical infrastructure.

Water infrastructure is already under active review and represents a once in a generation opportunity to make a step change in the delivery of waters and to address an area that contributes significantly to New Zealand's infrastructure deficit. It is not possible to wait on the development of a 30-year Strategy to inform deliberations. We have prepared this special topic report to provide independent insights on this important infrastructure-related reform and to support our advice on the Government's waters reform process.

Sections 9 and 10 of the Act outline Te Waihanga's functions. The key sub-section, for the purpose of this report, is ss10(b) which empowers the Infrastructure Commission:

> *"to provide advice in relation to infrastructure, including (without limitation) advice in relation to –*
>
> *(i) the ability of existing infrastructure to meet community expectations; and*
>
> *(ii) current and future infrastructure needs; and*
>
> *(iii) the priorities for infrastructure; and*
>
> *(iv) matters that prevent, limit or promote the efficient and effective delivery of infrastructure, and services that result from the infrastructure."*

2.2 Background

Water is an essential resource, arguably the most important on the planet. It is critical to life and to the way we live and is explicitly recognised by the United Nations as one of seventeen Sustainable Development Goals (see Figure 2). Without access to potable water and the ability to treat and cleanse polluted water before releasing it back into the environment, human life and civil society would not be possible. The consequences of failing to provide these core services, and even the potential for failure, have a deservedly high public profile. This is evidenced by the intense interest in the current Auckland drought and ongoing Wellington sewage spills.

In the developed world there is an implicit expectation that drinking water will meet minimum health standards and that consumers will receive sufficient quantities to meet basic needs. Similarly, we expect that the polluted water we pour down the kitchen sink, empty from the bath or flush down the toilet will be cleansed and treated before it is released back into the environment. In modern society it is not acceptable for drinking water to make us ill, or to contribute to the pollution of our clean, green environment.

[12] Now known as 'States of Play'

Figure 2- Access to Water and Sanitation is one of seventeen UN Sustainable Development Goals[13]

The reality however is something quite different. Water suppliers, which for the majority of New Zealanders are territorial authorities, are facing a growing number of challenges which are stretching their financial and human capital resources. They include:

- Providing sufficient resilience within networks to meet the demands of climate change and seismic events, including coping with more extreme weather events (ranging from severe flooding through to droughts) and the consequences of sea level rise on assets that have historically tended to be located on or near the coast
- Investing in new and existing networks in order to achieve carbon neutrality. In order to reach carbon zero many wastewater treatment plants are likely to require substantial, currently unbudgeted, investment
- Funding the cost of renewing ageing networks, many of which are now reaching the end of their serviceable lives
- Meeting increased expectations from communities that the water they receive will meet basic health needs (e.g. not require 'boil water notices'); be of sufficient volume to allow day-to-day activities (including supporting industrial and commercial (employment) services, urban firefighting and 'discretionary' activities such as watering gardens) and meet basic aesthetic standards (e.g. not have taste or odour issues)
- Meeting increasing environmental expectations not only in respect of discharges but also the impact of abstraction on minimum flow levels and therefore catchment ecologies
- Accessing technical skills, both specialised human capital and new technologies, required to provide water services to the standards expected by consumers and to the level likely to be required by the new regulator(s)
- Councils with high population growth face significant costs extending reticulated networks into new residential, commercial and/or industrial subdivisions to cope with demand for housing and associated employment and/or retrofitting existing plant and networks to cope with increasing volumes in similar brownfields developments
- For non-growth Councils, the challenge is coping with de-population and the attendant difficulties of funding expensive infrastructure from a declining rating base
- Managing affordability within existing funding mechanisms in an environment where rate increases are highly visible and often contentious

[13]. "Sustainable Development Goals," United Nations Development Programme, September 2015. http://www.undp.org/content/undp/en/home/sustainable-development-goals.html.

- Political pressure to adopt pricing structures and levels which neither manage demand, nor provide sufficient capital to meet investment needs.

The issues facing territorial authorities are compounded by historical institutional settings, which have led to an industry which lacks meaningful regulation and is fragmented into a multiplicity of often very small suppliers. As of 2019 there were 403 registered Drinking Water Suppliers in New Zealand, providing 677 supplies. The majority of the population (3,434,362 people) are served by 36 publicly owned Suppliers.[14] The remainder of the population is served by a mix of suppliers, likely numbering into the tens of thousands (even excluding self-suppliers). The quality of unregistered supplies is largely unknown.

New Zealand's current approach to the provision of water infrastructure is characterised by a lack of coherence. There are:

- Multiple suppliers (as noted above). These are mainly territorial authorities but also include a range of government departments (Corrections, Education, Conservation and Defence), marae and private suppliers. The multiplicity of suppliers means very few have the scale needed to optimise efficiencies. It also generates a range of consequential inefficiencies, such as limiting access to specialist skills, being less attractive to private equity and making access to sophisticated technology prohibitively expensive. It further complicates government's ability to apply and enforce an effective regulatory framework, while simultaneously increasing the cost of regulation.
- There is no coherent regulatory framework, although elements, such as the Resource Management Act 1991 and the recently created health regulator (Taumata Arowai), do (or will shortly) exist. Overseas experience demonstrates that optimal performance for water utilities operating in a monopolistic environment necessitates strong regulatory oversight and the consistent definition and enforcement of health, economic and environmental standards.[15] In New Zealand:
    - The Havelock North Inquiry identified that New Zealand's health framework was dysfunctional. This regulatory deficit will be resolved with the passage of the Taumata Arowai – Water Services Regulator Act and its companion Bill which will define and empower Taumata Arowai's functions. The Taumata Arowai – Water Services Regulator Bill received Royal Assent on 6 August 2020, and the second Bill, simply referred to as the 'Water Services Bill' was introduced on 28 July 2020.
    - Environmental oversight is fragmented amongst eleven regional councils and six unitary authorities. There is no single central environmental regulator with a waters focus, although the Ministry for the Environment and the Environmental Protection Authority both have strong interests in environmental water quality. In the absence of a coordinating agency, each regional / unitary authority makes their own independent resolutions on the environmental policies, rules and standards, testing and reporting they consider appropriate for catchments and coastal areas in their region. Some high-level coordination is provided through National Policy Statements; however evidence demonstrates that there is a lack of consistency between Councils (and often between catchments).[16]

[14] The Institute of Environmental Science and Research Ltd, Register of Drinking Water Suppliers for New Zealand PART ONE: Networked Supplies Serving 25 or More People (The Institute of Environmental Science and Research, April 2019), https://www.esr.cri.nz/assets/Uploads/RegisterOfSuppliers-PartOne-NetSupplies-2019a.pdf.
[15] Vogelsang, Ingo. *Public Enterprise in Monopolistic and Oligopolistic Industries* (London: Harwood Academic Press, 1990.)
[16] GHD Limited. "National Stocktake of Municipal Wastewater Treatment Plants: Final Report." Department of Internal Affairs, December 2019. https://www.dia.govt.nz/diawebsite.nsf/Files/Three-waters-documents/$file/Report-1-National-Stocktake-of-Municipal-WWTPs.pdf.

- Unitary authorities are both environmental regulators as well as water service providers. This is not best practice governance and notwithstanding efforts to keep these roles separated, it raises obvious concerns about the potential for a perceived, if not actual, conflict of interest.

- There is no independent economic or price setting regulator for waters services in New Zealand. Each water provider sets their own charges based on local circumstances. Because territorial authorities deliver a range of functions it is usually difficult to robustly determine whether charges accurately reflect the actual cost of service or whether the water service is being artificially subsidised by other activities (or is subsidising other activities). As an example, each Council allocates overheads across activities based on their own individual formula. Overhead costs (e.g. finance, IT and governance) can be quite significant and therefore an alteration to the allocation formula can lead to noticeable changes in the cost of an activity.

Table 4 – Australia and New Zealand's performance against minimum regulatory standards[17]

STATE	NSW	VIC	QLD	SA	WA	TAS	ACT	NT	NZ
Health Regulation	✓	✓	✓	✓	○	✓	✓	○	x
Environmental Regulation	✓	✓	✓	✓	✓	✓	✓	✓	○
Economic Regulation	Regional ✓/x Metro	✓	x	✓	○	✓	✓	x	x

As shown in Table 4, above, New Zealand's regulatory framework compares poorly against what is considered to be the minimum standard in Australian states. Given the disjointed nature of regulation it is not surprising that the outcomes experienced by local communities are equally fragmented. Furthermore, it is likely that many communities, like Havelock North prior to 2016, simply don't know what the state of their waters infrastructure is and what the attendant risks to their health and livelihoods are.

[17] Frontier Economics and ARUP, *Urban Water Regulation Reform: A Report Prepared for Infrastructure Australia* (Infrastructure Australia, December 2017), https://www.infrastructureaustralia.gov.au/sites/default/files/2019-06/frontier_economics_and_arup_urban_water_regulation_reform.pdf.

2.3 Tāngata Whenua

"Te wai, he taonga i tuku iho mai i ngā tipuna – water is a taonga, a precious treasure passed down from our ancestors."[18]

The purpose of this report is to consider the organisational and regulatory arrangements which have the best potential to optimise the supply of clean, healthy drinking water to consumers and to treat and safely discharge wastewater. Essentially, the report's focus is from the point at which water enters an intake pipe through to the point at which it is discharged.

This is, of course, an entirely artificial view.

The network of pipes and pumps transporting water to and from consumers is a small part of a much broader natural system. Issues such as freshwater standards and the unresolved questions of Māori rights and interests in water require acknowledgement but are beyond the scope of this report.

It is nonetheless essential that the living relationship between Māori and water is recognised. Waterbodies are integral to iwi, hapu and marae identity. The ongoing health and vitality of waterbodies and the importance of leaving a worthy inheritance for future generations is considered important kaitiakitanga – an intergenerational obligation to care for the environment. Water is a taonga – of paramount importance – and its whakapapa incorporates the full range of wellbeings – social, cultural, environmental and economic.

Local government has a responsibility under the Local Government Act 2002 to provide for Māori contributions to decision-making. A concern of iwi representatives during the Waikato Waters Study was that these and other obligations, such as providing for co-governance, would be lost if the management of waters was passed to an arms-length entity. On the other hand, the reformation of the sector provides a unique opportunity to ensure Te Ao Māori is built into new organisational and regulatory structures.

The Hawkes Bay Three Waters Business Case[19] gave specific consideration to how new water utilities could be structured to meet the needs and aspirations of Māori and how Te Ao Māori could be built into new organisational culture and business practices.

The Hawkes Bay Business Case identified seven Principles, shown in Table 5, to guide the assessment of proposed structures. Although these Principles are rooted in Heretaunga and Wairoa, and therefore require validation for other rohe, they provide a valuable starting point for a national debate.

[18] Morrison Low and WSP Opus, Hawkes Bay Three Waters: Business Case of Three Waters Service Delivery Options (Hawkes Bay Regional Council, July 2020), 5. https://www.hb3waters.nz/assets/Up- loads/HB-3-Waters-Delivery-Detailed-Analysis-29.07.20-Full-Report.pdf

[19] Morrison Low and WSP Opus, Hawkes Bay Three Waters: Business Case of Three Waters Service Delivery Options (Hawkes Bay Regional Council, July 2020), 5. https://www.hb3waters.nz/assets/Up- loads/HB-3-Waters-Delivery-Detailed-Analysis-29.07.20-Full-Report.pdf

Table 5 – Principles for Waters Reforms[20]

Value Te Ao Māori	**Incorporating and implementing mātauranga Māori, culture and values (i.e. Te Aranga Design Principles) are a core element for any potential framework to realise and enhance the region's commitment to Māori to protecting/enhancing water**
Value water	**Wai is the essence of all life and the world's most precious resource. It is of high importance to Māori, as it is the life giver of all things, a precious taonga, part of our whakapapa**
Whakapapa – genealogical links	**Recognise and respect the relationship and whakapapa (genealogical link) that mana whenua has with water**
Te mauri o te wai – the life force of water	**Mauri is the integrated and holistic well-being and life support capacity of water. The well-being/healthiness of the water, the land and the people are intrinsically connected**
Holistic approach to water	**Although the project is based around the review of the service and delivery of the three waters (infrastructure), the proposed model needs to take into account a holistic water approach: there is only one water**
Enabling of Te Tiriti o Waitangi	**Involving mana whenua in governance and decision making required to ensure Te Tiriti o Waitangi obligations are met, as well as making sure they are able to actively exercise kaitiakitanga in a practical way**
Mana motuhake -identity, self-de-termination	**The identity of mana whenua in Hawke's Bay should not be lost in any potential model. But inclusion and co-governance whilst keeping their identity is an opportunity**

The Seven Principles led to the following recommendations, which also raise important considerations in the context of upcoming discussions about waters consolidation and the design of new service delivery and regulatory entities. The recommendations were to:

1. "Consider the cultural capability and capacity of three waters service delivery to successfully enable Te Ao Māori the Māori worldview to be embedded across the organisation."

2. "Consider the cultural performance indicators of three waters service delivery to monitor the ongoing value of water, accessibility of water and wellbeing of Hawke's Bay people."

[20] Morrison Low and WSP Opus, Hawkes Bay Three Waters: Business Case of Three Waters Service Delivery Options (Hawkes Bay Regional Council, July 2020), 54. https://www.hb3waters.nz/assets/Up- loads/HB-3-Waters-Delivery-Detailed-Analysis-29.07.20-Full-Report.pdf

3. "Consider the cultural engagement of three waters service delivery to reach marae communities and whanau with the outlook to connecting with their immediate natural environment."
4. "Consider the cultural performance indicators of three waters service delivery that is centred by Te mauri o te wai."
5. "Consider the cultural capability and capacity required of three waters service delivery to successfully enable Te Ao Māori the Māori worldview to be embedded across the organisation."
6. "Adopt a co-design approach to both governance and operations to ensure that co-governance is made meaningful through operational implementation of Māori cultural values."

The outcome of the Business Case, from a local mana whenua perspective, was reported to be that[21]:

> *"They {the chairs of the Hawke's Bay Māori committees} were stringent in their view that the status quo is not a sustainable option for our environment and Te mauri o te wai. An Assert {sic} owning CCO was their preferred model with adaptation to a Māori worldview that place people within the environment, and not in a dominant and exploitive view."*

These views may, or may not, be reflective of other iwi views across Aotearoa New Zealand. It will be important to engage early with iwi to determine this and enable Te Ao Māori to be ingrained in the early design of new entities.

[21] Hawkes Bay Council, "Agenda of Extraordinary Regional Council Meeting - 15 September 2020," Accessed September 2020. http://hawkesbay.infocouncil.biz/Open/2020/09/RC_15092020_AGN_AT_EXTRA.htm.

3. Part A: The Case for Reform

Part A considers the history of water reform proposals in New Zealand, the advantages and disadvantages and why reform is challenging.

3.1 History of Reform

Headlines from stuff.co.nz

> ***'Raglan overflow riles residents'*** [22]
>
> ***'Pollution 'double standard''*** [23]
>
> ***'Pump stations overflowing with sewage'*** [24]
>
> ***'Waipa enforces level two water restrictions'*** [25]
>
> ***'Millions needed to fix sewage failings'*** [26]

The issues being experienced by the waters industry are not new, or unexpected. Over the past several decades the waters sector has been the subject of several studies motivated by the concerns previously listed. There is consequently a long history of failed reform attempts in New Zealand's water history. Selected examples (taken from Appendix 3 of the Government Inquiry into Havelock North Drinking Water[27]) include:

1. In 1989, Cabinet approved a major review of the sector to be led by the Ministry of Commerce. With the change of government in 1999, Local Government NZ accepted responsibility for the review, but it was not progressed.

2. In 2000 the Parliamentary Commissioner for the Environment, after studying the existing arrangements, reported:

   "I believe industry and community evidence indicates that the 'model' has now reached the end of its design life. Further incremental tinkering with the current systems, without going back to first principles of community water and wastewater needs relevant to the 21st century, will simply

[22] Aaron Leaman, "Raglan Overflow Riles Residents," *Stuff*, August 7, 2013, http://www.stuff.co.nz/waikato-times/9010143/Raglan-overflow-riles-residents.
[23] Aaron Leaman, "Pollution 'double standard'," *Stuff*, January 19, 2014, https://www.stuff.co.nz/waikato-times/10180096/Pollution-double-standard
[24] Daniel Adams, "Pump Stations Overflowing with Sewage," *Stuff*, June 11, 2012, https://www.stuff.co.nz/waikato-times/news/7082204/Pump-stations-overflowing-with-sewage.
[25] Nancy EL-Gamel, "Waipa Enforces Level Two Water Restrictions," *Stuff*, January 12, 2015, https://www.stuff.co.nz/waikato-times/news/64895221/waipa-enforces-level-two-water-restrictions.
[26] Elton Rikihana Smallman, "Millions Needed to Fix Sewerage Failings," *Stuff,* November 30, 2016, https://www.stuff.co.nz/environment/87024977/millions-needed-to-fix-sewerage-failings.
[27] Government Inquiry into Havelock North Drinking Water, *Report of the Havelock North Drinking Water Inquiry: Stage 2* (Department of Internal Affairs, December 2017). https://www.dia.govt.nz/diawebsite.nsf/Files/Report-Havelock-North-Water-Inquiry-Stage-2/$file/Report-Havelock-North-Water-Inquiry-Stage-2.pdf.

mean the necessary changes will be harder to achieve and more costly at some time in the future."[28]

3. The Auditor-General in 2010 undertook a performance audit of a representative sample of eight local authorities to assess how well prepared the country was to meet the likely future demand for drinking water. Among her findings were weaknesses in the adequacy of forecasting models and opportunities for how the management of water supplies could be improved.[29]

4. In 2011 the Land and Water Forum recommended:

   "The way water services infrastructure is managed and organised should be investigated to consider the potential benefit of rationalisation. This includes the possibility of a national regulator with oversight of pricing and performance issues."[30]

5. The Government's National Infrastructure Plan 2011[31] gave water infrastructure the lowest ranking of all New Zealand's infrastructure sectors across measures of investment analysis, resilience, funding mechanisms, accountability, performance and regulation.

[28] Office of the Parliamentary Commissioner for the Environment., *Ageing Pipes and Murky Waters: Urban Water Systems for the 21st Century* (Wellington: Parliamentary Commissioner for the Environment, 2000), iii. http://www.pce. parliament.nz/publications/archive/1997-2006/ageing-pipes-and-murky-waters-urban- water-system-issues-for-the-21st-century

[29] New Zealand Office of the Auditor-General, *Local Authorities: Planning to Meet the Forecast Demand for Drinking Water* (Wellington: New Zealand Office of the Auditor-General, February 2010). https://oag.parliament.nz/2010/water/docs/oag-water.pdf.

[30] Land and Water Forum, *Report of the Land and Water Forum: A Fresh Start for Fresh Water* (Land and Water Forum, September 2010), http://www.landandwater.org.nz/Site/Resources.aspx#H126743-12.

[31] Government of New Zealand, *National Infrastructure Plan 2011* (Government of New Zealand, July 2011), http://www.infrastructure.govt.nz/plan/2011

Table 6 – Summary of sectors from National Infrastructure Plan 2011

6. In response to this assessment, in 2013 Local Government NZ established a major work programme (The 3 Waters Project)[32] to establish a clearer picture of the performance of local government three waters related assets and services, to better understand future issues and to develop a robust framework for building on best practice.

[32] Local Government New Zealand, *Improving New Zealand's Water, Wastewater and Stormwater Sector: A Position Paper Prepared by LGNZ* (Local Government New Zealand, September 2015), 2. https://www.lgnz.co.nz/assets/2aa82f85f1/29617-three-Waters-Position-Paper.pdf.

7. The core findings of this project were that the local government sector faces current and future challenges in terms of the provision of water assets and services. These challenges included the ability and capacity of water service providers to meet and implement regulatory standards and the variations in the quality of asset management throughout the country.

   The project recommended the establishment of a single co-regulatory body similar to that which operates under Part 4A of the Gas Act 1992, to oversee the provision of water related assets and services.

8. Concurrently in 2013 the Minister of Local Government appointed a Local Government Infrastructure Efficiency Expert Advisory Group whose report[33] included 63 recommendations covering legislation, regulation and standards; a water framework; training; improved business practices; funding and pricing; transparency; increased coordination and removal of barriers to shared services, and greater use of regional provision to deliver regional solutions.

9. In 2014 the Auditor-General undertook an overview of the approach that local authorities were taking to manage their infrastructure assets.[34] The overall finding was that local government infrastructure and capital management practices needed to improve to meet the challenges ahead.

The warnings sounded by the Parliamentary Commissioner for the Environment in 2000 and the Auditor-General in 2010 finally manifested in a manner that could no longer be ignored when in 2016 contaminated groundwater entered Havelock North's drinking water supply. The Government Inquiry into Havelock North Drinking Water concluded that:

> *"(32) Given the existence of a compelling case for dedicated and aggregated suppliers being established as an effective and affordable means to improve compliance, competence and accountability, the Government should make a decisive and definitive assessment of whether to mandate, or persuade, suppliers to establish aggregated dedicated water suppliers.*
>
> *(33) Given the long history of equivocation on this issue …, a review and decision by the Government should be actioned as soon as practicable."* [35]

In the years following the Havelock North event and the production of the Government Inquiry both New Zealand's major political parties committed to waters reform. Nonetheless progress has been slow.

Most recently a further report, prepared by the NZ Productivity Commission has also considered the waters sector (in the context of local government funding and financing). The Productivity Commission recommended (R11.1) that:

> *"The Government should actively encourage aggregation of council water businesses and better governance arrangements. It should also consider having backstop arrangements to deal with councils that fail to lift performance sufficiently to meet minimum health and*

[33] Department of Internal Affairs, *Report of the Local Government Infrastructure Efficiency Expert Advisory Group* (Department of Internal Affairs, March 22, 2013) https://www.dia.govt.nz/pubforms.nsf/URL/LG-Infrastructure-Efficiency-Expert-Advisory-Group-Final-Report.pdf/$file/LG-Infrastructure-Efficiency-Expert-Advisory-Group-Final-Report.pdf.

[34] New Zealand Office of the Auditor-General, *Water and Roads: Funding and Management Challenges* (Wellington: Office of the Auditor-General, 2014)

[35] Government Inquiry into Havelock North Drinking Water, *Report of the Havelock North Drinking Water Inquiry: Stage 2* (Department of Internal Affairs, December 2017), 228.

environmental performance standards. The Government should place water providers under economic regulation when and where doing so would improve investment performance and minimise costs."[36]

The case for reforming New Zealand's waters sector by way of consolidation has been made on multiple occasions, by a multiplicity of different agencies each with a different focus (e.g. financial, public health or environmental) and each autonomously from the other. It is difficult to see value in further investigations or justifications.

3.2 Opportunities and Concerns of Consolidation

'Burning platform' incidents such as Darfield, Havelock North and the ongoing Wellington sewage spills provide a compelling narrative for reform. There are however numerous less dramatic, but no less important, reasons to encourage economies of scale in water and wastewater networks underlying the conclusions reached by the various agencies listed above.

These include:

3.2.1 Opportunities

Te Ao Māori

Understanding and implementing Te Ao Māori – the Māori worldview – should be integral to the design and development of a new waters framework for New Zealand. New Zealand has a unique opportunity to embed the principles of mātauranga into new regulators and new utility organisations, so that they become part of the fabric of the waters sector, as opposed to being uneasily retrofitted onto existing Council processes.

Te Tiriti o Waitangi

The Local Government Act 2002 specifically incorporates a responsibility for Councils to "maintain and improve opportunities" for iwi to contribute to and facilitate participation in local government decision-making. The creation of a new framework for waters provides an opportunity for Māori to be involved in the co-design, co-creation and ultimately co-governance and co-management of a new waters sector.

Sections 57(3) of the Local Government Act 2002 (local authorities must consider whether knowledge of tikanga Māori may be relevant for directors of the CCO) and 60A of the Local Government Act 2002 (CCOs must take into account the relationship of Māori and their culture and traditions with their ancestral water) go some way to ensuring that new entities will continue to take account of tikanga Māori.

The matter of the Crown and Māori confirming Māori rights and interests in water is still outstanding and requires resolution.

Enabling the Realisation of Significant Cost Efficiencies

The Waikato Waters Study identified savings (primarily opex) of $468.4M (base case)[37] over 28 years for Hamilton City, Waikato District and Waipa District Councils. This equates to $16.7M per annum, or $1.4M per month (on average) for those three Councils. Savings are generally greater for smaller, rural

[36] New Zealand Productivity Commission, Local Government Funding and Financing: Final Report (NZ Productivity Commission, November 2019), 294. https://www.productivity.govt.nz/assets/Documents/a40d80048d/Final-report_Local-government-funding-and-financing.pdf.

[37] Cranleigh Corporate Finance & Advisory, *Business Case For Water Services - Delivery Options. Part B : Detailed Report* (Cranleigh Corporate Finance & Advisory, May 2015), 41.

Councils. This can be for a variety of reasons, including a lower density of connections which is inherently less efficient. It has been estimated that small rural supplies can be up to 60 times more expensive to run.

The Potential to Rationalise Infrastructure

The status quo results in infrastructure and plant being duplicated across authorities. For example, Waikato's regional airport, which is located in the Waipa District, is supplied potable water via a trickle feed rural supply line originating near Cambridge; this is despite the airport's proximity to Hamilton City Council's reticulated network and one of the City's primary reservoirs. In comparison, aggregated suppliers would take a holistic overview of a network and rationalise duplicated infrastructure, reducing cost. Duplication also has environmental consequences. For example, each council seeks abstraction consents for more than their current demand, to safeguard against the potential of future development. A centralised utility would still seek headroom for future demand, but this could be rationalised across networks.

Increased Financial Capacity

More customers, a larger revenue catchment and the ability to cross-subsidise will provide stronger balance sheets and the ability to cope with future demand, including future costs (see Figure 3). This would allow provision for items such as deferred asset renewals, climate change, increasing environmental and health standards and resilience in the case of natural disasters (such as earthquakes). This is particularly important for smaller Councils.

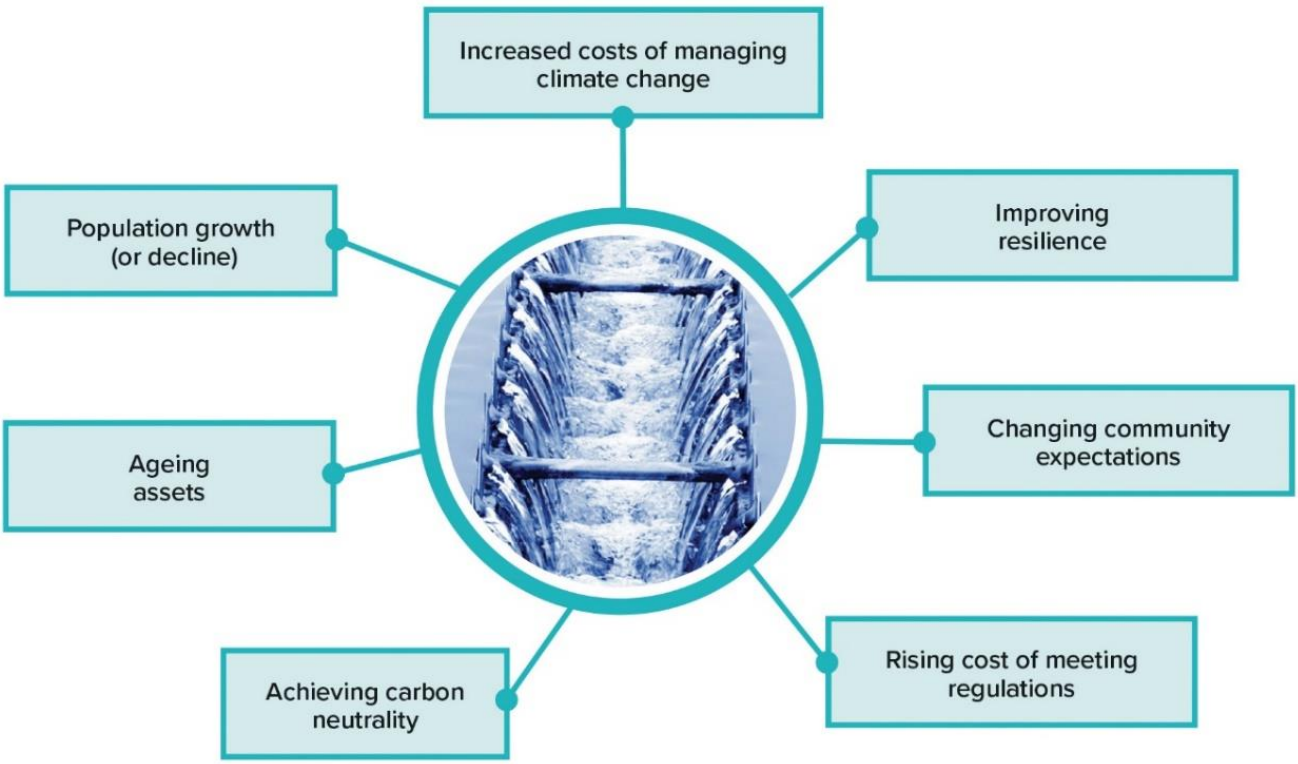

Figure 3 – A snapshot of factors influencing urban water bills over coming decades.

Debt Optimisation

Internationally, water utility companies tend to have much higher levels of debt than is the norm in New Zealand. The graph in Figure 4 below demonstrates gearing (debt as a proportion of the regulatory asset base) in English (privatised) water utilities.[38] In comparison, the debt (measured against total assets) for New Zealand Councils is much lower, as shown in Figure 5 (and in Appendix B).[39]

Building up too much debt can create a range of problems; however too little debt can also suggest that an organisation is under-investing in its assets and/or overcharging consumers. In the New Zealand context, the ability to take on more debt will go a long way towards resolving concerns around historic underinvestment, while at the same time the flexibility to spread debt inter-generationally will lead to lower direct prices for consumers, in the short-medium term.

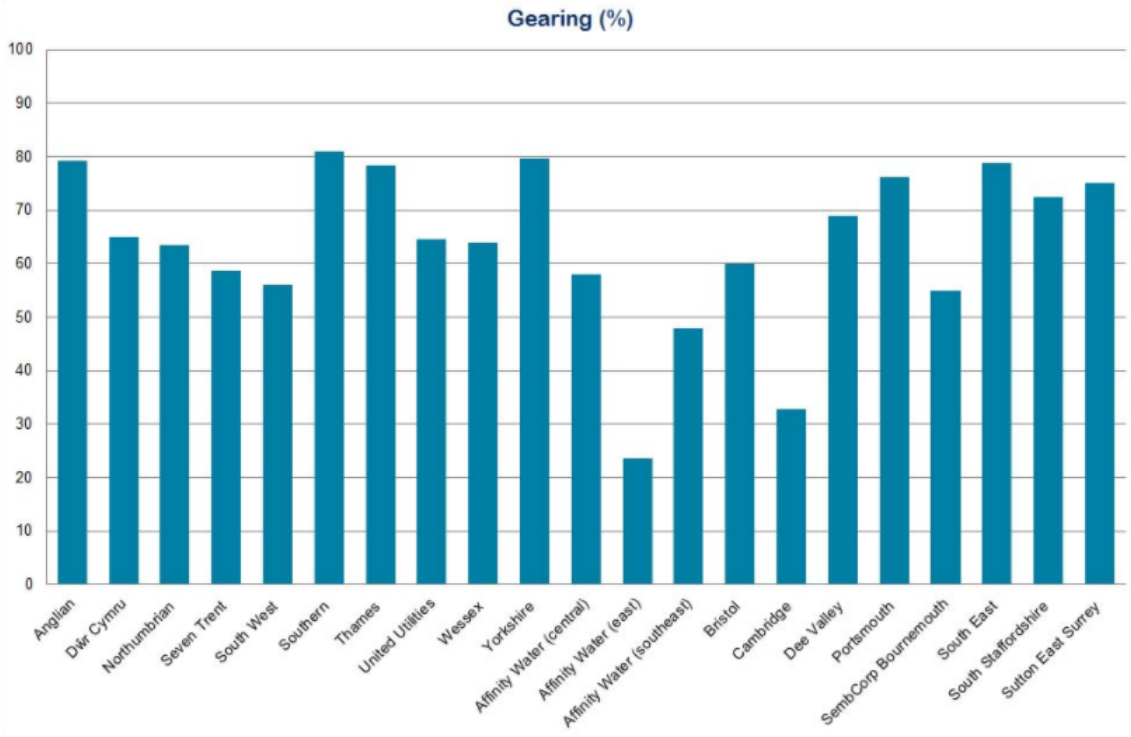

Figure 4 – Gearing in English Water Utilities

[38] "Financial." Ofwat, accessed February 2, 2021. https://www.ofwat.gov.uk/regulated-companies/company-obligations/performance/%20companies-performance-2011-12/financial-2012-13/

[39] "Infoshare - Statistics New Zealand." Accessed December 2, 2020. http://infoshare.stats.govt.nz/infoshare/Default.aspx.

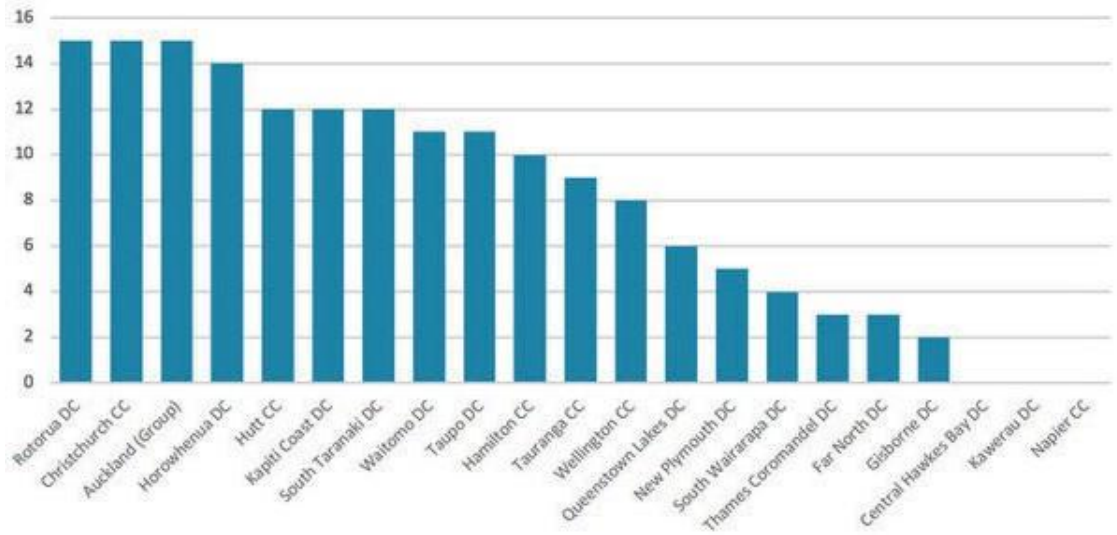

Figure 5- Gearing in New Zealand Water Utilities

De-coupling Debt

Water and wastewater networks have a high capital cost, which is normally debt funded. This debt is consolidated into the balance sheets of the responsible local Council and can create perverse outcomes. For example, expenditure on waters networks can often be curtailed or deferred due to a public perception of unnecessarily high debt, or to assist with debt to revenue limits. This is notwithstanding that debt / asset levels for most Councils (as shown in the previous tables) are relatively low. It also leads to Councils electing to have debt paid as fast as possible, in order to help with debt to revenue ratios and ratepayer perceptions, but which also increases consumer costs. For Councils with high asset growth there is no compelling reason for this.

A new ownership model has the potential to resolve this problem, by allowing the new water entities to be 'de- coupled' from their parent Council's balance sheet.

Resilience

The ability to network systems enables greater resilience, not just for small, rural Councils but also for larger metropolitans. For example, Hamilton City has only one water treatment plant, which is located on the banks of the Waikato river, with a history of erosion. A networked system would allow a second plant, perhaps primarily serving a surrounding community, to be added to provide security of supply. The precedent for this is electricity distribution companies which, following re-organisation, have taken significant steps to create redundancies within their networks to reduce the risk of unplanned outages.

Holistic Approach

The scope of this report is limited to a consideration of the organisational infrastructure most likely to efficiently and effectively transport water to and from consumers. However, this is clearly an artificial (albeit necessary) limitation and consideration needs to be given to the upstream impacts of abstraction and the downstream impacts of discharge. It is generally considered that a larger entity, with access to greater specialisation and resources, will be better placed to achieve this.

Enable Better Financial Accountability

Currently it is very difficult for consumers to identify the true cost of water and wastewater services. Costs are generally incorporated into Council rates, which are either split into a morass of individual lines or combined with other rates for simplification. Where separate rates are identified, such as in billing for metered properties, an adequate understanding of the true cost is still difficult due to each Council having a unique approach to the allocation of finance costs, such as overheads. Where

aggregation has occurred overseas, a common problem for Councils is the realisation that water services have been subsidising the costs of other activities, usually through the overhead allocation formula. In some cases, the reverse has been discovered, water services have been subsidised by other activities.

Enable Better Consumer Accountability

It is difficult for consumers to hold Councils to account for failures in water and wastewater services. Water infrastructure has an extremely long life, well beyond the three-year election cycle and therefore, as an example, a failure to adequately invest in renewals will not manifest for many years, possibly decades. Elected members are usually also elected on a broad platform of policies and, notwithstanding exceptional circumstances, are usually not judged on single service failures. This is because, amongst other things, the public generally understands that Councillors are not expert in the various services provided by Councils and are therefore dependent upon the specialist advice they receive. In comparison, a water utility company will have a board of directors appointed for their skills by shareholders. The actions of the Board of Directors will be significantly more transparent to the public due to the single-purpose nature of the entity. Instruments, such as Statements of Intent and Letters of Expectation, provide a commonly accepted mechanism to codify the outcomes and standards expected of Directors and the organisation.

To Enable an Effective Regulatory Regime

Dealing with 78 Councils, plus a multitude of other suppliers will be cumbersome and costly for regulators. There is a view that actively regulating any more than a dozen companies would create cost inefficiencies. It will also almost certainly lead to compromises being required, similar to those that have undermined the current drinking water assessor regime. For example, different regulatory agencies (health, environmental, economic) will need to liaise with each utility in order to agree trade-offs. Replicating this for 67 plus water suppliers will be time consuming and costly. International experience demonstrates that water regulatory agencies operating in a fragmented market tend to focus on capability building, which compromises their ability to also act in the more traditional enforcement mode.

The Drinking Water Standards for New Zealand have not significantly changed over the last two decades, however despite this timeframe as of 2019 only ~78% of municipal supplies have met them. It is likely that the new regulatory regime will not be as forgiving.

Re-focus Councils on Communities

It is unusual, in an international context, for Councils to be infrastructure providers, as their key advantage is their proximity to communities and therefore their ability to identify and provide for local community wellbeing. This is particularly true for elected members where, as identified by the Productivity Commission (Finding 5.1):

> *"The elected member governance model does not consistently deliver a mix of Councillors who collectively possess the full range of skills required for effective governance, and evidence shows that many councils lack the necessary expertise for effective decision making."*[40]

Moving the responsibility for governing water infrastructure to single-purpose entities will allow Councils, and particularly elected members, to focus on the social, cultural, economic and environmental wellbeing of their communities.

[40] New Zealand Productivity Commission, *Local Government Funding and Financing: Final Report* (NZ Productivity Commission, November 2019), 102. https://www.productivity.govt.nz/assets/Documents/a40d80048d/Final-report_Local-government-funding-and-financing.pdf.

Diversify Council Revenue

There are good reasons for requiring water utility organisations to return a dividend to their local authority shareholders. It provides Councils with a new revenue source (which can also be used to mitigate stranded assets) and reduces reliance on rates. It also balances the natural inclination of community representatives to want to reduce costs, by introducing a reason for maintaining a healthy revenue stream – and therefore a secure dividend. It is noted that early dividend payments may be constrained by the requirement to address infrastructure deficits, where these exist.

Valuing Wai

Rapid urbanisation, intensifying agriculture and horticulture and the impacts of climate change are placing water resources under increasing pressure.

This is a concern to Māori, as the health of waterways is intrinsically connected to their own and the community's wellbeing. Attitudinal and behavioural change will be required to encourage water to be more highly valued and less taken for granted. Aggregated entities are more likely to have the resource capability to achieve these outcomes, however they also face a perverse incentive to allocate as much water as possible, as this will be their principal source of revenue. With strong governance and a committed focus on Te Mana o te Wai the goal of valuing water is more likely to be advanced in an organisation with greater resources. On the other hand, a lack of good governance and a weak focus on water conservation and its efficient use is likely to compound existing problems.

Improved Environmental and Drinking Water Compliance

Utility entities tend to be more risk averse than local Councils. There are several pertinent examples of this in New Zealand, such as the accelerated local work programme in the ex-Franklin District following Watercare taking responsibility for water services there. Greater risk aversion results in enhanced levels of service, improvements to the environment and reduced health risks, although it can also increase cost. Shareholding Councils also have the ability to drive enhanced standards (whether health, environmental or customer related) through their governance overview, particularly the recommended annual Letter of Expectation and response to the water utility's Statement of Intent.

Te Mana o te Wai

Te Mana o te Wai encompasses the holistic and integrated wellbeing of waterbodies. It incorporates concepts such as te hauora o te taiao (health of the environment), te hauora o te wai (health of the water) and te hauroa o ngā tāngata (health of the people). Te Mana o te Wai recognises that freshwater has its own mauri and mana which all New Zealanders have an obligation to respect.

The National Policy Statement for Freshwater Management, which came into force on 3 September 2020 includes a new provision which requires planning agencies to 'give effect' to Te Mana o te Wai. In the 2014 Freshwater NPS there was a less prescriptive requirement to consider and recognise' this principle. Taumata Arowai – the Water Services Regulator, is also required to give effect to Te Mana o te Wai.

Te Mana o te Wai is grounded in the concept that 'the first right to the water goes to the water'. A fragmented waters sector, where each supplier is motivated to maximise their allocation (and may not be familiar with Te Mana o te Wai), coupled with a weak regulatory system is unlikely to provide the best outcomes.

Responsiveness to Regulatory Requirements

A targeted water utility, with specialist staff, will be better able to respond to the necessarily increasing regulatory demands and higher quality standards that Taumata Arowai (and potentially other regulators) will inevitably introduce. This includes the ability to find solutions to regulatory requirements which achieve the regulator's intentions and meet community aspirations.

Targeted Focus

Councils are multi-disciplinary entities, which means that governance and management focus is spread over a wide range of activities, such as dog control, civil defence, sports grounds, cemeteries, roads etc. The downside of this is that it forces a range of compromises which cumulatively result in corporate-wide inefficiencies. For example, enterprise-wide IT systems are universally favoured, for generally sound reasons. However while these systems are excellent at coping with a broad range of dissimilar activities, they cannot provide leading-edge solutions for each one. Council staff are therefore left to work with sub-optimal tools. Similarly, Council financial systems provide robust and auditable accountability, but can make bespoke designs (such as a migration to volumetric or demand charging) administratively cumbersome. The end result of both is embedded, systemic inefficiencies.

Providing for Growth

An aggregated supplier will have a greater ability to programme for growth and to manage large capital expenditure programmes. They are also better positioned to accommodate demands for unplanned growth (such as responding to the requirements of a prospective industrial employer) which can place burdensome demands on small engineering teams and isolated networks.

Internal Centres of Specialisation

Larger entities enable a platform to deliver increased levels of service through centres of excellence. For example, streamlining customer responsiveness and optimising debt are both services that larger organisations are better able to focus specialist skills on. The Australian Infrastructure Commission has noted that rural communities consistently suffer from poorer cost and quality outcomes for water services than their larger, metropolitan neighbours. It is likely that this is no different in New Zealand.

Regional Centres of Excellence

By virtue of their pool of expertise, larger water utilities can, and do, provide spin-off benefits to organisations within their communities, such as marae, schools and industry who may choose to continue supplying their own water and wastewater services. Very often services and advice are provided as a community good. For example, both Wellington Water and WaterCare provided immediate specialist advice and assistance to Hastings District Council following the Havelock North contamination event.

Improved Asset Management

This has been identified as a key issue in a number of studies, including work undertaken by Water NZ, Local Government NZ and the Office of the Auditor General.

Local Government New Zealand has commented that:

> *"There are reasons to be concerned that investment decisions in the sector are being made with limited information on the state of the assets. Responses to the LGNZ National Information Survey revealed that a large proportion of three waters assets are ungraded, and some councils' entire networks have not been graded according to their condition. In addition, despite the requirement for renewal profiles in councils' LTPs, 16 percent of respondents to the National Information Survey stated that they do not have a renewals profile for potable water assets, and 20 per cent of respondents did not have a renewals profile for their wastewater assets."*[41]

[41] Local Government New Zealand, *Improving New Zealand's Water, Wastewater and Stormwater Sector: A Position Paper Prepared by LGNZ* (Local Government New Zealand, September 2015), 13. https://www.lgnz.co.nz/assets/2aa82f85f1/29617-three-Waters-Position-Paper.pdf.

Without sound asset management information, it is difficult to optimise networks to achieve robust, cost effective results. A regional, or multi-regional, entity can also standardise asset management requirements in order to provide more efficient services.

Build Technical Capability

Watercare and Wellington Water have demonstrated the lift in capability that is possible in larger organisations that can cost-effectively provide specialist training and opportunities to retain specialist skills. These would be unaffordable for rural and provincial Councils (and even some cities). Examples include microbiologists, data analysts, water conservation engagement and specialist governance.

Depth of support would also improve. Many councils outside the main metropolitan areas don't have the option for internal peer review or even the ability to have officers act as independent, informed 'sounding boards' on technical decisions.

Staff Development

Similar to the above, a larger entity can offer greater development, training, peer support and advancement opportunities for employees, which are needed to attract and retain highly skilled, specialist waters staff. Most Councils are also unable to provide specialist succession plans or, in many cases, to provide cover when key personnel are on leave. Water utilities may also institute more sophisticated welfare systems, particularly to safeguard employee's health and safety, as shown in Figure 6.[42]

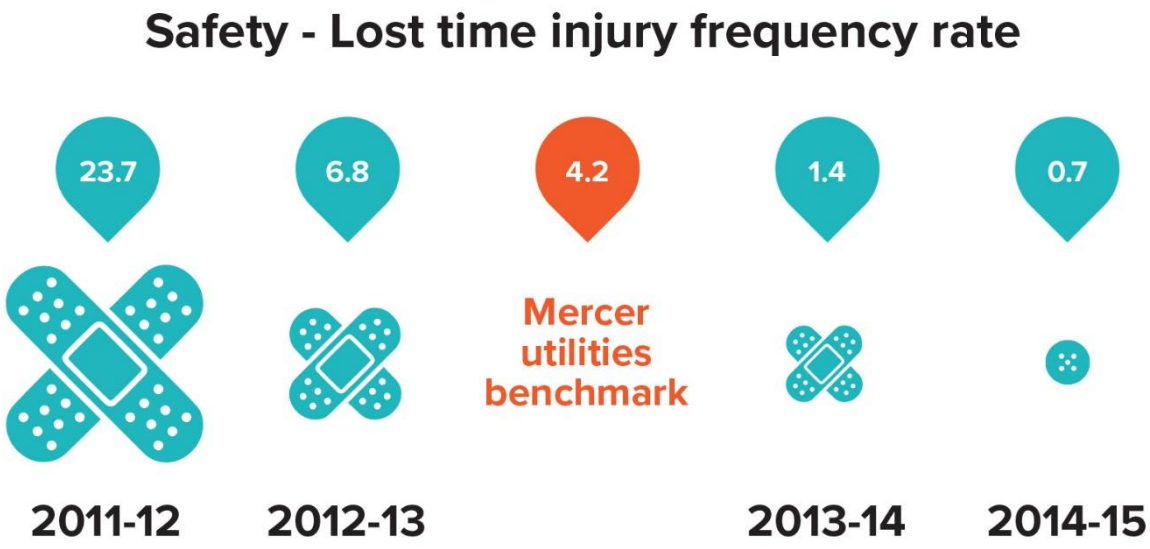

Figure 6 – Safety: Lost Time Injury Frequency Rate

Independent Governance Expertise

At Board of Directors level, a stand-alone entity creates the ability to target specialised skillsets for the governing body which is not possible by way of local elections.

[42] UnityWater, "Safety - Lost Time Injury Frequency Rate: Establishing A Sewage and Water Business," February 5, 2016.

For a waters utility entity this might include iwi representation, legal and accounting skills, civil engineering knowledge and project management experience.

Unlock Strategic Opportunities

Larger service providers can take a more strategic and long-term approach than is possible for most Councils. For example, Thames Water (a private UK company) is part-funding the Thames 'Tideway' project, with central and regional government support. This is a multi-billion-pound project aimed at re-directing London's combined stormwater and sewerage networks to treatment plants, and away from direct discharge to the Thames River.

Risk Management

A single focus water utility will have an enhanced ability to manage risk. This includes public health risk, the response to natural disasters and the implications of climate change as well as the ability to address operational network resilience across a region.

Procurement

A larger entity has the capacity to procure goods, services and finance at a cheaper rate than is available to small suppliers. There are a variety of reasons for this, including the ability to buy in bulk, the capacity to take advantage of cheaper capital and the ability to make use of procurement processes (such as panels of suppliers) that would be cumbersome for small suppliers (and likely unattractive for contractors).

Political Decision-making

Issues associated with direct political influence over infrastructure industries have generally led to the separation of political governance from day-to-day operational decision-making, especially for procurement decisions.

3.2.2 Concerns

Aggregation is not a magic bullet that will solve all ailments. Common concerns, often raised by Councils, include:

Predicted Price Reductions Not Realised

Academic reviews of aggregations have resulted in mixed findings.[43] Many have concluded that the financial benefits touted at the commencement of reform processes have not been realised in practice.

There are a number of explanations for these findings, in particular it has been noted that:

- In most cases reform has been compelled by a combination of factors, such as increasing environmental standards and the need to replace ageing infrastructure – very similar to the existing situation in New Zealand. The costs to overcome these issues are often un-budgeted and therefore it has often been difficult to make meaningful 'apples for apples' comparisons between the original, 'status quo' budgets and actual expenditure.
- Water utility companies tend to be more risk averse than public sector entities, which also leads to greater expenditure, as previously noted, but a safer and more resilient network. This also makes a direct comparison unreliable.

[43] World Bank, *Annotated Bibliography: Global Study on the Aggregation of Water Supply and Sanitation Services* (Washington, DC: World Bank, 2017)

- Establishment costs for new entities are substantial, in real terms if not in comparison with ongoing operational expenditure. These costs are often recouped from the new entity. There are also transitional costs relating to the transfer of assets, upgrade of information technology and redeployment of employees which mean that new entities are not able to realise their full potential for some time.
- Robust regulatory systems are a critical component of a successful waters environment. Often these systems 'lag' or take time to mature. In these circumstances the natural monopoly characteristics of the waters service can inhibit cost savings being passed on to consumers
- Finally, water assets are long-lived, and it is usually more economic to 'sweat' assets to the end of their lives than to mothball them. Legacy infrastructure therefore also limits the ability of new entities to find immediate efficiencies.

Risk Aversion

Arms-length water utility companies tend to be more risk averse in the provision of services than their Council managed counterparts. There are several reasons for this, including the greater level of visibility and accountability that comes from being a sole-focus organisation, and the legal liability faced by boards of directors which are not applicable to elected Councillors (in most situations). A lower appetite for risk motivates higher expenditure and therefore also negates predicted cost savings. The Wellington Water experience in South Wairarapa is a good example of where risks tolerated by the local Council for many decades were considered unacceptable by the new contractor and led to unbudgeted Council expenditure. Notwithstanding the potential cost implications, it could equally be argued that increased risk aversion in the context of an essential service with substantial public health implications, is not inappropriate.

Whakapapa

Human society inhabits the realm between Ranginui, the sky father, and Papatūānuku, the earth mother, and is connected by a whakapapa which is the spirit (wairua), or feeling of 'connectedness', that binds humans to the natural environment. There is a concern that these important, 'local' connections between individuals and their environment have the potential to be lost if water is managed through large-scale, multi-regional utility entities.

Privatisation

The prospect of large supply networks managed by commercially focussed organisations often raises fears of privatisation. However, the sale of waters infrastructure to the private sector is prohibited under the Local Government Act 2002, and both the Labour and previous National government have been clear that this prohibition will continue. Sceptics will point out, with some validity, that future governments could amend legislation and that State asset sales have occurred in the past despite vocal public concern.

Concerns about privatisation are predicated on the assumption that privatisation is a negative. The experience in other countries, most notably the UK, has demonstrated that privatisation does not necessarily lead to the dire consequences often predicted. (On the other hand, Scottish Water has also demonstrated that publicly owned suppliers can be just as efficient and effective as the private sector).

Mana Motuhake

> *"Mana motuhake means the authority (mana) gained through self-determination and control over one's own destiny. Mana whenua communities have this authority in their customary 'rohe' or territory and have special cultural relationships with ecosystems in these areas. It is important to*

proactively engage mana whenua in designing urban environments within their rohe so that they can have a meaningful role in shaping the outcome."[44]

The concern is that the role and significance of mana whenua, and particularly local hapū will be compromised if water is managed by large, multi-rohe entities.

Community Control

The loss of direct control by communities is sometimes raised as a concern. The view is that being part of a multiply owned water utility will impose limitations on the ability of councils to determine the future of their communities. The privatisation of water assets, somewhat ironically, is an instance where this may be true. This is because it is likely that shareholder agreements for aggregated water utilities will require unanimous, or at least a super-majority, shareholder support for the sale of assets. This means that if a shareholding council were to decide to monetise their assets (if that were legally possible) in order to (say) fund a public transport network, they would be constrained from doing so. To that extent, aggregated water entities could, in a limited number of circumstances, constrain community preferences.

Dis-economies of Scope

There is a concern that removing water and wastewater services from Councils will create inefficiencies in the development of structure plans and the coordination of urban growth (dis-economies of scope). However, most Councils are already familiar with this issue due to the need to liaise with utility providers such as power and telecoms.

Volumetric Charging

There are concerns that aggregation will lead to volumetric charging, although one doesn't necessarily follow the other. The underlying concern is that the change in the incidence of charging would have winners and losers. In the case of water metering as a replacement to rates it is considered likely that this would reduce charges on high value properties (which, the argument runs, are normally owned by the wealthy) and load charges on to lower valued properties, perhaps with a greater number of occupants and therefore higher water consumption.[45] The reality is that there are many compelling reasons for water suppliers to consider volumetric charging irrespective of the form of the water supplier. This is why many communities in New Zealand already have volumetric charging for water services still supplied by the local Council. On the other hand, Wellington City does not charge for water volumetrically despite its CCO, Wellington Water, providing all waters services.

Stranded Overheads

It is not possible to neatly separate water services from a council and move them into a new entity without also impacting other services. One of the issues that causes concern, particularly for small councils, is the creation of stranded overheads. As an example, the loss of water services may lead to a reduction of customer service calls by, say 20%. Where there are five individuals doing this work it is relatively simple for one person to transfer to the new entity, but where a council only has two or three customer service staff it is not so easy to reduce the size of the team and therefore to realise the associated financial benefit. In a worst-case situation a council could be left to fund staff, or systems, which are not fully employed.

[44] "Looking after Water in Towns and Cities," Ministry for the Environment, accessed on February 2021. https://www.mfe.govt.nz/fresh-water/we-all-have-role-play/towns-and-cities

[45] There is a counter-argument that wealthy neighbourhoods are greater consumers of water for activities such as watering lawns and gardens, filling swimming pools….

Internal Cross-subsidisation

Another concern is the impact of internal cross-subsidisation. Anecdotally, when Tasmania's water services were consolidated, the impact on individual councils was much more variable than anticipated. It transpired that this was because waters services had in some situations been cross-subsidising other activities and in other instances was itself being cross-subsidised. Where waters was cross-subsidising other activities the impact was that the cost of those services increased, and therefore council's overall costs (and rates) did not reduce as much as was initially anticipated.

Consumer cross-subsidisation

It is a common concern amongst councils that joining with other authorities will lead to 'their' water consumers subsidising the costs of consumers in other jurisdictions. There may be some validity to this claim. In the case of the Waikato water study the financial modelling identified that the smaller districts, Waikato and Waipa, gained most when water services were aggregated with Hamilton City. Importantly however, although Hamilton City gained the least benefit, they still enjoyed a financial advantage. In other words, everyone was a winner, but some more than others. It is possible that in some circumstances an urban area which already enjoys large economies of scale and has access to cheap, high quality, easily reticulated, treated and discharged water may end up cross-subsidising other water supplies. Napier City is a case in point.[46]

Council Amalgamation

A common concern, again particularly expressed by smaller councils is that the removal of waters services could compromise their overall viability and therefore lead to 'amalgamation by stealth'. Hauraki District Council in their submission to the 'Better Services' legislation wrote that:

> *"We note and share LGNZ's concern that removing a large degree of a rural local authority's expenditure through transferring water and transport services to another body will have significant financial implications for the sustainability of that local authority. The net effect of such transfers, particularly in geographical areas comprising a number of rural local authorities, could be the need for the formation of larger authorities – amalgamation by stealth. It is of utmost concern to us that our local democracy and decision-making could be lost as a result."*[47]

Staff Rationalisation

A portion of the efficiencies gained from aggregating water services derive from the ability to rationalise staff. For local councils the prospect of making staff redundant, particularly in small communities with a declining population base is very unappealing. In many cases this has been resolved through a requirement for the new entity to employ all existing staff, and to reconfigure the staff complement over time. The consequence however is that projected financial savings would take longer to be realised. The impact of reforms on existing staff is a valid concern, and it is important that this is consciously considered, particularly in smaller rural communities where alternative employment may not be readily available. There are mitigation options, however these will impact the ability of the new entity to realise cost savings, particularly in the short term.

Rural Urban Drift

[46] Morrison Low and WSP Opus. *Hawke's Bay Three Waters: Business Case of Three Waters Service Delivery Options*. Hawkes Bay Regional Council, July 2020. https://www.hb3waters.nz/assets/Uploads/HB-3-Waters-Delivery-Detailed-Analysis-29.07.20-Full-Report.pdf.

[47] Hauraki District Council, *Submission on the Local Government Act 2002 Amendment Bill 2016* (Local Government and Environment Committee, 2016), 5.

Similar to the above, it is likely that new utilities will be centralised to headquarters in larger metropolitan areas, notwithstanding that smaller branches may be required in strategic provincial locations. This means that even where employees are retained, it is likely that rural – urban drift will be exacerbated in locations which already have concerns about a static or declining population base.

3.3 Multi-Criteria Analysis

In order to provide a robust evaluation of the costs versus benefits of consolidating waters services a simple Multiple-Criteria Decision Analysis (MCDA) was undertaken. Multiple Criteria Decision Analysis allows qualitative considerations to be robustly evaluated and are often used to complement financial analyses.

A decision support workshop was held with Infrastructure Commission staff to agree a range of Themes and Criteria against which to assess the options. It was decided at this workshop that the Status Quo option should be broken into two parts – rural & provincial councils and metropolitan councils – which went some way to recognising the existing difference in the size and characteristics of councils. The weightings for each Theme were also discussed and agreed at the workshop. The weighting is designed to give a sense of relative importance notwithstanding that all Themes are important.

The highest weighted Themes selected by the participants are Consumer / Customer Focus; Environmental Sustainability; Financial Impact and Tāngata Whenua Perspectives. These coincidentally align closely with the Four Wellbeings listed in Section 4 of the Local Government Act 2002 – Social, Environmental, Economic and Cultural wellbeing.

The themes, criteria and weightings agreed at the workshop are summarised in Table 7, below.

Table 7– Themes and Criteria

Theme	Criteria	Weight
Consumer / Customer Focus	• An Effective Regulatory Regime • Drinking Water Compliance • Health Outcomes • Centres of Excellence • Volumetric Charging • Rural-Urban Drift	15%
Environmental Sustainability	• Environmental Compliance • Responsiveness to Regulatory • Requirements • Volumetric Charging • Impact on Source Water (Abstraction)	15%
Financial Impact	• Ability to Achieve Cost Efficiencies • Financial Capacity • Debt Optimisation • Risk Aversion • Cross Subsidisation • Procurement	15%
Tāngata Whenua Perspectives	• Te Ao Māori • Te Tiriti o Waitangi • Holistic Approach • Valuing Water • Te Mana o te Wai • Whakapapa • Mana Motuhake	15%

Theme	Criteria	Weight
Asset Management Planning	• Rationalisation of Infrastructure • Unlocking Strategic Opportunities by taking a Long-Term View • Enabling a Targeted Focus on Water • Providing for Growth • Developing Robust Asset Management Plans	10%
Resilience	• Financial Capacity • Network • Resourcing • Organisational • Risk Management	10%
Governance	• Governance Expertise • Financial Accountability • Consumer Accountability • Responsiveness to Regulatory • Requirements • Privatisation • Political Independence	7.5%
Staff Development & Welfare	• Technical Capability • Staff Development • Staff Rationalisation • Rural Urban Drift	7.5%
Council Operations & Viability	• Re-focus Councils on Community Wellbeing • Council Revenue (Dividends) Urban Design and Community Wellbeing • Coordination with other Infrastructure Development • Stranded Overheads • Corporate Cross-subsidisation • Viability of Councils	5%

A simple 7-point scale was adopted to score the options against the Themes, as shown below:

Table 8 – Scoring Schedule

Score	Explanation
3	Strongly advances the Theme across all criteria
2	Meets the Theme in most respects
1	Only partly meets the Theme
0	Neutral
-1	Does not meet the Theme, but is not contrary to it
-2	Does not meet the Theme, and is contrary to many criteria
-3	Fails to meet the Theme and is contrary to the criteria

Each member of the evaluation team individually scored the Themes, which were moderated at a second workshop. Following the workshop discussion, the finalised assessment of options was determined.

The outcomes of the Multiple-Criteria Decision Analysis are shown in Table 9. Firstly, there is an unmistakably clear transition from low scores to high scores as scale increases.

This trend is seen across each of the Themes, with the exception of 'Council Operations & Viability' which scored neutral for each option. A high score across each of the Themes indicates that, in

balancing the advantages and disadvantages associated with each one, the overall view was that the addition of scale created more positive outcomes for each Theme than negatives.

Table 9 – Results: Weighted

ID	Scheme	Asset Management	Financial Impact	Resilience	Consumer / Customer Focus	Governance	Environmental Sustainability	Council Operations & Viability	Staff Development & Welfare	Tangata Whenua Values	Total Score	Assessed Suitability
1	Status Quo - Rural & Provincial	-10.00	-10.00	-6.67	-10.00	-7.50	-10.00	0.00	-5.00	-5.00	-7.13	Low
2	Status Quo - Metro Councils	-3.33	-5.00	0.00	5.00	-5.00	5.00	0.00	5.00	-5.00	-0.37	Neutral
3	Consolidated Water Entities	6.67	10.00	10.00	10.00	7.50	15.00	0.00	7.50	10.00	8.52	Very Good

This is an important point, because often discussions about consolidation revolve around the financial economies of scale. What the Multiple-Criteria Decision Analysis highlights is that consolidation also has the potential to deliver a range of social, cultural and environmental advantages.

Real world consequences arise from systemic under-performance. For example, it is known that poor water quality is compromising the health of New Zealanders (social wellbeing). The Havelock North water contamination incident is an extreme example, but we also know that there are between 18,000 and 100,000 sundry cases of sporadic waterborne illness each year. Inadequate asset management and deferred investment is resulting in unnecessary environmental consequences – well-publicised cases of sewage spills are a headline example, but again there have been many warning signs, for example nearly 25% of wastewater plants (73) are operating under expired consents and full resource consent compliance was achieved at only 27% of wastewater plants, while 25% of plants recorded significant non-compliance (2017/18 data for 170 out of 321 plants (53%)) (environmental wellbeing). From a cultural wellbeing perspective, there are general concerns that iwi can be locked out of critical decision-making roles as a consequence of the existing structure of local government (cultural wellbeing).

Based on the Multiple-Criteria Decision Analysis results, it will be important that discussions on water reforms acknowledge the full range of social (especially health); environmental and cultural benefits likely to realised through consolidation and not allow conversations to solely focus on the economic benefits.

Figure 1 from Page 10 – Waters Contribution to Community Wellbeing

Determining best options through a Multiple-Criteria Decision Analysis process should not be driven solely by the scoring system. It is the informed judgements that underpin the scores that are of key relevance. The scoring system is simply a mechanism for bringing structure to the assessment.

The reasoning behind the scores is set out in Appendix A.

3.4 Why hasn't change already occurred?

The advantages of reform are compelling as shown in the Multiple-Criteria Decision Analysis in the preceding section, and as concluded by many independent bodies. Nonetheless, it has proven exceedingly difficult to motivate councils to take advantage of them. The failed Waikato Waters Study is an illustrative case in point, where despite a detailed business case identifying tens of millions of dollars of cost savings and a comprehensive shareholders agreement resolving many of the 'negatives' listed in the previous section, the proposal nonetheless failed to win a majority of support amongst Waipa District Councillors (and a minority of Hamilton City Councillors).

Understanding why substantial reform is so difficult for councils is important, particularly in the current environment where successive governments have been keen to promote waters reform as a voluntary choice. An acceptance that self-motivated reform is unlikely to occur enables moving more quickly to the consideration of alternative approaches, such as the use of incentive schemes (financial or otherwise), penalties (such as the imposition of regulatory requirements) or even legislative compulsion.

For local government, the inhibition to change is an inherent part of their institutional settings. In particular:

- The Monopolistic position of Councils (which leads to weak consumer feedback loops and a lack of competitive tension)
- Their Multi-Functional nature (which clouds transparency and accountability)
- A fear of the unkown, particularly when dealing with activities which the ultimate decision makers (Mayors and Councillors) are not expert in. This may also mean that the "right questions" are not asked and/ or that data is not robustly interpreted.

- The independent nature of Councils, which often means that an issue of concern at one Council is not a simultaneous concern at other Councils. For example, Council A may need an upgraded wastewater treatment plant at a location that could also benefit Council B. However, Council B's wastewater plant may only recently have been upgraded, or have more capacity than required, and therefore Council B is not interested in collaborating at that time
- A perception that failure has a low likelihood in the immediate future, but without an appreciation of the high impact when it does occur. This manifests in decisions such as a lack of investment in asset management
- A fear of failure, particularly in a highly visible public setting and even more so when public funds are at issue, and
- The pride (parochialism) of elected members in their own communities and, in the absence of a 'burning platform', the sense that no change is necessary

These all lead to a situation where the need for change is not deeply felt or sufficiently compelling to overcome the risks associated with voluntary reform.

In the absence of a potent need for change, such as the prospect of business failure, the desire to re-fashion the water sector will not exist. Change creates uncertainty. Any significant reform likely to create short-term disruption, add additional (transitional) costs, and only generate benefits in the medium or long term, is simply not welcome in a three-year election cycle.

Notwithstanding the above, if it were possible, voluntary reform would have benefit. It would allow Councils to ensure that the institutional settings of any new entities reflected the needs of their regions and communities, rather than reflecting a centrally imposed and generic solution. It would also increase the likelihood that Councils and communities 'buy into' and support the new entities, a critical success factor if Councils are intended to be governing shareholders. There are however risks, and it would be important that 'bottom-lines' were established to avoid inefficient solutions that require further rounds of future reform (as has happened in other jurisdictions).

For the reasons listed above it is considered unrealistic to expect councils to voluntarily reform without external impetus. External stimulus is therefore likely to be required. This could take the form of large scale incentivisation, regulatory compulsion or straight out legislative change. The bottom line, as noted by the Australian Infrastructure Commission below, is that some form of government intervention will almost certainly be required:

> *"National water reform requires not only agreement across governments and the support of industry and the community, but also strong national leadership. A clear lesson from the successes and failures of past reform efforts is that a national body can coordinate, monitor and report on progress across jurisdictions, and advocate for further changes."48*

[48] Infrastructure Australia, *Reforming Urban Water: A National Pathway for Change* (Infrastructure Australia, December 2017), 17.

4. Part B: Regulatory Environment

Part B of this report considers the form of regulatory framework required to support the waters sector. The primary focus is on economic regulation, as this is currently absent from the sector.

4.1 Economic Regulation

Economic regulation is a common characteristic of almost all global waters jurisdictions, irrespective of whether utility entities are publicly or privately owned. This isn't surprising as a key characteristic of drinking water and wastewater suppliers is that they are natural monopolies. That is, the high cost of infrastructure, particularly reticulation networks, relative to the size of the market gives the incumbent supplier an almost insurmountable advantage over any potential competitor. This advantage is compounded by a range of other barriers to entry, including:

- Statutory requirements for consumers to connect to a public network (where one is available)
- The ability to impose and enforce charges by way of taxation (property-based rates)
- The impracticality of duplicating existing networks, from a land access and cost perspective
- The long-lived nature of assets (particularly reticulation)
- The ability of Councils to cross-subsidise supplies, within networks (consumers further from the treatment plant normally pay no more for water than those close by) and between networks (Councils regularly harmonise costs between schemes meaning that consumers on more expensive networks, such as rural schemes with low connection densities, pay no more than those on the most efficient networks)
- The ability to cross-subsidise between unrelated services, for example by adjusting financial inputs such as overhead allocations
- An authority to establish bylaws and District Plan Objectives, Policies and Rules which can be used to regulate consumer behaviour, for example by requiring (or restricting) rainwater harvesting in new buildings, and
- The ability to access private land in order to maintain networks.

> *"Overall, regardless of whether a water system is publicly or privately operated, a key determinant of success is the nature of regulation that oversees the system."*[49]

There is public support for independent regulation of private sector monopoly service providers. This is due to the recognised potential for negative behaviours, such as price gouging. That public acceptance is not felt so strongly in the case of publicly owned assets, perhaps due to the lack of a profit motive or the inherent restrictions on personal enrichment. Nonetheless it has been shown that many of the inefficiencies of natural monopolies apply equally in the public sector as they do in the private sector. By reducing these inefficiencies, economic regulation has been shown to generate positive benefits for consumers beyond cost saving and irrespective of ownership. For example, in the decade following privatisation and the establishment of an economic regulator in England and Wales, the sector delivered a 30% reduction in leakage.

The functions of economic regulators are much broader than just price-setting, although that is a key focus. Internationally, the roles of economic regulators also include:

[49] Sean Ennis, and David Deller, *Water Sector Ownership and Operation: An Evolving International Debate with Relevance to Proposals for Nationalisation in Italy* (Centre on Regulation in Europe, July 2019), 48.

- Limiting sector revenues to no more than what is considered reasonable. This is particularly an issue for private sector entities operating in a monopoly environment where a lack of competition could be reasonably expected to result in 'monopolistic profits',
- Placing downward pressure on prices where analysis indicates that inefficiencies can be removed and / or that innovation can be incentivised. In England and Wales, Ofwat's recent PR19 (Price Review 2019) process saw average bills reduce by 12% before inflation,
- Ensuring that cross-subsidisation in public sector entities is removed or, at the very least, is transparent. Understanding the true cost of a service is fundamental to determining efficiency. Cost transparency is also important in order to encourage competition,
- Ensuring that investment decisions are made with a long-term perspective, particularly for publicly owned entities where short-term decisions may be politically expedient,
- Providing confidence for private investors that returns will not be unreasonably constrained for political purposes or placed at risk by arbitrary policymaking (i.e. managing 'regulatory risk'),
- Avoiding over-investment (and therefore higher consumer costs) in publicly managed organisations driven by a fear of reputational damage. For example, it has been mooted that historic decisions in the UK electricity sector were driven by the political imperative to avoid electricity shortages. The outcome, however, was costly excess generation capacity,
- Private operators may artificially over-invest in infrastructure in circumstances where this allows them to increase charges and therefore revenue,
- Avoiding under-investment in infrastructure (in the private and public sectors) as a mechanism to reduce costs, and/or allow expenditure to be re-directed to other projects or investment opportunities,
- To correct the asymmetry of information between suppliers and consumers which makes it difficult for consumers to hold suppliers, whether public or private, accountable for sub-standard service performance. A key authority provided to most regulators is the ability to require access to data necessary to ensure specified standards are being achieved,
- The allocation of water has historically been an environmental consideration, based around the minimum flow needs of catchments. However, in catchments which have reached their natural limit the allocation of water rights has intensely social, cultural (e.g. Te Ao Māori) and economic components, including balancing the needs of urban consumers against the needs of industry, agriculture and Te Mana o te Wai,
- An economic overview can ensure water utilities are adequately investing in network resilience and security of supply. These concerns should form part of each water utility's capital investment plan, used by economic regulators to determine the validity of proposed charges. Security of supply (and treatment in the case of sewage) is also of considerable interest to potential environmental, health and consumer protection agencies
- Water has elements of both private and public good. Considerations such as ensuring that all members of a community have access to the minimum quantity of water required for basic human health, irrespective of their ability to pay, is a public good. Providing access to water for the Fire Service, hospitals and individuals with special health needs (such as dialysis) are also public goods. These all must be maintained for the benefit of communities and the cost of doing so spread equitably,
- Mature economic regulators play an important role in the development of frameworks for incentivising positive, and improving, outcomes and dis- incentivising negative or declining performance,
- Historically the primary form of competition in the waters market has been for the design and construction of physical works. Internationally competition also exists in some markets for the operation of plant or networks. The management of Papakura's water and wastewater networks by Veolia is a local case in point. Until recently there has been little, or no direct competition for the supply of water and wastewater services direct to consumers. There are however some indications that this is changing. Where water markets are emerging economic regulators have an important role in fostering competition between supply entities and ensuring that new competitors are not excluded from markets,

- Enabling competition can help to drive a circular economy, where there is a focus on recovering waste streams as resources. There are a growing number of good water reuse examples (see the case study "Wastewater: From Waste to Resource" below),
- Economic regulators can undertake investigatory roles; normally where they think companies have not fulfilled their legal and statutory obligations. It ensures companies do what they are supposed to and that if they don't, there are consequences. As an example, Ofwat has recently used their legislative powers to levy fines against Southern Water and to require them to make £123m in reparations to customers as a result of an investigation into irregularities in their wastewater compliance sampling,
- Most regulators benchmark in some way or other and it is often the act of benchmarking and publishing the results that drives behaviour change. An anonymous member of a regulation team in a water company has noted that "…nothing galvanised action and got things done like being bottom of a league table or being singled out – whether there was money at stake or not.",
- Economic regulators can also take an active role in promoting climate change, resilience and long-term planning through regulating price/performance. Ofwat has also started trying to actively incentivise innovation via the set-up of an innovation fund.

As the water industry has matured examples of competition are beginning to emerge. In some cases, most notably Scotland, a water market has been created artificially by the Scottish Parliament, which has mandated that Scottish Water must compete against other providers for the retail sale of water to non-residential customers. There are now a number of private companies competing against Scottish Water's commercial arm, 'Business Stream', in this market. In Australia, the New South Wales 'Water Industry Competition Act 2006' includes provisions to encourage competition, particularly in relation to 'sewer mining' and third-party licensing. To date the uptake of these provisions has been limited, however it is significant that the State government has identified and provided for the opportunity

In New Zealand the only (marginally) relevant example of a market for water is the proposed third-party treatment and re-use of grey water in Stonefields, Auckland. Ultimately this example didn't progress, however it is possible to foresee a situation, particularly in severely water-constrained urban settings, where private suppliers could treat and sell water into a reticulated network and/or 'sewer mine' grey water for re-use. In these and other situations where innovative new practices are emerging, economic regulation is imperative to ensure that incumbent suppliers do not use their market dominance to strangle competition

Case Study – Wastewater: From Waste to Resource

The Case of Durban, South Africa Wastewater Reuse for Industrial Purposes

South Africa is a water-scarce country. Durban, the third biggest city in the country and one of the main commercial centres, depends both on the availability of water resources and proper sanitation services for its sustainable economic and social development. During the 1990s, Durban was facing a sewage capacity constraint. The existing infrastructure could not cope with the growing population and the economic development of the city.

The municipality had to invest in new infrastructure to increase wastewater collection in order to avoid negative impacts on its citizens and the environment. Durban's first option was to invest in a new marine outfall pipeline. However, the costs of the infrastructure were very high, and the city considered alternative solutions to prevent large increases in the costs of wastewater disposal in the area

Through a public-private partnership (PPP), the municipality successfully implemented a wastewater recycling project for industrial purposes. This project is an example of sustainable wastewater management with multiple environmental, economic, and social benefits for the region. In addition, the project is the first of its type in South Africa and became an exemplar of a solution that considers wastewater as an asset rather than a liability to be disposed of.

Solution: Instead of increasing the capacity of the existing marine outfall pipeline in the city's Southern Wastewater Treatment Works (SWTW) to discharge primary treated wastewater to the ocean, Durban explored the possibility to further treat it and reuse it for industrial purposes.

Mondi, a paper industry, and SAPREF, an oil refinery, expressed interest in receiving the treated wastewater. The goal of the project was to treat around 48 million litres per day (approximately 10 percent of the city's wastewater) and achieve an acceptable quality for industrial reuse: 85 percent of the treated water would go to Mondi, and the rest to SAPREF.

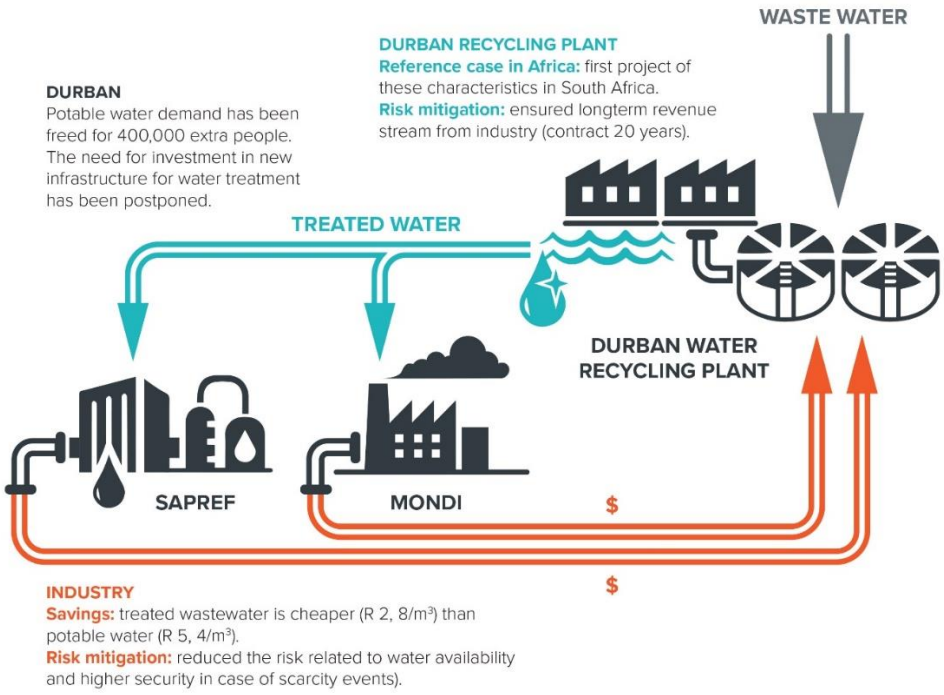

Figure 7 - Durban Recycling Graphic[50]

4.2 Need for a National Environmental Regulator

There are a range of regulatory issues which do not clearly fall within the mandate of any existing agency. These include:

- Ensuring that drinking water supplies are resilient in the event of natural disasters, such as droughts
- That wastewater systems can cope with the impacts of climate change
- That source water is comprehensively protected
- That there is surety of supply for vulnerable members of the community in the event of a network failure, and
- That stormwater systems can capture and adequately treat urban runoff.

Water services also carry substantial externalities that require independent control. For example, water abstracted for one purpose, say irrigation, is not generally available for other purposes, such as urban supply, recreation or Mana O Te Wai. Similarly, the treatment of wastewater may impact on downstream users and the ecology of the catchment.

It is significant that Parliament has recognised these gaps, and provided Taumata Arowai, the proposed health regulator, with a number of environmental objectives. These include:

> *"(e) provide oversight of, and advice on, the regulation, management, and environmental performance of wastewater and stormwater networks; and*
>
> *(f) promote public understanding of the environmental performance of wastewater and stormwater networks."*[51]

In the New Zealand context, the primary environmental regulators are regional and unitary authorities, although the Ministry for the Environment and the Environmental Protection Authority also have policy and regulatory responsibilities respectively.

Regional Councils are provided with an authority to regulate the use of water through the Resource Management Act 1991. This Act mandates them to, subject to any National Policy Statement(s), develop policies and rules to guide the use of water, and authorises the issuing of resource consents for water abstraction and discharge. Abstraction and discharge consents invariably include a range of often stringent conditions and are time limited.

The role of Regional Councils has come under scrutiny in the aftermath of the contamination of Havelock North's drinking water. Various reports, including the consequent Government Inquiry, have identified significant limitations in the existing environmental regulatory framework, including:

- An internal conflict for Unitary Authorities, which are Councils that have the roles of both territorial authorities (i.e. are water suppliers) as well as Regional Councils (i.e. the environmental regulator)
- Each Regional Council is responsible for developing their own policies and plans, for each water catchment and coastal marine area within their boundaries. This has led to a wide variance of standards across the country

[50] World Bank. *Wastewater: From Waste to Resource: The Case of Durban, South Africa*. (Washington, DC: World Bank, 2018), 2.
[51] Taumata Arowai–the Water Services Regulator Bill 2020 (202-3). https://www.legislation.govt.nz/bill/government/2019/0202/latest/LMS294383.html.

- There is a lack of consistency in the terms and conditions set by Regional Councils in Regional Policy Statements, Regional Plans and resource consents, between and often within regions. This includes differing limits on the concentration of discharged contaminants, variances on which contaminants are monitored and variances on the length of consents.
- Consent holders are often required to monitor contaminants, but in many cases the consents include no indication of what is considered acceptable and what is considered unacceptable. In the absence of clarity there is no way for the consent holder to determine what level of contamination should trigger a response, or what that response should be[52]
- There are also often 'narrative' limits included in resource consents (such as 'No adverse effects on the environment') but with no definition to clarify what that means in practice and therefore no clarity on how it might be enforced[53]
- Source water protection is regulated through Regional Council policies and plans and is therefore de-coupled from the direct oversight and control of drinking water suppliers
- The current 'first in – first served' water allocation framework, deriving indirectly from the Resource Management Act 1991, has resulted in essential applications for water abstraction being held in limbo for years while less impactful applications, such as for on-farm irrigation, are processed
- The allocation of water has historically been an environmental consideration, normally based on minimum flow needs for catchments. However, in catchments where consents to take water are approaching, or have exceeded, the assessed minimum desirable flow allocation decisions have considerable social, cultural and economic implications. As noted previously, how these trade- offs are made, and by which authority, is a question that merits consideration
- Less than half of all Councils have a stormwater quality management plan and/or catchment management plan in place despite stormwater discharges being a recognised source of surface water pollution[54]
- Uncertainty about the standards of treatment and the length of consent, particularly for wastewater treatment plants, complicates substantial investment decisions
- The costs of obtaining a resource consent, particularly for wastewater treatment plants, have escalated over time. In some cases the cost of obtaining a consent can reach up to 20% of the overall project cost
- Only eight participants in the National Performance Review survey had all stormwater discharges consented. Most commonly, participants had consents for less than 10% of their network, and six had no stormwater discharge consents at all[55]
- There were 627 non-conformances with wastewater treatment consents in the 2018/19 reporting year, however these led to only eleven compliance actions (as seen in Figure 8).[56] There is a perception that regional councils are unwilling to prosecute territorial councils that they must cooperate with on a range of other activities.

[52] GHD Limited, *National Stocktake of Municipal Wastewater Treatment Plants: Final Report* (Department of Internal Affairs, December 2019), 12. https://www.dia.govt.nz/diawebsite.nsf/Files/Three-waters-documents/$file/Report-1-National-Stocktake-of-Municipal-WWTPs.pdf

[53] Ibid

[54] Water New Zealand. National Performance Review 2017 - 2018. (Water New Zealand, 2018), 40. https://www.waternz.org.nz/Attachment?Action=Download&Attachment_id=4270

[55] Water New Zealand. National Performance Review 2018 - 2019. (Water New Zealand, 2019), 34. https://www.waternz.org.nz/Attachment?Action=Download&Attachment_id=4270.

[56] Ibid, 33.

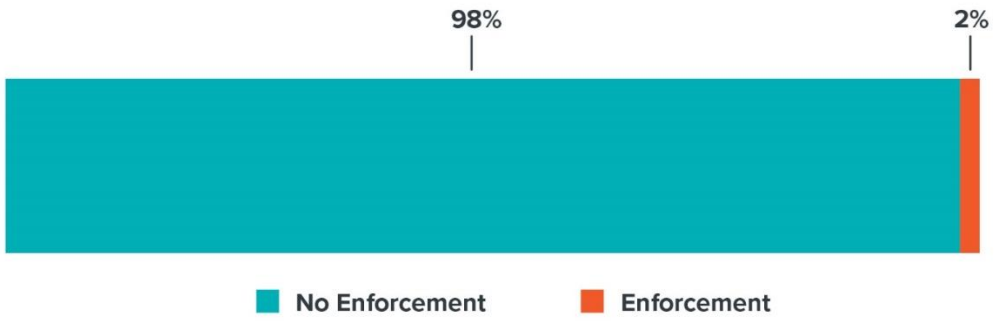

Figure 8 - Non compliances for wastewater treatment (2018 - 2019)

- Full resource consent compliance was achieved at only 27% of wastewater plants, while 25% of plants recorded significant non-compliance (as seen in Figure 9)

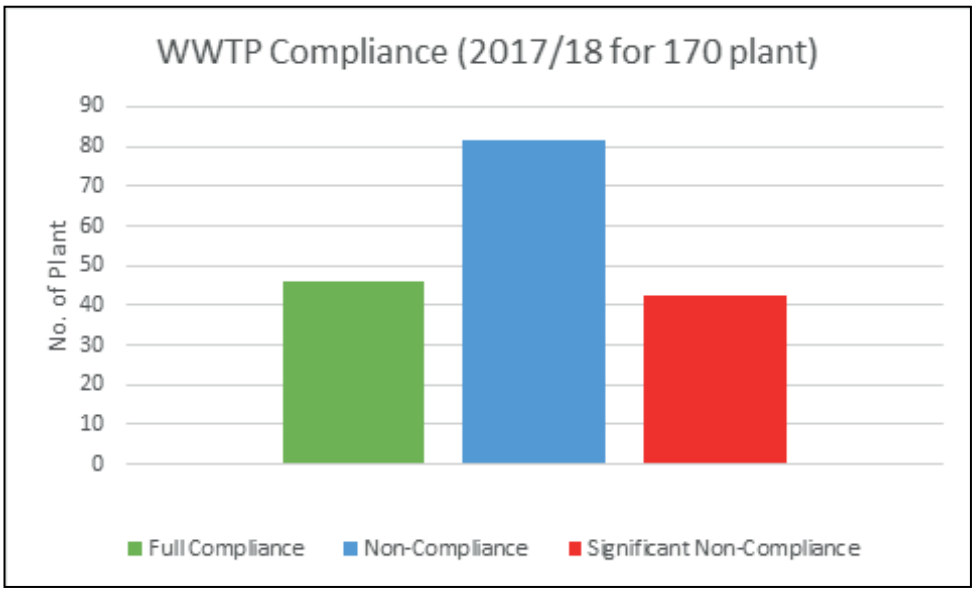

Figure 9 – WWTP Compliance (2017/18 data for 170 out of 321 plants).[57]

Based on the above it is reasonable to question whether New Zealand's current environmental framework for waters is fit for purpose.

Every catchment is different and optimal environmental stewardship of one catchment may be very different to that needed in another catchment. It is therefore logical to continue a catchment approach to environmental regulation. Regional Councils currently fulfil this role and have a direct relationship with local communities and their aspirations for their environment. However international experience suggests that other mechanisms may be just as (or more) effective at developing and enforcing regional standards.

[57] GHD Limited, *National Stocktake of Municipal Wastewater Treatment Plants: Final Report* (Department of Internal Affairs, December 2019), 25. https://www.dia.govt.nz/diawebsite.nsf/Files/Three-waters-documents/$file/Report-1-National-Stocktake-of-Municipal-WWTPs.pdf

Setting appropriate catchment standards is important, however this becomes hollow if there is a lack of consistency in the enforcement of rules and breached consent conditions.

More work is required in this area, however as an interim conclusion it is suggested that consideration be given to empowering an existing centralised agency to provide an overview of waters management across New Zealand and to bring consistency to the design of environmental standards. This may include the specification of national standards. In the case of unitary authorities, where there is a clear conflict of interest, the powers of a new agency may need to extend to determining catchment standards.

In addition, it is also suggested that a central agency should be given a national enforcement role. In the case of unitary authorities there is a clear and self- obvious need for this, but even where the functions of territorial and regional authorities are separate the lack of enforcement suggests a need for an independent and dispassionate actor.

4.3 Introduction of a Dedicated Water Quality Regulator

The need for a dedicated entity to regulate the quality of New Zealand's drinking water was incorporated into the terms of reference of the Government Inquiry into Havelock North Drinking Water and addressed in the Board's second report.[58]

The Board's investigations highlighted a number of deficiencies in the way drinking water was regulated. These included a lack of adequate resourcing, an inconsistent national approach, and a lack of coordination between parties. Many of these issues were rooted in the fragmented nature of the regulatory framework, which resulted in multiple government agencies such as the Ministry of Health, District Health Boards, Public Health Units and Drinking Water Assessors all holding regulatory responsibilities. In addition, local and regional Councils had (and still have) a range of regulatory powers which they hold alongside their role as network operators. The Board noted that for this multi-agency approach to be successful 'first class leadership' was essential.

The structure of drinking water regulations at the time meant that the Ministry of Health was in the best position to provide national leadership, however the Board concluded that for a range of reasons "[t]here has been a complete failure of leadership and stewardship within the Ministry…".[59] After hearing submissions both for and against the formation of a new, dedicated drinking water regulator the Board recommended that:

> *"**(9)** A dedicated drinking water regulator … should be established early and promptly."*[60]

and further recommended that:

> *"**(11)** Without defining or limiting the matters for which a regulator might be responsible, a regulator should have responsibility for licensing and qualification of supplies, the standards and practices of water suppliers, DWAs [Drinking Water Assessors], laboratories and samplers,*

[58] Government Inquiry into Havelock North Drinking Water. "Report of the Havelock North Drinking Water Inquiry: Stage 2." Department of Internal Affairs, December 2017. https://www.dia.govt.nz/diawebsite.nsf/Files/Report-Havelock-North-Water-Inquiry-Stage-2/$file/Report-Havelock-North-Water-Inquiry-Stage-2.pdf.
[59] Government Inquiry into Havelock North Drinking Water. "Report of the Havelock North Drinking Water Inquiry: Stage 2." Department of Internal Affairs, December 2017. https://www.dia.govt.nz/diawebsite.nsf/Files/Report-Havelock-North-Water-Inquiry-Stage-2/$file/Report-Havelock-North-Water-Inquiry-Stage-2.pdf, 80
[60] Ibid, 222

compliance and enforcement, and the approval and monitoring of WSPs [Water Safety Plans]."[61]

Taumata Arowai – the Water Services Act 2020 was introduced to Parliament in December 2019 and received Royal Assent on 6 August 2020. The Act established Taumata Arowai as a new Crown Agent, with objectives to:

(a) protect and promote drinking water safety and related public health outcomes; and
(b) effectively administer the drinking water regulatory system; and
(c) build and maintain capability among drinking water suppliers and across the wider industry; and
(d) give effect to Te Mana o te Wai, to the extent that Te Mana o te Wai applies to the functions and duties of Taumata Arowai; and
(e) provide oversight of, and advice on, the regulation, management, and environmental performance of wastewater and stormwater networks; and
(f) promote public understanding of the environmental performance of wastewater and stormwater networks.[62]

Additional legislation, titled the Water Services Bill, has been introduced to Parliament and provides a wide range of duties and responsibilities to Taumata Arowai, designed to allow them to effectively achieve their objectives.

4.4 Need for Consumer Protection Oversight

Consumer protection is routinely incorporated into the role of regulators. In a 2014 survey of water regulators, primarily focussed on economic regulation, the OECD found that 25 of the 32 regulators surveyed had a role in customer protection. In some jurisdictions, such as England & Wales and Scotland, a separate, stand-alone entity dedicated to consumer protection has been established.

In England and Wales, the 'Consumer Council for Water' was created by legislation in 2003 and is empowered to investigate complaints made by consumers. It is also required to have regard to the interests of individuals who are disabled or chronically sick; of pensionable age; have a low income and/or reside in rural areas.

The Scottish 'Customer Forum' for Water operates under a very different model. It was established and is funded by way of a cooperation agreement between Scottish Water, the Water Industry Commission for Scotland (WICS) and Consumer Focus Scotland. The principle role of the Customer Forum is to represent consumers in the six-yearly review of water and wastewater charges. This recognises the trade-off between the role of WICS in establishing the 'lowest reasonable overall cost' and what might be considered appropriate from a customer perspective. It allows qualitative values, such as a desire to advance environmental protection or social equity as examples, to be factored into price setting decisions. In order to achieve that goal, the Customer Forum works with Scottish Water to research, analyse and interpret their customer research programme. They also feed into Scottish Water's business plan. The Customer Forum was originally established in 2011 to play a formal role in the Strategic Review of Charges 2015 – 2020 and has now been re-established to focus on the next review period, 2021 – 2027.

As noted previously, the monopoly nature of the waters sector means that public accountability and consumer preference are weak, and therefore there is merit in enabling a forum in which the consumer's voice can be heard.

[61] Ibid
[62] Taumata Arowai–the Water Services Regulator Act, § 10 (2020), Section 10.

A scan of international examples identifies that the most common role for consumer protection agencies, where these exist as separate entities, is to receive and mediate consumer complaints. In some countries this includes a focus on protecting the interests of vulnerable consumers. Other roles may include advocating on water quality issues and environmental protection.

It might be assumed that an obvious role for a consumer protection agency would be to provide a shield against unjustified consumer charges. However there appears to be a sharp divergence on this matter. A number of agencies, such as in Denmark and Cyprus, are specifically excluded from considering price issues, which are reserved for the economic regulator, while others, such as France and Germany, have a specific role to consider the reasonableness of water tariffs.

In the New Zealand context, a consumer agency could also play a role in ensuring that iwi perspectives and aspirations, particularly for the mauri of water, can be acknowledged. This world view should also be part of discussions with the economic regulator. This would complement the requirement for the environmental regulator to protect Te Mana o te Wai; the presence of a Māori Advisory Committee within Taumata Arowai and the likely inclusion of individuals with an understanding of mātauranga on the Board of Directors of each waters utility.

Further work would be required to determine the potential role of a consumer protection agency in New Zealand, how indigenous rights and interests can best be safeguarded and whether it would be appropriate for it to be a stand-alone entity; incorporated into the role of an existing agency such as 'Utilities Disputes' (Milford Sound Infrastructure and Wellington Water have already committed to this service); or established as a time-bound organisation with a specific focus (as in the case of the Scottish Customer Forum). Timing will also be important; it will take time for a new structure to become embedded and for the economic regulator to become confident they are operating at optimal efficiency.

Notwithstanding the form and timing, international precedent clearly favours some form of consumer protection agency.

4.5 Form of the Regulatory Environment

There are a variety of forms of regulation. As an example, Local Government New Zealand has proposed that waters regulation could adopt a co-regulatory approach modelled on the Gas Industry Company (GIC) which operates under the Gas Act 1992.[63] The Gas Industry Company is owned by gas market participants, but designated by, and accountable to, the responsible Minister to be the mandated industry body to oversee gas market regulation. There are many other examples of self-regulation, or light-handed regulation, in New Zealand.

From an international perspective, it appears to be generally agreed that water regulators should have, and be seen to have, independence from the functions of the network operator and its shareholders. It is also considered desirable for the regulator to operate at arms-length from political direction, particularly when it comes to price setting. This approach is usefully reflected in a report commissioned by Infrastructure Australia which ultimately influenced their recommendations on the optimal settings for regulatory improvements in the Australian urban water sector. The report defines 'Minimum Standards' and 'Best Practice Standards' for regulation. In this model *"the minimum standard for review and appeals mechanisms as part of the governance arrangements is for judicial review of decision-making.*

[63] Local Government New Zealand. "Improving New Zealand's Water, Wastewater and Stormwater Sector: A Position Paper Prepared by LGNZ." Local Government New Zealand, September 2015. https://www.lgnz.co.nz/assets/2aa82f85f1/29617-three-Waters-Position-Paper.pdf.

The best practice standard is for independent merits review in addition to judicial review."[64] This approach was accepted by Infrastructure Australia, who noted that *"reforms to make the regulatory frameworks more independent, transparent and accountable have helped to introduce greater competition and efficiency among water service providers"*[65].

This ideal situation is very different to existing settings. In New Zealand, territorial authorities are not only the suppliers of drinking water and wastewater services, they also fulfil the role of economic regulator and, in the case of unitary authorities, are the environmental regulator.

The separation of regulatory functions from political oversight was a key pillar of the 2004 Australian National Water Initiative.

> *"The structure of the sector, with a high degree of government ownership and oversight, means that many states and territories lack the independence or incentive to evaluate themselves honestly and identify important ongoing reforms."*[66]

If it is accepted that an economic, and other, regulator(s) is desirable the question of the form of the regulatory environment must also arise, including whether it is best to create a new, stand-alone regulator; incorporate the functions with another body, or combine functions into a single, waters-focussed entity, potentially taking advantage of the soon-to-be-established health regulator, Taumata Arowai.

Global scans indicate that economic regulators tend to be responsible for a range of other services, most commonly energy as shown in Figure 10. In New Zealand this would be comparable to the role of economic regulator being taken by the Commerce Commission. Arguments in favour of combining economic regulation revolve around the creation of synergies and cost savings in administrative services. It has also been suggested that joining waters regulation with an existing organisation can provide early credibility.

As shown in Figure 10, it is significant that few countries combine economic regulation with health regulation (nine cases), or environmental regulation (four cases).

[64] Frontier Economics and ARUP. "Urban Water Regulation Reform: A Report Prepared for Infrastructure Australia." Infrastructure Australia, December 2017. https://www.infrastructureaustralia.gov.au/sites/default/files/2019-06/frontier_economics_and_arup_urban_water_regulation_reform.pdf, 32

[65] Infrastructure Australia, *Reforming Urban Water: A National Pathway for Change* (Infrastructure Australia, December 2017), 60.

[66] Ibid, 43.

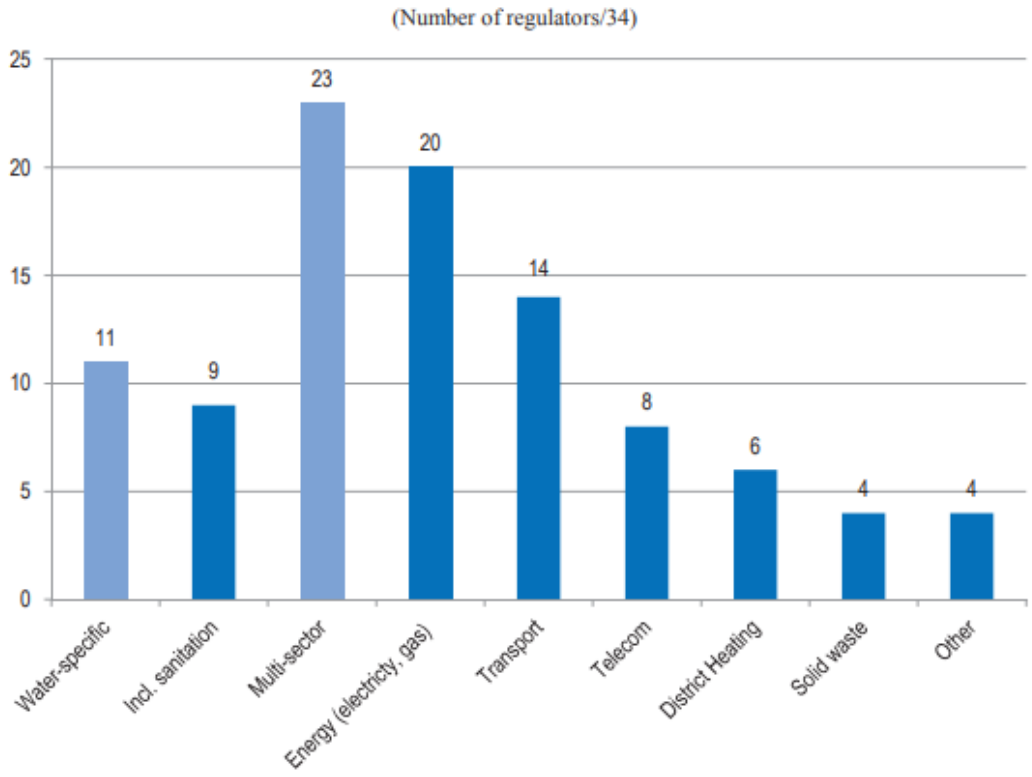

Figure 10 – Competencies of economic regulators[67]

The reasons given for keeping economic regulation separate from other regulatory disciplines (health, environment and consumer protection) are outlined in the following lists of advantages and disadvantages:

4.5.1 Advantages of Single Discipline Regulators

- Transparency: There is an inherent, healthy tension between regulators. In particular, regulatory bodies charged with safeguarding human health and the environment are motivated to promote investment in solutions and technologies which maximise these outcomes, unconstrained (beyond general principles of fairness) by the need to analyse cost impacts. On the other hand, economic regulators and (to a lesser extent) consumer advocacy agencies are motivated to reduce costs wherever that is practically possible. Tensions also exist between health and environmental agencies as they 'compete' for limited spending by the utility.

- Visibility of Trade-offs: In the situation described above the compromises necessary to achieve a balance between increased spending to address health and/or environmental concerns, and reducing consumer prices to the lowest viable point will be made clearly and transparently. This would be less likely to happen in an organisation which had responsibility for each topic because in these organisations the decisions would likely devolve to a group of executives and/or their Board.

- Clarity of Roles: Specifying standards for drinking water and the health of the environment is technically complex, particularly where proactive assessment of highly visible and enormously costly alternatives is necessary. Determining optimal investment profiles, levels of return on

[67] OECD, "Results of the OECD Survey on the Governance of Water Regulators." in *The Governance of Water Regulators*, OECD Studies on Water (Paris: OECD Publishing, 2015), 35.

capital and efficiency assessments is equally complex. Single-discipline regulators can focus their attention on their speciality, rather than requiring a range of skills across multiple, differing disciplines.

4.5.2 Disadvantages of Single Discipline Regulators

- Irreconcilable Conflicts: In situations where there is no requirement for stand-alone regulators to come together to resolve competing tensions, the supplier could be left in the untenable position of having to resolve conflicting imperatives. As an example, a utility organisation may be required to achieve specified public health or environmental requirements, but not be provided with sufficient financial flexibility to allow those outcomes to be achieved

- Disruption: Regulatory requirements will inevitably generate delays and disruptions to the regulated organisation. Where there is a lack of coordination between agencies these inefficiencies may be compounded

- Efficiency: It may be argued that NZ is too small to justify multiple, single-focus regulators, each with their own administrative costs and requirements. Under this argument a single waters regulator would be preferred.[68] It is noted however that functions could be allocated to existing regulatory entities.

Based on the advantages and disadvantages listed above, it is considered that optimal outcomes will emerge from an environment where the intrinsic tensions between regulatory agencies, utility entities and owners can be robustly and transparently debated and where trade-offs are understood and agreed by each of the parties. As noted above, if a single regulator were responsible for each regulatory function (health, environment, economic and consumer protection) it is likely that transparency and the ability for robust debate would be lost.

In essence the danger would be that a Board, or an executive, would be able to dictate that: "This year we will give primacy to environmental concerns" (as an example) rather than having to justify that position against similar arguments in relation to public health, or for holding or reducing costs.

This suggests that the optimal regulatory environment is one that incorporates, perhaps legislatively, a forum enabling cross-discipline coordination and integration of decision-making between regulatory agencies. The forum would allow waters suppliers and their shareholding Councils to participate in debates and therefore gain a first-hand understanding of the factors influencing their work programme and tariff structure.

It was noted previously that economic regulation drives efficiency gains in natural monopolies irrespective of whether they are public or privately owned or operated. However, economic regulation, is very time-consuming to apply over a multitude of different suppliers. This may explain why, when the functions of international regulators are analysed we can see that in countries with a consolidated market for water and wastewater services, such as the UK, regulators operate in a 'traditional' regulatory / enforcement mode, which has an emphasis on determining standards and enforcing them. However, in countries where the market is fragmented, such as New Zealand, regulators trend towards a greater focus on capacity building and supporting organisational development. This is a more expensive approach and can be less effective. For example, a regulator would encounter an immediate conflict if it found itself having to prosecute an organisation for which it was actively involved in capacity building.

[68] OECD, "Results of the OECD Survey on the Governance of Water Regulators." in *The Governance of Water Regulators*, OECD Studies on Water (Paris: OECD Publishing, 2015), 36.

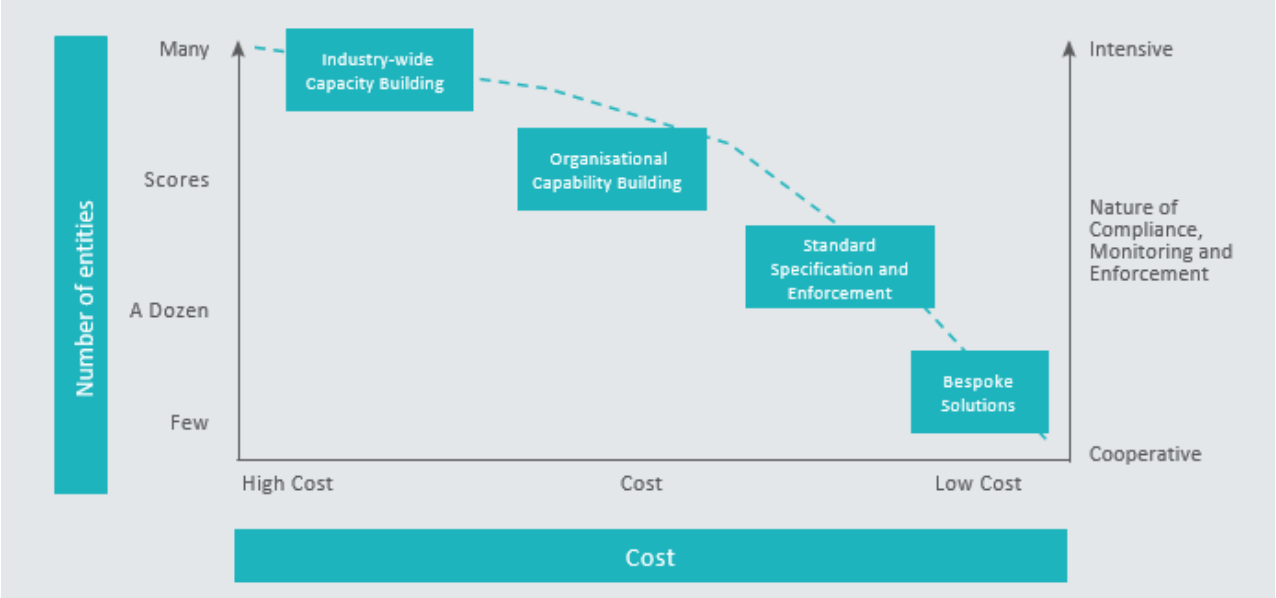

Figure 11 – The Changing Nature of CME[69] as Numbers of Regulated Entities Reduce

4.6 Need for Maturity in Regulation

The regulation of water is a relatively new phenomenon, with most of the world's water regulators having only been established in the past 30 years, as shown in Figure 12 below. Notwithstanding this, there are a number of examples of 'mature' regulators, particularly in the UK. In these agencies it is notable that their focus has evolved away from a 'cost-plus' approach to price-setting and towards a more consumer-centric emphasis. In these settings the economic regulator works closely with consumers and utility organisations to understand and validate the value proposition represented in tariff increase requests. Where it can be shown that consumers are prepared to pay higher rates in order to achieve outcomes they subscribe to, for example higher environmental standards, mature regulators have incorporated these factors into their considerations. This reflection that 'the lowest possible cost is not necessarily the best cost' is manifest in the Scottish 'Customer Forum', noted above.

[69] Compliance, Monitoring and Enforcement

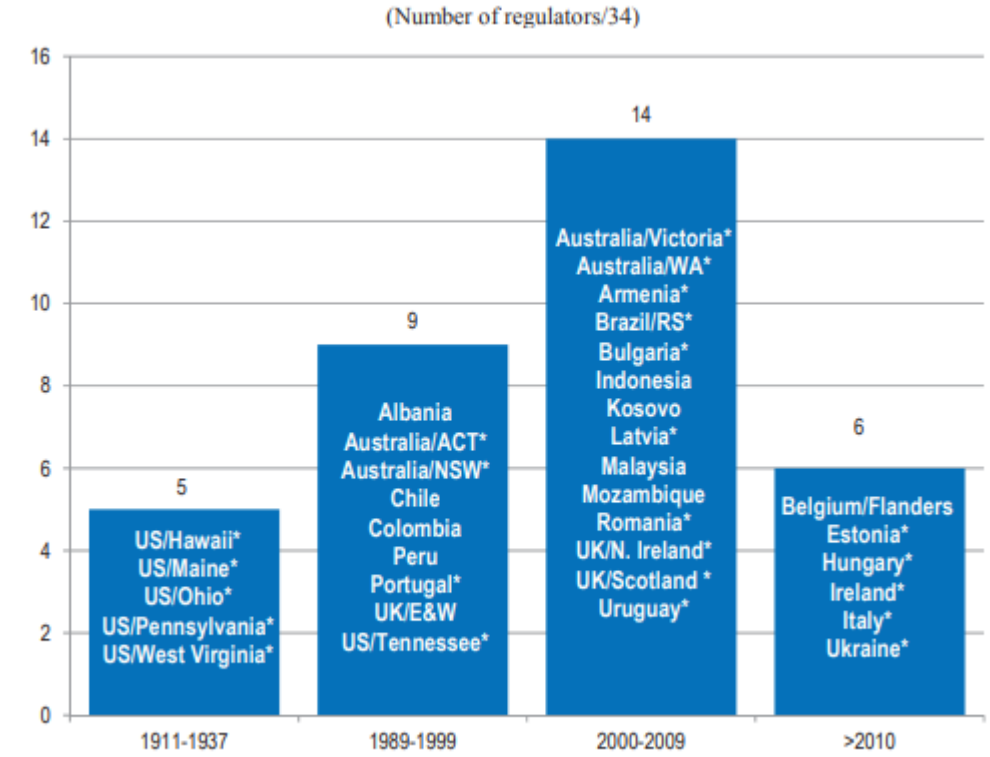

Figure 12 – Year of operational establishment of water regulators[70]

While it would be appealing for a New Zealand regulator to move directly to this consumer-led methodology, it is questionable whether it would be wise in the short term. As noted above, if the New Zealand market is fragmented it will be difficult, and expensive, for regulators to take a bespoke approach to each supplier. Similarly, if water reforms lead to consolidated suppliers it will take time for the new utilities to establish. In either case, regulators will need to be confident that each entity, new or existing, has developed and priced best practice operations, an appropriate capital works programme, comprehensive asset management systems and provisions to ensure resilience and security of supply. In the short term therefore, it is likely that a more prescriptive, but clear and unambiguous framework would be preferable. For the economic regulator this will probably mean developing an austere, quantitative approach which forces innovation and efficiency, in the same manner that the Scottish (WICS) and United Kingdom (OFWAT) economic regulators did when they were originally established.

4.7 Regulatory Collaboration

The formation of 'RAPID' – the Regulators Alliance for Progressing Infrastructure Development has been a relatively recent, and noteworthy, development in the England and Wales regulatory environment. This innovation is designed to address potential regulatory tensions and trade-offs between organisations and to help accelerate the development of new water infrastructure and the design of future regulatory frameworks. RAPID is jointly populated by staff from the health, environmental and economic regulators and their sole overarching purpose is to work together to progress the development of strategic water resources. By working together, the regulators enable utility companies

[70] OECD, "Results of the OECD Survey on the Governance of Water Regulators." in *The Governance of Water Regulators*, OECD Studies on Water (Paris: OECD Publishing, 2015), 21.

to also work together to solve some very large and complex schemes, which often require inputs from multiple disciplines. Water allocation modelling is a good example of a complex problem RAPID is intended to consider.

New Zealand is in the enviable position of having the opportunity to draw from these learnings, avoid the mistakes of others, and enable mechanisms such as RAPID at inception.

5. Conclusion

Infrastructure which supplies healthy drinking water to New Zealanders and removes (and treats) polluted wastewater is essential.

Concerns about the performance of the waters sector, particularly drinking water and wastewater, are not new. Calls for reform date back to at least the late 1980's. In 2011 the Government's National Infrastructure Plan gave waters the lowest ranking of any of New Zealand's infrastructure sectors. Tragically these concerns manifested in 2016 when contaminated ground water entered Havelock North's drinking water supply. Four deaths and thousands of illnesses have been attributed to this avoidable incident.

Waters sector reform has been considered by several independent bodies, including the Office of the Controller and Auditor General, the Government Inquiry into Havelock North Drinking Water and, more recently, the Productivity Commission. Each of these bodies has concluded that reform, including consolidation of supplies, is merited and necessary. The rationale for these conclusions is not limited to health concerns – essential as they are. A wide range of potential benefits have been identified, including social, environmental, cultural and economic advantages.

It is unlikely that councils will voluntarily pursue reform without some form of external stimulus or compulsion. This is due to the institutional settings within which local government operates, including that waters are a natural monopoly. These shield Councils from market pressures that would ordinarily provoke reform. The consequence is that while there is nothing stopping Councils from voluntarily reforming, full sector reform is unlikely to be achieved on a voluntary basis.

There is compelling evidence that performance in the waters sector will be enhanced through the introduction of strong regulation, as it is for many other natural monopolies. Based on global scans of waters regulatory regimes we can see that most regulatory environments are made up of three separate but interlinked, components. These are health, environmental and economic regulation. A fourth independent regulatory actor is now also becoming common in mature systems, focused on consumer protection. New Zealand's waters environment currently lacks a comprehensive regulatory framework in any of these areas, although the Resource Management Act provides a flawed foundation for environmental regulation, and legislation to create Taumata Arowai has recently been assented.

3. Appendix A – MCA Analysis

THEME	CRITERIA	WEIGHTING	STATUS QUO – RURAL & PROVINCIAL SCORE	COMMENT:
Consumer / Customer Focus	• An Effective Regulatory Regime • Drinking Water Compliance • Health Outcomes • Centres of Excellence • Volumetric Charging • Rural-Urban Drift	15%	-2	• It is not cost-effective to provide economic regulatory control across multiple organisations • The Australian InfraCom has noted that rural communities consistently suffer from poorer cost and quality outcomes • The status quo has led to demonstrably poor drinking water & health outcomes
Environmental Sustainability	• Environmental Compliance • Responsiveness to Regulatory Requirements • Volumetric Charging • Impact on Source Water (Abstraction)	15%	-2	• New regulatory regime will introduce a range of compliance costs, including administrative costs. These costs are likely to be proportionally higher for smaller Councils
Financial Impact	• Ability to Achieve Cost Efficiencies • Financial Capacity • Debt Optimisation • Risk Aversion • Cross Subsidisation • Procurement	15%	-2	• Base (lowest) Case scenario in the Waikato Study calculated a 9.7% and 9.3% reduction in waters costs for Waikato and Waipa District Council water users • Councils have created shared service opportunities to leverage procurement, where possible • Councils tend to have a greater appetite for risk, which drives lower short-term costs
Tāngata Whenua Perspectives	• Te Ao Māori • Te Tiriti O Waitangi • Holistic Approach • Valuing Water • Te Mana o te Wai • Whakapapa • Mana Motuhake	15%	-1	• The performance of local Councils is not considered a sustainable model, by some mana whenua, for sustaining Te Mauri O Te Wai • Legislation does not provide for mana whenua to be represented as decision makers at Council meetings, which limits influence on waters issues • Smaller Councils are more intimately attuned to the whakapapa of local freshwater bodies • Community-based Councils are more likely to accommodate mana motuhake than multi-rohe corporates • Tāngata whenua capacity and capability is stretched when dealing with multiple Councils within one rohe.
Asset Management Planning	• Rationalisation of Infrastructure • Unlocking Strategic Opportunities by taking a Long Term View • Enabling a Targeted Focus on Water • Providing for Growth • Developing Robust Asset Management Plans	10%	-3	• Waikato's regional airport, located in the Waipa District, is supplied potable water via a trickle fed rural supply line originating near Cambridge; this is despite the airport's proximity to Hamilton City's reticulated network and one of the city's primary reservoirs. • In small Councils civil engineers tend to be generalists • Poor asset management planning has been identified as a key concern by several organisations, including the Auditor-General • None of criteria are able to be achieved
Resilience	• Financial Capacity • Network • Resourcing • Organisational • Risk Management	10%	-2	• The ability to network systems enables greater resilience, not just for small, rural Councils but also for larger metropolitans. • Rural / remote Councils struggle to attract and retain skilled staff, both civil engineers and plant operators • Small networks can be quicker / easier to patch in the case of an emergency

Governance	• Governance Expertise • Financial Accountability • Consumer Accountability • Responsiveness to Regulatory Requirements • Privatisation • Political Independence	7.5%	-3	• It is very difficult for consumers to identify the true cost of water and wastewater services, as they are incorporated into Council rate bills • It is difficult for consumers to hold Councils to account for failures in water and wastewater services because they are one of many services Councils provide • With no effective regulation there is dissymmetry of information • Elected members vary rarely have a technical or experiential background in waters • Decisions may be criticised for being politically-motivated • None of the criteria (with the possible exception of privatisation) can be achieved under this theme
Staff Development & Welfare	• Technical Capability • Staff Development • Staff Rationalisation • Rural Urban Drift	7.5%	-2	• Access to qualified staff is an ongoing concern for small and remote Councils, including for engineering and plant operators
Councils Operations & Viability	• Re-focus Councils on Community Wellbeing • Council Revenue (Dividends) • Urban Design and Community Wellbeing • Coordination with other Infrastructure Development • Stranded Overheads • Corporate Cross-subsidisation • Viability of Councils	5%	0	• NZ Councils are unusually focussed on infrastructure, whereas globally the focus tends to be more on community wellbeing, which Councils are well placed to advance • Dividend payments are a welcome diversification of revenue for Tasmanian Councils • Stranded overheads can create cost inefficiencies for small Councils • It is possible that removal of waters services could impact the viability of Councils, however this hasn't occurred in other jurisdictions and work is already underway to re-consider the role of Councils • Dis-economies of scope, particularly for development planning, can occur

STATUS QUO – METRO COUNCILS		CONSOLIDATED WATER ENTITIES	
SCORE	**COMMENT:**	**SCORE**	**COMMENT:**
1	• Ministry of Health drinking water gradings for large councils are usually high • A regulatory regime could be created for metros, but that would leave a significant number of people unregulated • There have been instances where cities (e.g. Dunedin) have had to issue boil water notices. Auckland has issued water restrictions	2	• There is a view that active economic regulation of any more than a dozen companies would create cost inefficiencies • International aggregations have resulted in higher customer satisfaction and less health compromising incidences • The centres of multi-region utility companies are likely to be in metropolitan centres, although there will inevitably be regional offices / depots.
1	• Arguments for and against volumetric charging exist independently of the organisational form of the waters entity • Failures in wastewater systems have led to some metros failing to achieve resource consent compliance. Hamilton City has been prosecuted for discharges into the Waikato River; Wellington sewerage discharges into the harbour	3	• All Councils seek abstraction consents for more than their current demand, to safeguard against the potential of future development. Acentralised utility could rationalise water takes across its networks • There is a greater ability to find solutions to regulatory requirements • Each of the criteria listed under this theme can be achieved
-1	• Base (lowest) Case scenario in the Waikato Study calculated a 6.6% reduction in waters costs for Hamilton City Council consumers • Infrastructural debt is treated inter-generationally • Most large Councils have a procurement expert to leverage purchases	2	• The Waikato Waters Study identified savings of $468.4M (base case) over 28 years. This equates to $16.7M per annum, or $1.4M per month (on average). • Water utility companies tend to have much higher gearing compared to Councils • Greater risk aversion (and a backlog of maintenance) means that actual cost reductions for consumers are unlikely

-1	• Large Councils have a greater capacity to ensure that Te Ao Māori perspectives and Te Mana o te Wai are appropriately addressed • Legislation does not provide for Mana Whenua to be represented as decision-makers at Council meetings • Local Councils are more likely to reflect local iwi preferences and Mana Motuhake than large multi-rohe corporate entities • No metropolitan Council has the geographic spread needed to take a whole-of-catchment approach	2	• An early partnership with Māori will allow entities to be developed which respond directly to the Criteria in a way that existing Council structures, based on European models of local government, may struggle to achieve • Local accountability of the new entities will be required, which is likely to involve iwi and Council representatives joint oversight Committee • A new regulatory framework will be required, which will allow iwi Māori perspectives to be embedded in economic, environmental and health considerations
-1	• High growth Councils are struggling to meet the infrastructure demands associated with increasing populations • Dedicated water engineers tend to be, at best, third-tier • Pressure on rates has led to inadequate asset inspections and consequent failures	2	• The status quo results in infrastructure and plant being duplicated across authorities. In comparison, aggregated suppliers would take a holistic overview of a network and rationalise duplicated infrastructure. • The total organisation is focussed solely on waters • Global water utility companies tend to have sophisticated asset management programmes and models • There are potential dis-economies of scope, particularly in relation to managing growth
0	• Hamilton City is totally reliant for water on a single treatment plant abstracting from the Waikato River, it also has a single WWTP	3	• A multi-regional waters utility has the ability to interconnect networks in order to introduce redundancies • As noted above, multi-region CCOs have much greater financial capacity, they are also better able to attract specialist staff • Each of the criteria can be achieved
-2	• It is very difficult for consumers to identify the true cost of water and wastewater services, as they are incorporated into Council rate bills • It is difficult for consumers to hold Councils to account for failures in water and wastewater services because they are one of many services Councils provide • Elected members vary rarely have a technical or experiential background in waters • Decisions may be criticised for being politically-motivated	3	• Water utility organisations will have a politically independent, dedicated Board of Governance selected for their skills and experience. The single focus of the organisation will make their actions more transparent • Effective regulation will ensure financial transparency and should also make provision for consumer accountability • Large entities are better able to cope with the administrative demands of regulators and have the internal capacity to identify solutions to requirements • Each of the criteria under this theme (with the possible exception of privatisation) are able to be achieved
2	• Metropolitan Councils can attract and retain qualified specialist staff	3	• Watercare and Wellington Water have demonstrated the lift in capability that is possible in larger organisations, including the employment of highly specialised staff, such as microbiologists, laboratory technicians…
0	• NZ Councils are unusually focussed on infrastructure, whereas globally the focus tends to be more on community wellbeing, which Councils are well placed to advance • Dividend payments are a welcome diversification of revenue for Tasmanian Councils • Stranded overheads can create cost inefficiencies for small Councils • It is possible that removal of waters services could impact the viability of Councils, however this hasn't occurred in other jurisdictions and work is already underway to re-consider the role of Councils • Dis-economies of scope, particularly for development planning, can occur	0	• NZ Councils are unusually focussed on infrastructure, whereas globally the focus tends to be more on community wellbeing, which Councils are well placed to advance • Dividend payments are a welcome diversification of revenue for Tasmanian Councils • Stranded overheads can create cost inefficiencies for small Councils • It is possible that removal of waters services could impact the viability of Councils, however this hasn't occurred in other jurisdictions and work is already underway to re-consider the role of Councils • Dis-economies of scope, particularly for development planning, can occur

4. Appendix B – Gearing in New Zealand

Gearing in New Zealand Councils

Rotorua District Council	15%	Buller District Council	7%	Canterbury Regional Council	3%
Christchurch City Council	15%	Masterton District Council	7%	Thames-Coromandel District Council	3%
Auckland Council Group	15%	Queenstown Lakes District Council	6%	Kaikoura District Council	3%
Horowhenua District Council	14%	Ruapehu District Council	6%	Far North District Council	3%
Hutt City Council	12%	Palmerston North City Council	6%	Opotiki District Council	2%
Kāpiti Coast District Council	12%	Nelson City Council	6%	Otorohanga District Council	2%
South Taranaki District Council	12%	Dunedin City Council	6%	Gisborne District Council	2%
Waitomo District Council	11%	Hurunui District Council	5%	Tararua District Council	2%
Taupo District Council	11%	Marlborough District Council	5%	Wairoa District Council	2%
West Coast Regional Council	10%	Upper Hutt City Council	5%	Selwyn District Council	1%
Invercargill City Council	9%	Ashburton District Council	5%	Waipa District Council	1%
Tasman District Council	9%	New Plymouth District Council	5%	Waimate District Council	1%
Tauranga City Council	9%	Carterton District Council	4%	Chatham Islands Council	0%
Manawatu District Council	9%	Waikato District Council	4%	Central Hawkes Bay District Council	0%
Whangārei District Council	9%	Manawatū-Wanganui Regional Council	4%	Kawerau District Council	0%
Whakatāne District Council	9%	Matamata-Piako District Council	4%	Rangitikei District Council	0%
Western Bay of Plenty District Council	9%	Stratford District Council	4%	Central Otago District Council	0%
Wellington City Council	8%	Gore District Council	4%	Clutha District Council	0%
Waimakariri District Council	7%	Westland District Council	4%	Mackenzie District Council	0%
Grey District Council	7%	South Wairarapa District Council	4%	Napier City Council	0%
Kaipara District Council	7%	Hastings District Council	4%	Southland District Council	0%
Porirua City Council	7%	Hawkes Bay Regional Council	4%	Waikato Regional Council	0%
Hauraki District Council	7%	South Waikato District Council	3%	Waitaki District Council	0%

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