

**1.0 TECHNICAL MEMO – NAVIGATION AND SAFETY**

<b>To:</b>	Stacey Sharp & Blair Masefield, Beca (consultant planners)
<b>From:</b>	Scott Keane, Stantec
<b>Date:</b>	2 August 2023

**2.0 APPLICATION DESCRIPTION**

Applicant's Name:	Northport Limited (Northport)
Activity type:	<b>Land Use (s9), Coastal Permit (s12), Water Permit (s14), Discharge Permit (s15)</b>
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

**2.1 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.

I hold a Bachelor Engineering (civil) and Masters of Engineering and have 27 years experience in the industry.

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, navigational safety assessments and oil spill response planning and implementation. 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, and Principal Industry Director Ports and Maritime with Stantec Australia.

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 Courts 2023 Practice Note dated 1 December 2022, particularly section 9 – Code of conduct for expert witnesses. 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 m<sup>3</sup> 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
- Construction of a high tide bird roost to the west of the existing Port facility.

The memorandum is limited to the consideration of matters relating to navigation and safety.

### 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
- *Navigation Safety Report*, prepared by Bruce Goodchild, dated September 2022.

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 TECHNICAL ASSESSMENT OF APPLICATION AND EFFECTS**

**5.1 Assessment Methodology**

In assessing the information provided, the simulations provided in response to Council’s s92 request for information provide suitable detail of vessels swinging at the proposed Berth 5

a review of the oil spill response plan as well as S92 and supplementary response navigational studies has been completed.

**5.2 Assessment of Effects**

The following effect types are identified and assessed within the Northport Navigation Safety Report:

- Navigational safety effects relating to:
  - Ships utilising the Northport swing basin
  - Channel navigation

- Recreational boating traffic conflicts
  - Conflicts with the CINZ Jetty
  - Users of the proposed fishing jetty/tug facility/swimming pontoon.
- Marine spill risk.

Navigational Safety

The Navigation and Safety approach from the Applicant has been to utilise results from their own navigation simulator and current experience of vessel behaviour to determine that navigation and safety is not a matter that requires control through the resource consent process.

From the responses to further information requests and the simulations / safety practices, there doesn't appear to be anything that addresses passing ship risk and proximity to other facilities. Passing ship effects can be significant on mooring lines and in this case, for a tanker berth, on connections for loading / unloading.

It is also usual that an 'independent' observer and possibly oversight by a MNZ representative, would be appropriate when conducting future simulation activities.

I am aware that there is no certainty around when the Port expansion would need to occur. Therefore, it is uncertain what navigation and safety risks will actually be present at some time in the future.

While I expect that navigation and safety risks can likely be adequately addressed, but for the reasons above I conclude that conditions requiring a Navigation and safety risk assessment occur prior to construction of the expansion. This is especially due to the long projected lead time for the proposal, and the likelihood of an increase in recreational vessels in the harbour as population growth continues.

Marine Spill Risk

The regional Marine spill response plan is independent of the Northport responsibilities. The planned expansion and scale of shipping however dictates that a marine oil spill risk assessment would normally be undertaken as good practice and to guide amendment of the response plan and equipment requirements accordingly. This will be guided by emergency actions from simulations and influenced by available tonnage (tugs) as part of agreed procedures.

**5.3 Conclusion**

Overall, I conclude that, subject to conditions, the actual and potential adverse effects of the proposal will be appropriately managed.

**5.4 Recommended Mitigation**

The following measures are recommended to mitigate navigation and safety effects:

- Additional bespoke simulation from pilot boarding ground to berth and reverse procedure, based on design vessels, vessels at adjacent facilities, passing ships, emergency procedures (loss of steerage and / or propulsion etc)
- A review of operation measures, including number and function of a pilot boat / security vessel or similar, to manage future recreational vessel conflict
- Update / document an oil spill risk assessment, for the purpose of showing risk of navigational incident, likely quantity and types of product spilled, response equipment / capability.

## 6.0 TECHNICAL RESPONSE TO MATTERS RAISED IN SUBMISSIONS

### 6.1 Ship Simulation

Relevant submissions: e.g. 130.1, 168, 176.4

- As raised in relation to the S92 response, respondents have also noted that there is a lack of simulation available, particularly in relation to impacts on existing facilities (i.e. fuel berth). This matter is addressed in Section 5 above and conditions of consent are proposed to require further simulations are undertaken to inform operational management controls.

### 6.2 Conflicting uses

Relevant submissions: e.g. 146.3, 12.4

- Conflicting traffic and recreational impacts and the like are poorly assessed, and no mitigations are proposed, despite Northport suggesting that this will be further reviewed in future stages. As such the impact of the expansion cannot be fully assessed at this time and this assessment, likely for staged increased utilisation and frequency of shipping, should be considered prior to consent considerations.
- Any impacts on International Ship and Port Facility Security Code (ISPS) are unclear and more particularly how other uses and transit through the port area will / can be monitored and controlled. Whilst an operational matter, conditions of consent are recommended to address this matter.

## 7.0 STATUTORY CONSIDERATIONS

### 7.1 Resource Management Act 1991

Relevant statutory considerations under the RMA include:

- New Zealand Coastal Policy Statement
- Regional Policy Statement for Northland

- Proposed Regional Plan for Northland (Appeals Version)
- Operative Regional Coastal Plan.

## 7.2 Other Statutory Documents

Other relevant statutory considerations include:

- Northland Regional Council Navigation Safety Bylaw 2017: restrictions on vessel use around wharf structures, prohibited areas (Channel Infrastructure facility and Northport), navigation controls within harbour limits (including speed limits and rights of way), controls on tankers and hazardous cargos
- Maritime Transport Act 1994: licencing of ships and crew, investigation of maritime accidents, offences/responses for oil spills, liability for pollution damage
- Maritime Security Act 2004: implements New Zealand's obligations under the International Maritime Organization's International Ship and Port Facility Security Code (ISPS Code)

## 7.3 Duration and Review of Consents

The Applicant seeks 35 year durations for the regional consents.

# 8.0 RECOMMENDATION

## 8.1 Adequacy of information

The above assessment is based on the information submitted as part of the application. It is considered that the information submitted is limited in enabling the consideration of the above matters on an informed basis.

## 8.2 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.

### Conditions and Advice Notes

1. Prior to construction of the port expansion, the consent holder must provide to Council results of Full Mission Bridge Simulations (FMBS) with outcomes and recommendations (i.e. ship size, environmental conditions, tug capacities and emergency response) agreed by a suitably qualified independent observer / Maritime New Zealand, or their delegated representative, observers to agree findings. The FMBS are to include:
  - a. Navigation to and from pilot boarding through to berthing at extended berth associated with resource application, all tide conditions, agreed limiting conditions (i.e. Harbourmaster limits for wind, waves, currents) with real time / model inputs into simulator;

- b. Assessment of passing ship, swing safety, emergency planning / procedures and minimum towage requirements;
- c. Manoeuvres into/out of bunker facility with new facility berths occupied / passing effects and safety / emergency procedures and risk assessment.

*Advice Note: The FMBS's are to include independent verification / observer as well as representation from other industry (i.e. CINZ). The comprehensive inclusion of metocean modelling and limiting criteria for navigation, together with suitable sized (design) vessels and support vessels (tugs) to enable a range of arrival and departure maneuvers as well as ad-hoc (unplanned) emergencies such as loss of steerage and / or loss of propulsion.*

- 2. At least six months prior to Practical Completion, the consent holder must provide an Oil Spill Risk Assessment (OSRA) to Council for certification. The OSRA shall be for the purpose of informing any required updates or changes to the Northland Marine Oil Spill Contingency Plan and associated spill response procedures and equipment requirements. The OSRA shall, at a minimum, consider all navigation (i.e. whole transit from boarding to departure of Pilot), emergency procedures, and potential sources and scale of oil spill and response times.
- 3. That operational procedures are set to utilize either existing Pilot boat and crew, or supplement with additional vessels, a security / safety vessel to ensure the channel and swing areas are clear of recreational / fishing vessels in advance of any ship movement.

*Advice Note: Whilst recreational use is sporadic, over the life of the consent application this and other behaviours may change, It is imperative that the Port takes responsibility to ensure safety of public or other users of the waterways. This can be supported by existing vessels and as the port traffic increases and likely pilotage movements dictate, then the inclusion of a specific marine safety / security vessel would be justified and not uncommon in international trading ports.*

<b>Memo prepared by:</b>	Scott Keane, Principal Industry Director Ports and Maritime, Stantec Australia Pty Ltd
<b>Date:</b>	12 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