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Infrastructure New Zealand submission on DPMC's Strengthening the resilience of Aotearoa New Zealand's critical infrastructure system discussion document

1. Introduction

- 1.1 Infrastructure New Zealand (INZ) welcomes this opportunity to submit on the Department of Prime Minister and Cabinet's Strengthening the resilience of Aotearoa New Zealand's critical infrastructure system discussion document.
- 1.2 INZ is New Zealand's membership organisation for the infrastructure sector. We promote best practice in national infrastructure development through research, advocacy, and public and private sector collaboration. Our members come from diverse sectors across New Zealand and include infrastructure service providers, investors and operators.

2. General Remarks

- 2.1 INZ is generally supportive of the move to the whole of system approach taken by the discussion document and welcomes the Government's work to build on Te Waihanga – the New Zealand Infrastructure Commission's 30-year strategy - Rautaki Hanganga o Aotearoa.
- 2.2 As the discussion document emphasises, we know that our existing infrastructure is no longer fit for purpose. The impacts of recent weather events have exposed the fact that the majority of New Zealand's infrastructure is old and ageing and is ill-equipped to handle New Zealand's changing climate and more frequent extreme weather events.

Most of the infrastructure in our cities, and that making up our critical lifeline connections, was constructed to handle the more benign weather conditions and volumes of rain that existed fifty or more years ago. It is evident that extreme weather events, once considered a one-in-one-hundred-year or more occurrence, will now continue to strike with greater frequency and ferocity. The increased likelihood of major natural disaster events will occur alongside continuing technological change in coming decades, bringing different threats and opportunities to our critical infrastructure resilience. As such, we welcome work in this space to ensure that the performance of critical infrastructure assets is aligned with the needs of Aotearoa New Zealand.

- 2.3 We support progress on a regulatory regime, but however, note that enhanced standards must be met with increased resourcing for asset owners and operators, including councils and central government agencies with existing deficits. Improvements to local government and transport funding systems, and further consideration of funding and financing arrangements, including opportunities for private capital, will need to precede and support regulatory intervention, as will informed guidance for public and private sector owners and operators alike.
- 2.4 An increased focus on digital capability building across the infrastructure sector is also needed to support risk mapping and cyber resilience responses. Investment in digital capability in Government, as well as investment in a digitally enabling data provision environment will need to precede or be developed alongside increased regulation.
- 2.5 On implementation, we look forward to seeing more detail on timelines and phasing of work with actions under the National Adaptation Plan, as well as coordination with reform programmes already underway, in further consultation on the proposed approach to a regulatory regime and minimum standards development.
- 2.6 INZ also encourages DPMC to continue collaborating closely with Te Waihanga and the sector on the development of the regulatory regime. While we appreciate that critical infrastructure failure is an emergency response and national security issue, it is also closely intertwined with the raft of other reform programmes and infrastructure challenges affecting key players in the industry.
- 2.7 Further, as noted in the discussion document, with reference to comments by Infrastructure Australia and Infrastructure New South Wales, situating the government's regulatory regime for resilience in an emergency management context can make cross-government coordination difficult. This recognises that several areas of government outside of the emergency management framework have a regulatory interest in infrastructure resilience. We support this reflection, and would like to see greater involvement of lead infrastructure agencies.
- 2.8 Te Waihanga holds substantial sector knowledge, and relationships across the sector whose engagement would benefit the development of reform programme options. Coordination across the diffuse agencies and actors that act within the infrastructure system is best placed with Te Waihanga in a system stewardship role.

3. INZ is generally supportive of the approach to regulatory assessment and problem identification in the discussion document

- 3.1 Cyclone Gabrielle and the Auckland flooding events have further highlighted the interconnected nature of our critical infrastructure assets. Infrastructure is often described as a 'system of systems', so consideration of the assets as a whole is encouraging to see.
- 3.2 We generally support the discussion document's objectives, and principles for reform assessment, including; effectiveness, cost and complexity (impact on regulatory system's complexity).
- 3.3 We do however suggest that a consideration of the sector's ability to pay and capacity to meet minimum standards should be included.
- 3.4 We also agree, in general, with the assessment of key megatrends, but strongly encourage DPMC to acknowledge more clearly that we are starting from a substantial infrastructure deficit, and so will need greater investment to meet increased standards, and which precedes and closely interacts with many of the vulnerability risks identified here and in New Zealand's climate change risk assessment, among other places.
- 3.5 INZ strongly supports the inclusion of criterion B in the option assessment criteria – "how does the option change regulatory burden and regulatory certainty across the community?" Recognition of increased compliance costs, and regulatory burden for asset owners and operators should be considered early in the process to ensure that the sector is able to meet enhanced standards.
- 3.6 Regulatory certainty is key to the sector's ability to gear up and deliver the infrastructure resilience that New Zealand requires. Additional resource, consideration of investment phasing, and training for workforces will rely on clear and well-phased implementation of regulation that coordinates effectively with existing and upcoming requirements.

4. Minimum standards development and regulatory system design

- 4.1 INZ supports a principles-based approach to minimum standards.
- 4.2 Many critical infrastructure owners and operators in New Zealand are based overseas, often in Australia, but operate here.
- 4.3 Flexibility for infrastructure owners and operators to meet increased resilience standards by drawing on their international experience will incentivise knowledge transfer between countries as entities look to meet standards more efficiently, and

innovation which carries wider benefits.

- 4.4 New techniques for building resilience, including designs like grass swales that manage water runoff, filter pollutants, and increase rainwater infiltration should also be able to dynamically leveraged.
- 4.5 We are also supportive of critical infrastructures of particular significance (e.g. those that have a significant number of connections with other critical infrastructures) being subject to higher resilience standards for the benefit of the wider, interdependent, system. However, INZ would like to see further information, including review periods for reassessment of critical infrastructure risks and interdependencies – especially where new and emerging technologies are relevant – included in the next round of consultation on proposed regulation.
- 4.6 We also encourage the establishment of a review mechanism for the determination of what constitutes a critical infrastructure asset. As is evident in the discussion document, increasing concerns about cyber security and technological vulnerability have driven progress in this area. Continuing development of technologies, and learnings from future natural disasters should inform updated assessments of the relevance of included asset classes. This should sit outside of the Minister’s ability to remove a critical infrastructure from the list at will.
- 4.7 INZ supports an asset-oriented approach to regulation, rather than a focus on the entity itself.
- 4.8 We note, and support, Deloitte’s reflection that an asset-led, all-hazards approach transcends traditional silos to focus on core service delivery, which can be applied to aspects of an organisation over time. This makes it far easier to prioritise and build capability in essential business units facing immediate disruption. Organisations can use a sprint-based approach to then uplift other areas at a manageable cadence, rather than trying to run a more daunting and resource intensive transformation of a whole business¹.
- 4.9 On whether there is a need for the government to have greater powers to provide direction or intervene in the management of significant national security threats against a critical infrastructure, we would like to see clarity around what threats would likely consist of. Early information sharing will be key to ensuring that infrastructure owners (or prospective owners) looking to attract overseas investment have a high degree of certainty.
- 4.10 INZ encourages DPMC to include a right of review, and would support an efficient process for intervention that does not leave owners and operators uncertain about the validity of investment for extended periods of time.
- 4.11 We also support proposed government investment in a model to assess the significance of a critical infrastructure asset to be used that as the basis for imposing more stringent resilience requirements.

¹ [Enhancing critical infrastructure resilience in New Zealand | Infrastructure & Capital Projects | Deloitte New Zealand](#)

- 4.12 We would expect that this would be led by Te Waihanga, and build on the criteria included in the proposed Emergency Management Bill for ministerial decision making on inclusion of critical infrastructures².
- 4.13 In considering the most appropriate settings for proposed regulation, INZ encourages DPMC to consider in greater depth how existing regulatory bodies and agencies may be repurposed, in place of the discussion document's main focus on setting up a new agency to coordinate critical infrastructure resilience standards management and regulation functions. While we agree that the National Emergency Management Agency is not well placed to act as a regulator, we encourage DPMC to consider options alongside the establishment of a new entity.
- 4.14 In some parts of the infrastructure system, we have agencies that are empowered to impose requirements on delivery agencies and market actors. Electricity and gas transmission and distribution are regulated by the Commerce Commission. Water sector reform proposes a similar approach and energy market participants are regulated by the Electricity Authority. However, the transport, health and education sectors lack external checks and balances and instead rely upon a combination of internal investment approval processes, investment approval by ministers or Cabinet and assurance by the Treasury. Proposed emergency management legislation will also provide for asset class agnostic resilience requirements. We agree that the system is complex and needs coordination. However, alongside proposed new agencies and regional structures under the Future for Local Government, Affordable Water and Resource Management reform programmes, we question whether another new entity is necessarily required.
- 4.15 An existing regulatory agency's role could instead be broadened, with adequate resourcing to do so, and an interdepartmental executive Board could be tasked with strategic policy development and coordination with a role to support this work and the agency in its broadened regulatory role. Te Waihanga could be empowered to take a system stewardship role and coordinate with asset owners and operators in central and local government, as well as in the private sector, to feed back into the system.
- 4.16 The Public Service Act 2020 expands the institutional design options at hand, and INZ encourages DPMC to consider all options before defaulting to the establishment of a new entity.
- 4.17 If a new entity is created, we recommend that it is complemented by a central government entity with a remit to oversee climate change event recovery and rebuilds and to ensure there is ongoing adequate funding available. Learning from recovery, through an entity based on the Queensland Reconstruction Authority model, should be centralised and able to be used to inform understanding about interconnections and critical asset failure trends over multiple disasters. The entities should have a close information sharing relationship, on the basis that dynamic reassessment of critical infrastructure needs should be supported by consistent information sharing and real time learnings.
- 4.18 We also note that the reform of the emergency management system, from which this programme of work has stemmed, requires critical infrastructure providers to develop, or contribute to the development of, annual reporting to the Director of Emergency Management and relevant regulatory agencies and sector-specific plans for

² [Emergency Management Bill 225-1 \(2023\), Government Bill – New Zealand Legislation](#)

responding to and recovering from emergencies, and to establish and publicly state their planning emergency levels of service. Coordination across these requirements and information sharing across agencies, including any new regulatory body, will be crucial to ensuring that duplication of regulation is avoided, and the regulatory burden for asset owners and operators is minimised where possible.

5. Funding successful resilience building

- 5.1 It is encouraging that the discussion document draws on Te Waihanga's funding and financing principles. However, there is inadequate reflection of the existing infrastructure deficit, and the impact that historic underinvestment has and will continue to have for asset owners and operators' ability to meet increased standards and the potential consequences of regulation.
- 5.2 We agree that building resilience is urgent, especially in the context of recent weather events, however, consideration of resourcing will be critical to making sure that resilience building is possible.
- 5.3 Current funding models, including at the local government and central government levels, fail to adequately provide sustained resourcing for adequate maintenance and renewal programmes, let alone additional investment to meet increased resilience requirements – both by improving existing assets, as well as funding new builds.
- 5.4 To address historic underinvestment, future need – before increased resilience standards - and upcoming renewals we would need to nearly double current investment from 5.5% of GDP a year, to an annual public spend of 9%³.
- 5.5 Our transport funding system is also failing to keep pace. The current emergency works budget provided through the National Land Transport Fund will need to increase significantly to keep up with the rising frequency of these climate change related events. Waka Kotahi has taken on a loan of \$2 billion, while its funding structure is currently under review.
- 5.6 The incentives associated with local government rating systems has meant that historic underinvestment also significantly hampers critical infrastructure performance in council owned and operated assets.
- 5.7 The discussion document fails to identify where increased funding or the ability for councils and central government agencies in particular will come from to meet additional requirements. There are opportunities to draw on private capital, sustainable funding models and innovative funding and financing tools to resource increased requirements for new assets and improvements to existing infrastructure which may be appropriate to support increased expenditure, where rates and taxation unlikely to be an adequate funding source for more expensive assets given the increasing incidence of climate related disasters. We encourage DPMC to further consider how the sector should be resourced to meet increased resilience requirements in future consultation documents, and to acknowledge that this challenge is too big for government to fund

³ [new-zealands-infrastructure-challenge-quantifying-the-gap.pdf \(tewaihanga.govt.nz\)](#)

alone.

5.8 We encourage DPMC to also consider to potential co-benefits where private entities maintain assets under long term agreements, including public private partnerships. In these scenarios, asset management outcomes can often be improved because the entity faces non-compliance penalties for underinvestment in maintenance. Discussion of alternative funding and financing models and their potential to improve critical infrastructure outcomes by resourcing the sector to meet increased standards would be a helpful addition to further consultation.

5.9 Whilst INZ supports the discussion document's view towards timing the introduction of any new regulatory requirements to align with businesses' existing investment plans, this does not address the fundamental infrastructure deficit that gives context to investment decisions for many asset owners and operators.

6. Digital capability improvements have a key role to play in building a shared understanding between government, regulators, and critical infrastructure owners and operators on key issues affecting system resilience

6.1 The discussion document identifies technological change as a key megatrend and focusses in some depth on building cyber threat response capability and development of a right for Government to intervene when cyber and other threats are immediately threatening critical infrastructure assets.

6.2 It also overviews the need for reliable information on asset locations and the risks they are likely to encounters and highlights that there is no real-time national view of the dependencies and interdependencies between critical infrastructures which would inform an assessment of how service disruptions are likely to cascade across the infrastructure system (and which infrastructures are the most important to protect). Further, the discussion document also identifies no government agency has the mandate or expertise to develop and maintain such a model, even if it had access to the relevant information.

6.3 INZ agrees that digital capability will be central to both understanding broader risks, including those in the natural environment, and to assessing and responding to cyber security threats.

6.4 Great examples exist, including Auckland Council and the Earthquake Commission's National Landslide Database, and the potential of Wellington City Council's underground asset mapping work to contribute to resilience building and identification of critical infrastructure assets in emergencies.

- 6.5 However, the data provision and use environment for infrastructure in New Zealand is not adequately prepared to meet the needs of an integrated, national scale digital platform.
- 6.6 Digital tools, like digital twins and underground asset mapping technology would be of great benefit for mapping risks and critical infrastructure interdependencies.
- 6.7 A regulatory regime, especially where it plans to impose penalties for non-compliance, will need to be built on quality data and reporting platforms that are easily accessible to critical infrastructure asset owners and operators.
- 6.8 To achieve that scale, central government will need to take a leading role in improving procurement practices to require data provision, potentially mandating the use of Building Information Modelling techniques, improving government and sector capability to use data effectively and funding significant investment to scale regional tools and projects nationally. This will not happen overnight, but should be in place to support information sharing, risk mapping and emergency response, and support the sector to effectively respond to enhanced regulation.
- 6.9 INZ encourages DPMC to explore in greater depth the sector's current capability and how investment in digital tools can support crisis response and resilience building.

7. Considerations for implementation

- 7.1 INZ strongly supports the discussion document's acknowledgement of the need to coordinate across reform programmes and existing regulatory regimes, in part to avoid duplication of regulation.
- 7.2 We encourage the department to engage closely both with agencies crafting legislation that will crosscut critical infrastructure resilience regulatory reform, and to ensure that any implementation of a new regime is phased effectively with other actions and reform programmes that will affect the sector's ability to respond to new standards and requirements.
- 7.3 Local authorities in particular are currently facing substantial reforms and need to be adequately resourced to respond. Any additional requirements should take into account the capacity of local governments and their council-controlled organisations as major critical infrastructure asset owners, to meet increased standards and resource work in this area.
- 7.4 Outside of upcoming reforms in the sector, it is at present unclear how minimum standards would map onto existing risk assessment work and Councils' long-term plans and infrastructure strategies. Greater clarity is required.
- 7.5 We also note that the National Adaptation Plan includes Action 3.8: Develop guidance for assessing risk and impact on physical assets and the services they provide. This guidance is expected to be published by 2026. Any implementation timeline for a regulatory regime and minimum standards will need to acknowledge that guidance for

asset owners and operators would ideally precede implementation of regulation.

7.6 Further consultation will need to include more clarity on the interconnections between minimum standards and increased regulation with existing plans and future reforms, as well as phasing of implementation of any changes from both resourcing and guidance development perspectives.

8. Conclusion

8.1 INZ thanks the National Security Group at DPMC for this opportunity to submit and looks forward to continuing to engage on this strengthening the resilience of Aotearoa New Zealand's critical infrastructure system workstream during the next round of consultation early next year.

8.2 Whilst generally supportive, we encourage DPMC to provide further clarity on how minimum standards and regulatory changes will fit within the existing planning and funding systems, as well as how digital capability will grow to facilitate risk identification and emergency response.

8.3 We also highlight that the implementation of any regulatory reform should be considered in the context of existing institutional settings, with clear stewardship from Te Waihanga – the New Zealand Infrastructure Commission.

Yours Sincerely,



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