PORTS OF AUCKLAND
TĀMAKI HERENGA WAKA

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Response to consultation on critical infrastructure resilience

Opening Comments

Ports of Auckland Limited (POAL) history goes back to when the Auckland Harbour Board was formed in 1871. Having ports on both the Waitemata and Manukau Harbours enabled Auckland to become the major commercial centre in NZ. Over time we saw the Waitemata Harbour port location take precedence. The main reason is the Waitemata Harbour is such a naturally resilient location compared to the Manukau Harbour. Our Waitemata location is protected by the Hauraki Gulf islands from large sea-swells and tsunami and has more natural protection from high-wind than the Manukau location. The Waitemata location has been used throughout the history of human occupation for these reasons – it was for centuries a key trading post and safe location for Māori. A decision was made to close the Manukau port, due to insufficient customer demand, and it was sold to Auckland Council in 2018.

Over the years we have experienced the resilience benefits from being very close to NZ's largest population centre. The ability for trucks and trains to travel to and from the port is critical for our continued operation. Having smaller distances with multiple route options has enabled us to keep operating when other ports have not. However, freight corridor protection is vital. We often see local government focused more on public transport than freight transport. There would also be significant benefit if critical infrastructure systems were considered rather than individual elements in an ad-hoc way. Ports need to be considered as part of an infrastructure 'system' that includes the connecting road and rail connections and downstream distribution centres, warehouses, inland ports, and empty container yards. This 'system' can only function if workers can access these sites (as was evident in Covid).

NZ has many international ports and we have seen the resilience benefits in having multiple port options around NZ, following events such as the Christchurch and Kaikoura earthquakes. Ports have demonstrated a strong ability to withstand or quickly recover from significant interruption events. However, NZ should be concerned with the impact of a large tsunami from the South American west coast which would likely cause severe damage to Northport, Port of Tauranga, Port of Napier, CentrePort, Lyttelton Port, and Port Otago. Fortunately, our location naturally protects us from the worst impact of such an event.

NZ ports are very concerned with the 2026 expiry of our Coastal Occupancy Permits (Resource Management Act s384a). There will be large costs coming soon for ports to renew their consent to legally operate – potentially individually via local Councils, whereas a national approach appears more logical to us. We believe it would be better for NZ if this money was spent on improving resilience.

At POAL, with growing freight volumes and changing shareholder expectations, we continue to invest in infrastructure improvements. We need a favourable planning and consenting regime for critical infrastructure to enable resilience improvements and to improve infrastructure capacity. Historically we have experienced delays and multiple court actions impacting our ability to invest in critical infrastructure and are seeing this with other critical infrastructure owners.

The Discussion Document mentions a 30-year horizon (pg 3) and an infrastructure deficit of $104 billion (pg 20). NZ needs to ensure that it also has sufficient infrastructure capacity and it plans well in advance (30 years seems appropriate). Having sufficient infrastructure capacity will make NZ more efficient and competitive and likely enhance resilience through multiple options. For example, overburdened infrastructure due to a deficit of infrastructure will have very little capacity to absorb shocks or provide alternate options when other infrastructure is compromised. A power network running at capacity can't absorb shocks, a port running at capacity can't take freight from another region if their port is compromised. The Government has a role to ensure that Government legislation and Council Regional and District Plans provide for infrastructure owners to upgrade and expand infrastructure to ensure it is resilient and provides sufficient capacity. Many current capacity constraints are due to consenting complexity or high economic costs to construct.

From an affordability and efficiency perspective, we see the ideal as building infrastructure capacity slightly ahead of its requirement, thus balancing overall cost / return on investment, whilst ensuring infrastructure has sufficient capacity to meet needs. We note that in the wider supply chain (and in infrastructure generally), there is often significant spare capacity which can be accessed by conscious choices around timing and seasonality – for example, ports operate largely 24/7 whilst inland supply chains and transport systems currently operate on shorter hours. There are options to manage infrastructure congestion that do not involve building additional infrastructure, such as peak-hour pricing.

We believe infrastructure resilience should also consider the balance between short and long-term requirements, as well as the balance between national interest and local priorities. The Port Companies Act 1988 was established to provide a measure of long-term certainty / security for operation of ports, ensuring some separation from shorter term political or other risks.

In future there is potential for private investors to take a more significant role in infrastructure investments in NZ. Initiatives to improve critical infrastructure resilience could anticipate this and ensure Government provides for appropriate consistency of approach nationally.

Prelude: Objectives for and principles underpinning this work programme

• Does more need to be done to improve the resilience of New Zealand's critical infrastructure system?

Yes. Historically NZ has made significant resilience improvements after critical infrastructure has failed. There would have been significant benefit to NZ Inc if these resilience improvements were made prior to event that caused the failure. There would also be significant benefit if critical infrastructure systems were considered rather than individual elements in an ad-hoc way.

• Have you had direct experience of critical infrastructure failures, and if so, how has this affected you?

POAL was severely affected by the Mercury Energy power failure in February/March 1998. POAL had to organise a cargo ship moored at the port to feed power into its own electricity network to maintain critical functions.

POAL was minorly impacted by water restrictions during the drought of autumn 2020.

Rail services have proven to be unreliable, both from rail network, rolling stock and personnel. For example, the Auckland Metro Rail Network suffered massive disruption in 2019 and 2020 due to rolling contact fatigue – a form of wear and tear on the tracks. The unreliability of rail services lowers POAL's ability to increase the ratio of containers moved via rail versus road.

POAL is frequently impacted by failure of key arterial roads due to accidents and severe weather events. However, these issues are normally resolved over-night. An exception was the harbour bridge closure for over two weeks in September 2020 that caused wide congestion across the roading network. Roading failures causes travel time delays for freight and port workers.

POAL is also impacted when other NZ ports are not operational, such as Lyttelton after the 2010 and 2011 earthquakes and CentrePort following the 2016 Kaikoura earthquake. The impact includes changes to shipping line service calls (including delays) and more freight demand (e.g. offloading freight in Auckland and transporting it down country on KiwiRail). Shipping routes and schedules mean that individual ports both in NZ and overseas can impact on other ports' operations due to the flow-on effects of delays or congestion.

The Covid restrictions and lockdowns highlighted how much of NZ's critical infrastructure operates as a system. For example, ports are dependent on functionality of; the port; road and rail connections; receiving warehouses and distribution hubs and vice-versa. These all require staff (which must be able to access the sites) and services (such as electricity).

• How would you expect a resilient critical infrastructure system to perform during adverse events?

POAL would expect critical infrastructure to perform as the owner has advised, either directly or published online (i.e. the risks for the infrastructure are described along with the likely impact from the risk eventuating at different event scales). POAL expects that some reduction in functionality would occur during adverse events, but that the infrastructure owner would provide frequent current communications on the status and likely return of normal service.

We would also expect that infrastructure owners have identified key failure / disruption risks and have appropriate contingency plans in place to avoid and/or respond to the risks. The contingency plans would need a balance of cost / quality appropriate to NZ's size and ability to afford them.

• Would you be willing to pay higher prices for a more resilient and reliable critical infrastructure system?

This depends on the infrastructure. For electricity supply, which is critical for port function, the likely answer would be 'yes', as it may decrease our need to supply back-up power generation or redundant supply feeders. For communications, which is also critical for port function, the answer would be 'maybe', as we have designed around our telco's failure to deliver an inherently resilient service, however this is expensive and distracting. For land transport networks the

answer would likely be ‘no’. Roads are normally local or central government funded, while rail is not cost effective at current rates.

• *The work programme’s objective is to enhance the resilience of New Zealand’s critical infrastructure system to all hazards and threats, with the intent of protecting New Zealand’s wellbeing, and supporting sustainable and inclusive growth. Do you agree with these objectives? If not, what changes would you propose?*

POAL agrees with those objectives.

• *Do you agreed with the proposed criteria for assessing reform options? If not, what changes would you propose?*

POAL agrees with the proposed criteria of effectiveness, cost, and complexity.

Section 1: Background and context

Why a new regulatory approach may be required

• *The paper discussed four mega trends: i) climate change, ii) a more complex geopolitical and national security environment, iii) economic fragmentation, and iv) the advent and rapid uptake of new technologies. Do you think these pose significant threats to infrastructure resilience?*

POAL agree that the four listed mega trends pose significant threats to infrastructure resilience.

• *Are there additional megatrends that are also important that we haven’t mentioned? If so, please provide details.*

One thing missing is the absence of people. Most infrastructure requires highly-trained and experienced personnel to create, maintain, and enable the services to be delivered. There is a mega-trend regarding a global shortage of many of these personnel combined with a global labour market that enables easy movement of people. NZ, unfortunately, can be a difficult immigration and training market. A general example is cyber expertise, which is a difficult area to recruit. A specific ports example is quay crane operators, which we train (takes around 18 months before they are experienced) and then they leave for Australia for significantly higher salaries.

What is also missing is infrastructure capacity. The Discussion Document mentions a 30-year horizon (pg 3) and an infrastructure deficit of $104 billion (pg 20). NZ needs to ensure that it also has sufficient infrastructure capacity and that it plans well in advance (30 years seems appropriate). Having sufficient infrastructure capacity will make NZ more efficient and competitive and likely enhance resilience through multiple options. For example, overburdened infrastructure due to a deficit of infrastructure will have very little capacity to absorb shocks or provide alternate options when other infrastructure is compromised. A power network running at capacity can’t absorb shocks, a port running at capacity can’t take freight from another region if their port is compromised. From an affordability and efficiency perspective, we see the ideal as building infrastructure capacity slightly ahead of its requirement, thus balancing overall cost / return on investment against ensuring infrastructure has sufficient capacity to meet needs.

Third (and related to both the complex geopolitical and national security environment as well as the uptake of new technologies) the rapidly evolving extent and sophistication of cyber-crime should be emphasised more, as a distinct significant trend with the potential to cause major economic disruption. Examples of recent cyber-attacks causing significant infrastructure disruption include:

- The Triton malware attack in 2017. This was one of the most potentially destructive and dangerous cyber-attacks on industrial control systems in the last several years. This state-sponsored malware attack was discovered first in a Saudi petrochemical plant, allowing hackers to take over the plant's safety instrument systems. This malicious code could have led to an explosion or release of toxic gas and was the first time such an attack was purposefully designed to cause loss of life.

- Israeli water systems were cyber-attacked on a number of occasions in mid-2020. The attacks were designed to compromise the industrial command and control systems for Israel's pumping stations, sewer systems, wastewater plants, and agriculture pumps.

- Iranian state-sponsored hackers broke into the control systems of the Bowman Dam in New York. The hackers were able to take control of the SCADA controllers, potentially giving them full engineering control of the dam.

• Do you think we have described the financial implications of enhancing resilience accurately? If not, what have we missed?

POAL considers that the financial implications have been described adequately, except we believe that costs of improving resilience (65b in the consultation document) are realistically likely to be largely borne by central / local government on behalf of taxpayers and ratepayers, or by customers, and unlikely to be borne by employees.

Section 2: Potential barriers to infrastructure resilience

Building a shared understanding of issues fundamental to system resilience

• How important do you think it is for the resilience of New Zealand's infrastructure system to have a greater shared understanding of hazards and threats?

POAL consider this very important.

• If you are a critical infrastructure owner or operator, what additional information do you think would best support you to improve your resilience?

We need consistent Government-led information and metrics on risks and the quantum of those risks (cyber, sea level rise, foreign interference, etc)

• What do you think the government should do to enable greater information sharing with, and between, critical infrastructure owners and operators?

Provide a safe, secure, trusted process for sharing information.

Setting proportionate resilience requirements

• *Would you support the government having the ability to set, and enforce, minimum resilience standards across the entire infrastructure system?*

This would depend on the type of standard being set. The Government has a role to ensure that Government legislation (such as the RMA replacement) and Council Regional and District Plans provide for critical infrastructure owners to upgrade and expand infrastructure to ensure it is resilient and provides sufficient capacity. Many current capacity constraints are due to consenting complexity or high economic costs to construct.

If so:

– what type of standard would you support (eg. requirement to adhere to a specific process or satisfy a set of principles)?

POAL would support requirements that are considered good practice and entities should doing anyway e.g., to periodically identify critical assets, risks to them, and implement a mitigation strategy. The reform options criteria outlined (effectiveness, cost, and complexity) would be fundamental to achieving an appropriate balance.

We would not support a minimum service level standard across all sectors (e.g., service availability or outage frequency calculation). The sectors are very different in terms of consequence for service interruption. If an electricity network provider is completely unable to provide power for 5 minutes, everyone trying to use power at that time knows about it and is at least inconvenienced and potentially incurs a loss. If POAL is completely unable to provide services for 5 minutes, it will not impact the importer/exporter at all and would only inconvenience the trucks waiting at the port. Ports frequently need to suspend operations for safety reasons (e.g. high winds) and there is general acceptance by port users of this.

– do you have a view on how potential minimum resilience standards could best complement existing approaches to risk management?

Would depend on the minimum resilience standard.

• *Would you support the government investing in a model to assess the significance of a critical infrastructure asset, and using that as the basis for imposing more stringent resilience requirements?*

It makes sense that the government understands the significance of critical infrastructure assets. POAL's support to use that to impose more stringent resilience requirements would depend on the critical asset criteria and the more stringent requirements imposed.

If so:

• *what options would you like the government to consider for delivering on this objective?*

The government should first identify the critical assets and understand the impacts from their failure before considering what more stringent resilience requirements are required.

• *what criteria would you use to determine a critical infrastructure asset's importance?*

The impact on NZ society should the asset not be functioning across varying time periods.

Managing significant national security risks to the critical infrastructure system

• Do you think 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?

Yes.

If so:

– what type of powers should the government consider?

The type of powers provided for in Australia seem reasonable.

– what protections would you like to see around the use of such powers to ensure that they were only used as a last resort, where necessary?

The protections given in Australia seem reasonable.

Creating clear accountabilities and accountability mechanisms for critical infrastructure resilience

• Do you think there is a need for a government agency or agencies to have clear responsibility for the resilience of New Zealand's critical infrastructure system?

Yes.

If so:

– do you consider that new regulatory functions should be the responsibility of separate agencies, or a single agency?

Makes sense for a single agency. This agency should also focus on removing regulatory national and local body obstructions to critical infrastructure.

– do you consider that an existing entity should assume these functions or that they should be vested in a new entity?

We don't consider establishing a new entity would make sense. NZ Infrastructure Commission may be logical fit for these functions.

– how do you see the role of a potential system regulator relative to sectoral regulators?

Do not see an issue with having a system regulator to deal with along with Maritime NZ, providing they are regulating different things. POAL already has several regulators.

• Do you think there is a need for compliance and enforcement mechanisms (eg. mandatory reporting, penalties, offences) to ensure that critical infrastructure operators are meeting potential minimum standards?

POAL consider there is a need for compliance mechanisms such as mandatory reporting requirements, subject to appropriate balance of effectiveness, cost, and complexity. This may be sufficient for critical infrastructure owners to meet minimum standards. If not, then barriers for the entity in meeting them could be ascertained and options for removing the barriers could be investigated. Penalties may not be the best way to address the barriers, particularly when some of the barriers could be due to conflicting Government or Local Body requirements.

If so do you consider that these should be applied to the entity, to the entity's directors/executive leadership, or a mix of the two, and why?

Applying obligations for compliance directly to the entity is likely to be most appropriate balance in the short to medium term.

Concluding comments

POAL thanks the DPMC for the opportunity to provide early feedback and is available to respond to any questions regarding the feedback provided.

Yours sincerely

Roger Gray
CEO