

i WHAT THIS OVERVIEW SHOWS

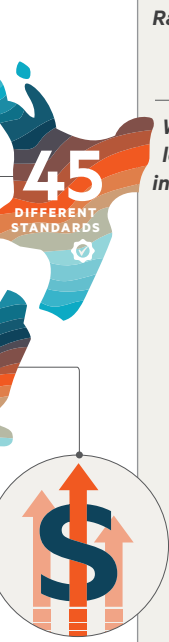
This overview shows the problems with the existing local engineering codes that councils use, and the expected benefits of moving to National Engineering Design Standards (NEDS).

A WHY IS CHANGE NEEDED?**Problem definition: what is the core issue?**

New Zealand currently has up to 45 different engineering standards for water infrastructure. Each council has its own rules and requirements vary across the country.

This creates higher costs, delays, inconsistent approval processes, and makes it harder for both councils, developers, and other water sector professionals to build or upgrade water infrastructure.

The existing system also impacts on the sustainability, resilience, and performance of water infrastructure - this drives up the cost of water charges and affects public health and environmental outcomes.

**What are the issues with the current system?****COST & TIME**

- Infrastructure costs more to build and maintain than it should.
- Developers/contractors face different requirements in different regions - increasing time and costs in the design and approval of water infrastructure.

Councils and water service providers must maintain separate local codes or risk them becoming outdated.

The current arrangements incentivise reliance on engineers and consultants - especially for small councils.

Many councils are moving to a joint service arrangements under Local Water Done Well. Fragmented local codes inhibits these arrangements.

HOW THE SYSTEM OPERATES**DAY-TO-DAY DELIVERY**

- Infrastructure must be designed and built to local rules, limiting standardisation and scale.
- The current system results in bespoke infrastructure, which impacts on its resilience and sustainability.

B WHAT ARE WE TRYING TO ACHIEVE?**There are five objectives for the NEDS regime:****Objective:****Rationale:****What this looks like in practice:****1****PROVIDE A HIGH DEGREE OF NATIONAL CONSISTENCY AND TRANSPARENCY****Rationale:****What this looks like in practice:**

- ✓ Water services infrastructure is designed and constructed to broadly consistent standards nationally.
- ✓ Developers and suppliers have greater certainty about requirements, regardless of location.
- ✓ Water service providers can work together more easily.
- ✓ There is less need to redesign assets for different regions.

2**INCREASE NETWORK RESILIENCE****Rationale:****What this looks like in practice:**

- ✓ Sustainability and resilience will improve - it will perform better and more predictably.
- ✓ Standards will continue to allow infrastructure to be tailored to local conditions.
- ✓ Infrastructure will be designed to cope with peak demands and extreme conditions, such as floods, droughts, and faults.

3**ACHIEVE EFFICIENCY IMPROVEMENTS AND WHOLE-OF-LIFE COST SAVINGS****Rationale:****What this looks like in practice:**

- ✓ Building and renewing infrastructure will be faster, easier, and more cost effective for developers/contractors and councils.
- ✓ Designs and components will be standardised with emphasis on national and international compatibility.
- ✓ Redesign, duplication, and variation between regions are reduced.
- ✓ There is a stronger focus on whole-of-life costs, not just upfront construction costs.

4**INCREASE TRUST AND CONFIDENCE IN WATER SERVICES INFRASTRUCTURE****Rationale:****What this looks like in practice:**

- ✓ Infrastructure will be consistently built and maintained to an appropriate national standard.
- ✓ Requirements will be applied more consistently across the system.
- ✓ Greater assurance for boards and council owners or operators who can make better investment decisions.
- ✓ Confidence will be strengthened among communities, regulators, and the water services industry.

5**STRENGTHEN PUBLIC HEALTH, SAFETY, AND ENVIRONMENTAL OUTCOMES****Rationale:****What this looks like in practice:**

- ✓ Infrastructure supports safe drinking water, effective wastewater treatment, and appropriate stormwater management.
- ✓ Design and operation reduce risks such as contamination, overflows, and pollution.
- ✓ There will be stronger alignment with standards across all parts of the system.

How key groups may be impacted:**Water services providers**

- Improvements in quality, consistency and maintainability of assets.
- Greater opportunities for collaboration, workforce mobility, procurement efficiencies and innovation.
- Flexibility for alternative solutions, supporting innovation.
- Reduced need to develop and maintain bespoke engineering standards.
- Enables better governance and investment decisions.

Developers, infrastructure providers, and contractors

- Greater certainty and predictability in infrastructure design and delivery.
- Ability to reduce time and costs by realising economies of scale, producing for a national and international market.
- Greater scope for innovation and adoption of efficient delivery practices.

Water sector professionals

- Streamlined processes and reusable design specifications.
- Reduced need for tailored local designs.
- Greater skills transferability for work across regions.

Providers of infrastructure construction materials

- Increased market certainty through consistent requirements.
- Ability to reduce time and costs by realising economies of scale, producing for a national and international market.

Communities and users of water services (including hapū, iwi, and mana whenua)

- Improved long-term reliability, resilience, and safety of infrastructure.
- Benefits from nationally consistent service quality.
- Potential long-term savings from streamlined administration and design.
- Improved public health and environmental outcomes.

C WHAT ARE THE EXPECTED BENEFITS?

Over the next decade, New Zealand will invest:

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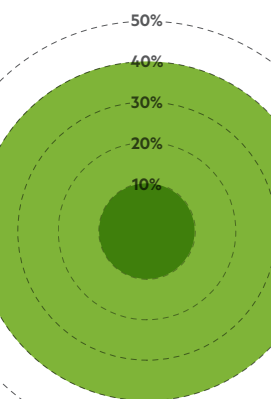
\$49 Billion
in water services infrastructure

Te Waihangā forecast based on Water Services Delivery Plans.

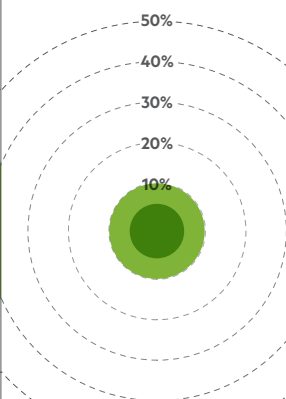
NEDS have the potential to drive standardisation and significantly reduce the cost and time for private developments and infrastructure renewals. Infrastructure standardisation can unlock efficiency gains, improve asset performance, and support better regulatory outcomes.

Based on evidence from other infrastructure sectors, preliminary advice indicates that potential cost savings for OPEX and CAPEX over the life of water services infrastructure, could include:

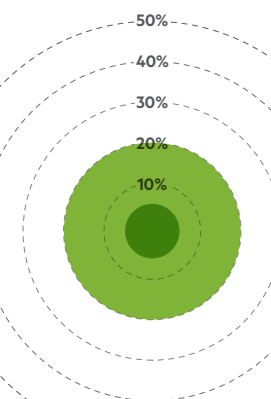
i As engagement and policy design continues, areas of further cost and time savings will be identified and this will inform ongoing development.

PLANNING AND DESIGN COST SAVINGS

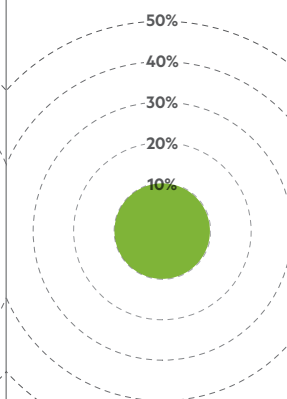
This is the phase where the NEDS are most likely to reduce costs.
Depending on project complexity, savings could range from: **10-40%**

ACQUISITION AND BUILD COST SAVINGS

Ongoing savings are likely to be achievable of approximately: **5-10%**

OPERATIONS & MAINTENANCE COST SAVINGS

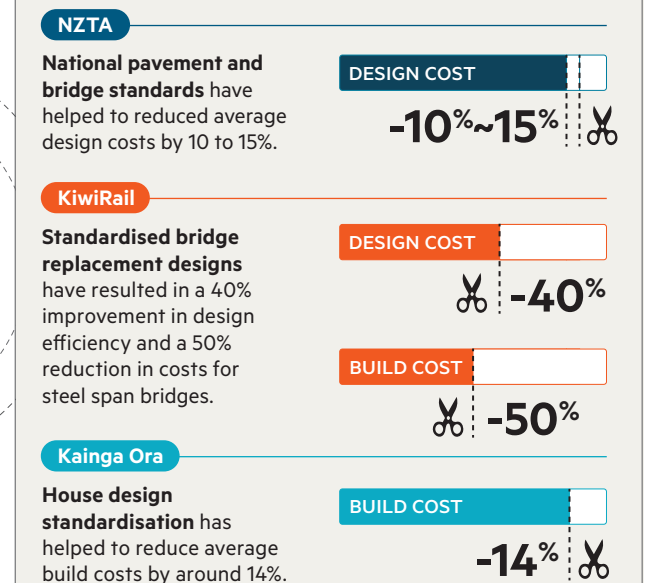
Depending on project characteristics, OPEX savings over the life of the infrastructure could range from: **5-20%**

RENEWALS, UPGRADE AND DISPOSAL COST SAVINGS

Standardisation is likely to deliver the largest cost and productivity benefits for renewals/upgrades. Based on a typical project, savings that could be achieved is approximately: **10%**

D WHAT HAVE WE SEEN IN OTHER SECTORS?

There has been significant benefits from infrastructure standardisation in other sectors. For example:



[1] <https://www.engineeringnz.org/news-insights/fast-tracking-bridge-construction/>
[2] <https://kaingaora.govt.nz/assets/News/Media-centre/Information-sheet-on-standardised-design-plans.pdf?v=553a1fa8165e7ebdc382469ce604bee4cb3029fd>