1.0 TECHNICAL MEMO – PORT DEMAND AND LOGISTICS / ENGINEERING DESIGN AND PORT OPERATIONS

To:	Stacey Sharp & Blair Masefield, Beca (consultant planners)
From:	Scott Keane, Principal Industry Director Ports & Maritime, Stantec Australia Pty Ltd
Date:	25 July 2023

2.0 APPLICATION DESCRIPTION

Applicant's Name:	Northport Limited (Northport)
Activity type:	**Land Use (s9), Coastal Permit (s12), Water Permit (s14), Discharge Permit (s15)**
Purpose description:	Northport seek to construct, operate, and maintain an expansion of the existing port facility to increase freight storage and handling capacity, and transition into a high-density container terminal.
Application references:	Northland Regional Council: APP.005055.38.01 Whangārei District Council: LU2200107
Site address:	Ralph Trimmer Drive, Marsden Point, Whangārei

Statement of Qualifications and Experience

My name is Scott Keane. I currently hold the role of Principal Industry Director, Ports and Maritime at Stantec Australia Pty Ltd.

- Bachelor Engineering (civil)
- Masters of Engineering
- 27 years experience
- Having undertaken significant coastal research initially and as a Master's thesis, I have applied that and engineering expertise throughout my career including executive management in public and private sector associated primarily with the maritime industry, including 13 years in client side Port management. My career includes engineering design and maintenance (Ports), Port regulatory planning and environment, port operations, pilotage management, and maritime safety management and systems. This includes as relevant to this statement, Port engineering manager, port planner and designer, port operations adviser. These include roles as General Manager Seaport for Mackay Port Authority (now part of North Queensland Bulk Ports), CEO Torres Industries (parent body to Australian Reef Pilots), GM Business Development with Australian Maritime Systems, Adviser to COO PNG Ports and Principal Industry Director Ports and Maritime with Stantec Australia. This includes as relevant to this statement, economic and financial feasibility of projects associated with roles, and feasibility (financial and economic) in port reform activities throughout the Pacific.

Also relevant to the above scopes has been my involvement on the Board of the Queensland Multi Modal Freight Council from 2008-2011, and Board Member of PIANC Australia/New Zealand (from 2008 to present), including regional representation on the Maritime Commission within PIANC.

- I confirm that the statements made within this memorandum are within my area of expertise and I am not aware of any material facts which might alter or detract from the opinions I express. Whilst acknowledging this consenting process is not before the Environment Court, I have read and agree to comply with the Code of Conduct for Expert Witnesses as set out in the Environment Court Consolidated Practice Note 2014. The opinions expressed in this memorandum, are based on my qualifications and experience, and are within my area of expertise. If I rely on the evidence or opinions of another, my statements will acknowledge that.

3.0 SITE AND PROPOSAL DESCRIPTION

3.1 Site and Environmental Setting

A description of the subject site and surrounding environment was provided in section 4.0 of the Assessment of Environmental Effects (AEE) entitled: *Application for resource consents for the expansion of Northport*, prepared by Reyburn & Bryant, dated 6 October 2021.

3.2 Proposal

The proposal is as described in section 3.0 of the AEE and depicted on the design drawings attached as Appendix 3 of the application (referenced in Section 2.3 below).

I note the following key elements of the proposal:

- Construction of a 11.7ha reclamation to extend the existing Port facility to the east, increasing the overall berth length to 700m
- Construction and operation of a container terminal (500,000 TEU per annum) on the reclaimed land, including the use of ship to shore cranes and associated port infrastructure
- Dredging of approximately 1.72 million m3 of material to construct the reclamation and extend/deepen the existing swing basin
- Construction activities within the coastal environment, including pile-driving (via vibro and top-driven impact hammers), construction of seawalls and abutments, and discharge of decant water
- Discharge of operational stormwater from the extended and existing Port

The memorandum is limited to the consideration of matters relating to demand assessment/economics, supply chain and logistics, engineering design and port operations.

3.3 Reference documents

The following application documents have been reviewed and inform this technical memorandum.

Application

- Assessment of Environmental Effects entitled: *Application for resource consents for the expansion of Northport*, prepared by Reyburn & Bryant, dated 6 October 2021 (henceforth referred to as AEE)
- Design Drawings entitled: *Northport – Proposed Reclamation and Dredging*, prepared by WSP, sheets C01 – C04, plan set dated 18 August 2022
- *Concept Design Report,* prepared by WSP, dated 1 August 2022
- *Issues and Options Report,* prepared by Northport, dated October 2022
- *Northland Marine Oil Spill and Contingency Plan,* prepared by Northland Regional Council, dated June 2020.

s92 Request for Information

- Further information response prepared by Reyburn & Bryant, dated 21 February 2023 (henceforth referred to as s92 Response)
- Draft conditions of consent, working drafts, dated 21 April 2023
- Draft supplementary response to RFI, dated 20 June 2023.

4.0 REASON FOR CONSENT

4.1 Reasons for Consent

A list of resource consents sought (as per the application documents as lodged) are summarised in Sections 1.5 – 1.7 of the AEE, and are as amended by the s92 Response.

4.2 Overall Activity Status

Overall, the resource consent is considered as a **Discretionary Activity**.

5.0 TECHINICAL ASSESSMENT OF APPLICATION

5.1 Port Demand

The Demand and Supply Chain elements of the project impact the scale of requested Port expansion area, which has a resultant impact on the environment via other mechanisms (reclamation, habitat loss, dredging etc).

Having reviewed the ME and other economics reports provided by the applicant, I found them to be based purely on assumption rather than any evidence base. These assumptions expect to capture capacity presently serviced elsewhere. In this instance, the ME report is utilised to reverse engineer the capacity of a terminal to meet inferred

demand. Similarly, purely on Northland/regional demand basis, it would appear that the proposed scale is unwarranted, and the existing plus consented development is sufficient to satisfy predicted regional demand.

The section 92 response refers to a TBA study, however this appears to be based on the estimation of container throughput that is itself based on assumptions rather than demand. Further details around what the berth could achieve with various handling scenarios are provided, but nothing about local demand, need for transport links, cost of whole supply chain for customers and therefore competitiveness in market (overall feasibility) is substantiated.

In my experience, normally such a significant Port development and investment would be underpinned by two key elements:

- Shipping forecast – this would engage with the sector and identify shipping lines and associated shipping types/size that would be willing to utilise the facility under different development scenarios. These might include for example the key assumption contained in the existing reports regarding complete closure in effect of the adjacent Auckland facility.

- Trade forecast – similar to the above this would typically look at trade demands regionally and adjacent regions plus transhipment. In the case of adjacent regions this would then look at logistics requirements in order to achieve trade forecasts. Similarly, in the case of transhipment any coastal shipping or similar hubbing would necessarily be considered. These elements would need to establish economic criteria as conditions or hurdles to be achieved prior to commitment.

5.2 Logistics

The section 92 response in 56.14 refers to the rail spur and potential demand from the initial stage - however KiwiRail in its submission speaks to the requirement for high utilisation of this service for which no assessment of the first stage or any thereafter has been made regarding end users and associated demand for the rail capacity or its associated profitability to justify its construction (acknowledging this is ultimately a Kiwirail / Central Government decision and the rail spur is designated).

56.13 introduces the importance of a strong business case underscored by demand as the trigger, yet nothing in the application seeks to address this critical consideration at this time.

S92 request response 32 (of Attachment 8) and its response raises the expectation by KiwiRail that 80% of cargo will go by rail to a West Coast distribution centre. This seems to suggest an expectation that most cargo is not for benefit of the region. Again, this links back to the necessity of demand for a Port of this scale in this location

The proposal appears decoupled from any reliance on the logistics infrastructure necessary to enable efficient freight distribution from the expanded Port to the locations of demand for imports. This includes the Marsden Rail Link and references have been made to 4 lanes between Auckland and Whangārei. Coastal shipping is also a logistics option.

Various benefits of increased employment and services are discussed by the report. What the report however does not consider is how many of these necessary skills exist in the region or will need to be imported from elsewhere, and in the case of importing skills is there sufficient housing, will housing costs increase etc. Similarly due to larger potential contracts, some contracted services could be outsourced from outside the region and local companies miss out. This has not been discussed as a risk or weighted economic assessment. I acknowledge though this may be beyond the scope of the New Zealand planning framework.

5.3 Shipping

The supplementary response suggests that shipping numbers are unlikely to increase – that is that with existing trade throughputs as forecast, plus liner (container) trade, plus occasional cruise traffc, there is NO forecast increase in shipping movements. This is a demonstration of the lack of actual demand assessment and planning undertaken to date. Indeed the very assumption of ship sizes cannot be simply assumed, albeit this is somewhat predicated on the ships presently calling New Zealand from international ports.

55.13 - acknowledge the resistance to expiry timeframes etc however interestingly the para actually acknowledges the role that shipping plays in facilitating international trade, port planning horizons etc yet the application fails to even initiate such a study of shipping sector and relative support. Indeed shipping line submissions have linked success to other factors such as transportation links so in isolation it seems that there is insufficient immediate support / demand established

5.4 Port Design

Quayline (berth) Extension

Subject to demand and logistics / shipping confirmation, the scale of the berth extension and yard / terminal is otherwise justified based on the forecasts made to date. The concept to amend the terminal at a later date from Reachstacker operations to RTG crane terminal operations would be limiting unless infrastructure is invested in initially so as not to reduce capacity and delays through construction if/when forecast capacity and the need to change terminal / stevedoring equipment occurs (noting this is more of a design than an RMA matter).

Yard Layout

Assuming the demand and layout is confirmed, then there are minimal opportunities for visual amenity, noise or similar issues to be addressed without impacting on the capacity of the terminal. While not considered at this time, particularly as part of a staged development of the site, a solution could be automation as that reduces lighting and warning signals in the terminal and therefore improves noise and light impacts at night at least. I note that these effects are addressed by other experts.

Section 15.1 of the S92 submission suggests demarcation of areas however the very setting out of areas for container storage, particularly with RTG cranes or similar, mean these areas are not automatically suitable for other uses (subject to design of beams etc), similarly reefer points mean those areas are dedicated to a large degree to refrigerated

container storage and have other structures in the way of other uses (i.e. breakbulk for arguments sake).

Civil Defence / Logistics

Statements in the Section 92 response relating to contribution of the facility to civil defence should be considered in the context of logistics connections and resilience/redundancy of all associated infrastructure. Of particular note here is that the Engineering Concept Design identifies the infrastructure as Importance Level 3 – i.e. no post disaster functionality. Also, irrespective of post disaster functionality, the cost of the facility and ROI is usually a consideration for assets of this nature, which appears not to be addressed (noting this may not strictly be an RMA matter).

5.5 Operational Functions

Container Terminal Activities

It is agreed that from an operational perspective as well as security and infrastructure that the existing uses at the port and container operations cannot be blended. The provision of a land backed terminal provides greatest operational efficiency on terminal however beyond terminal it is unclear how cargo will be transported until such time as logistics networks (road and rail) are fully established. The access provisions are heavily subject to logistics arrangements (i.e. rail vs truck and gates/ queuing accordingly).

It has been argued that key components of the terminal are effectively all encompassing (Item 2 response to RFI). Elements however such as Harbour Control, Border control / customs offices, and tug and pilot facilities are not absolutely required within the port environment. They could for example be housed near site / city area with relative access times, nearby marine facilities etc. This will however have limited to any impact on the forecast reclamation area.

6.0 TECHNICAL RESPONSE TO MATTERS RAISED IN SUBMISSIONS

6.1 Rail Spur / Road Links

Relevant submissions: e.g. 35, 48, 50, 51, 93, 94, 95, 113, 127, 137, 147, 151, 167, 169, 182, 208, 216, 236

- Submissions acknowledge the rail spur and issues such as shipping line's 3 port strategy around where cargo needs to go and how the spur is part of this.
- Level of utilisation (high volume) to underpin the development of the spur vs regional demand for goods.
- Criticality of the rail/transport links to achieve required trade / alleviate pressures
- Need to work with Kiwirail but no consideration of subsidies, infrastructure costs,

required levels of utilisation or overall freight costs

- challenges competitiveness / economics of rail spur/line for frequent transport unless linked with other regional opportunities - should be part of overall feasibility
- link resource consent to other transport links proceeding as well
- Some speak against rail link and instead limiting capacity to align with road links.

In reviewing the documentation provided it is my opinion that the matters raised in the above submissions (by example) are valid and are a necessary element of establishing the demand or extent of any resource consent.

6.2 Demurrage

Relevant submissions: e.g. 45

- Submission raises cost of demurrage to economy and freight costs which is not addressed elsewhere but is a key element of the financial feasibility of the facility as proposed vs using established ports and freight options.

6.3 Layout, Capacity, Utilisation etc

Relevant submissions: e.g. 51.3, 80, 92, 124, 141, 204

- As discussed above, submissions have raised the issue of utilisation vs sharing of berths for example. These are valid points as presently the demand itself has not been properly established. If demand is assumed, then the opportunity for sharing etc is very limited and the design as proposal is reasonably optimised.
- Impacts on Noise, Visual Amenity etc are different throughout the staged development. These effects are addressed by other experts.

6.4 Other / alternate Users

Relevant submissions: e.g. 54.2, 58.2, 73.1, 77, 88, 90.1, 97.2,

- Respondents have raised the possible use for alternate uses to container cargo (i.e. breakbulk). This is not the subject of the intent nor planned use of yard capacity. As mentioned above, to accommodate a 500,000 TEU facility, and facilitate predicted break bulk trade/volumes, the proposed port footprint is sized appropriately.
- Need for associated facilities (i.e. cold stores) in support of operations are understood to be enabled on the immediate hinterland owner by Marsden Maritime Holdings and zoned for this type of use and development.
- Use for Cruise ships would come with an associated impact particularly on liner trade commonly associated with container terminals. The allowance for Cruise or other uses must be considered in overall demand assessments as these would

likely impact on the attractiveness of the port to liner trade.

7.0 STATUTORY CONSIDERATIONS

7.1 Duration and Review of Consents

The Applicant seeks 35 year durations for the regional consents.

8.0 RECOMMENDATION

8.1 Recommended Conditions and Advice Notes

Should consents be granted, the following conditions and advice notes are recommended to avoid, mitigate, or remedy environmental effects of the proposal and to implement mitigation proffered by the Applicant.

Conditions and Advice Notes

1. Prior to construction provide a thorough staging plan to demonstrate how the terminal at a later date can be modified from Reachstacker operations to RTG crane terminal operations so as not to reduce capacity and delays through construction and avoid the need for additional coastal occupation

2. Design the structures and reclamation and all infrastructure to International standards and guidelines (for example BS, AS/NZS, PIANC) and to withstand natural disasters and function as a lifeline utility

Memo prepared by:	Scott Keane, Principal Industry Director Ports & Maritime, Stantec Australia Pty Ltd
Date:	25 July 2023
Memo reviewed and approved for release by:	Blair Masefield, Technical Director, Beca Limited On behalf of the Whangārei District Council and Northland Regional Council
Date:	2 August 2023