



**Submission of Taituarā  
to the  
Department of Prime Minister and Cabinet  
regarding  
*Strengthening the resilience of New Zealand's critical  
infrastructure***

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***What is Taituarā?***

Taituarā — Local Government Professionals Aotearoa (Taituarā) thanks the Department of Prime Minister and Cabinet (DPMC) regarding the discussion paper Strengthening the resilience of New Zealand's critical infrastructure (SRCI).

Taituarā is an incorporated society of approximately 1000 members drawn from local government Chief Executives, senior managers, and council staff with significant policy or operational responsibilities. Our contribution lies in our wealth of knowledge of the local government sector and of the technical, practical, and managerial implications of legislation.

Our vision is:

Professional local government management, leading staff and enabling communities to shape their future.

Our role is to help local authorities perform their roles and responsibilities effectively and efficiently.

***Local government is a partner in the provision of critical infrastructure, More should have been done to engage directly and specifically with the sector.***

Local government is (currently) a provider of the following infrastructure that could be regarded as critical infrastructure: drinking water, sewage treatment and disposal, stormwater disposal, flood protection and control works, roads, and passenger transport.

In addition to a role as a provider, there is:

- a regulatory role, particularly through the infrastructure provisions of our resource management law (currently under the Resource Management Act 1991)
- a role as an advocate and broker – local authorities identify community needs and then work with others to address these (aspects of the rollout of ultra-fast broadband are an example of this). On occasion that may also create a further role as a funder either in partnership with the sector

Local government is more than ‘just another stakeholder’. It is a partner in the governance of New Zealand, and especially the provision of critical infrastructure in particular. Even it were not, local authorities still have the responsibilities for managing the impacts of infrastructure failure and of the ‘on the ground’ impacts policy decisions taken to build resilience.

It is disappointing to note that DPMC has taken few steps to engage specifically and proactively with the sector outside of the CDEM groups. As DPMC turns SRCI into more concrete proposals, we encourage it not only to broaden its direct engagement with the CDEM sector, but also to more directly engage with Local Government New Zealand and Taituarā.

***Resilient infrastructure is an enabler of many other wellbeing outcomes. DPMC must not lose sight of the linkages between this work and other policy and institutional reforms.***

Infrastructure is the servant of the community. Investments in resilient infrastructure are not made for their own sake, but for their ability to protect the wider package of wellbeing outcomes that they generate.

SRCI proposes to increase resilience standards and sets out various strategies to that end. And while SRCI identified linkages between its proposals and those in the Emergency Management Bill (though it could have made more of these), resilience has overlaps with proposals around (among others) Affordable Water Reforms, Resource Management Reforms, the Severe Weather Emergency Recovery work and sectoral reforms in transport and energy. As the keeper of emergency management policy and the overall coordinators of policy approach DPMC must ensure that any additional requirements that result from this strategy are integrated with existing regulatory regimes to avoid onerous, complex, or competing requirements for end users.

***The Australian approach to defining critical infrastructure has much to commend it.***

We were interested to see the definition of critical infrastructure as it applies in Australia's Security of Critical Infrastructure legislation.

New Zealand has traditionally taken a lifelines approach to defining critical infrastructure. While that's not 'wrong', Covid-19 has reminded us of the role that services outside the subset of lifelines infrastructure play (for example, the closure of severe curtailing of service in some Auckland supermarkets due to staff absences).

There are examples, both abroad and in New Zealand, of service or system disruption that was as disruptive to economy and daily life (or potential disruption). For example, the denial of service attacks on the New Zealand Stock Exchange that effectively removed its ability to trade for (a week) or the cyberattack on the Reserve Bank that might have compromised the banking system).

For that reason the approach that the Emergency Management Bill takes to defining critical infrastructure is a step forward, in that critical infrastructure is defined as *"assets, systems, networks, and services that are necessary for the provision of public services and are essential to public safety, national security, economic security, or the functioning and stability of New Zealand"*.

However, this is a very broadly drawn provision. Arguably a service is critical infrastructure if the Minister says it is. Policy options canvassed elsewhere in the document such as setting minimum standards for resilient infrastructure are critically dependent (no pun intended) on a clear understanding of which services are included and which are not.

We consider that the approach to defining resilience should be clearer regarding the inclusion of flood protection and river control infrastructure. We concur with the comments made by the River Managers Special Interest Group of Te Uru Kahika when it says

*"As the 2023 rain events and Cyclone Gabrielle have emphasised, the infrastructure associated with river control and flood protection operates to protect economic, environmental, and social wellbeing. As such, this infrastructure is essential to the functioning of our society, the economy, public safety and security, and the provision of public services.*

*Loss, damage, or disruption to flood management infrastructure has and will – as demonstrated by the recent storm events, severely prejudiced the provision of other essential services, and has had a significant impact on the lives and livelihoods of New Zealanders*

*Moreover, river control and flood protection infrastructure play a vital role in protecting other lifeline utilities. Simply stated, river management and flood protection schemes provide infrastructure that protects other vital infrastructure."*

We note in neither SRCI nor the Australian approach did we see any recognition of governance as a critical service. We are aware that the recently (January 2023) European Directive on Resilience of Critical Infrastructure did recognise a public administration category (unhelpfully limited to central governments alone).

We submit that there are governance functions – such as the maintenance of law and order, emergency management (not least) that are very much critical regardless of the approach taken to defining resilience. To illustrate our point, consider how a CDEM agency might cope with an emergency such as a severe weather event, if one of the staff had an undetected case of Covid-19 and physically turned up for work.

***There are overlays of both ability to pay and willingness to pay to the resilience question.***

Some of the common approaches to resilience include the following:

- building and operating infrastructure that might not be 'economic' but is otherwise needed to protect national security or economic security<sup>1</sup>
- building redundant or back-up systems
- building to a higher standard
- adding protective capacity.

The one thing that all of these approaches have in common is that they cost. Broadly speaking, New Zealand can build as much or as little resilience into its critical infrastructure as it is both able to afford and willing to pay for.<sup>2</sup>

SRCI asks if it has accurately discussed the financial implications of enhancing resilience. We submit that much more could have been said about the financial implications of resilience and further, that it is the availability of funding that acts as the most significant practical and political constraint on the policy choice available to us .

SRCI notes that those who pay for the cost of resilience include the shareholders, employees (!), consumers/users and Government. While strictly speaking correct, speaking as a representative of one of the spheres of Government we observe that

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<sup>1</sup> For example, this was the historic justification for the construction and operation of the Marden Point Oil Refinery.

<sup>2</sup> There is some tendency to confuse affordability and willingness to pay, politicians in particular talk about the former when they often mean the latter. Put simply affordability refers to a genuine inability to pay, willingness to pay refers to a reluctance to pay (cant pay vs won't or don't want to pay).

Government's do not conjure money from thin air. The funding supplied by central and local government ultimately comes from the taxpaying public (i.e. the other groups).

We would have anticipated that this section of SRCI would be supplemented with a synthesis of the existing evidence on the key resilience challenges and what is known about the associated costs. For example, what evidence is presented in the New Zealand Infrastructure Strategy have to say – noting that the strategy mostly covers the lifeline assets.

There is an additional aspect to this calculus – which is (of course) the potential costs of not acting, or of taking inadequate action. The most topical example we can think of comes from Cyclone Gabrielle where a combination of inadequate protection, some asset failure and inadequate maintenance resulted in a national level disaster. As we understand the cost of Government buying out some 700 so-called 'category 3' affected properties is estimated \$1 billion, and that's before any other action.

The steps outlined on paragraph 68 represent a partial list of the steps required to minimise the scale and consequence of costs.

First, we need to establish what we actually expect from our critical infrastructure and services. Infrastructure (even critical infrastructure) is the servant of the community – we invest in it for the contribution to our wider goals. That then helps us both define the levels of service we expect and assess where the risks to those levels of service (including risks), It this assessment that informs the judgment about whether the resilience strategy needs to be based on a minimum standard (referred to in SRCI as 'the floor'), or something above it.

Second, we need a robust understanding of the present state of the critical infrastructure, including how resilient (or not) the infrastructure is. That may not always be as easy as it sounds, local authority experience is that we know much more about the condition of assets that are above ground (such as a road) than we do about underground networks (such as sewages disposal).

Having established the base expectations and whether these are being met, then the strategies mentioned on page 26 of SRCI become relevant. But these decisions need to be informed by an assessment of risk, cost, and consequences.

We concur with the commentary in the LGNZ submission that:

*"While we recognise the long-term benefits of investing in our critical infrastructure, councils are currently facing significant financial pressures and lack adequate funding mechanisms to meet current requirements. Although the Future for Local Government Review's final report recognises the financial pressures facing councils, no commitment*

*to improve the funding and financing tools available to councils has been made yet. This poses a significant risk to the success of the proposed strategy as it is unlikely councils will have the resources required to implement improved minimum standards. This is particularly true in districts with large areas where the potential rating base is limited due to their small population. Often these districts have some of the least resilient local government infrastructure. This issue is further exacerbated in places like Northland and Tairāwhiti, where councils face additional funding challenges due to socioeconomic conditions. We encourage DMPC to work with LGNZ and the Department of Internal Affairs to ensure that councils can fund improvements to critical infrastructure and meet any new requirements introduced under this strategy.*

*The discussion document outlines the need for users, providers, and the government for pay for improvements to the resilience of our critical infrastructure and proposes reasonable principles for apportioning the costs between them. These principles are useful in the context of business investments and where infrastructure provision is the sole focus of an agency. However, councils face a number of cost pressures and will need to balance several competing priorities to fund improvements to critical infrastructure. Options to develop system resilience need to be staggered to accommodate financial and capacity constraints and should integrate with existing maintenance and renewal programmes where possible."*

***The discussion of megatrends is helpful but is incomplete.***

We consider that there are two further megatrends that are also relevant to critical infrastructure.

As with much of the developed New Zealand has an **aging population**. The latest subnational population projections suggest that by 2032 somewhere between 20 and 22 percent of New Zealanders will be aged 65 or older, compared with 15 percent in 2016. By 2050 this proportion is likely to sit at around 23-25 percent. Some parts of the community have reached the demographic 'tipping point' where the number of people leaving the workforce is greater than the number entering it.

The main implications that aging populations create for critical infrastructure lie not so much in the direct creation of an additional risk to the infrastructure, but in the affordability of the necessary investments. Even with changes to the entitlement regimes (such as raising the age of entitlement) more New Zealanders will move onto fixed incomes raising concerns about the affordability of services. This links back to our second comment.

Having said that an aging population could go some way to adding further to the set of critical infrastructure. An aging population comes with demands for wider smoother footpaths or for mobility services and passenger transport,

The second megatrend not covered in SRCI is **urbanisation**. New Zealand is (somewhat paradoxically given our international brand) actually more urbanised than much of the rest of the world and urbanised at an earlier stage than many. The big implication for our critical infrastructure lies in the 'way we do' urbanisation. New Zealand's urban areas tend to eschew brownfield or infill-based intensification in favour of greenfield development,

By the way, rural depopulation can pose a challenge too especially from the standpoint of affordability. Network infrastructure of any sort is characterised by a high level of fixed cost, as populations decline the economic base necessary to generate funding to support infrastructure also declines.

We agreed with much of what has been said about the **more complex geopolitical and national security environment**, though much of that discussion though is weighted towards cybersecurity.

We consider that the spread of **dis/misinformation and declining trust in government** (and business) is a legitimate threat to critical infrastructure. To take some examples, the so-called occupation of Parliament and the surrounds was a political protest in regard the state's response to Covid-19, but blocked a major arterial and a major public transport interchange. Misinformation about fluoride and other means of treating potable water has not yet, but is likely to, generate attempts as disruption and sabotage.

SRCI correctly identifies the **rapid uptake of new technology** as a fourth megatrend.

We note one of the larger risks as technology grows ever more complex there is a provider risk. This is the risk that infrastructure providers face issues with interoperability of systems or are locked into a particular solution (or out of others). This risk is particularly acute in smaller economies such as New Zealand where there are not a lot of alternative providers onshore.

New technologies are not only a source of vulnerability, but can also offer opportunities to enhance resilience. For example, the internet of things offers much potential as a tool for monitoring asset condition in real time and (in conjunction with data analytics) to generate insights as to how and when critical infrastructure is used. The pay-off in better ability to engage in strategies such as preventive maintenance and demand management techniques can both enhance resilience and make for better quality spend.

***We view clear standards and expectations as a must – but these must be robust.***

Some standards would be essential but cannot just be based on a minimum 'set of numbers'.

One of the concerns about minimum standards is that by their existence the minimum becomes the standard. Decision-makers provide only that which they are required to. This is also sometimes referred to as the teaching to the test' phenomenon.

Basing a regulatory regime on minimum standards alone provides clarity and certainty, especially for those who might bear legal responsibility for failure to meet the standards. But clarity and certainty can also be a weapon in the hands of those such as those with political agendas in seeing or creating a failure of critical infrastructure.

As with any risk management process, the resilience of critical infrastructure is a journey rather than a destination. The megatrends identified in SRCI (or elsewhere) each mean that the risks to the resilience are forever evolving, so what it means to be resilient evolves likewise.

It seems to us that standards for resilience need to focus on minimum levels of supply or service (e.g. all suppliers of automotive and energy must keep at least x days supply in reserve at all times). The other places where standards have a role are:

- *planning* -what plans do we expect the providers of critical infrastructure to prepare, including what information, and with what quality and assurance requirements (for example both local authority long-term plans and those of the new water services entities are subject to prospective audit by representatives of the Auditor-General)
- *reporting* – what information must be supplied, to whom and with what frequency and quality. Further, what happens if any breaches of other standards occur – should these be disclosed and to whom.

At the very least great care must be taken when setting standards. For example, policy-makers should never set a minimum standard that was the genuine minimum. Some allowance for surplus or contingency would be built in over that genuine minimum (an example of this appears in the document as the difference between 'just in time' and 'just in case'). And processes for reviewing standards must be both frequent and robust.

***The regulatory regime is fragmented and would benefit from a single lead agency.***

One of the historic deficits in the way New Zealand 'did' infrastructure is that there was little national coordination to the development and particularly the regulation of infrastructure. There is something of a jumble of different frameworks and approaches, with little by way of a unifying vision of what infrastructure is actually 'for'.<sup>3</sup>

We therefore support a single regulatory agency with oversight of critical resilience. We further agree that the National Emergency Management Agency is not an appropriate body to act as a regulatory agent. There may be occasions where a conflict of interest may exist between the role of a regulator and a manager of emergencies. Providers may also be reluctant to share information with an emergency manager that may leave them liable for prosecution at a later stage.

We've considered several alternatives from amongst the existing set of Government Departments. In the case of agencies such as the Commerce Commission there could be conflicts in regulatory roles. Other would suffer from a credibility gap – for example the Ministry of Transport or Ministry of Energy are expert in their fields but are not (would not claim to be) experts in other areas.

Te Waihangā – NZ Infrastructure Commission comes closest. It has expertise across a broad range of infrastructure types and of a wide cross-section of infrastructure challenges. It already has some degree of arms-length relationship from central government.

Te Waihangā would need some degree of repurposing from its present role however. For example its purpose would need to change to reflect the change in role. It would need access to a wider range of regulatory powers – including regulation-making and enforcement powers.

Of course, there is a very valid 'machinery of government' question to be asked about the plethora of infrastructure agencies and whether this is the optimal way to configure arrangements. There has been some rationalisation of infrastructure related areas – for example telecommunications, energy and infrastructure have been centralised in MBIE. Could there be more?

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<sup>3</sup> The New Zealand Infrastructure Strategy represents a 'start' but is not comprehensive in its coverage of services regarded as critical (and was probably not intended to capture banking or food and grocery assets).