



Water Tight 3.0
The top issues
in the New Zealand
water sector

Global water sector issues in the NZ context

The recent Deloitte report *Water Tight 3.0* identified eight top issues in the global water sector:

- Growing demand for a limited resource
- Climate change: adapting to uncertainty in water resources management
- Managing demand: the era of low-cost water is over
- Resource efficiency: technology in the driver's seat
- Integrated thinking: the water, energy, and food nexus
- New sources of financing and funding: engaging private sector partnership
- COVID-19: an urgent call for disaster risk and management for resiliency
- Resilience and sustainability through water stewardship: the way forward

New Zealand has its own water challenges, and these have become even more important to address as the government moves forward with three waters reform. Water is essential to all New Zealanders and a key objective of three waters reform is to ensure the safe delivery and quality of drinking water services and the environmental performance of wastewater and stormwater systems. But these objectives will mean nothing without a delivery model that gives effect to the principles of Te Mana o te Wai – recognising the vital importance of water.

Te Mana o te Wai is not a new concept within the water sector but it has a higher profile through the establishment of Taumata Arowai and how it must give effect to and embed Te Mana o te Wai in its decision making and practices. And the reform's proposed governance of new water entities is intended to enable local iwi to develop and inform policy, objectives and planning to better deliver kaitiakitanga, mana whakahaere, governance and stewardship.

The interconnected relationship between all living and non-living things (te ao Māori), the connection between the physical and spiritual, the mauri of the water and our understanding of freshwater as a taonga will become cornerstones of water management into the future.

In addition to Te Mana o te Wai and building on *Water Tight 3.0*, Deloitte New Zealand's three waters team have identified three further key water sector challenges facing NZ:

- The infrastructure deficit – a challenge and an opportunity: The current three waters arrangements created an infrastructure deficit that will take significant investment to fix. This challenge also creates an opportunity to improve the performance of our current water system.
- Technology has a major role to play: This is not only a reform of delivery arrangements, it is just as important to lift performance by integrating technology into the infrastructure used to deliver three waters.
- Capacity and capability constraints: Our future water sector will need a larger and increasingly able workforce. COVID-affected borders and growing skill requirements will create medium and longer-term capacity and capability challenges.

The infrastructure deficit – a challenge and an opportunity

Current water arrangements and water asset ownership across the country vary by region, with local government using different delivery approaches. This fragmented approach has resulted in an uneven infrastructure deficit of massive scale, seen inconsistent water delivery for communities across New Zealand, and makes it difficult for a central framework to be put in place with the right controls and risk management.

The poor state of New Zealand's three waters infrastructure is well understood and is a major driver of the government's reform agenda.

Significant investment is required to both reduce the infrastructure deficit and meet new water standards:

- Analysis by the Department of Internal Affairs suggests there may be a need for \$150 billion of investment in three waters infrastructure over the next 30 years to ensure that the system delivers safe drinking water, manages waste and stormwater in a manner that protects the environment, and can deal with challenges presented by climate change.
- New standards and new regulations mean that current infrastructure – even when properly replenished – will not on average meet the performance requirements needed in the future.

These challenges also create opportunities to build a more effective water arrangement that enhances system performance and becomes economically viable when implemented at scale. The opportunities may well be made possible through the establishment of a limited number of specialist water entities, as proposed in the Three Water reforms.





Technology has a major role to play

The acceleration in three waters network investment will be focussed on capital plans that have already been signalled through councils' long term planning processes. If the reforms go ahead, and as the new water entities become established and develop integrated planning and procurement processes, significant opportunities will present to build better for the future.

This is a great opportunity to better integrate technology into the infrastructure used to deliver three waters services. Connected sensor and smart metering technology are just two examples that could be designed into the upgraded infrastructure to better manage services and asset performance.

Sensor technology is using a device or machine to detect events or changes in the environment, using that information for analysis and to inform decision making. In three waters, connected sensors can be used to improve water utilisation and provide early warning of potential infrastructure failures.

Smart metering technology enables information on water consumption to be accessed remotely, automatically, and frequently. This provides instant access to the information for both customers and suppliers.

For three waters, smart metering technology can assist with monitoring the usage of water and the development of equitable charging regimes – resulting in material efficiency gains, less stress on existing infrastructure and pushing back emerging capacity constraints and capital investment.

Technologies like these integrated into new and existing infrastructure will provide the information needed to improve water usage, distribution, and maintenance, helping to optimise water system investment and performance.

Capacity & capability constraints

It will be a significant challenge in the near to medium term to secure a workforce with the size and skills to support increased capital investment in three waters. Analysis undertaken by DIA, Water New Zealand, Deloitte, and other industry bodies all indicate that thousands of new roles will need to be filled if the investment programme is to be delivered at the scale and to the timeframe envisaged through the three waters reform.

To start with there is likely to be a big focus on a renewals programme to fix the most pressing issues that compromise network performance, and to maintain levels of investment during the transition to new water entities.

This will require both specialist technical capability and a workforce that can undertake the labour-intensive physical work. This is likely to be in competition with other sectors for the same workers, as we deal with ongoing COVID border restrictions and the risk of losing capacity and capability to Australia and other countries.

Longer term the deployment of better technologies to enhance water infrastructure performance will need an increasingly specialised workforce. Now is the time to start growing capability and capacity well ahead of the time it will be needed to deliver a better future for three waters.

Our team

The Deloitte team brings extensive experience with the implementation of government reforms across multiple sectors.

We have been involved with all aspects of the establishment process including the design of transitional arrangements, valuation and capital structure advice, organisation design, systems integration, revenue and cost modelling and debt advisory services.

The Deloitte team assembled to support Councils through the Three Waters reform process hold a combination of the technical skills required to deal with the needs presented by that process combined with the experience learned from earlier processes. They have a deep understanding of the Three Waters Programme including the strengths and challenges of the different delivery models that apply across New Zealand and in overseas jurisdictions.



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