

10th December 2024

Te Waihangā Infrastructure Commission

Email: inform@tewaihangā.govt.nz

Subject: Submission on Testing our thinking - Developing an enduring National Infrastructure Plan

A. Who is making this submission?

[REDACTED]
Principal Technical Advisor,
IrrigationNZ
[REDACTED]

B. Submission made on behalf of an organisation

IrrigationNZ represents over 4,500 members nationally, encompassing irrigation schemes, individual irrigators, and the irrigation service sector across New Zealand.

Our irrigator members include a diverse range of farmers and growers: sheep and beef, dairy and cropping farmers, horticulturists, winegrowers, as well as sports and recreational facilities and councils.

We also represent more than 120 irrigation service industry members, including manufacturers, distributors, irrigation design and installation companies, and providers of irrigation decision-support services for both freshwater and effluent irrigation.

As a voluntary, not-for-profit organisation, our mission is to foster the responsible use of water for food and fibre production, catering to local and international consumers, while supporting the well-being of communities.

IrrigationNZ plays a technical leadership role, promoting best practice irrigation through training and education, and actively contributing to freshwater management. We have trained hundreds of professionals across the irrigation sector in water-use efficiency and environmental stewardship, achieving measurable improvements in soil moisture and surface water management.

Our members share common aspirations with New Zealanders, striving to:

- Reduce environmental footprints and improve ecosystem health,
- Contribute to community well-being, and
- Ensure New Zealand's resilience to climate change impacts.

C. Permission to Contact

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D. Submission

Our submission answers the questions posed in pages 10 and 11 of the Testing our thinking. Your questions are in blue typing. Our answers are in black.

Section One: Why we need a National Infrastructure Plan

1. Critical infrastructure challenges over the next 30 years:

- Climate change will increase the frequency and severity of droughts and floods, posing significant challenges to food production. Unirrigated systems will face the greatest impacts, while irrigated systems without reliable storage will also be vulnerable. Only systems with dependable water storage and distribution networks will remain resilient.
- Effective water storage and distribution infrastructure is essential for sustaining food production while protecting waterways and habitats. For example, the Australian Government's investment in Tasmania's water storage and distribution infrastructure has resulted in improved social, economic, and environmental outcomes.

2. Incorporating te ao Māori perspectives and principles:

- While we are not experts in te ao Māori, we recognise its value in long-term infrastructure planning and encourage its inclusion to ensure culturally appropriate, balanced, and inclusive solutions.
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Section Two: Long-term expectations

3. Addressing uncertainties in infrastructure planning:

- The current consenting framework lacks clarity and consistency, particularly around the duration of consents and future regulatory changes. Certainty is critical for effective planning, land-use changes, and adopting sustainable practices.
 - Developing large-scale water storage and distribution infrastructure requires substantial time and resources to align stakeholders, secure financing, finalise designs, and complete construction. These projects have a lifespan of 50–100 years, and strategic foresight is crucial to optimise outcomes.
 - Clear and timely communication of regulatory changes would foster better planning and encourage proactive investments.
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Section Three: Existing investment intentions

4. How can the National Infrastructure Pipeline be used to better support infrastructure planning and delivery across New Zealand?

- Including off-farm irrigation infrastructure (e.g., storage and distribution networks) in the pipeline would signal the importance New Zealand places on water security and infrastructure resilience, thereby attracting investors
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Section Four: Changing the approach

5. Are we focusing on the right problems, and are there others we should consider?

- Current efforts focus on balancing economic outcomes with environmental protection. Climate change, particularly the increased frequency of droughts, is ranked the no. 1 megatrend facing the world. Reliable water supply is a critical enabler of resilience, innovation, and sustainability in farming systems.
- The narrative could shift to highlight collective well-being across farms, communities, and the environment, while also enhancing national and global food security.

Theme one: Capability to plan and build

Investment management: Stability, consistency and future focus

6. What changes would enable better infrastructure investment decisions by central and local government?

- The Resource Management Act (RMA) currently emphasises environmental impacts without acknowledging farming's critical role in food production. A more balanced narrative could recognise that good farming practices and effective water management can lead to environmental enhancements.

7. How should we think about balancing competing investment needs when there is not enough money to build everything?

- Long-term projects with a 100-year lifespan can be staggered to spread costs and build local expertise over time. This phased approach ensures lessons are incorporated into future projects and allows for sustainable employment and cost optimisation.

Workforce and project leadership: Building capability is essential

8. How can we improve leadership in public infrastructure projects to make sure they're well planned and delivered?

- A coordinated national approach, with steady-state project pipelines, would build local expertise and create stable employment opportunities. This fosters cost efficiency and consistent quality.

What's stopping us from doing this?

- A lack of consensus between various political parties and govt departments to agree on a long-term goal around balancing food security and environmental effects.
- A lack of an overarching plan.

9. How can we build a more capable and diverse infrastructure workforce that draws on all of New Zealand's talent?

- Continuous investment in infrastructure projects would provide market confidence, encouraging education, training, and retention of talent across diverse sectors.

Project costs: Escalation means less infrastructure services

10. What approaches could be used to get better value from our infrastructure dollar?

- By adopting a steady state collective approach across the country that will allow for a sustained local experience and expertise to be developed. This will ensure:
 1. That lessons learnt are woven into future projects.
 2. Certainty and optimisation of costs can be achieved.

What's stopping us from doing this?

- A lack of consensus between various political parties and govt departments to agree on a long-term goal around balancing food security and environmental effects.
- A lack of an overarching water infrastructure development and asset management plan built off a bipartisan intergenerational national water strategy.

Theme 2: Taking care of what we've got

Asset management: Managing what we already have is the biggest task

11. What strategies would encourage a better long-term view of asset management and how could asset management planning be improved? What's stopping us from doing this?

- The Te Waihangā 2024 "Taking Care of Tomorrow Today" report says that, apart from several large schemes, the level of asset management maturity across the irrigation sector is low although "there is a close relationship between the owners of irrigation schemes and the operation of the schemes" which "ensures that assets do provide the services that are demanded of them at an operational level". The reports scored the sector worst in 'system and improvement', where it noted "little documentation of a systemised management of assets, and little improvement planning or action".
- Educating the owners of Irrigation schemes on the importance of understanding their asset, and associated risks-consequences if it fails. Private sector irrigation infrastructure often relies on reactive maintenance and service-level agreements. Enhancing governance and technical skills among community members managing these assets would improve long-term outcomes.

Resilience: Preparing for greater disruption

12. How can we improve the way we understand and manage risks to infrastructure? What's stopping us from doing this?

- Adopting industry best practices for risk management, such as ISO 31000 standards, would enhance resilience and preparedness.
- Education of the value.

Decarbonisation: A different kind of challenge

13. How can we lower carbon emissions from providing and using infrastructure? What's stopping us from doing this?

- Water infrastructure enables land-use changes that support lower-emission food production systems.
- Lack of infrastructure.

Theme 3: Getting the settings right

Institutions: Setting the rules of the game

14. Are any changes needed to our infrastructure institutions and systems and, if so, what would make the biggest difference?

Knowledge transfer from other sectors to water infrastructure schemes, while preserving community ownership, would enhance governance and outcomes.

Network pricing: How we price infrastructure services impacts what we think we need.

15. How can best practice network pricing be used to provide better infrastructure outcomes?

- With Irrigation schemes the capital and operating costs are privately owned and the amount water is restricted by consent conditions. Therefore; network pricing is an internal matter that does not have the same drivers as National power and water supplies. It is noted water is a common and not owned.

Regulation: Charting a more enabling path

16. What regulatory settings need to change to enable better infrastructure outcomes?

- Addressing inconsistencies in the RMA and freshwater regulations would provide greater certainty and consistency in consent conditions, enabling better infrastructure planning.

Section Six: What happens next?

17. Additional comments:

- IrrigationNZ is keen to contribute to future planning forums and discussions to support the development of a robust National Infrastructure Plan.
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We have attached below our submission on "Strengthening the resilience of Aotearoa New Zealand's critical infrastructure system", 8th August 2023, to the National Security Group, Department of the Prime Minister and Cabinet. This document has additional supporting information on the criticality of irrigation infrastructure to the New Zealand economy and its communities.

IrrigationNZ submission on strengthening the resilience of Aotearoa New Zealand's critical infrastructure system.

8th August 2023

Address to:

National Security Group
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Level 8 Executive Wing, Parliament Buildings,
Wellington 6011

infrastructureresilience@dpmc.govt.nz

Please find below the Irrigation New Zealand (IrrigationNZ) submission to the National Security Group, Department of the Prime Minister and Cabinet, on the "Strengthening the resilience of Aotearoa New Zealand's critical infrastructure system" consultation.

[Disclosure and privacy](#)

The IrrigationNZ submission does not contain confidential information and no part needs to be withheld. Irrigation NZ is happy for its submission and name to be visible publicly as part of the consultation process.

[1. About IrrigationNZ](#)

Irrigation New Zealand represents over 3,800 members nationally, including irrigation water storage and distribution schemes, individual irrigators producing food, fibre and beverages, and the irrigation service sector across all regions of New Zealand.

Our irrigator members include a wide range of farmers and growers – meat, dairy and cropping farmers, horticulturalists, and winegrowers, as well as sports and recreational facilities and councils. We also represent over 120 irrigation service industry members – manufacturers, distributors, irrigation design and install companies, and irrigation decision support services for both freshwater and effluent irrigation. Many of these organisations also offer rural drinking water treatment, storage and distribution solutions as well as stock drinking water infrastructure.

We are a voluntary-membership, not-for-profit organisation whose mission is to create an environment for the responsible use of freshwater primarily as irrigation for food and fibre production for local and international consumers but also to sustain the wellbeing and resilience of communities through responsible use of the freshwater resource and well designed and operated infrastructure.

As an organisation we actively take a technical leadership role in promoting best practice irrigation and carry out a range of training and education activities associated with general freshwater management. Over the last five years, we have provided informal training and formal qualifications to hundreds of people on various aspects of irrigation best practices to

improve water use efficiency (lowering consumption) and better manage environmental effects (improved soil moisture management and surface water outcomes). We deliver qualification courses on irrigation infrastructure design, performance assessment and operational management.

IrrigationNZ members share the same goals as many other New Zealanders:

- Reduce their environmental footprints and see improvements in the health of the natural environment,
- Contribute to the wellbeing of their communities, and
- Provide for a resilient future for New Zealand in the face of climate change.

2. Introduction:

We have considered the Department of the Prime Minister and Cabinet's (DPMC) consultation documentation and information presented at the online briefing on critical infrastructure (CI) legislation, and we have gained valuable insights into the proposed focused approach.

The irrigation sector has been actively engaged in improving freshwater management for several decades. It has worked towards minimizing the impact on freshwater bodies and meeting the expectations of food consumers, who impose numerous demands on the industry. These demands on the primary sector are already reflected in, not only industry led Codes of Practice, but also multiple layers of central government legislation, regional regulations within land and water plans, and specific water take and infrastructure consent conditions. Consequently, the rural sector has made significant progress in addressing both freshwater resource management and infrastructure asset management to support food production within communities.

Irrigation NZ is in principle supportive of initiatives led by the Ministry for Primary Industries (MPI) that aim to enhance freshwater utilization in accordance with the Fit for Better World policies and the policies of the Ministry for the Environment (MfE) that underpin the Essential Freshwater program.

We are however concerned about the complexities of messaging to the primary sector arising from the involvement of multiple government agencies, to varying degrees, in the development of water-related legislation including those affecting long term infrastructure management.

We identify a risk associated with the absence of a comprehensive, coordinated national strategic management approach to New Zealand's freshwater resources and infrastructure investment. This risk creates uncertainty for our communities' resilience and ability to adapt to global megatrends such as climate change over the next 30 to 40 years. A lack of policy and legislative coordination jeopardizes the investment needed in the maintenance and upgrade of irrigation infrastructure to the required levels necessary for addressing the interconnected challenges posed by climate change resilience and population growth driven demand for food.

3. The scale and value of irrigation infrastructure in New Zealand

IrrigationNZ have been modelling irrigation sector capital and operational costs for some years and through that extensive industry knowledge present figures below that should assist DPMC in better understanding the scale of this asset class.

In 2021 IrrigationNZ assisted MPI in the preparation of a water availability and security assessment titled [Water Availability and Security in Aotearoa New Zealand \(mpi.govt.nz\)](https://www.mpi.govt.nz/research-and-development/water-availability-and-security-in-aotearoa-new-zealand/). The assessment identified 903,465 ha of irrigated land in 2020 with the majority in Canterbury, Otago, Hawke's Bay, and Marlborough. Based only on topographic criteria the assessment identified a further 5.7 million ha of land would be straight forward to irrigate if water was available and a further 1.5 million ha with some potential to irrigate. Of this area 277,000 ha is Māori owned land.

MPI summarises the assessment as having applied topographic, hydrological, and financial viability filters, and likely water quality constraints, to land that potentially can be irrigated in different regions, and indicates the likely land uses that would benefit, such as land use conversion from animal-based systems to horticultural crops. The MPI assessment method provided a basis for prioritising regions for further investigation and engagement.

Due to the assessed constraints, largely driven by tightening water access policies, the expansion potential is much less than the potential, and was documented as being in the order of an additional 400,000 ha. Further work is underway with MPI supported by IrrigationNZ to unravel the constraints that freshwater policy places on irrigation infrastructure development impacting not only the improvement in the New Zealand economy but also its food supply resilience.

Notwithstanding the gap between the areas assessed for potential growth of irrigated land supported by new infrastructure and the constrained growth as set out above, a reasonable statement of the overall asset value and economic contribution can be interpolated.

By applying a very broad rule of thumb would suggest on farm irrigation system value is \$5-\$25 / ha depending on the system type. That would give a current value of 900,000ha x say avg \$10k of \$9B. There is an on-going conversion of old on farm irrigation systems such as border dykes to higher precision spray and drip/micro systems.

The modelled future expansion of on farm system value of 400,000 ha multiplied by a higher new build avg of \$15k / ha would be additional \$6B.

Land use change can be expected to occur gradually, assuming land and water policy improvement, with the added drivers of climate change and emissions policy impacting current land use. Therefore, it is plausible to see new irrigated area occurring over a development horizon. This timeline will be highly dependent on water availability and security, i.e. the further development of storage for existing irrigation distribution schemes and new storage and distribution infrastructure in previously un-serviced regions, predominantly the east coast of the North Island.

However, although systemically linked to on farm irrigation asset values, the key focus for DPMC in its consideration of critical infrastructure is the off-farm asset value. Irrigation water supply scheme infrastructure is a mixture of both storage and distribution. The following capital estimates account for consents, design and construction implementation for water intakes, races, pipes, pumps and electrical control systems from source to the farm gate. Many new irrigation schemes also incorporate some form of hydro energy production. It is assumed 70% of existing irrigated farms and 90% of future irrigation will be supplied by schemes, as opposed to individually operated farm bores or river intakes.

Irrigation scheme distribution infrastructure establishment capital “without storage” typically is modelled about \$5,000 / ha of area supplied. With a water storage component added, that improves supply reliability and operational flexibility, infrastructure establishment capital estimates would be closer to \$15-\$25,000 / ha including both the water storage and distribution components.

It should be noted that recent new irrigation schemes that supply only a few thousand hectares are less capital efficient and have been floated at up to \$40,000 / ha. This constrained scale is a result of the uncertainty and ambiguity resulting from continued regulatory limitations placed on potential land use change.

Therefore, the total future off-farm infrastructure asset value could be in the order of $(900,000 \text{ ha} \times 70\%) + (400,000 \text{ ha} \times 90\%) = 930,000 \text{ ha}$ scheme supplies \times avg capital value \$20,000 / ha thus an overall asset value in the order of \$18.6B in 2023 dollars.

Typical electromechanical system annual asset management cost is 2-5% of asset value and is typically this level for irrigation infrastructure. The annual spend on R&M elements poured into rural communities is in the order of \$0.934B in regional economic activity.

4. Irrigation infrastructure and its critical role in New Zealand’s resilience

New Zealand faces a slow-moving but significant impact of climate change, it therefore becomes essential to focus on strengthening critical infrastructure across all sectors, including irrigation for food production. This view is shared by the National Science Challenge – Our Land and Water with its findings published in the Growing Kai with Increasing Dry report, 2021. Issues directly related to lack of infrastructure preparedness were raised within this joint industry and scientific community research forum.

Irrigation NZ has had extensive discussions ahead of this DPMC consultation with Te Waihangā Infrastructure Commission on the irrigation sector’s role and have received acknowledgement that irrigation infrastructure is underrepresented in national level policies on resilience and climate change adaption.

Irrigation plays a pivotal role in ensuring a reliable and sustainable food supply chain. By providing water to agricultural lands during ever increasing dry seasons, not just during extreme droughts, irrigation enables farmers to produce crops consistently. A resilient irrigation infrastructure ensures that communities have access to food, reducing the reliance on unpredictable weather patterns and disrupted imported food supply chains. During times of crisis or extreme weather events, a robust irrigation system can act as a lifeline, helping maintain food production and supply.

Irrigation is a significant driver of economic stability and growth in New Zealand. The agriculture sector heavily relies on irrigation to maintain its productivity and competitiveness. A secure water supply through resilient irrigation infrastructure fosters economic activities, generates employment opportunities, and contributes to the overall economic prosperity and stability of the country.

The report "Value of irrigation in New Zealand: An economy-wide assessment, NZIER, 2014" provided valuable insight to the importance irrigated agriculture delivers to the New Zealand economy in terms of GDP and FTE contribution, however it did not specifically focus on infrastructure value or asset management maturity risks. IrrigationNZ is working with MPI to develop a brief and funding to update this report to reflect the role irrigated agriculture plays in the New Zealand economy taking into account the contribution to export earnings and to local economy activity around asset development and management. IrrigationNZ have also recently contributed to a Te Waihanga project looking at the irrigation sector asset management maturity.

An earlier NZIER 2004 report estimated the net farm gate GDP contribution of irrigation at \$0.92 billion using 2002/03 figures. Using the same methodology in 2014, NZIER estimated this net contribution had risen to \$2.17 billion based on 2011/2012 data. This increased contribution resulted from improved farm gross margins and the expansion in irrigated land area (from 457,700 hectares to 721,400 hectares) during that decade.

StatsNZ presents a regional breakdown of irrigated activity in their 2017 survey data, and this is updated to correlate to MPI's 2020 data on total irrigated area. StatsNZ presents that in 2017, irrigated agricultural land covered 3 percent (747,000ha) of New Zealand's total land area of 28M ha, however, the MPI 2020 irrigated area (930,000 ha) is 6.64% of New Zealand's productive land of 14M ha.

Canterbury still has the greatest area of irrigated agricultural land in the country (64 percent of irrigated land), followed by Otago (13 percent). Close to 90% of all fruit and vegetables crops are irrigated whereas only 26% of the overall dairy industry is irrigated.

5. What is meant by critical infrastructure and does irrigation fit this definition?

From our understanding of the DPMC consultation documents IrrigationNZ supports the general use of terms to discuss what critical infrastructure includes.

It is apparent to IrrigationNZ that the government's current definition of and approach to delivering resilient critical infrastructure, differs even across government departments let alone across regulated sectors.

A coordinated approach is somewhat invisible in sectors that are not regulated such as irrigation infrastructure, and it is therefore inconsistently identified as being critical.

There is arguably no sector more obviously impacted by the first of the four global megatrends in the DPMC consultation document, that is climate change. Climate change adaption is a core element of Te Waihanga's National Adaptation Plan commentary on infrastructure. The acknowledgement and provisioning within risk assessments of New Zealand's critical

infrastructure justifies consideration of a regulatory approach that better supports irrigation infrastructure.

Irrigation infrastructure, particularly water storage and distribution schemes, include assets, systems networks, and services that are essential to the business activity for growing and supplying food and fibre to our communities, that take into account safety, security, and economy stability. If these infrastructure assets were to fail catastrophically or even fail to adapt to climate change this would impact New Zealand's resilience, which as DPMC states, "does not just measure an entity's ability to absorb a stress or shock – like an earthquake – but also accounts for an entity's ability to recover" and in IrrigationNZ's opinion, adapt.

It is clear to IrrigationNZ there are parallels in considering irrigation infrastructure and society's interests in a resilient critical infrastructure system, where stability of the food production and supply chain is essential to protecting New Zealanders' lives and livelihoods, but also is important for economic growth. As can be seen in recent extreme weather events that effected the rural primary production sector the costs of meeting community food supply impacts the amount that government must spend on recovery from events particularly if that involves reliance on imported food goods or being unable to continue land use activities as they were.

In IrrigationNZ's view, critical irrigation infrastructures provides direct support of locally produced nutritious and safe food services that are essential to the functioning of our society, the economy, public wellbeing and health. Loss, damage or disruption to irrigation water storage and distribution entities may severely prejudice the provision of essential food supply services to the public, national agriculture trading positions, public food safety, the maintenance of law and order in the event of food shortages and may threaten rural social fabric and livelihoods.

6. Our understanding of the DPMC Consultation on Critical Infrastructure Legislation

1) Asset-Based Approach to Resilience:

DPMC is advocating for an asset-based approach to resilience, centred around identifying and addressing key risk vectors. This approach seeks to assess and enhance the resilience of critical infrastructure assets to various hazards and threats, ensuring a robust and proactive response to potential disruptions.

This is consistent with IrrigationNZ's view on the role infrastructure plays in societal resilience. However, we believe the role of critical irrigation infrastructure is not dealt with consistently across government legislation. IrrigationNZ believes the status of irrigation infrastructure especially related to large scale water storage and distribution requires an elevated recognition of its status and consistency in government policy and legislative tools. IrrigationNZ believes based on the definition being used in the DPMC and previous Te Waihanga documentation that irrigation infrastructure should hold the same critical infrastructure status as other urban water utilities. IrrigationNZ believes having this critical infrastructure status would ensure more consistent treatment across government legislation when making other policy decisions, such as in the MfE management of freshwater resources and MBIE Dam safety assurance program, that can both negatively and positively affect the long-term management of related infrastructure assets.

2) Defining Minimum Enforceable Standard of Resilience:

As part of the proposed legislative and regulatory approach, DPMC aims to define a minimum enforceable set of standards of resilience for critical infrastructure entities. These standards will set a baseline for the level of preparedness and response capabilities required, with the goal of ensuring a consistent and effective approach across all sectors.

IrrigationNZ agrees in principle with setting minimum standards, which is in alignment with its own approach to setting industry led Codes of Practice and Design Standards.

We are however concerned that infrastructure classes (such as transport, energy, communication and urban water utilities) that nominally already hold critical infrastructure status in the eye of government, and the asset owners themselves, will be at a greater level of maturity in asset management planning, reporting and funding of resilience actions.

IrrigationNZ believes any implementation of minimum enforceable standards that affect primary sector irrigation infrastructure will need to consider a pragmatic implementation and support timeline to address any gap in maturity across other critical infrastructure.

IrrigationNZ points DPMC to the pragmatic example being taken in a legislative process by Taumata Arowai in relation to drinking water safety and infrastructure upgrades. In this instance the legislative response from Taumata Arowai (and DIA) is in proportion to the identified risk to the population which has largely been an unregulated area for many decades. The Taumata Arowai implementation timeframe takes this into account the highest risks and target populations first but still holds all to account, in due course.

IrrigationNZ also points DPMC to the example with an inconsistent approach being taken by MBIE in applying unreasonably short timeframes to Dam Safety regulations that is likely to lead to a significant non-compliance in the rural sector due to poorly informed legislative design. As a result, the regulatory impact is underestimated and the rural sector most impacted by lack of resourcing capacity is the sector likely to pose the least actual risk.

3) Additional/Enhanced Government Powers:

DPMC is considering granting additional/enhanced government powers to provide direction and intervention in critical infrastructure entities under certain circumstances. These powers would enable swift and coordinated action in response to crises or threats that could potentially impact critical infrastructure.

We note DPMC recognizes that the regulatory costs may vary significantly between businesses and sectors, and funding may therefore need to come from a combination of shareholder, customer, and government contributions.

IrrigationNZ requests that the cost implications of implementation inequity of any new regulatory framework for critical infrastructure is flagged as a key consideration. Understanding the potential impact on affected rural businesses and irrigation infrastructure asset owners in particular is essential to ensure a balanced and sustainable approach to funding of any resilience and long-term adaptation programs.

IrrigationNZ understands that DPMC is actively pursuing this legislative/regulatory approach to critical infrastructure reform and is planning to move relatively quickly. We understand a

second round of consultation on the proposed implementation format will be scheduled early in the new year.

We understand that there is a high level of bipartisan support among the major parties regarding the critical infrastructure uplift process and therefore progress of this critical infrastructure reform is expected to be ongoing and potentially rapid.

This signals to our sector the government's urgency in expediting this regulatory framework and whilst it does flag the objective of enhancing critical infrastructure resilience it also presents the real risk that haste may lead to poorly informed policy design, implementation planning and regulatory impact assessments.

While IrrigationNZ advocates for the inclusion of irrigation infrastructure in the critical infrastructure regulatory reform process, we urge DPMC to further engage with us directly to ensure that the specific considerations of the irrigation sector are taken into account within this broader framework of critical infrastructure reform.

4) Transition to System-Wide Regulatory Approach:

In light of the challenges posed by climate change and other threats, IrrigationNZ disagrees with the proposed transition from sector-level regulations to a system-wide approach in regulatory design and funding.

Including irrigation water storage and distribution infrastructure in this approach, applies the same standards to all critical infrastructures where they are held to similar standards. While this may at face value reduce systemic weaknesses and interdependencies the differing levels of regulatory burden and misaligned public sector funding support and policies would mean implementing uniform resilience standards would be inequitable for the irrigation sector.

The inconsistency in defining resilience minimum standards would mean until the government acknowledges the benefit of irrigation infrastructure in all policy decisions and are funded accordingly means the irrigation sector while critical to society is disadvantaged in its ability to contribute to the overall resilience of the critical infrastructure system.

5) Balancing Regulatory Costs and Investment Confidence:

While the introduction of tighter policies to support irrigation infrastructure may entail some regulatory reporting costs, subject to better understanding how this applies to the role irrigation plays in societies' food security systems, the long-term benefits would seem to outweigh these initial expenses.

The upfront investment in infrastructure resilience by the public and private sector is likely more cost-effective than the extensive recovery costs during and after a disruptive event. Moreover, a resilient irrigation system will instil confidence in public sector contribution and private sector investment, encouraging improvements in irrigation infrastructure capacity without fear of potential vulnerabilities or instability.

6) The need to be better informed in integrating irrigation water storage and distribution infrastructure in critical infrastructure reform:

To strengthen the resilience of irrigation water storage and distribution infrastructure, IrrigationNZ suggests that more information is needed to better inform any policy design that could impact irrigation infrastructure.

To this end IrrigationNZ proposes that DPMC along with MPI and Te Waihanga support a case study 'all hazards' assessment conducted on a small, selected set of irrigation infrastructure entities. This assessment will improve available knowledge for all related government agencies as well as support irrigation schemes in their governance decisions on provisioning for resilience.

The case study would apply an asset-based framework, similar to the Australian Security of Critical Infrastructure Act, to two to three large irrigation schemes, assess their current practices, vulnerabilities and risks, and define a target state for resilience within a food security systemic approach.

The outcomes of this case study would improve knowledge on how to include resilience improvement for irrigation schemes and showcase the benefits of an 'all hazards' framework, as well as enhancing the government's understanding of the value of an all hazards, asset-based approach applied to the irrigation industry.

7) Need for a centralised coordination on water policy:

It is apparent there is no regulatory body with the authority to monitor and enforce minimum standards across critical infrastructure sectors. This lack of centralized oversight and accountability leaves the country vulnerable and unable to ensure that critical infrastructure meets the expectations of the New Zealand public and our global customers.

This is particularly apparent with regard to water infrastructure resilience. To address these shortcomings and bolster the resilience of critical water infrastructure, IrrigationNZ is proposing the government establishes a Minister of Water to include input to the likes of critical water infrastructure policy design. This dedicated ministerial position would have the responsibility of coordinating and overseeing all aspects related to water-related critical infrastructure, including irrigation water storage and distribution systems. The Minister of Water would play a pivotal role in developing comprehensive policies and regulations that apply to the entire water infrastructure network, ensuring it is resilient and prepared for various threats, including those associated with climate change.

By having a Minister of Water, New Zealand can centralize accountability, effectively manage risks, and set enforceable minimum resilience standards for water-related critical infrastructure. This approach would facilitate a more coherent and well-understood framework for strengthening the resilience of the nation's water systems, including irrigation, and ensure that they can withstand various challenges, such as extreme weather events, droughts, and other potential disruptions.

Moreover, having a dedicated Minister of Water would signal a strong commitment from the government to address water-related challenges proactively. It would allow for better coordination among agencies and stakeholders, foster knowledge sharing, and streamline decision-making processes to enhance the overall resilience of water infrastructure.

8) Overall Concluding Remarks:

The critical infrastructure reform in Aotearoa New Zealand presents a significant opportunity to strengthen the resilience of our essential systems, including irrigation water storage and distribution infrastructure. While the proposed approach for CI standards and risk management shows promise, it is essential to consider the potential costs and regulatory complexities associated with integration. Striking the right balance between resilience accountability and recognition of irrigation's positive contributions is paramount.

DPMC's approach to critical infrastructure consultation underscores the government's track record of swiftly enacting legislative reform albeit in this case with apparent bipartisan support that could strengthen the prospects of meaningful reforms.

By taking the time to apply an asset-based framework case study, assessing current practices, and defining a target state for resilience, we suggest this will improve our joint knowledge base on the preparedness for hazards and disruptions in the irrigation sector. A case study 'all hazards' assessment for selected IrrigationNZ member irrigation schemes would serve as a valuable knowledge creation and sharing exercise and promote a more informed and strategic approach to engaging with the government on critical infrastructure regulatory reform.

The journey towards a more resilient Aotearoa New Zealand depends on the collective efforts of industry members, government, and stakeholders. Together, we can strengthen critical infrastructure, including irrigation, to withstand the impacts of climate change and other hazards, ensuring a prosperous and secure future for our nation.

Ensuring DPMC engages with other government departments and stakeholders will be crucial in shaping a future where irrigation plays a central role in New Zealand's sustainable and resilient food supply chains, contributing to economic stability and prosperity. With a Minister of Water and proper representation, irrigation infrastructure can rightfully contribute to New Zealand's resilience, community food supply chain reliance, and economic stability.

IrrigationNZ advocates for the inclusion of irrigation infrastructure in the identification of critical infrastructure. We are available for specific engagement to consider the cost implications, funding mechanisms, and sector-specific needs while aligning with the broader framework of critical infrastructure reform.

Please, direct any inquiries to:


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