



Socioeconomic Impacts of Northport Expansion on Te Tai Tokerau/Northland

Outline

Key findings, purpose and scope	03
Context: the Northland economy	06
Port expansion	19
Dry dock/shipyard	41
Interdependencies and constraints	59
Conclusions and Recommendations	65
Appendices	68



NorthlandInc

Growing Northland's Economy
Kia tupu ai te ōhanga o Te Tai Tokerau

Purpose and scope

Purpose

The further development of Northport via an expanded port facility including further containerisation, and the development of a new shipyard and drydock, hold the potential not only to create direct, indirect and induced employment, but to unlock and catalyse a range of additional commercial opportunities in the North.

An expanded Northport, linked by upgraded transport connections to Auckland and the Upper North Island, could help transform the Northland economy as a core part of the Upper North Island supply chain and economy.

A new shipyard and drydock has strategic and commercial opportunities both regionally and nationally.

However, there are a wide range of uncertainties around where decisions lie and the extent of the catalytic effects that these developments would bring.

The purpose of this work, therefore, was to analyse and gain an understanding of the economic and related social impacts of these developments, individually and collectively, to inform decisionmakers and Northland stakeholders.

Scope

Amidst complexity and uncertainty, scope and limitations need to be clear so that readers can judge the probability of certain developments occurring. Therefore, this report considered both eastern port expansion and western shipyard and drydock proposals independently. To do this the strategic context, including a review of relevant prior studies and research, high level analysis of social and distributional outcomes, economic baselines and qualitative stakeholder interviews were conducted for each. These forms of data contributed to scenario-based, probability-weighted, estimations of regional social and economic impacts. Key risks, constraints and interdependencies were then considered followed by conclusions and recommendations for next steps.

Given data limitations, exhaustive quantitative analysis, full stochastic modelling, full benefit cost analyses or ROI calculations, management and implementation planning, or business case development were out of scope. Environmental and cultural impact analyses were also out of scope.

Disclaimer: Our results are directional and approximate, but accurate within stated assumptions and tolerances to support decision-making. While every care has been taken to provide accuracy and judgement based on the information available, we acknowledge that we have not had access to all available data and research. No warranties, implicit or explicit are implied by this report. It does not represent valuation advice nor a forecast of net benefit/cost returns.

Key Findings

Northland lags the NZ economy and is losing GDP at the Refinery. Northport and its adjacent marine cluster hold the potential to underpin a rebound.

The expansion of Northport is estimated to create an extra \$160m GDP per annum and approximately 1500 new jobs by 2060, assuming efficient transport links to Auckland.

The Shipyard/Drydock development is estimated to bring an additional \$290m GDP per annum and approximately 1,135 new jobs by 2060 as a mid case estimate.

While a shipyard/drydock and associated marine clusters at Marsden Point and Port Nikau could provide needed facilities for Naval training facilities and an uplift in socioeconomic impacts for Northland, this decision is a matter for separate Government policy decisions.

There are likely to be positive externalities between the eastern port expansion and the shipyard/drydock facility, but they can be undertaken separately.

These results are predicated in our scenarios on:

- A rail spur to Northport (with further expansion potential from a four-laned motorway to Auckland)
- A marine skills cluster, a commercial access regime and patient capital for the shipyard
- Appropriate legal, consenting, social license and Treaty of Waitangi conditions being satisfied.

Because the key constraints (land transport logistics and shipyard investment) rely on central government decisions, a long-term strategic view of both UNI supply chains and Northland regional development is required.

“
The expansion of Northport is estimated to create an extra \$160m GDP per annum and approximately 1500 new jobs by 2060, assuming efficient transport links to Auckland.
”

“
The Shipyard/Drydock development is estimated to bring an additional \$290m GDP per annum and approximately 1,135 new jobs by 2060 as a mid case estimate.
”

Project context

Northland Inc wish to better understand the socio-economic impacts of Northport's growth on Northland.

This study was conducted by Polis Consulting Group for Northland Inc from January to May 2022.

This research summarised previous reports and undertook independent qualitative and quantitative analysis to inform scenarios of potential future outcomes.

Northport's Vision for Growth seeks to expand the container port to the East and a shipyard and floating Drydock to the West.

Port expansion encompasses a further 250m of berthage, on top of an already consented 270m, with associated freight handling capacity and container terminal.

A new shipyard encompasses a 250m floating dry dock, associated berthage extensions, and industrial activities.

The combined impact of these two developments would see Northport's harbour frontage extending to 1390m and footprint to 75 Hectares.



Methodology

Approach

Northland Inc commissioned this report to assess what Northport's future developments might mean for Northland. Work was undertaken from January to May of 2022 by Polis Consulting Group. The following steps inform conclusions and recommendations:

- Baseline data assessment for the Northland economy to determine the economic context and baseline
- 40 one-hour semi-structured interviews undertaken with key stakeholders and knowledge holders to surface envisioned socio-economic impacts
- A review of available⁽¹⁾ previous research, studies and reports for both port expansion and Shipyard/drydock options
- Scenario-based economic impact analysis (modelling under uncertainty) was undertaken for both port and shipyard developments
- Distillation of key implications, independencies, benefits and constraints
- Conclusions and Recommendations.

Process

Qualitative, reference and baseline data informed scenarios and parameters that were then tested in the quantitative assessment:

- Details of the qualitative and quantitative methods are provided in the sections that follow
- Emerging results were sense-checked with Northland Inc and with Northport and iterated where appropriate.

Independence and interdependencies

During the research we concluded that the port expansion and shipyard developments were more independent than interdependent and thus have been treated independently in our analysis:

- Northport also decoupled their resource consent processes starting with the eastern port expansion announced March 25th, 2022
- However, interdependencies, mutual benefits and challenges have also been considered.

Limitations

Benefit forecasting under uncertainty must recognise the presence of major exogenous variables that can impact outcomes.

Data is limited to that publicly available and accessible within project scope, and provided by consent of stakeholders⁽¹⁾

Note (1): Several key reports such as the Babcock dry dock business case and the MBIE dry dock assessment were noted by stakeholders but unable to be provided for confidentiality reasons. Our report reflects the statements of stakeholders and the limitations of data availability where appropriate.



Context: The Northland Economy

Socio-Economic Impacts of Northport's
Growth on Te Tai Tokerau/Northland





Process

Review of relevant previous studies.

Analysis and summary of baseline regional socio-economic data.

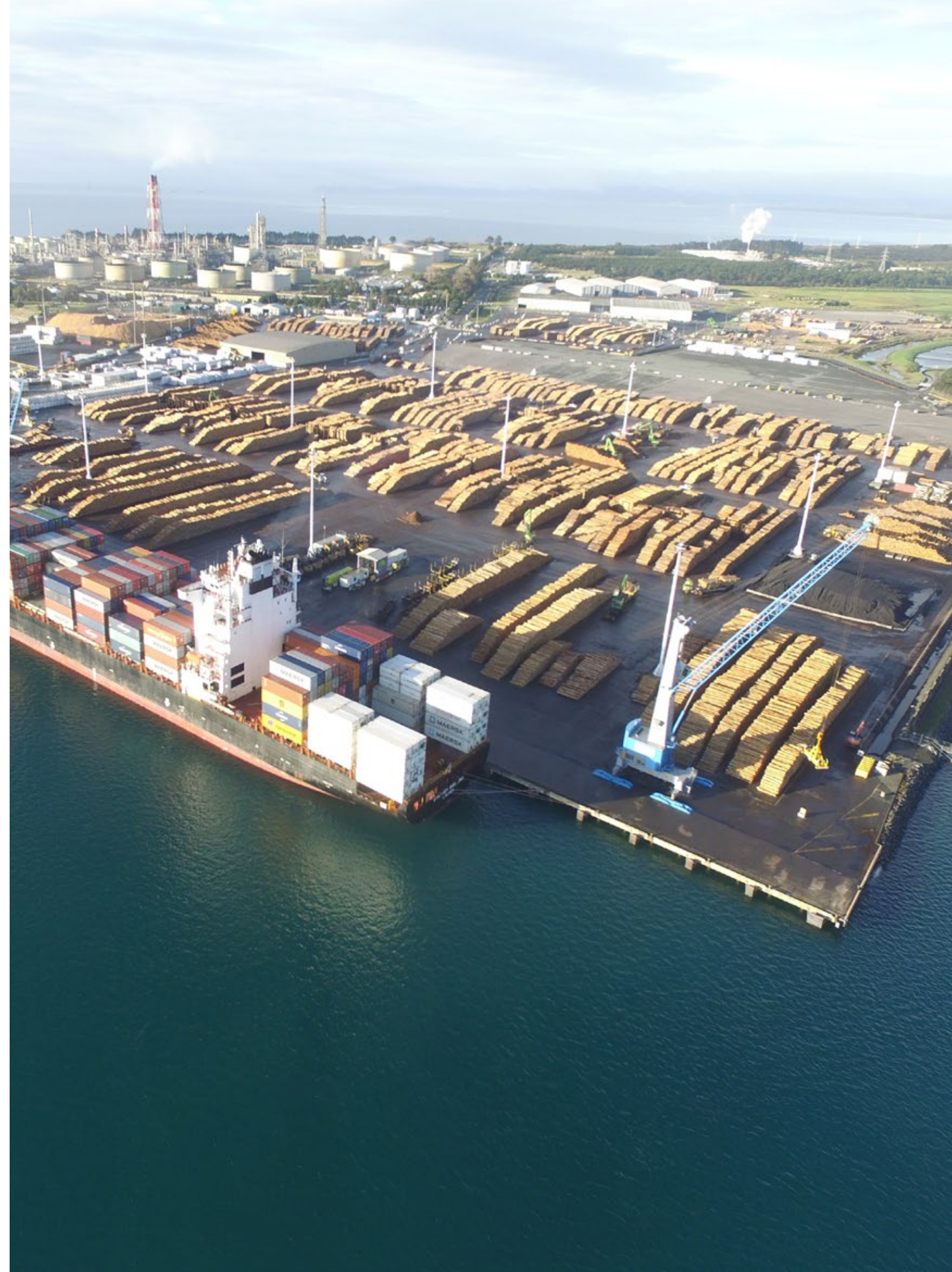


Result

Snapshot of Northland as a low-growth, low-productivity economy with relatively low incomes and challenging distributional patterns.

Manufacturing plays an important part in the Northland economy but is suffering a major decline due to Refining New Zealand becoming an import only terminal.

Northland/Whangarei marine cluster is a key potential source of growth, productivity and value creation.





Northland lags NZ economy, and is losing GDP at the refinery – Northport and the marine cluster hold potential to underpin a rebound

1. Northland's socio-economic baseline indicates a high need for economic uplift

- The Northland economy has low GDP per capita – linked to low productivity
- Northland lags national averages on wellbeing and labour-force participation
- Māori are disproportionately affected.

2. Manufacturing leads Northland's GDP, but growth is slow

- Northland's manufacturing sector has been led by the Refinery in GDP and productivity
- The refinery closing down and becoming an import-only terminal adversely affects productivity and skilled job opportunities in Northland's largest industry sector.

3. Northport operations are regionally significant for Northland and have potential to grow

- Northport's regional role has been focused on high-volume, low-value trade
- Northland has a small but well-established marine economy with capacity for growth.





Northland's socio-economic baseline indicates a need for economic uplift

On many socio-economic indicators Northland lags national averages; and Māori are disproportionately affected.

- The Northland economy has low GDP per capita, linked to low productivity growth.

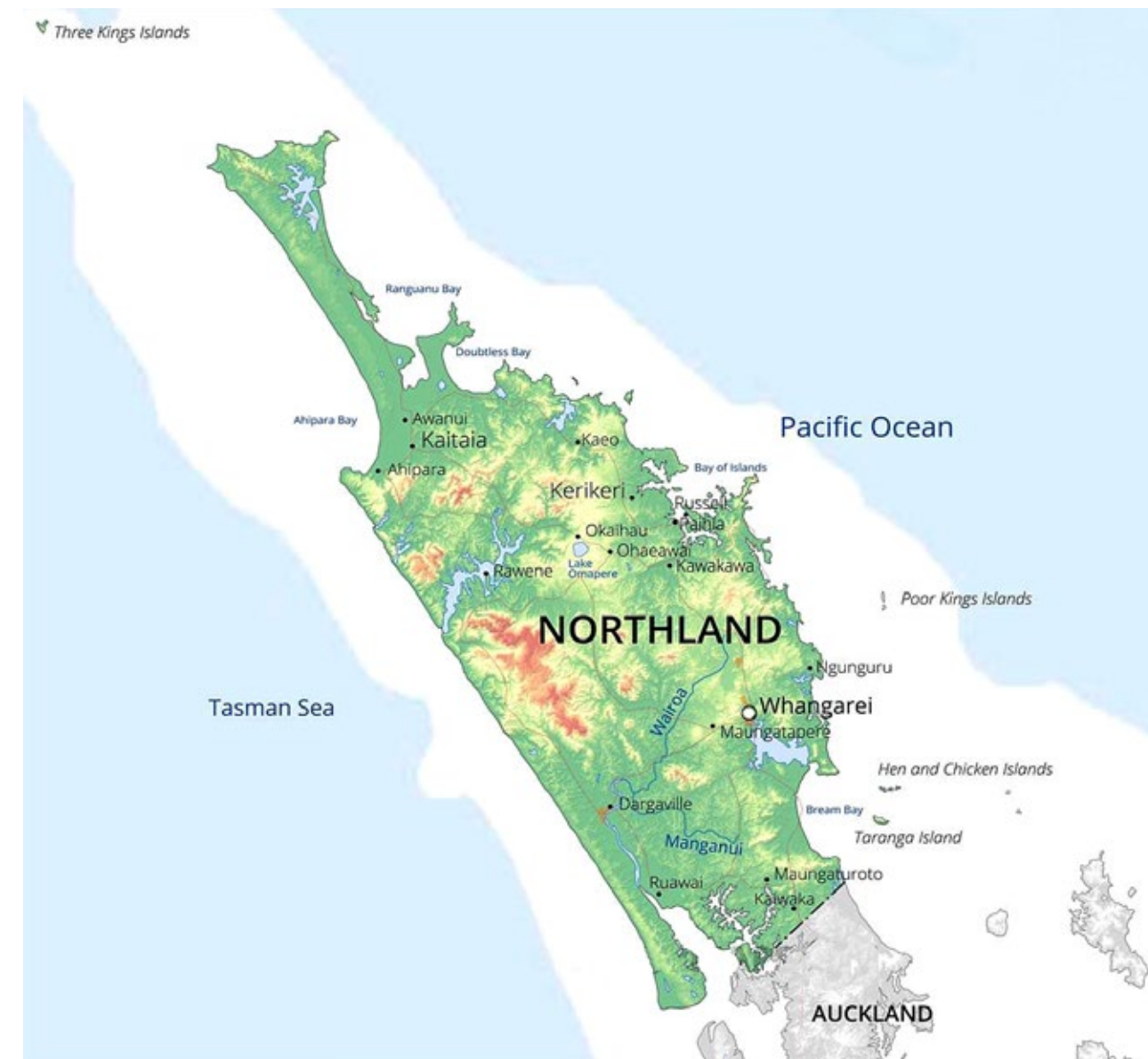
Manufacturing plays a critical role in the structure, diversity and resilience of the Northland and Whangarei economies.

- Most Northland industry sectors lag NZ productivity averages; with manufacturing the exception previously underpinned by the Marsden Point Oil Refinery
- Northland is now confronting further challenges with the shift in focus at Marsden Point and associated highly skilled, highly paid, job losses.

The Northland marine sector has a comparative advantage:

- The marine sector has strong roots and great potential
- Northland's marine cluster supports over 700 relatively high value jobs
- Boatbuilding has been increasing while shipbuilding has been declining.

Northport has a mainly regional role in Northland focused on high volume, low value trade that reflects Northland's import / export trade and economic structure. Port operations currently contribute approximately \$40m per annum to regional GDP but facilitate approximately \$440m per annum in value added economic activity.





Northland lags national averages in wellbeing and labour participation

Jobs and earnings

- Northland's unemployment rate of 5% is 0.3 percentage points higher than NZ
- The Not in Employment Education or Training (NEET) rate of 15% is 2.3 percentage points higher than NZ
- Northland's labour force participation rate of 65.3% is the second lowest in NZ.

Knowledge and skills

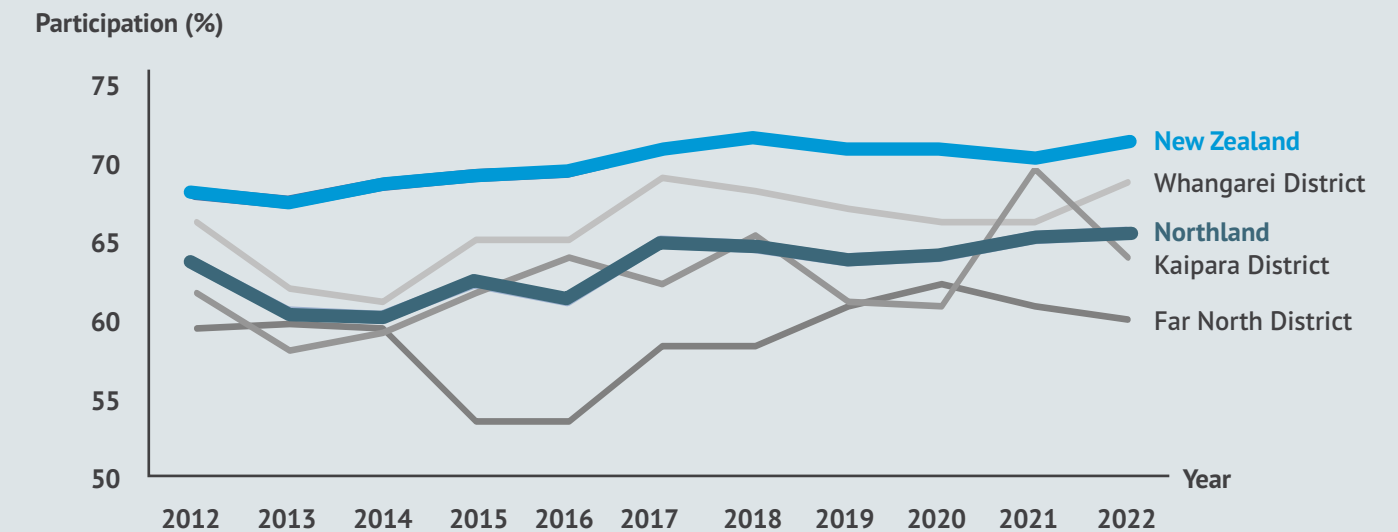
- The Northland region has the lowest Early Childhood Education (ECE) participation rate in NZ
- 46.3% of school leavers in Northland did not gain L3 school qualifications in 2021.

Northland's Income and Consumption index score is significantly below the NZ index score

- The benefit dependency ratio is 7 percentage points higher than NZ (a low ratio indicates a better position)
- Northland's mean household income is 20% (\$22,300) lower than NZs.

Source: 2021 Infometrics data

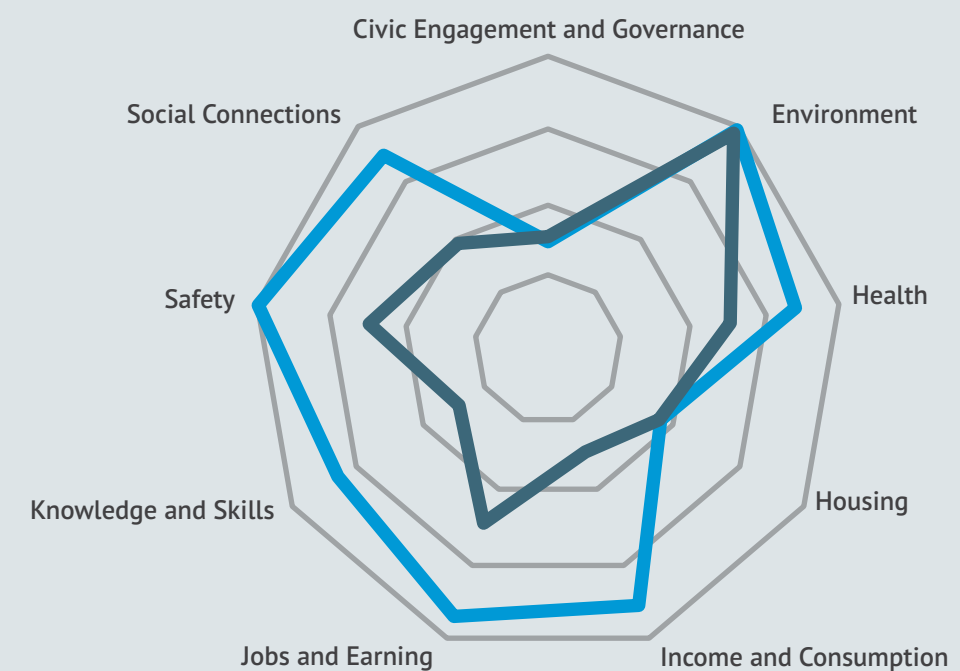
Labour force participation rate



Source: 2022 MBIE Economic Development Tool

Wellbeing radar

Northland lags New Zealand on nearly all wellbeing indicators



— New Zealand — Northland

Source: 2021 Infometrics



Northland is relatively deprived; Māori are disproportionately affected

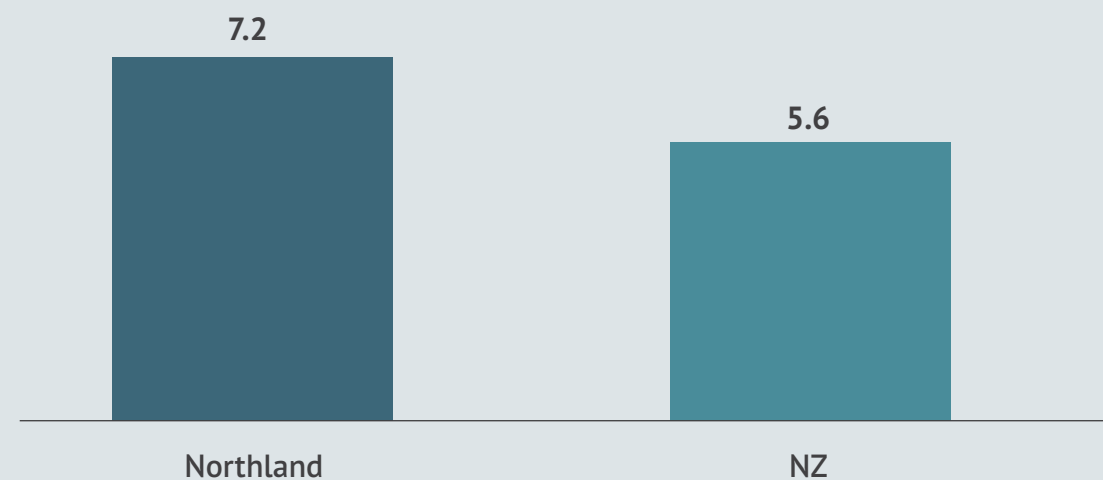
Māori are disproportionately affected, and there are distributional and inclusion issues across the region.

- Northland is the second lowest scoring region in NZ on the Human Development Index with a score of 7.2 compared to the NZ average of 5.6. Note a score of 9 indicates the most deprived
- There is a high number of people in the most deprived quintile, five, within which Māori are disproportionately represented.

Northland does have huge potential. However, that potential needs to be realised. Increasing inclusion and equitable outcomes require new opportunities for people. Increasing human capital standards has been a long-term battle as the jobs that require high skills are in short supply and often not filled by Northlanders. Northland needs demand side pull to match all the efforts that locals are making in the labour supply through strengthening educational and training organisations and the mechanisms that support in-work success. The economic engine needs to work better to address long standing inequities. Job staircasing needs to occur alongside new developments such as these.

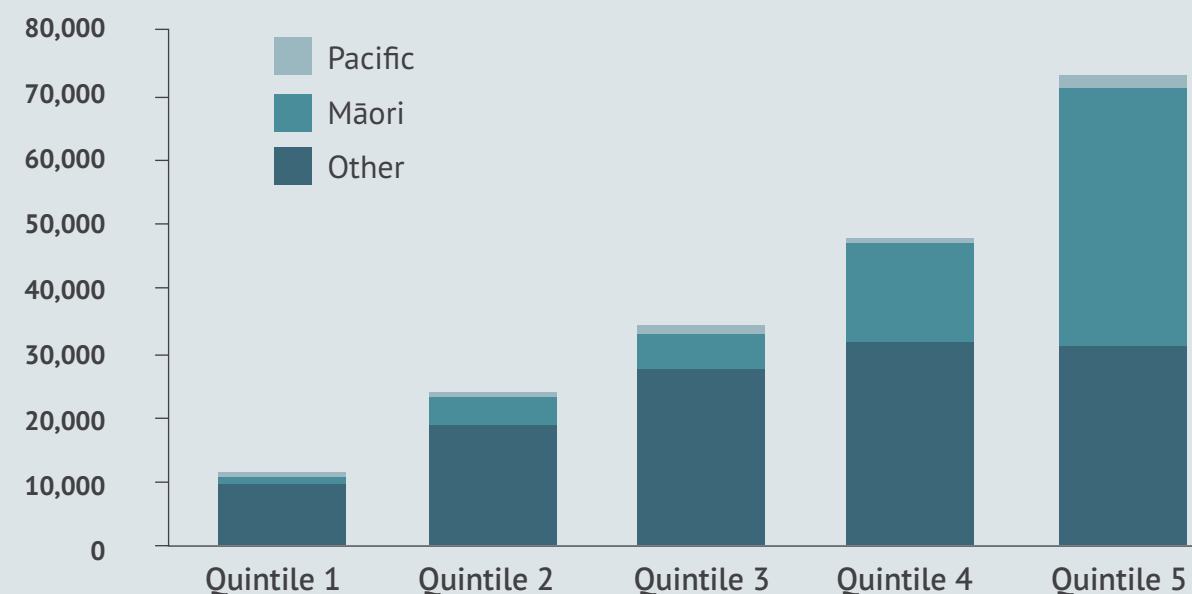
Source: MBIE Regional Economic Development tool, 2021 Infometrics data

Human Development Index - 2018



Source: MBIE Economic Development Tool

Northland Deprivation - 2020/21



Source: 2020/21 Health NZ



The Northland economy has low GDP per capita but growing with a recent decline in employment productivity since 2017

Northland and Whangarei's GDP per capita is below the national average.

Northland's GDP per capita has grown at a faster rate (3.7% p.a.) than the NZ average (1% p.a.) since 2011.

Northland has potential, with a high proportion of NZ's population (3.9%) and land (5.1%), relative to GDP (2.7%).

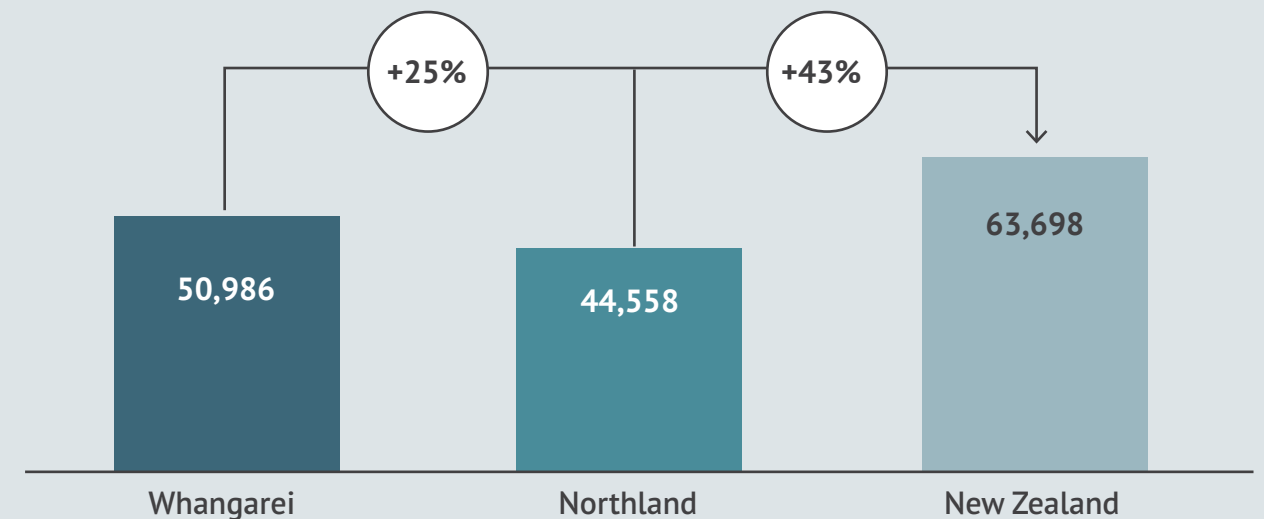
Northland and Whangarei's productivity is below the national average:

- Productivity measures are a proxy, using GDP per employed person
- Productivity can also vary as a result of other production inputs, such as machinery, technology, and land.

Productivity in Northland and Whangarei has declined by 0.1% and 0.2% p.a. respectively since 2017.

- NZ productivity has increased by 0.1% p.a. in the same period.

GDP per capita (\$m), 2021



Source: Infometrics 2021,

Productivity (\$), 2021



Source: Infometrics 2021,



Manufacturing leads Northland's GDP, but growth is slow

Manufacturing has the largest share of GDP in Northland, largely made up of petroleum refining and wood processing:

- 41% of manufacturing has been petroleum refining and fuels manufacturing
- 11.3% of manufacturing is related to wood processing
- Manufacturing has grown on average 0.5% per annum (not year) since 2017.

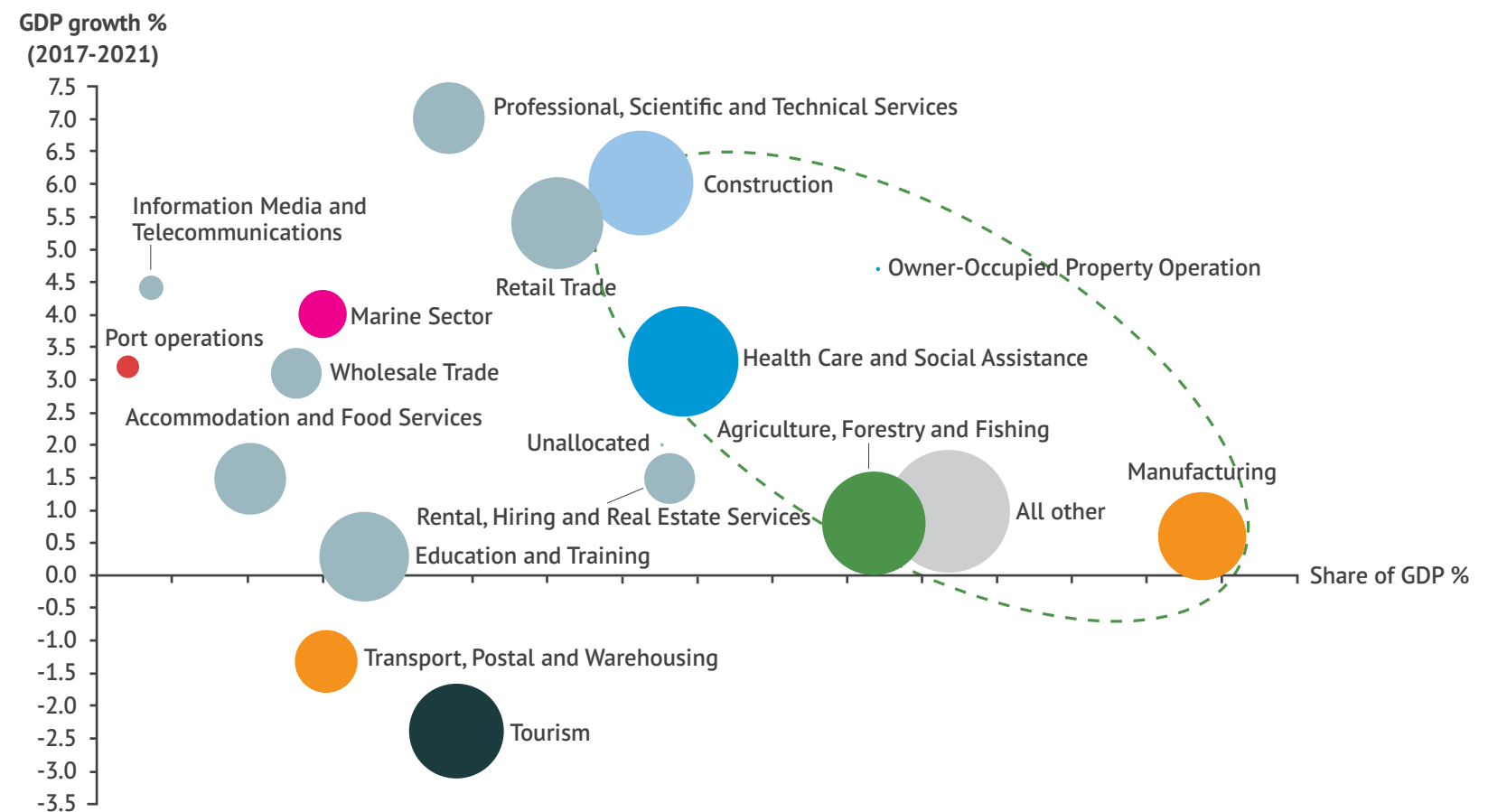
Agriculture, forestry and fishing is largely dairy (35%) or beef (14%) cattle farming.

Logging, forestry and support services account for 21%.

The Marine sector and port operations have had medium to high growth but a lower share of regional GDP.

Overall Northland has been historically dependent on sectors that are relatively slow growing. Recent exceptions include construction, health care and professional services. The marine sector has the potential to underpin a stronger regional specialisation that has upstream, downstream, human capital and related industry benefits.

Share of GDP and annual GDP growth by sector Bubble size: = number of jobs



Source: Infometrics data 2021, Polis analysis



Most Northland industry sectors lag NZ productivity; manufacturing exception was underpinned by refinery

Productivity growth and productivity c.f. NZ average*, Bubble size = productivity

All industries in Northland, except for manufacturing, have lower productivity than the NZ industry averages (shown by x-axis):

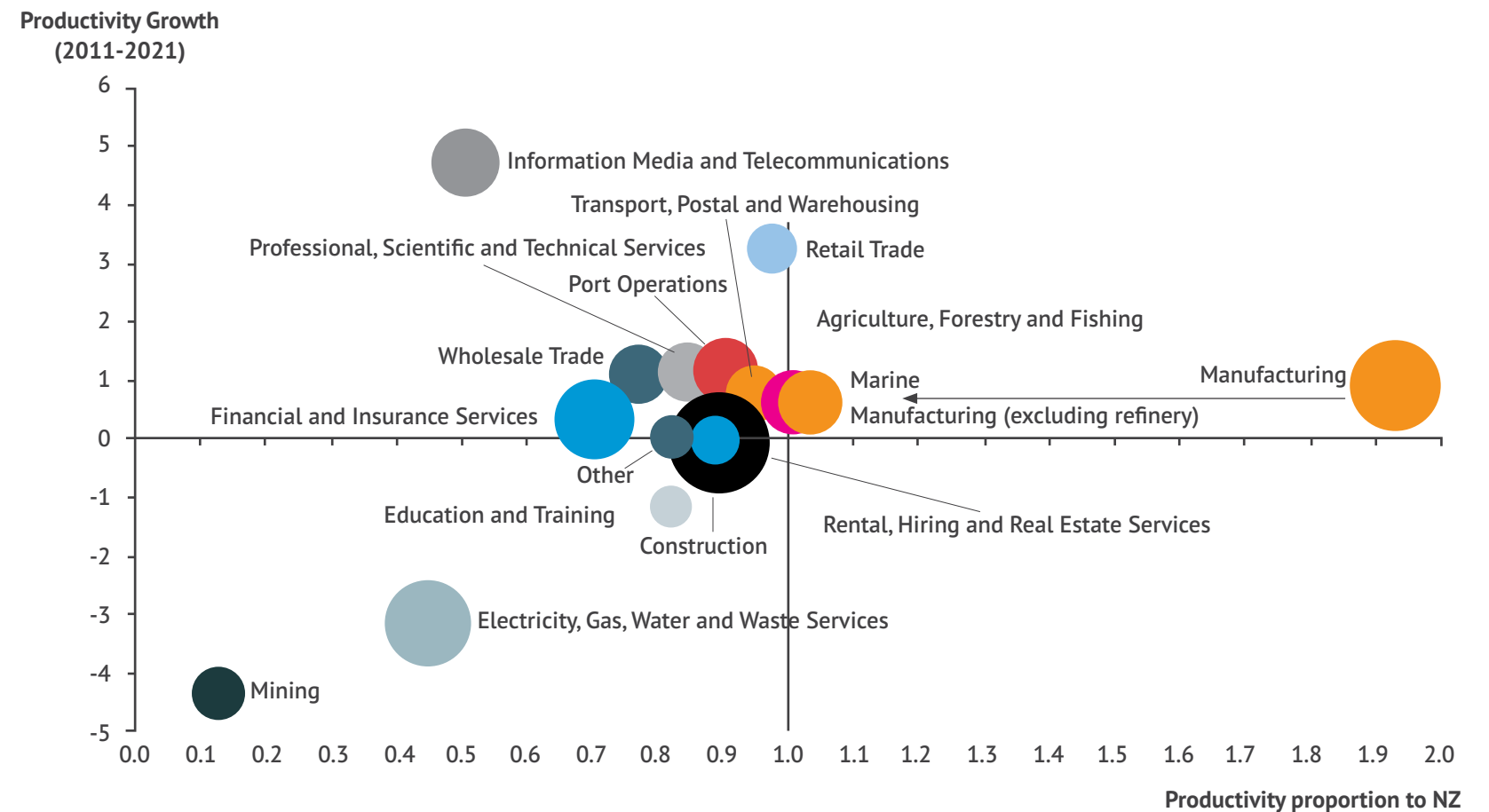
- Manufacturing’s productivity was largely driven by the refinery, which was capital intensive
- Without the refinery, manufacturing’s productivity falls back to the NZ manufacturing average.

Productivity growth over the past 10 years have been low for most sectors, which generally lag the NZ average:

- The Information Media and Telecommunications sector is high for the region but still lower than the NZ average
- Retail Trade and Agricultural productivity increased in line with the NZ average.

The size of the bubble equates to the productivity of the industry:

- Manufacturing, Construction, and Electricity and Gas Services are the industries with the highest regional productivity.



*Indicates productivity per industry relative to the NZ average. A score of 1 means productivity for the industry is equal to the NZ average productivity of that industry. A score lower than 1 indicates Northland’s industry is less productive than the NZ average.

Source: Infometrics, 2021, Polis Analysis



The refinery closure reduces productivity and skilled work opportunities in Northland's largest industry

Petroleum refining made up the lion's share of manufacturing GDP in Northland:

- Petroleum refining accounted for \$530m in regional GDP
- Northland's greatest comparative advantage was in Petroleum Manufacturing.

Refining NZ scaling back heightens Northland's underutilised workforce and low availability of highly paid and skilled jobs:

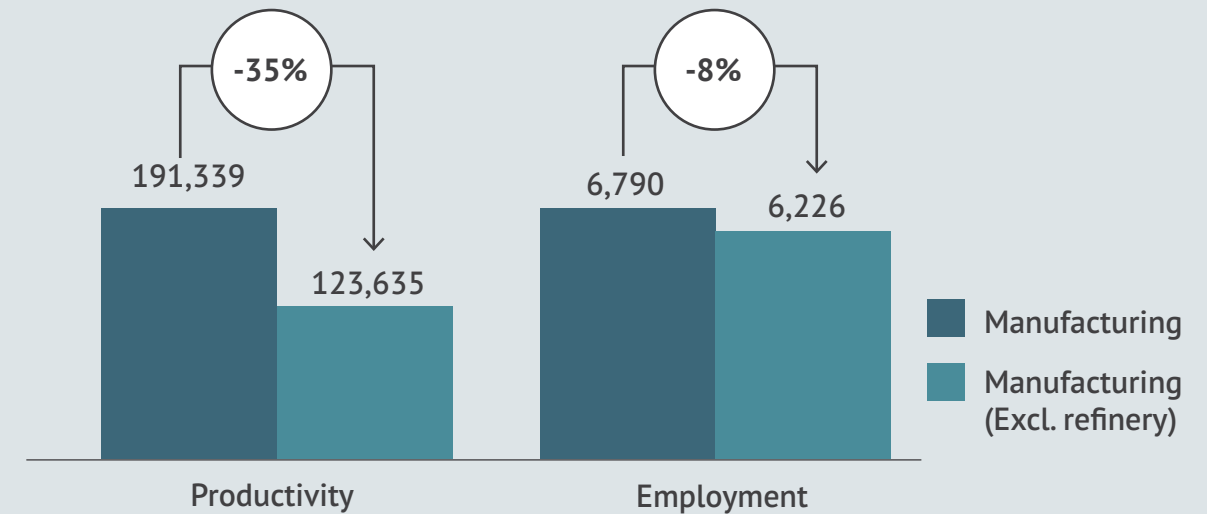
- The shift in focus resulted in the loss of 240 skilled jobs and...
- A 35% drop in regional manufacturing productivity and the loss of up to a further 564 related manufacturing jobs.

Overall, the loss of major capacity and employment at the Marsden Point Refinery will have a significant negative impact on average regional productivity, by greatly reducing a major capital-intensive productive asset. There may be wider impacts on New Zealand's energy supply chain resilience as well, but they are out of scope of this Report. What is very clear, though, is that Northland needs an injection of capital investment if there is any intention to offset the negative regional impacts of the Refinery scale-back. Northport is not only physically adjacent, but offers one of the largest and potentially best industrial and logistics capital development opportunities in the region.

T Pullar-Strecker. (2021). No last minute reprieve for Marsden Point oil refinery. Stuff. Infometrics

Northland manufacturing productivity and employment

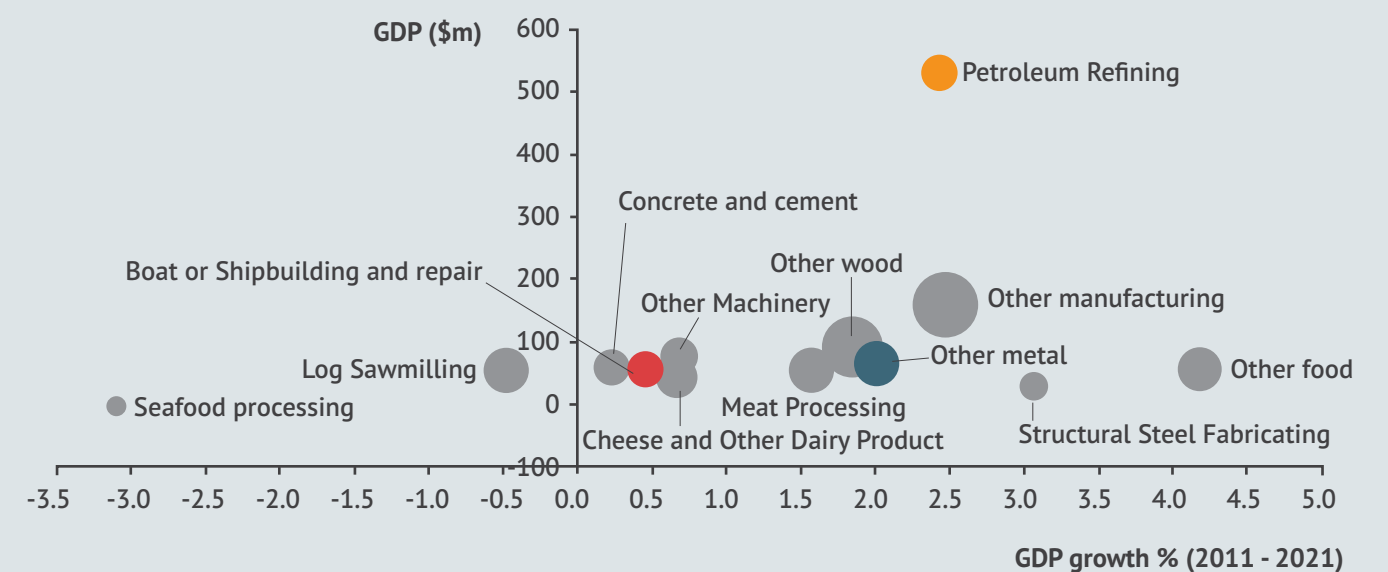
(\$, FTE) 2021



Source: Infometrics 2021,

Northland: Manufacturing sub-industry GDP by GDP growth

Bubble size: employment



Source: Infometrics 2021,



Port operations are regionally significant for Northland

Northport is both a business and a facilitator of trade:

- Northport operations contribute to approximately \$40m in regional GDP per annum, largely from stevedoring services and port terminal operations
- Northport plays an important role in the Northland regional economy supporting import and export activity.

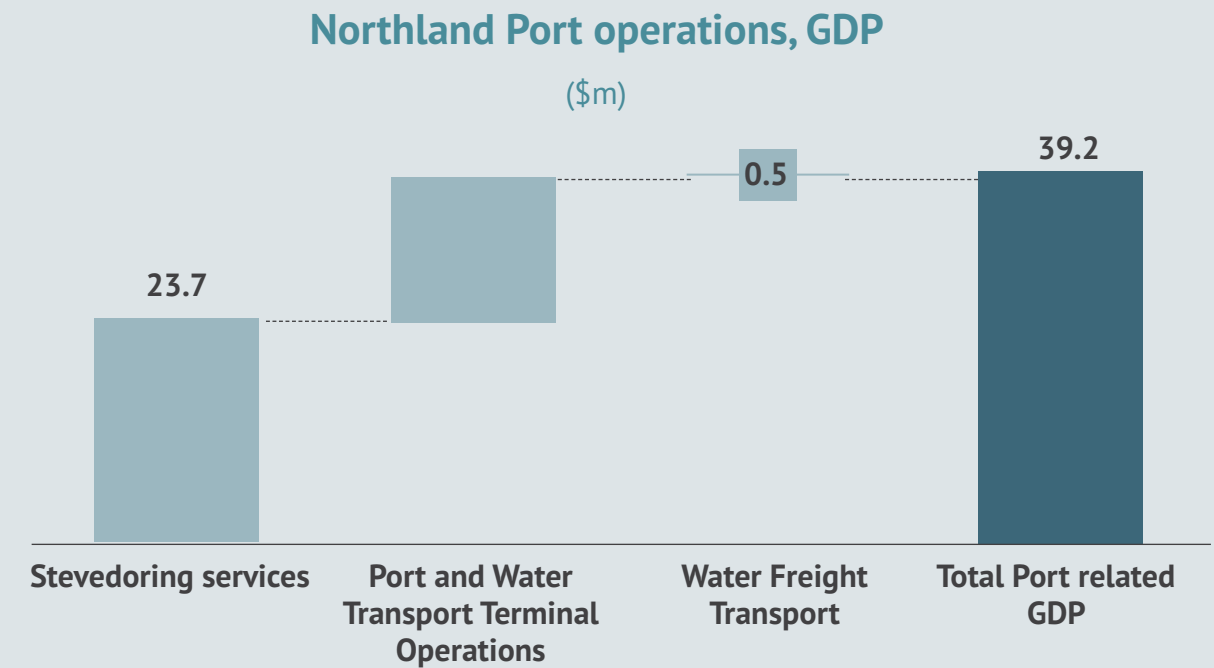
Northport operations are estimated to provide an extra \$440m per annum in value added GDP and the equivalent of 6,300 jobs.

The marine economy contributes approximately 2,200 jobs to Northland including approximately 700 jobs above Northland's median earnings.

- Marine services is currently a small but well paid sector with potential for growth.

The purpose of this report is to examine the potential benefits of port expansion. Ports are enablers of trade. Northport with its existing capital base and expansion prospects will, in and of itself, provide direct and indirect GDP and Job prospects for Northland. This will flow on to trade and market access opportunities for Northland businesses. This is before one considers increased logistic capability that has wider benefits.

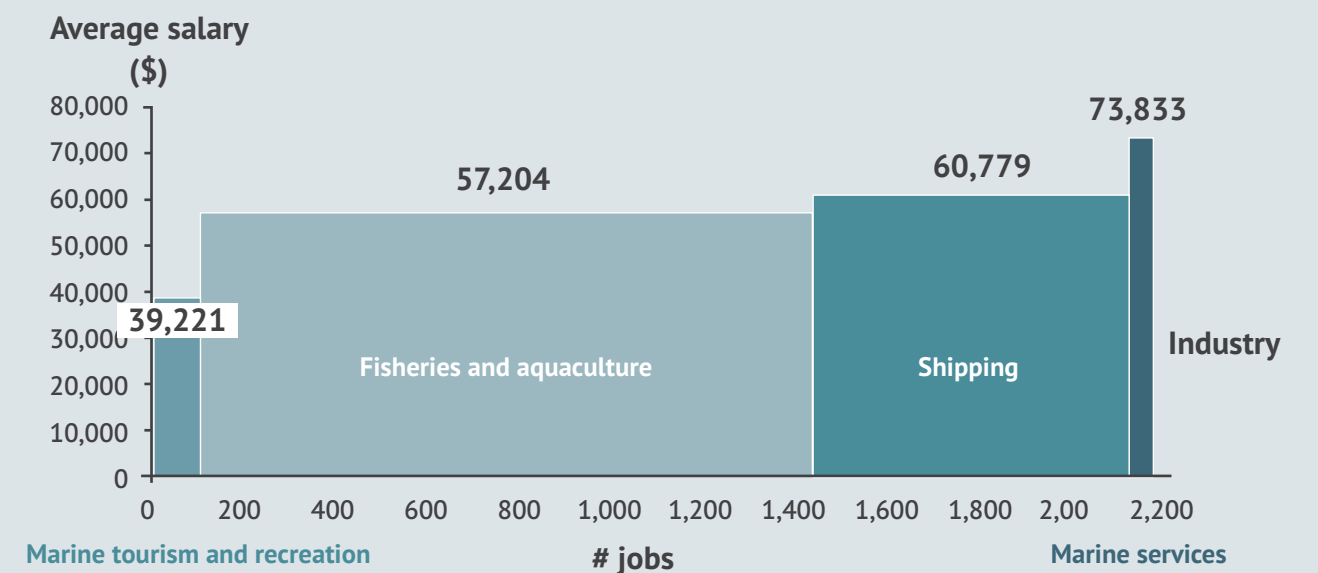
Source: Infometrics 2021 data, Market economics eastern reclamation report, Stats NZ 2021



Source: Infometrics 2021 data, Market economics eastern reclamation report

Northland Marine sector: Number of jobs by average salary

(\$), Width of bar = # of jobs



Source: Infometrics 2021, Stats NZ 2021, Polis Analysis



Northport's regional role has been focused on high volume, low value trade

3.5 million tonnes of cargo were exported in 2021.

- Northport handles predominantly high volume, low value trade
- Breakbulk accounted for 20% of cargo, with similar projections for 2021/22
- Logs have dominated Northport's export trade since the 90's.

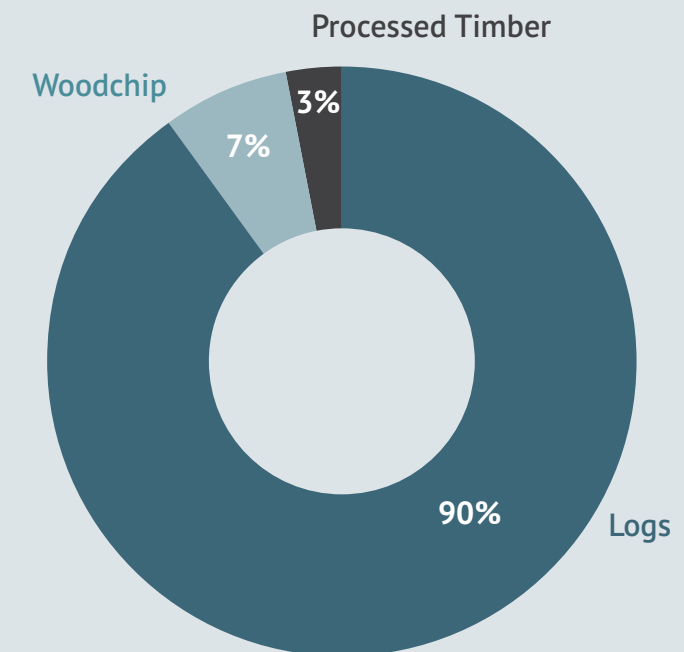
The regional trade tasks and the role of Northport are likely to change in the future.

- A predicted drop in forest harvests will impact log exports'
- There will be increasing demand for containerised trade
- Increased handling of high value goods (e.g. engineered timber, horticulture, marine products) – partially due to new container handling facilities and the changing nature of Northlands economic structure
- Northport's shift towards higher value goods in containers will offset some decline in bulk wood exports.

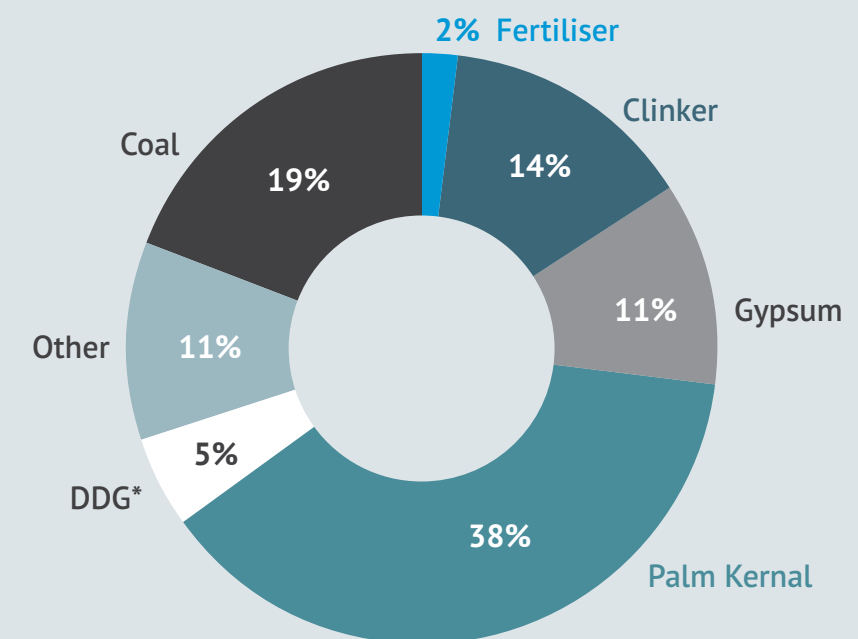
13,451 TEUs ('Twenty Equipment Units' or 20 Ft containers) were handled by Northport in the 2020/2021 financial year.

- There are 22,415 TEUs predicted for the 2021/2022 year
- 50,000 TEUs are predicted by 2025, which is the maximum capacity under Northport's current footprint (requiring further investment in forklifts etc)
- Container exports are currently mainly kiwifruit with expansion planned
- Approximately 10,000 TEUs of cement are regional exports destined for other NZ Ports
- Approximately 10,000 TEUs are destined for Auckland
- 100% of TEUs in and out of the port are transported by truck.

Northport bulk exports, 2021 (Tonnes)



Northport bulk imports 2021 (Tonnes)



Source: Cargo Stats 2020/21 (Northport), Estimates provided by Jon Moore
*DDG= Dried Distillers Grains



Northland has a small established marine economy with room for growth

Northland's Shipping sector contributes 7% of New Zealand's Shipping GDP:

- Boat building and repair services contribute \$46.6m to the regional economy servicing vessels under 50 tonnes
- Shipbuilding and repair services contribute \$9.06m (vessels over 50T)
- 62% of boatbuilding and 95% of shipbuilding is in the Whangarei District.

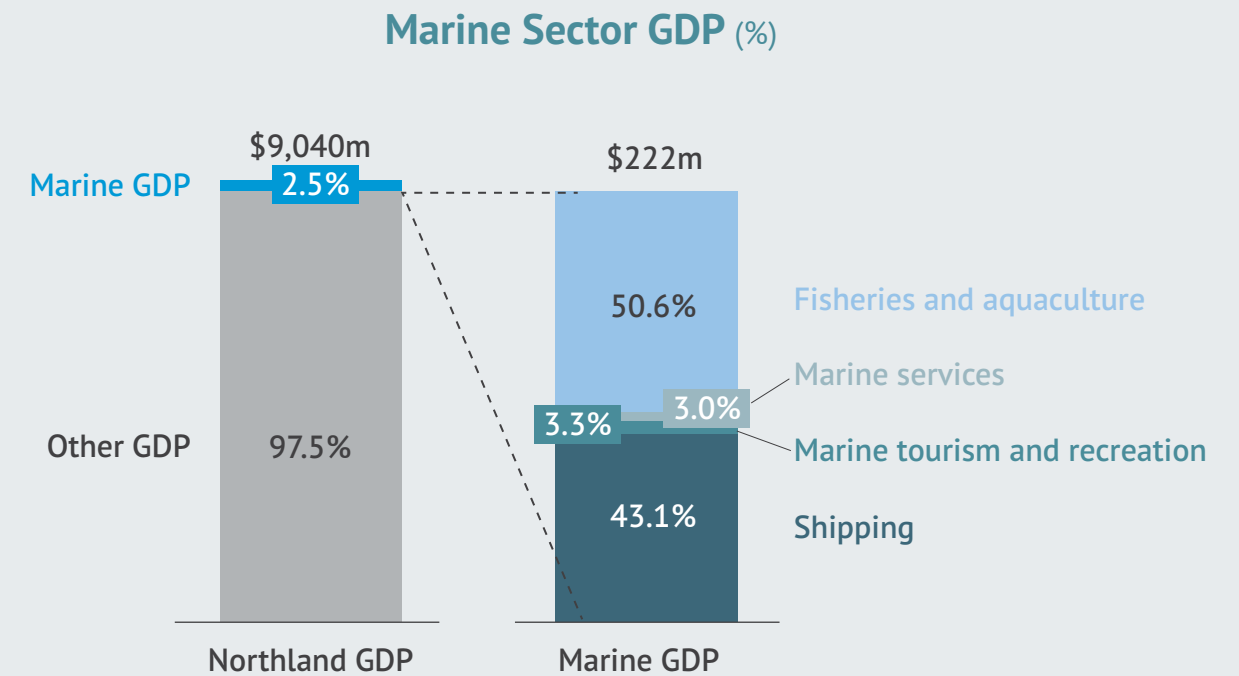
The marine economy contributes to a larger percentage of total GDP in Northland than NZ indicating a competitive advantage:

- 2.5% of the Northland economy versus 1.7% of NZ economy.

Boatbuilding and repairs have been increasing while shipbuilding and repairs have been dropping.

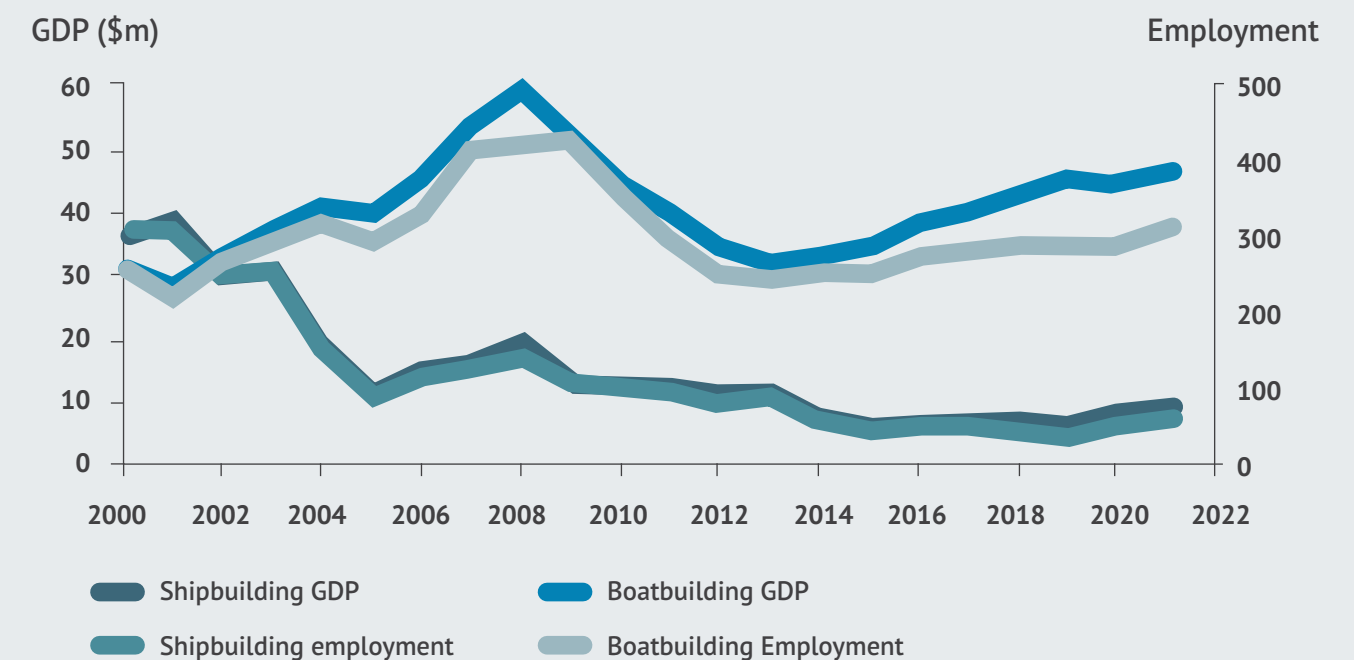
- The drop in ship building is largely due to Tenix laying of staff in 2002, then closing in 2009
- The arrival of a Shipyard/drydock facility in Whangarei provides future potential in shipbuilding
- Plus, an ability to flex boat-building and servicing capacity to meet demand.

Source: Infometrics 2021

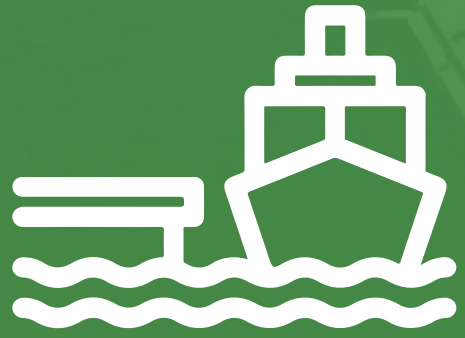


Source: Infometrics 2021, Polis Analysis

Northland ship and boat building and repairs GDP, employment 2000 - 2021

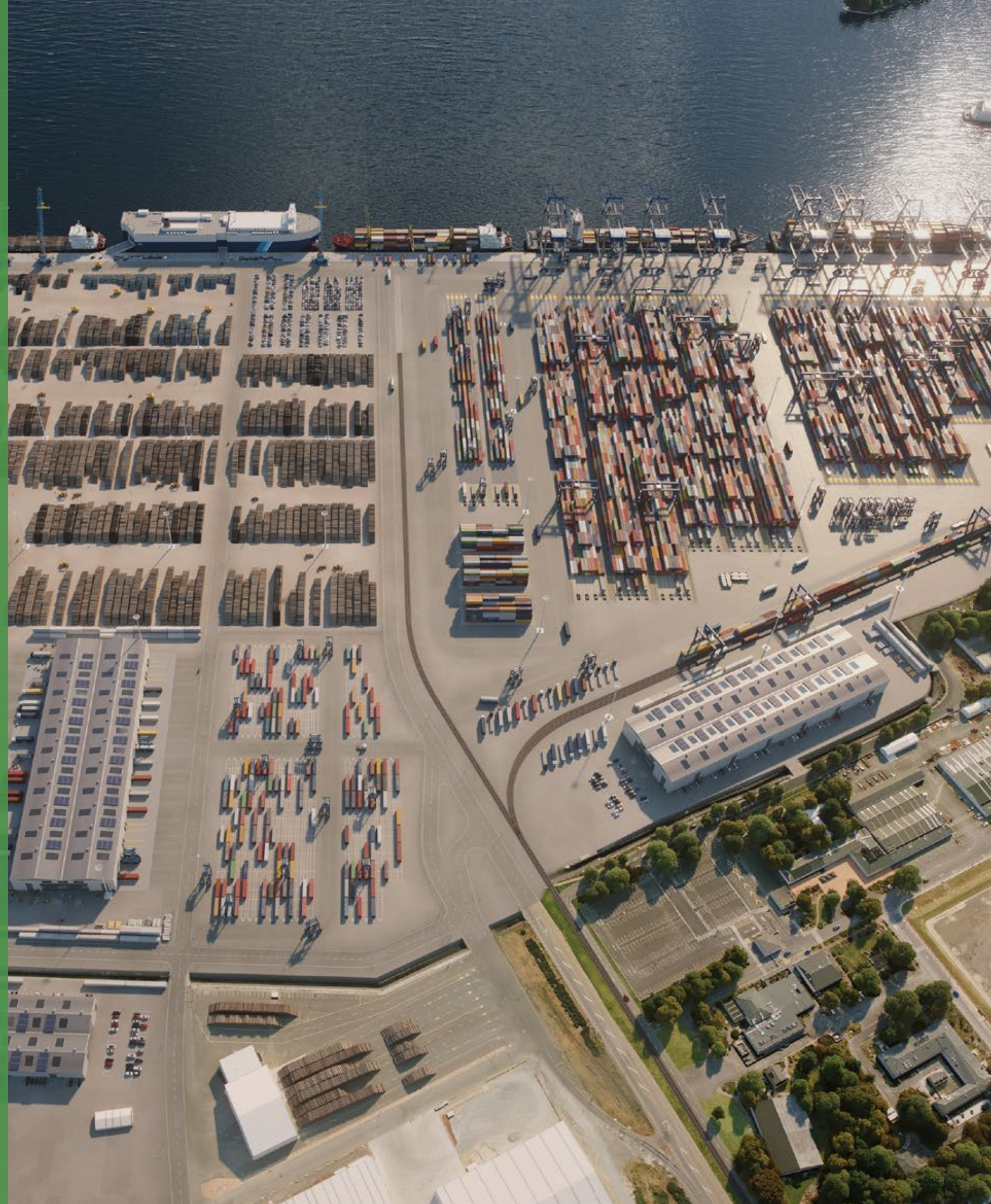


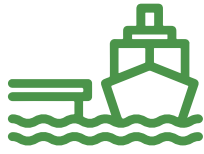
Source: Northland Inc analysis, infometrics data



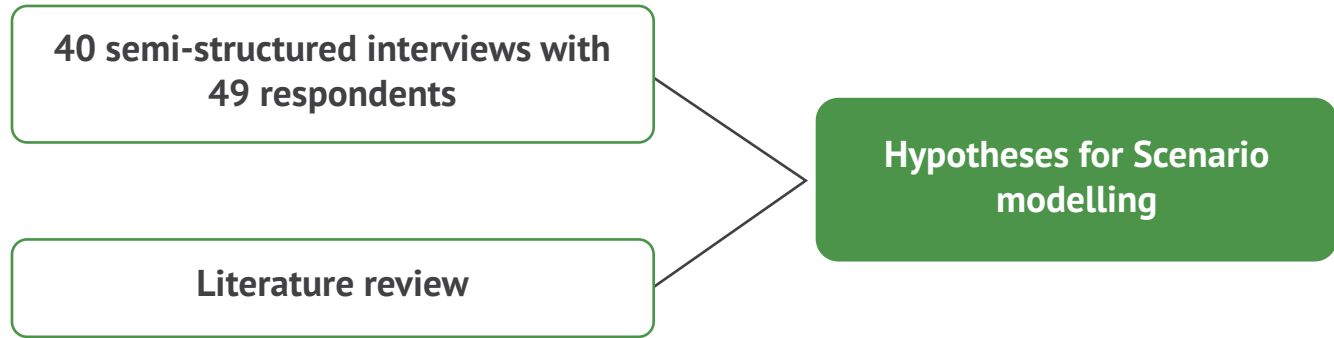
Port Expansion

Socio-Economic Impacts of Northport's Growth
on Te Tai Tokerau/Northland





Port expansion: qualitative assessment methodology



Process

An extensive literature review was conducted including previous media/ policy/ research/ reports/ studies on port strategies, supply chains and logistics.

40 one-hour semi-structured interviews were conducted around 5 key questions to allow deeper exploration of key themes. Respondents were chosen in partnership with Northland Inc and consent was sought. All interviews were recorded alongside notes taken. Some snowballing occurred to trace key themes and triangulate data.

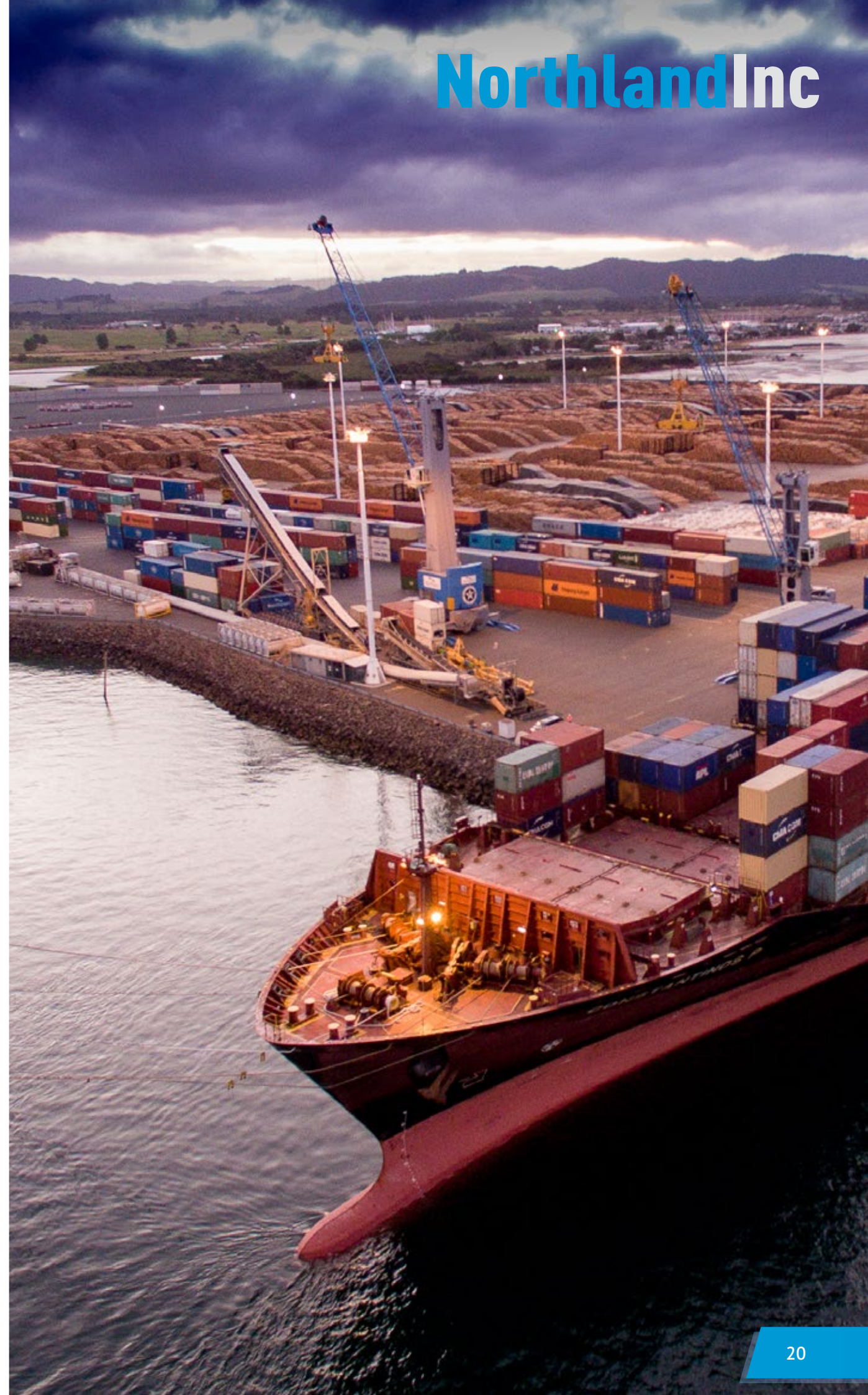
These two forms of data were then synthesised to form hypotheses for scenario modelling.



Result

Literature was contradictory in some cases, but provided some robust data.

Interviews yielded strong positive benefits to Northport's growth plans but with some key challenges.





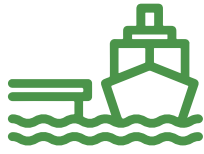
Northport expansion is critically linked to the future of transport infrastructure supporting the Upper North Island Supply Chain

The literature review produced varying conclusions on Northport's expansion:

- Previous studies helped triangulate stakeholder hypotheses on Northport's impact assessment, but had inherent limitations and conflicting conclusions on the role of Northport
- An Upper North Island Supply Chain Strategy is yet to be completed and will need to account for Northport's potential growth and role.

Qualitative research highlighted high economic benefits, and significant infrastructural constraints:

- Stakeholders consistently linked port expansion potential to connectivity with Auckland and the Upper North Island (UNI)
- Stakeholders highlighted that the expansion of Northport would improve efficiency in the Upper North Island Supply Chain (UNISC)
- Stakeholders consider Northport expansion will strongly benefit Northland's economy and society if supporting infrastructure is improved.



The literature review produced varying previous assessments of Northport's expansion potential - often reflecting stakeholder interests

There have been multiple studies conducted on the future of the Upper North Island Supply Chain (UNISC) and implications for Northport.

- Some studies have been written to present a particular view supported by their sponsors, and we consider results should be interpreted in that light.

Most studies and stakeholders conclude that Port of Auckland's growth will be highly constrained:

- There are wide client-driven divergences on the optimal alternatives and levels of constraints
- We are unconvinced by the practicality of Manukau or the economics of the Firth of Thames options
- Port of Tauranga has expansion capacity but isthmus constraints limit access to Northern Auckland.

Major marine and transport infrastructure decisions will crucially impact Northport's role:

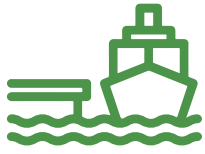
- We have not assessed the likelihood of these decisions eventuating, rather we considered the impacts of these decisions in various scenarios
- Infrastructure investment, particularly rail and road investment, were key input differences affecting modelling outcomes.

Source: Literature review, see Appendix 4



The Port is the easy part.
The constraints are the things that are outside, primarily with central government.

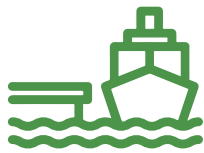




Previous studies helped triangulate stakeholder hypotheses on Northport benefits assessment, with inherent limitations

Author, Report, Date	Key findings	Link to our report
PwC UNI Port Study (November 2012)	<ul style="list-style-type: none"> Northport will not be required to manage freight outside of Northland Northport may provide network resilience Too far away from main markets - major transport infrastructure decisions will crucially impact Northport's role. 	<ul style="list-style-type: none"> Similar to low case assumptions but predated rail/ tunnel improvement and probability of spur to port (our mid case scenario).
PoA (Boven), Future Ports Study (July 2016)	<ul style="list-style-type: none"> PoA freight operations should be relocated to the Manukau Harbour Northport does not have capacity to accommodate their own growth and Auckland's. 	<ul style="list-style-type: none"> Does not include Northport expansion scenario Predates refinery scale back Underestimates available land at Northport Optimistic about Manukau entrance navigability.
EY Economic Analysis of UNISC Scenarios (August 2019)	<ul style="list-style-type: none"> Move to Northport to generate a net economic benefit of ~\$200 million over 30 years Small number of direct port jobs, benefit is from wider employment opportunities Major transport infrastructure decisions (rail) will crucially impact Northport's role. 	<ul style="list-style-type: none"> Similar assumptions to Polis mid case, but with no probability weightings Port of Auckland's growth will be highly constrained Assumes a larger reliance on rail Presents a particular view.
Sapere, UNI Supply Chain Strategy (June 2020)	<ul style="list-style-type: none"> Significant connectivity constraints with a port relocation to Northport, recommends Manukau (over 60 years) Port of Auckland's growth will be highly constrained Major marine and transport infrastructure decisions will crucially impact Northport's role, assumes \$8-11 billion needed to connect Northport to UNI. 	<ul style="list-style-type: none"> Agree infrastructure investment needed, and is graduated in our mid/ high case analysis Northport integration into Auckland/UNI would be mainly to serve North/West Auckland, with Southern excess traffic via PoT Makes low case assumptions without probability weighting Presents a particular view. Sponsored by Auckland Council.
Market Economics consulting, Northport Expansion Economic Assessment (September 2021)	<ul style="list-style-type: none"> Assumes Northport increases from 2% to 35% share of containerised trade in UNI by 2040 'Mid' Scenario adds \$107 million to GDP and 1,400 jobs to Northland economy by 2050 Major marine and transport infrastructure decisions will crucially impact Northport's role. 	<ul style="list-style-type: none"> Polis quantitative analysis reviewed and updated Market Economics assumptions Results are directionally consistent with Polis scenario-based modelling outputs on a cumulative basis.

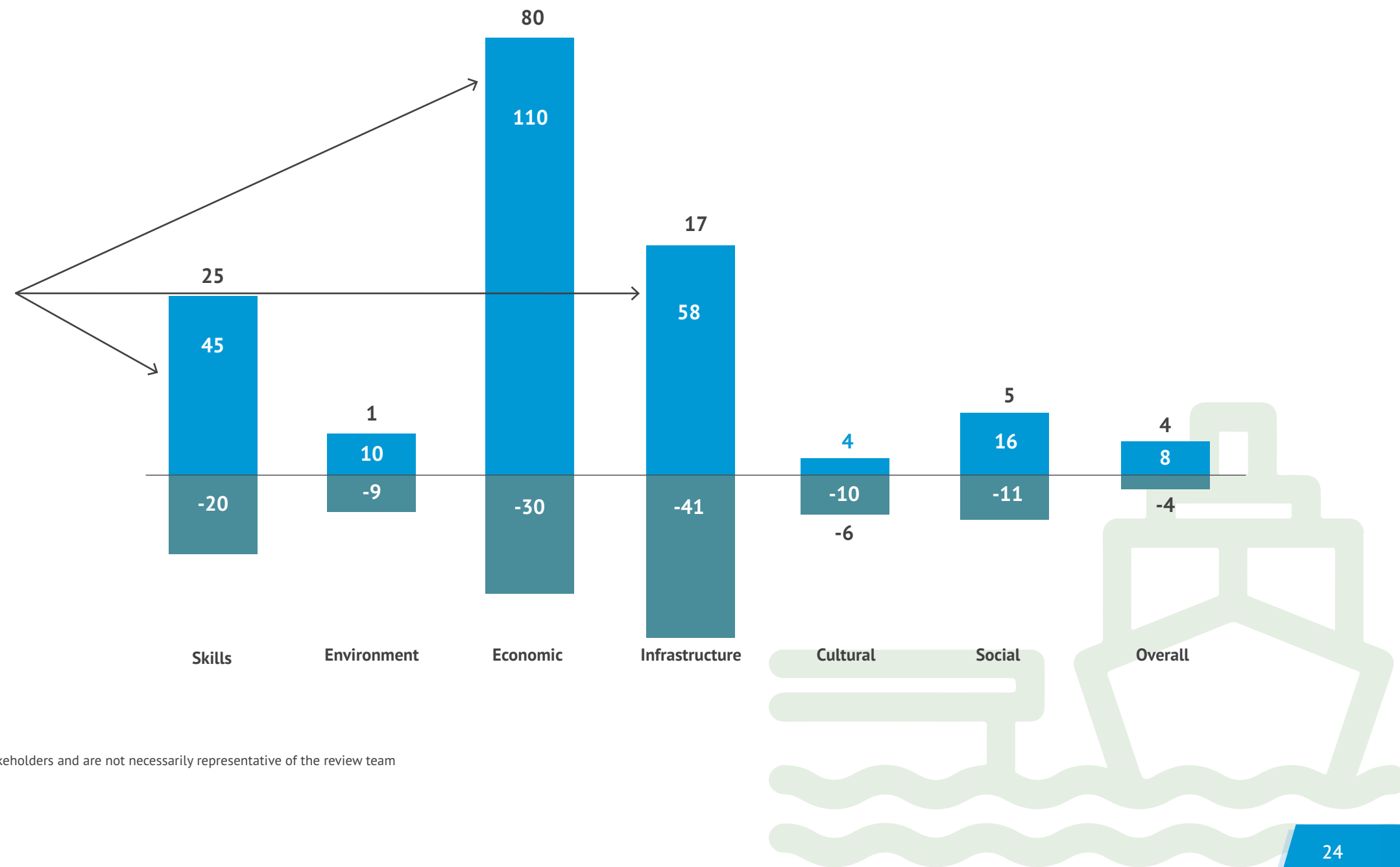
Source: Literature review, see Appendix 4



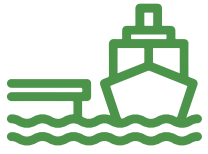
Qualitative research highlighted high economic benefits, and significant infrastructural constraints

Qualitative data: Number of key mentions by theme

Economic value creation, infrastructure and skills/workforce development were the most common themes raised during stakeholder interviews. Mentions were assessed to be either positive or negative.



Source: Stakeholder interviews, 2022. Note: views presented are those of stakeholders and are not necessarily representative of the review team

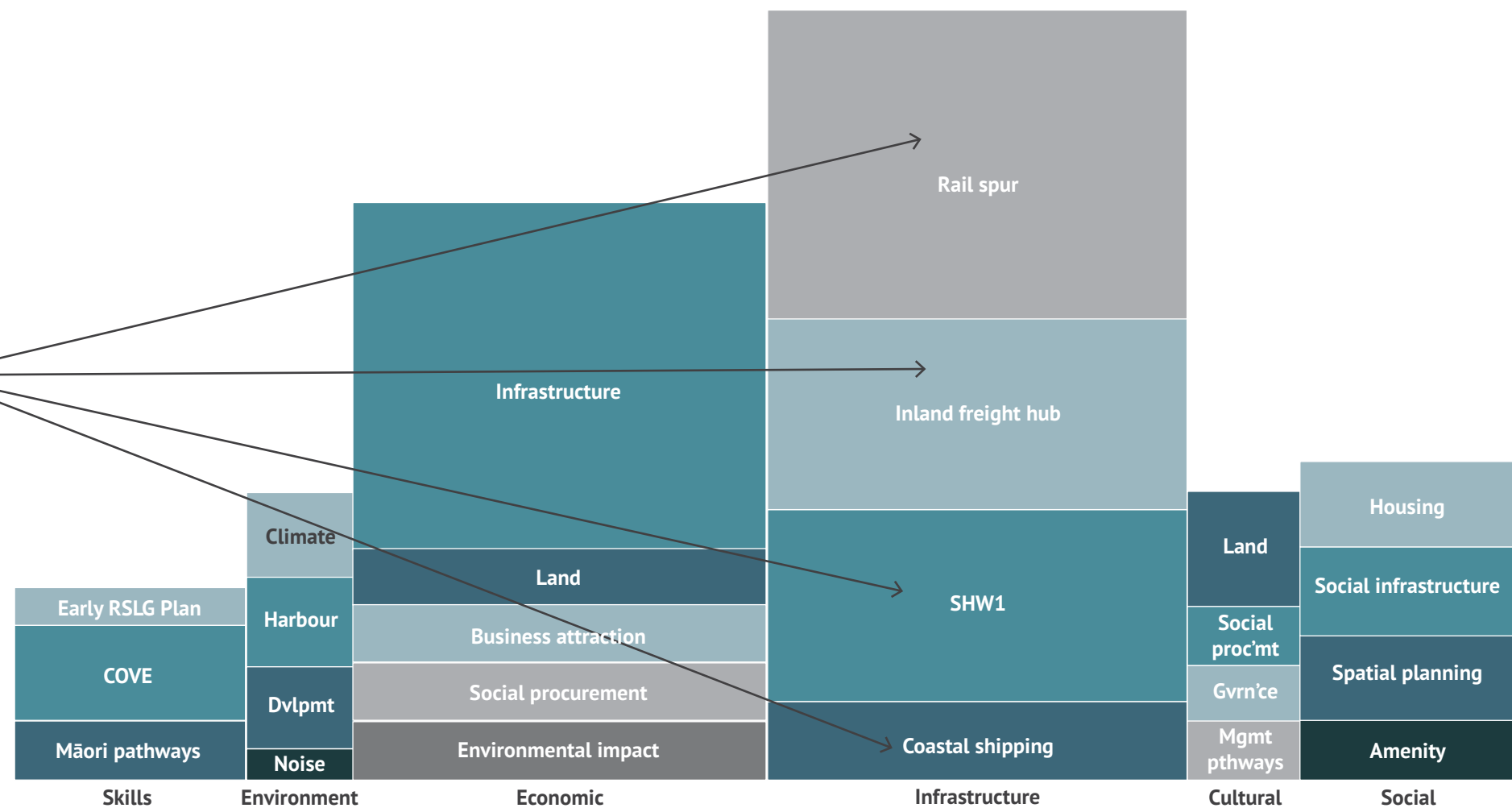


Stakeholders consistently linked port expansion potential to logistics/transport connectivity to Auckland/UNISC

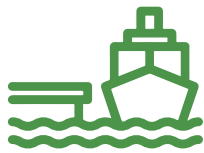
Qualitative data: Port expansion number of key mentions by theme and sub-theme
(width = # of mentions, height = importance assessment)

A key qualitative finding was the importance of rail and road transport links to the realisation of port expansion benefits.

We used this input to help frame the scenario analysis.



Source: Stakeholder interviews, 2022. Note: views presented are those of stakeholders and are not necessarily representative of the review. See Appendix 3.



Stakeholders highlight Northport improves UNISC efficiency, but infrastructure investment is needed

Qualitative findings: Port connectivity

Northport has the potential to be integral to the future of the Upper North Island Supply Chain. An expanded Northport as part of an expanded 'Golden Triangle' will increase supply chain resilience and efficiency for the largest and fastest growing cities and regions in New Zealand.

- Northport has an advantage as a deep-water port in providing access to large (and growing) vessels – this could open new market opportunities and accommodate international shipping trends
- Northport is strategically positioned near high growth areas in the UNI, particularly Auckland
- Northport can provide logistic support to Auckland from the North for both imports and exports.

An expanded Northport increases national trade resilience and efficiency by providing a viable alternative to the heavily constrained Ports of Auckland and the logistic choke point through the Auckland isthmus.

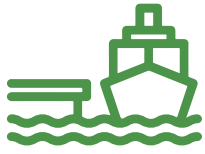
- The Ports of Auckland is constrained by land availability, inland logistics, social license, and faces pressures to reduce its footprint
- The Port of Tauranga has capacity to expand and serve Auckland from the South, however the Auckland isthmus limits access to the North of Auckland via road or rail.

For Northport to play an expanded, integrated and competitive role in the Upper North Island infrastructure investment is required:

- Investment is needed in the rail spur to Northport, an inland freight hub in Northwest Auckland adjacent to the rail line, and road improvements in SHWY 1 from Whangarei to Auckland to facilitate increased freight movements
- Increased coastal shipping will provide extra logistical capacity and connectivity to other ports, however without sufficient road and rail connectivity, and an inland freight hub, logistical efficiency will be severely constrained, particularly to Auckland
- Utilising current inland freight hub capacity in South Auckland or serving South Auckland from the North is also constrained through the Auckland isthmus with road congestion and passenger rail reducing rail freight availability through Auckland
- Investment in the transport network is not in the control of Northport but it is essential.

Key decisions on Northport's future should be taken jointly between local, regional and central government within an integrated UNISC strategy.





Stakeholders consider Northport expansion will strongly benefit Northland's economy and society

Qualitative findings: regional benefits

Access to a competitive port with containerisation will attract new industry, businesses and workers to the area:

- There is approximately 700 Hectares of available industrial land adjacent and near to Northport which could facilitate the development of industrial parks and production facilities - no other port has similar growth options
- Industrial growth around Northport will also accommodate and stimulate indirect and induced economic growth.

Increased port operations will expand opportunities for directly related port and logistics business in Northland:

- Port Jobs are typically on-going in nature and would continue to rise in line with freight volume (approx. 0.03 jobs for every additional 100 tonnes), to a point where further automation increases productivity.

Northport expansion will increase Northland's trade access to both local and international markets:

- Local industry will benefit from increased logistic efficiency and capacity in the region and local businesses gain better market access to Auckland, the Upper North Island and internationally
- This also creates new market opportunities for Northland's growing primary industry.

Māori enterprises and assets are concentrated in primary exports in forestry and agriculture, both of which stand to benefit from increased port capacity and capability and increased rail access from Otiria to the port.

Cruise ships will be attracted to the area with increased berthage, bringing a potential additional \$37.m p.a. to the local economy. There are 11 Cruise ships booked for this tourist season (2022/23) and 10 already for 23/24.



New Zealand Avocado



Avocado NZ have ambitious targets to grow their avocado volumes by between 80-150%* in the next decade



Approximately 40% of New Zealand's planted Avocado land is in Northland, and this is expected to grow



Approximately 70% of Avocado returns are from exports.

The large majority of these go to Australia, but there are growing markets in Taiwan, Singapore and Thailand.

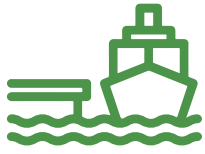


Proximity to a port with large volumes of container movement, would enable the growth, reduce transaction costs and carbon miles, open up export markets, and encourage additional production line facilities (e.g. pack houses) to be developed in Northland.

*Estimate only

Source: Stakeholder interviews 2022, NZ Avocado Northland Feasibility Workshop output



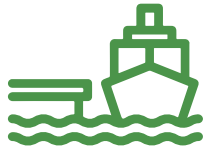


Qualitative research findings were used to develop our hypotheses

We used outputs from our qualitative research to generate hypotheses; and to identify the critical success factors required for each to be true. This then fed into ranged low/med/high case scenarios that were used to model outcome values and benefit assessments.

Embedded in these views are several key assumptions, largely transport links and other port capacity, that are not in control of Northland stakeholders. Because decisions are uncertain we have taken a scenario-based approach to test our hypotheses under simplified conditions.

	Scenarios with port expansion		
Counterfactual:	Low:	Medium:	High:
<p><i>A future with no port expansion.</i></p> <p>Land transport infrastructure: Assumes investment in rail spur.</p> <p>Trade: Assumes container growth is constrained to ~1.5% p.a.</p>	<p><i>A future that assumes Northport's role grows organically, continues to be focused on regional trade with some support for Auckland emergencies.</i></p> <p>Land transport infrastructure: Assumes investment in rail spur.</p> <p>Trade: Assumes container growth is constrained to ~4% p.a reaching 420,000 TEUe. 'TEUe' (TEU equivalent accounts for 40 foot container volume as well).</p>	<p><i>A future with the port expanding its role to include both regional and national trade, growth is largely from north of the Auckland isthmus.</i></p> <p>Land transport infrastructure: Assumes investment in rail spur and inland freight hub in North-West Auckland. Breakbulk handling at Northport, container marshalling at Northport complemented by an Auckland freight hub.</p> <p>Trade: Captures a proportion of the import container trade growth from the area north of the Auckland isthmus. Attracts 80,000 TEUe and grows at ~3.6% before reaching rail/road capacity at ~400,000 TEUe.</p> <p>Industrial activity: There is an industrial hub around Marsden point with some supporting services relocating to Whangarei.</p>	<p><i>A high future which assumes POA becomes further constrained, which results in a larger proportion of trade in Auckland region being handled at Northport.</i></p> <p>Land transport infrastructure: Scenario assumes investment in rail spur and inland freight hub, and four lane State Highway 1 from Whangarei to Auckland to be completed by 2050.</p> <p>Trade:</p> <ul style="list-style-type: none"> • Attracts ~100,000 TEU in 2050 with ~3.5% p.a. growth • Container trade reaches 1,000,000 TEUe in 50 years • Cars and other bulk freight handled at Northport. <p>Industrial activity: There is an industrial hub around Marsden point, related and supporting businesses relocate to Whangarei alongside maximum endemic activity.</p>



Quantitative findings

Process

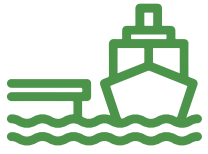
Building a scenario-based model based on key qualitative hypotheses.
Selection of key parameters and proxy data for estimates.
Running multiple iterations to produce a reliable result range.



Result

3 key scenarios: low/mid/high cases plotted long term growth paths.
GDP and jobs estimates derived from each.
Mid case results examined and tested in more detail.
Risks, mitigations and interdependencies assessed.





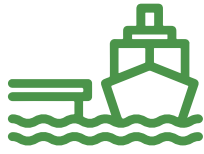
Northport expansion is expected to create an extra \$160m regional GDP per annum and 1500 new jobs by 2060 if there are efficient transport links to Auckland

Our quantitative methodology was built to test Northport expansion scenarios:

- Modelling found that cargo throughput depends heavily on the land transport infrastructure
- An expanded Northport **could bring an additional ~\$160m GDP per annum to Northland by 2060 and ~1500 additional jobs by 2060** (based on mid-case scenario analysis)
- Port expansion delivers more substantial benefits if there are efficient transport links to Auckland
- The known risks associated with port expansion can be substantially mitigated
- If Northport is integrated within the UNISC then investment will provide significant socio-economic benefits to Northland and efficiency gains to the UNI.

Note: These mid-case estimates were derived from the mid-case scenario using stochastic probability distribution modelling of key value drivers identified in qualitative research. Methodology is outlined in p32.





Quantitative methodology was built to test Northport expansion scenarios

The modelling simulation used random sampling and statistical modelling to mimic real-life scenarios.

- Three distinct scenarios were run, plus the counterfactual, over a period of 50 years (from 2027).

Triangular distribution was used because exact data (e.g. cargo volumes in 2030) was uncertain, but we were able to make informed estimates on the low, high and most likely outcomes under these parameters.

- Values could occur anywhere within the low and high parameters, but were most likely to occur around the 'likely' value.

Multipliers were used to calculate the indirect and induced effects of the estimated direct economic impact.

The model was run 3000 times to derive means and standard deviations for each value of interest within each scenario.

This technique is a good way to account for uncertainty, but it does not provide us with precise results. Results should, therefore, be interpreted as directional and probable:

- Results are shown as a ranged value presented in a box and whisker graph
- In situations where one value is given, the mean value is used. While this is the most likely result, it is not necessarily precise.

*Triangular Probability Density Function is a probability distribution with a lower and upper limit, and a most likely.

Note: Additional detail is set out in the Appendices: Sections 5 and 6

Modelling process

Data (triangular PDF*)

- Container forecasts
- Supply chain requirements
- Port revenue.



Estimate GDP contribution

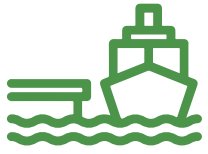
+ extract employee compensation component (divide by FTE earnings).



Apply multipliers for Indirect and Induced GDP contribution and employment.



Model iterated 3,000 times to derive means and statistical summaries.



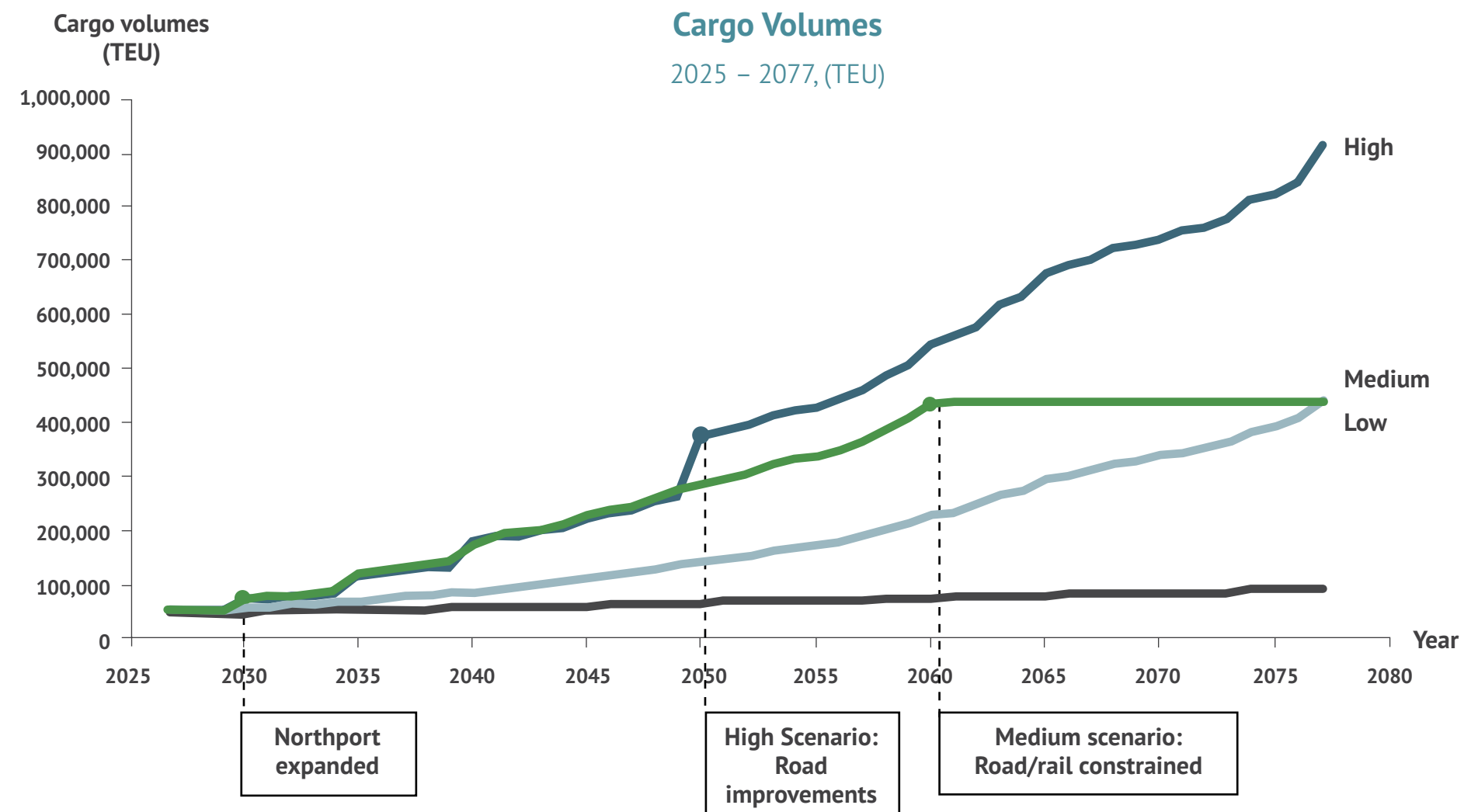
Quantitative modelling found that cargo throughput depends heavily on the land transport infrastructure

Cargo volumes in TEU were modeled from 2025 to 2077 in three scenarios.

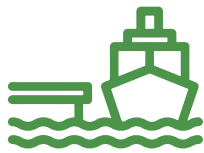
The low case assumed a rail spur but no road improvements, and 4% p.a. endemic cargo growth.

The mid case assumed both a rail spur and limited road connectivity improvement, with higher volume growth rates eventually constrained from 2050 by rail and road capacity.

The high case assumed a four lane road as well as rail connection, and a Northland based inland port facility. This scenario allowed volume growth unconstrained post 2050.



Source: Polis Stochastic model



An expanded Northport could bring an additional \$160m in Regional GDP per annum to Northland by 2060

Regional GDP includes direct port value added and indirect and induced GDP that arises as a result of port expansion:

- The likely value of regional GDP is within the box, but given uncertainties it is possible it could fall anywhere on the whisker line.

Direct GDP (excl. indirect and induced) is estimated to be approximately \$124m per annum (mid scenario).

The range is much larger in the high scenario (box height and whisker range) as the results are less precise.

The bar shows the cumulative GDP (including direct, indirect and induced) under each of the scenarios.

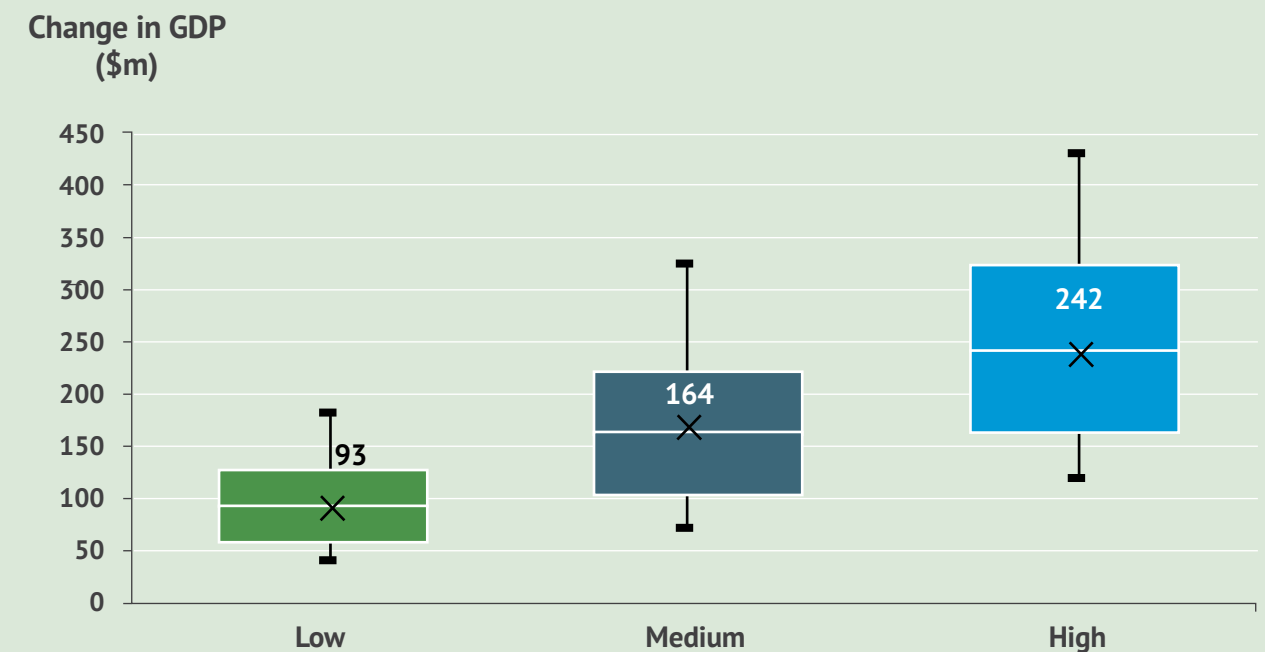
- Each scenario adds the additional GDP contributed.

The port expansion is a long-term strategic decision; significant GDP benefits are realised in 30 – 40 years.

- GDP gain is not significant until 2050, and only under medium and high scenarios.

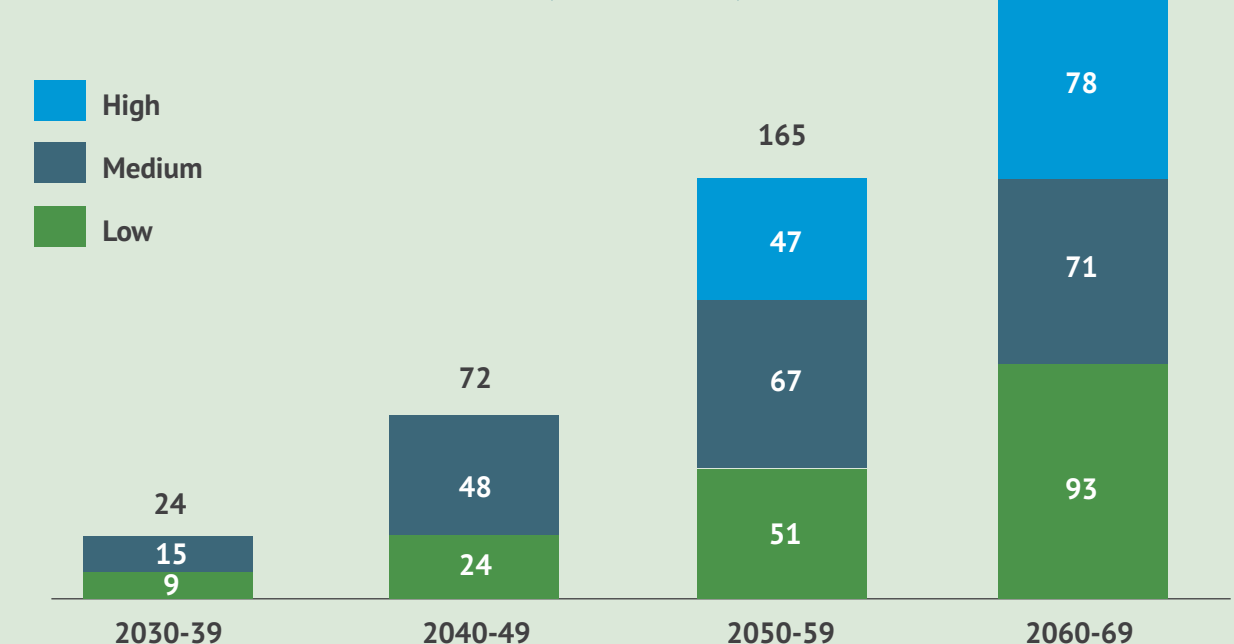
Source: Polis Stochastic model

Change in GDP
(2060-69 decade average, 2022 \$m p.a.)

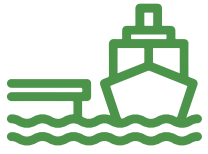


Source: Polis Stochastic model

GDP growth by decade average
(2022 \$m p.a.)



Source: Polis Stochastic model



Northport Expansion is estimated to create ~1500 jobs⁽¹⁾

Employment is expected to grow by up to 1500 additional jobs, (15% port employment, 25% supply chain employment, 60% from indirect and induced economic impacts).

- Port infrastructure provides a long-term return on investment; over 2/3rds of jobs will not arise until 2050 as supply chain links form and businesses migrate to Northland.

Port and supply chain jobs are highly paid and long term:

- Shipping and marine services jobs are on average above Northland's median wage
- This provides long term career opportunities for Northland rangatahi.

Over time, the port expansion will continue to unlock more employment opportunities in the medium and high scenarios:

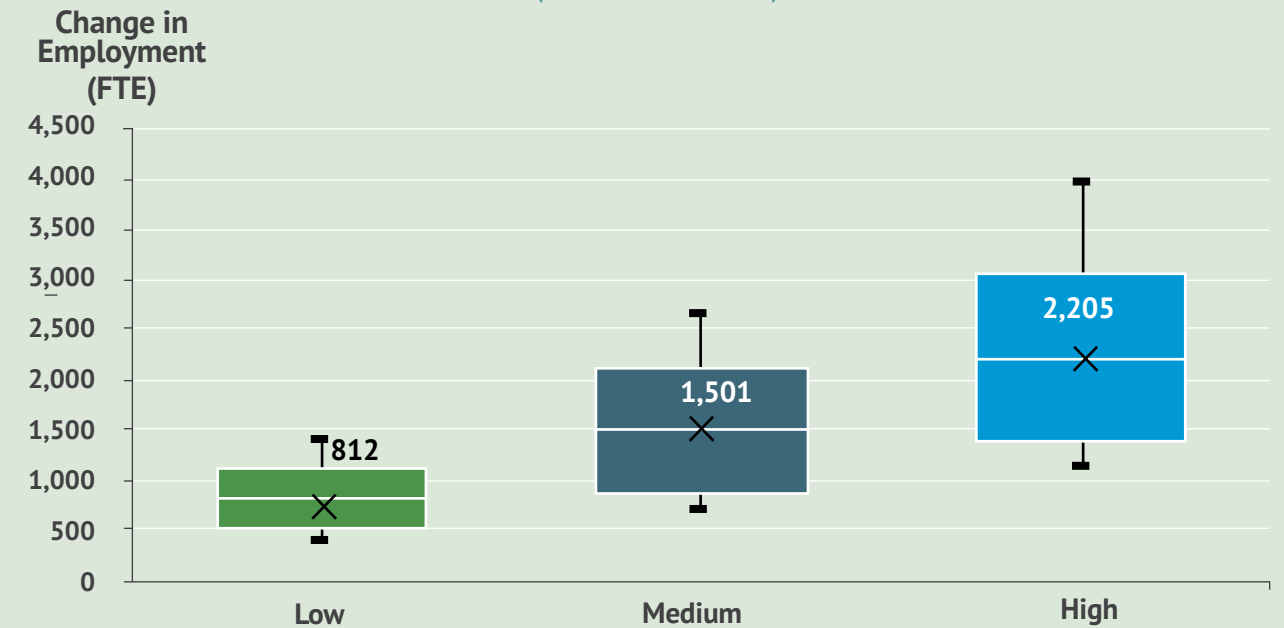
- Businesses, including logistics and port operations, will expand or move to Northland to benefit from port access, land availability, and relatively cheaper operating costs
- Direct port jobs rise in line with freight volume before levelling off through increased mechanisation and increased productivity in approximately 30 years.

Note (1): Estimates are the mid-point of the modelled probability range in the Medium Case Scenario, and are approximate and subject to scenario assumptions

Source: Polis Stochastic model, Infometrics, Qualitative interviews

Change in Employment 2060-69 decade average

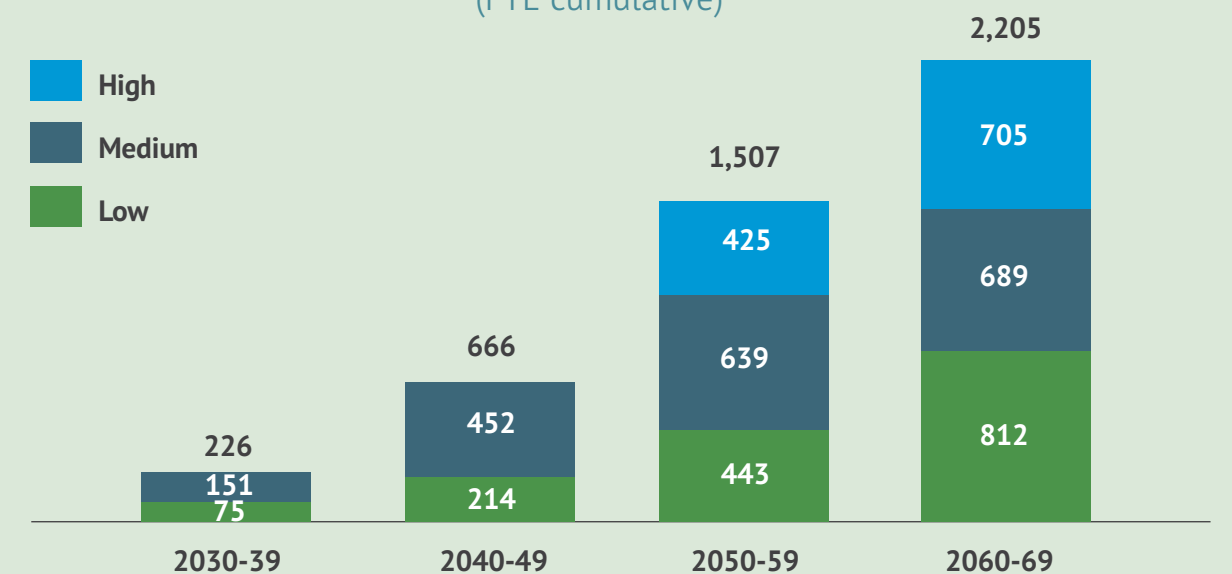
(FTE cumulative)



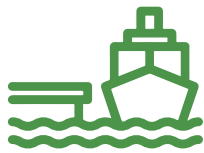
Source: Polis Stochastic model

Employment growth by decade average

(FTE cumulative)



Source: Polis Stochastic model



The most likely (mid case) scenario increases GDP by \$160m per annum and employment by 1500 FTE by 2060

Port expansion provides for regional economic growth and Upper North Island Supply Chain security.

The likely scenario brings ~\$160m p.a. in additional GDP by 2060-2069, and 1500 new FTE employment opportunities in Northland

Northport becomes a viable import hub substituting freight traffic from a constrained POA

- Benefits are medium to long-term, supporting the UNI population, economy and increasing freight demand
- Port expansion enables additional 310,000 TEU to move through the port
- Northport reaches capacity in cargo volumes by 2040-49 as rail and road infrastructure becomes further constrained

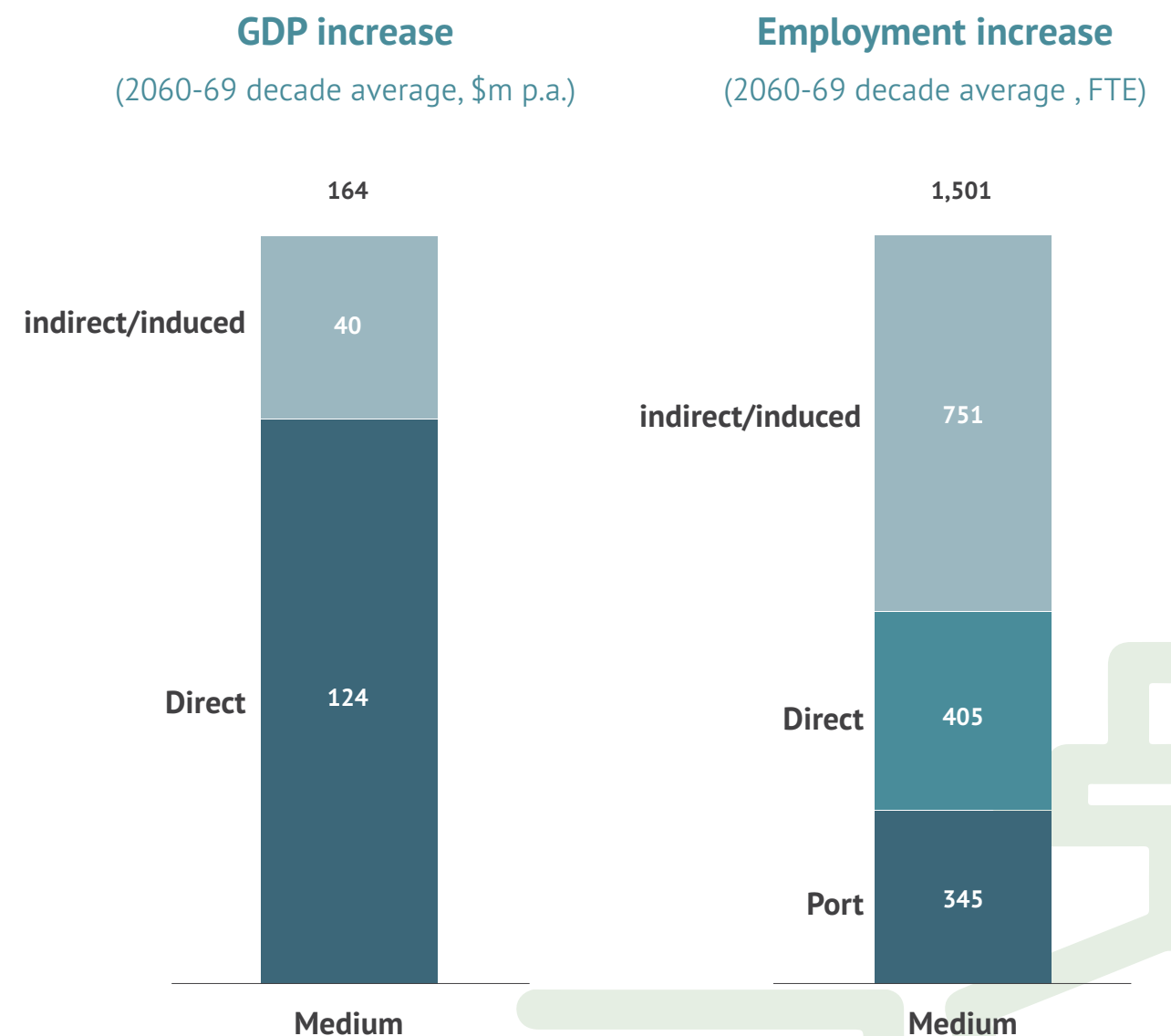
This likely case expects ancillary businesses and an industrial hub to form around the port, but a lot of the handling is likely to occur in the North-West Auckland inland freight hub

- Local importers and exporters will expand operations to benefit from the integrated supply chain and reduced operating costs
- Business migration to Northland will become limited without further road investment between Whangarei and Auckland

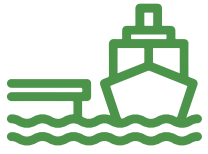
Ships will undergo replenishment, minor repairs and maintenance at Northport

- As more ships call into Northport there will be an increase in minor repairs and maintenance. More major maintenance schedules would be available if the Shipyard/Drydock is built.

Source: Polis Stochastic model



Source: Polis Stochastic model



Port expansion delivers greater benefits if there are efficient transport links to Auckland

Supporting land transport infrastructure has a major influence on trade flows and the cost and time of moving goods to/from the port.

- The competitiveness and potential role of Northport therefore varies significantly depending on the surrounding transport infrastructure.

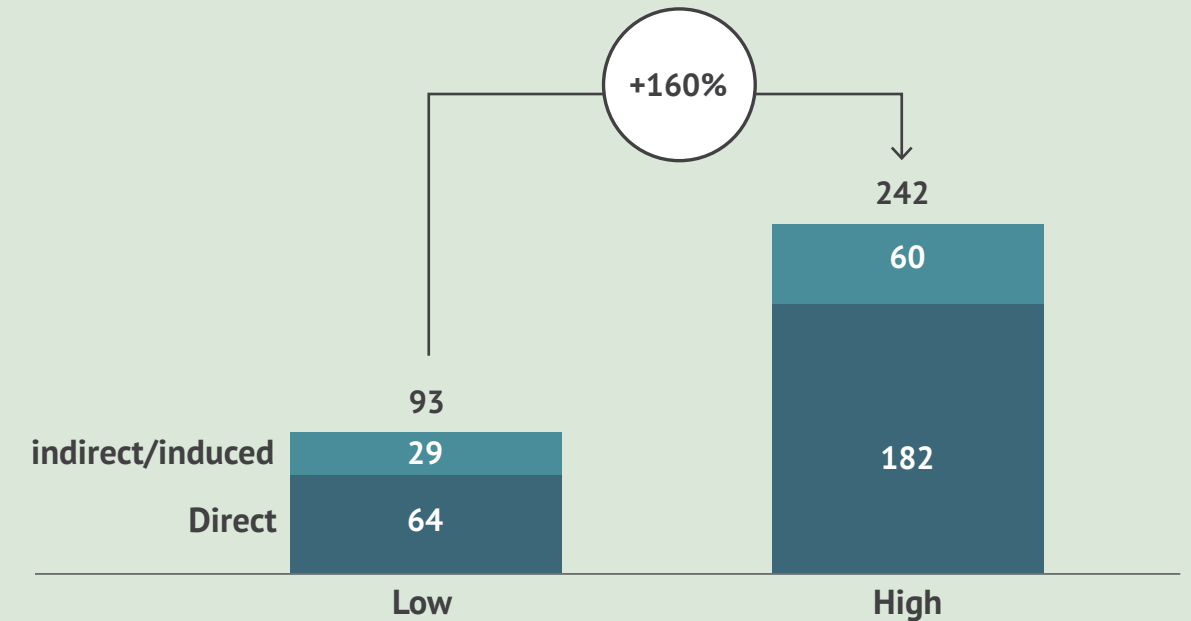
Without substantial transport links Northland could expect regional GDP to increase by \$93m per annum and employment to increase by 812 FTEs by 2060-2069.

- Absence of connection to main markets and industrial activity hubs will deter customers from using Northport for national trade tasks 'and Northport will remain primarily a regional port'
- And, it is unlikely that there will be a significant expansion or relocation of businesses to Northland.

Alternatively, with all transport links (and assuming that road constraints will be eased by 2050), Northland would expect an increase of \$242m per annum in regional GDP 2,205 FTE employment by 2060-69.

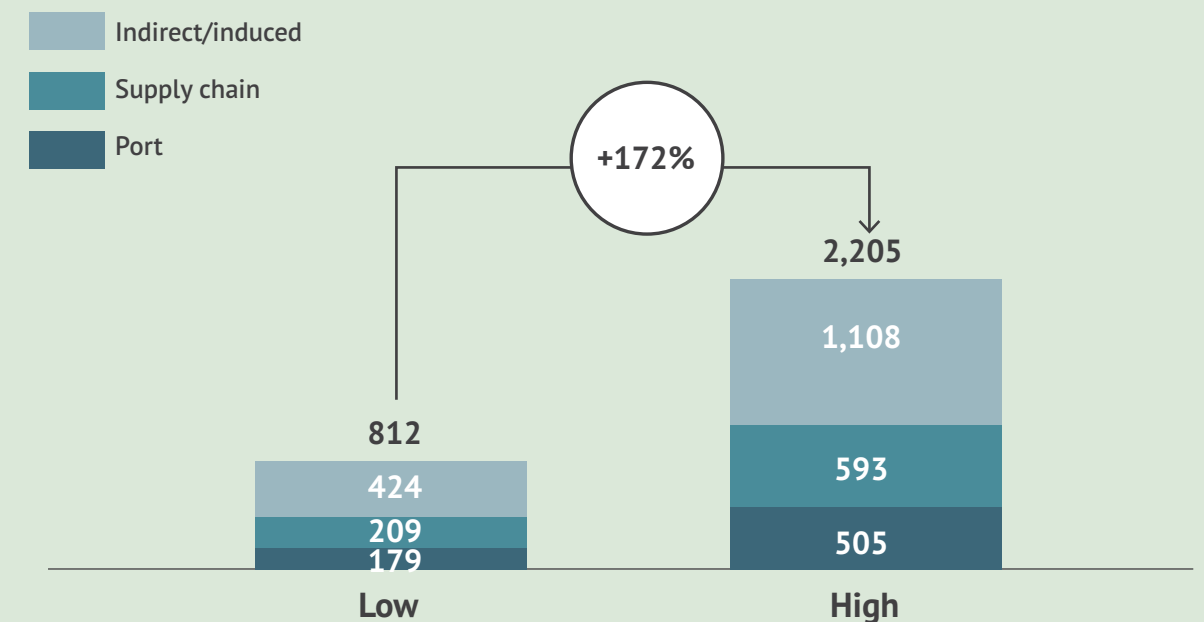
- Improved roading infrastructure would complement an inland freight hub in North-West Auckland with direct to customer (trucking point to point) freight to and from Marsden point. This would also maximise freight handling in Northland and make a second distribution hub more viable
- Northland would also be better connected to Auckland and support an integrated UNISC. Northland businesses would benefit from access to improved port facilities, local and export markets with reduced transaction and operating costs. These factors would also favour domestic business migration.

GDP increase
(2060-69 decade average, 2022 \$m p.a.)

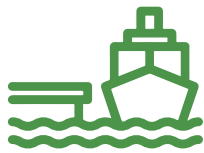


Source: Polis Stochastic model

Employment increase
(2060-69 decade average, FTE)



Source: Polis Stochastic model



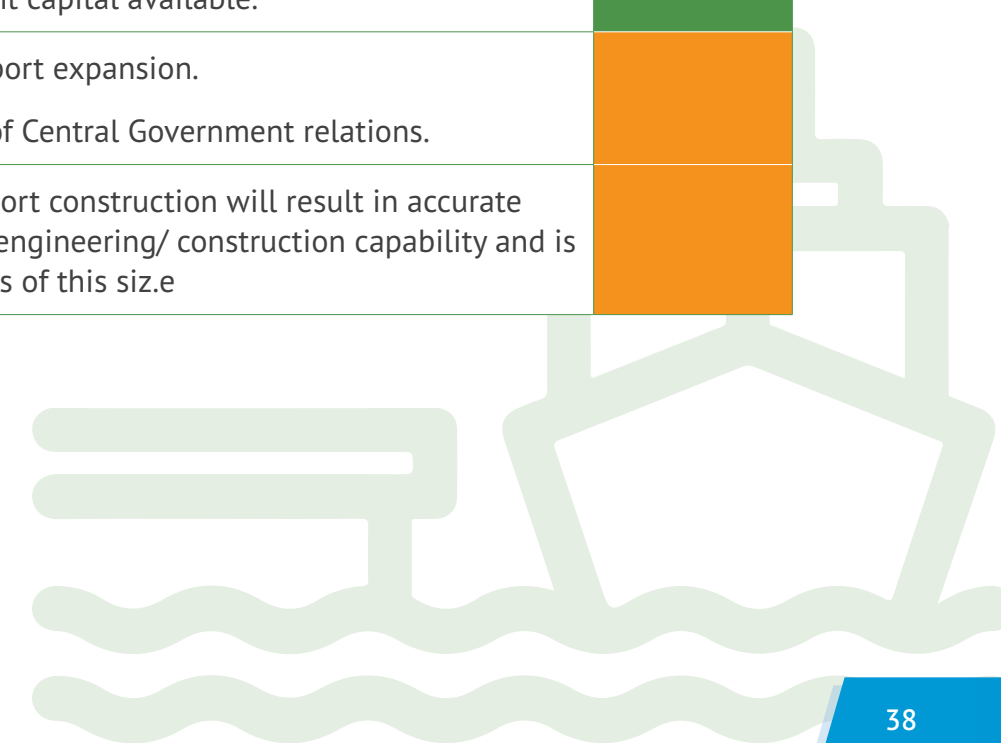
Known risks of Port expansion can be substantially mitigated

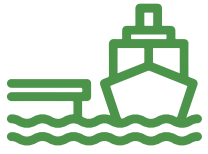
Risk Matrix

As the project progressed, we assembled a list of risks from respondents, other literature and reports, and the Polis team. We assessed these risks under likelihood of them occurring against their potential impact on a traditional heat map. Then we assembled the mitigations that were conveyed to us from various sources. This table gives two ratings, one where the risk is assessed prior to mitigation measures, on the left, and second, assessments post mitigating factors on the right. Colours denote low risk (green), medium (orange) and High (Red).

Risk	Description	Rating	Mitigation	Mitigated risk rating
Regulatory requirements	RMA and regulatory consenting required.	High (Red)	Planning under way.	Medium (Orange)
Māori Support	Confidence needed that development/s will benefit Māori.	High (Red)	Consultation and clarifying of mutual benefits, projects in place to demonstrate partnership and inclusive growth.	Medium (Orange)
Social license to operate	Increased traffic, pollution and reduced community amenity and housing affordability.	Medium (Orange)	Community and government consultation. Environmental and health and safety planning and practices. Spatial planning under way.	Low (Green)
Negative environmental effects	Growth impacts sights and sounds, water and air quality, marine mammals, harbour ecology etc.	Medium (Orange)	Following RMA. Proper effects management, resource consent granted, and policies in place.	Low (Green)
Too much capacity too early	Overestimated demand leading to underutilised assets.	High (Red)	Demand and feasibility study, and business cases completed. Long term investment and patient capital available.	Low (Green)
Inadequate supporting logistics infrastructure	Political risk that key land transport infrastructure projects are not funded.	High (Red)	Compelling case for Northport expansion. Appropriate management of Central Government relations.	Medium (Orange)
As-built cost overruns	Unexpected additional costs due to budget and supply chain delays.	High (Red)	Northport's experience in port construction will result in accurate cost estimations and local engineering/ construction capability and is strong in delivering projects of this size.	Medium (Orange)

Source: Qualitative interviews, literature reviews, team analysis





If Northport is integrated within the UNI supply chain then investment will provide significant socio-economic benefits

With appropriate risk planning and targeted mitigations, the benefits appear to be achievable for Northland and the UNISC:

- The biggest risk is inadequate supporting logistics infrastructure.

Northport needs logistics infrastructure to be well integrated into the UNISC:

- If minimal investment is made in land transport infrastructure, then the full potential of Northport will not be unlocked, and it will remain primarily a regional port
- An expanded regional port is unlikely to provide the benefits necessary to justify this investment
- With good transport links between Northport, the Far North, Whangarei, and Auckland, Northport and Northland will flourish.

With Northport integrated into the UNISC additional jobs, businesses and wealth and associated socio-economic benefits will accrue to the region:

- Housing and community infrastructure development with greater choice and amenity will result from growth and spatial planning
- The region will also benefit from skill and career development in port, supply chain and other businesses with high paying jobs.

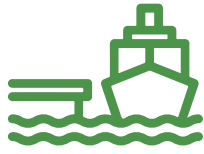
Source: Stakeholder interviews, 2022. Te Waihanga, Infrastructure for a better future. Team analysis

Environmental Benefits

An expanded and integrated Northport can further help New Zealand achieve its infrastructure priority of supporting a zero-carbon economy:

- Reaching a net-zero carbon emissions economy by 2050 requires major investment in new infrastructure
- Northport is the only port in NZ fully built under the RMA
- Northport has attained world-class environmental management standards.

“Northport can contribute to a lower carbon future by providing integrated logistics using lower carbon transport technologies like rail, coastal shipping and more efficient point to point freight trips.”



Conclusion

Northport is integral in the future of the upper North Island Supply Chain. An expanded Northport will increase supply chain resilience and increase logistic efficiency for the largest and fastest growing cities and regions in NZ.

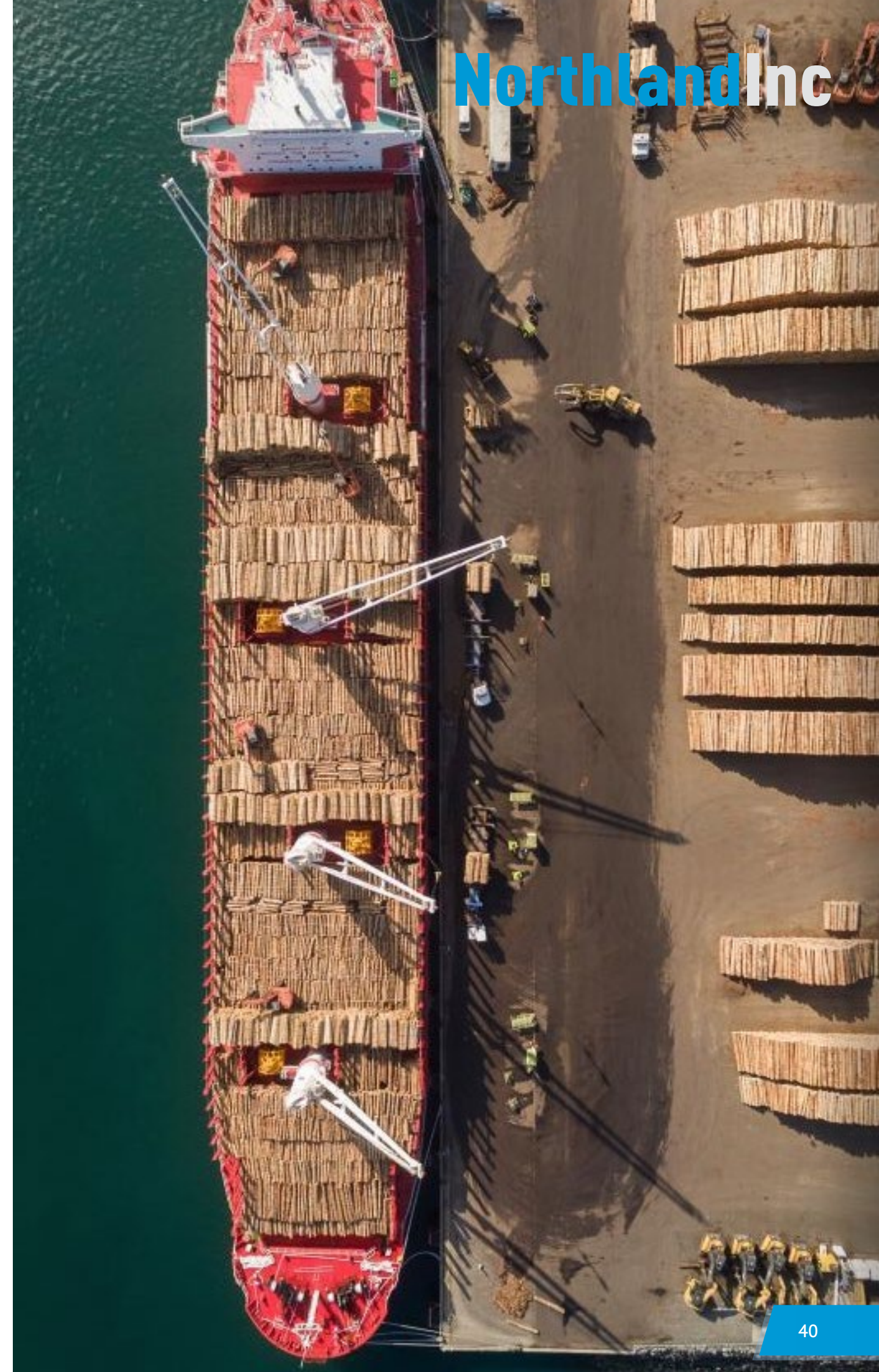
- An expanded Northport could bring an additional \$160m GDP per annum to Northland by 2060
- Port expansion is estimated to create 1500 additional jobs by 2060
- Port expansion becomes viable if there are improved transport links to Auckland
- Known risks of port expansion can be substantially mitigated.

If Northport is integrated within the UNISC then investment will provide significant socio-economic benefits. Port expansion will provide logistic efficiencies, reduce transaction costs, and facilitate trade.

Northport provides a viable option to meet increasing trade demand and pressures on other ports in the upper North Island.

- Northport has available industrial land near to the port which could be used to develop industrial parks and attract investment
- There is local benefit in industrial development, business attraction, logistics and trade facilitation
- Northport is a deep-water port with good navigability, it is already built with room to expand, it has a strong health and safety and environmental record, and with the right infrastructure support potential to relieve congestion in Auckland.

For Northport to play an expanded, integrated and competitive role in the Upper North Island expanded sea, road and rail connectivity is required. These benefits that can accrue to the UNI and Northland's advantage.





Shipyard and drydock

Socio-Economic Impacts of Northport's Growth on Te Tai Tokerau/Northland





Drydock and shipyard: Context

A shipyard and drydock proposal has had several iterations, reports and studies conducted. The current proposal provides for a Shipyard, berthage for at least three large vessels and a 250m floating Drydock capable of handling all New Zealand's Large vessels.

The outcome of previous work reaches the conclusion that Northport is the best, if not only, site in New Zealand capable of servicing clients to the Shipyard with deep water access and significant local industry capability.

Internationally, infrastructure of this kind is mostly publicly funded or via a Public Private Partnership with usage rights, and often has associated shipbuilding activity providing a steady flow of business, which is not currently the case in Northland.

Public investment can provide patient capital that allows for a longer-run return on investment, but with the expectation that the investment is a catalyst for wider socio-economic benefits.

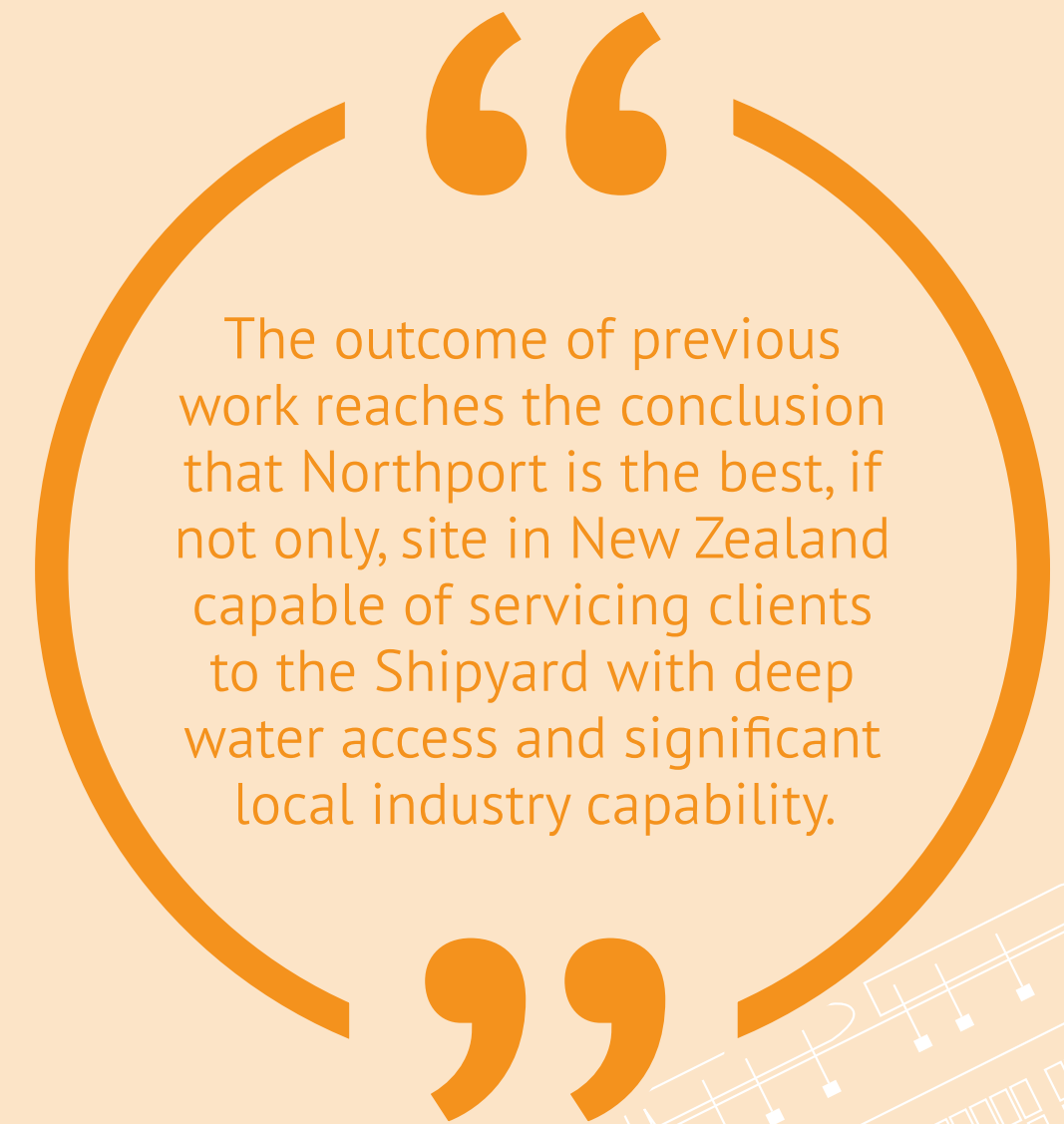
The current Devonport Calliope dock was officially opened in 1888; now over 130 years old it has structural challenges. It is also now susceptible to rising sea levels estimated to be problematic by 2035. It is too small for the Navy's and New Zealand's larger vessels. At the same time, the Devonport naval base is constrained by a reducing footprint and challenged by rising land values and demand.

A gradual relocation of naval activity over time to Whangarei would relieve pressure on the Devonport facility and provide for a two-port strategy. A shipyard/drydock facility and increased connectivity to Auckland by road and rail would facilitate that shift and harmonise a two-port approach in the short to medium term. This has strategic benefits to the Navy, Auckland, Northland and New Zealand.

Our approach has been to survey previous work, literature and stakeholders to define the key issues that would define the benefits to Northland and New Zealand.

There are significant exogenous variables that can impact decisions and outcomes. For these reasons, our qualitative research informed a quantitative ranged scenario analysis.

Source: Qualitative interviews, Northport vision for Growth





Qualitative phase: drydock and shipyard

40 semi-structured
interviews with 49
respondents

Literature review

Hypotheses for Scenario
modelling

Process

Interviews were recorded and data was analysed, summarised and synthesised into key themes.

Interview data was compared and checked against previous literature reports to provide a sense-check against key themes.



Result

The combination of these two data streams formed the basis for parameters and input assumptions to be tested in quantitative ranged modelling.

Conclusions and recommendations were based on a synthesis of all forms of data.





Stakeholders strongly believe a drydock shipyard would augment Northland's marine cluster to national significance and regional benefit

The Shipyard / Drydock development is seen as a catalyst to marine activity:

- that will bring strong industry development benefits to Northland.

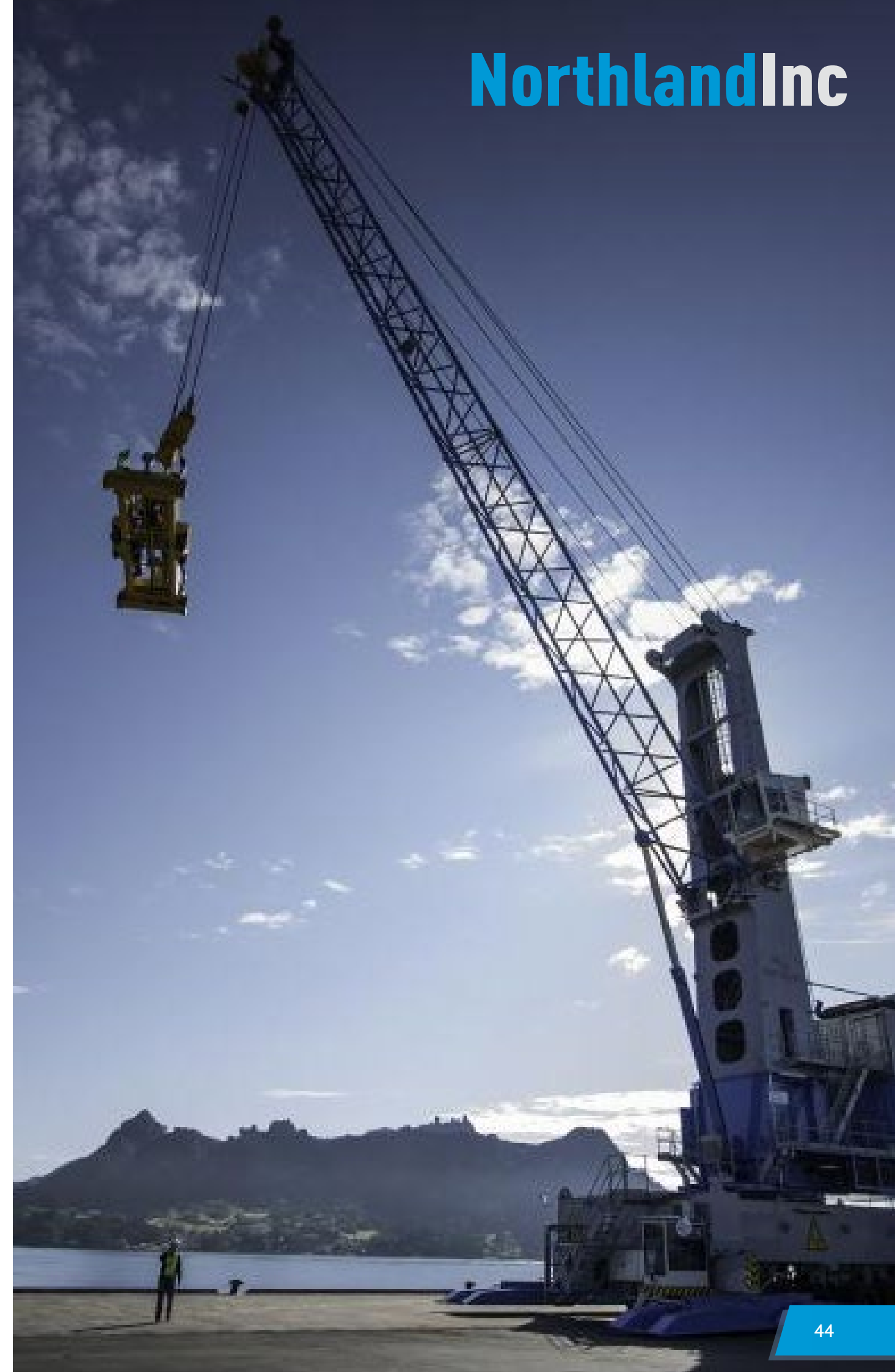
Stakeholders told us skills and career development would benefit from enablers that address constraints and meet demand:

- Staircasing skills to meet demand through early planning with education providers and the development of a marine Centre of Vocational Excellence (COVE)
- The COVE is likely to complement and increase naval training activity in the region.

Stakeholders consider shipyard/drydock would be economically and environmentally beneficial:

- Environmental concerns were high, but accounting for those was seen as achievable
- Alongside concerns there is an opportunity for the facility to gain a competitive position in international markets through environmental stewardship.

Source: Stakeholder interviews, 2022. Note: views presented are those of stakeholders and are not necessarily representative of the review team





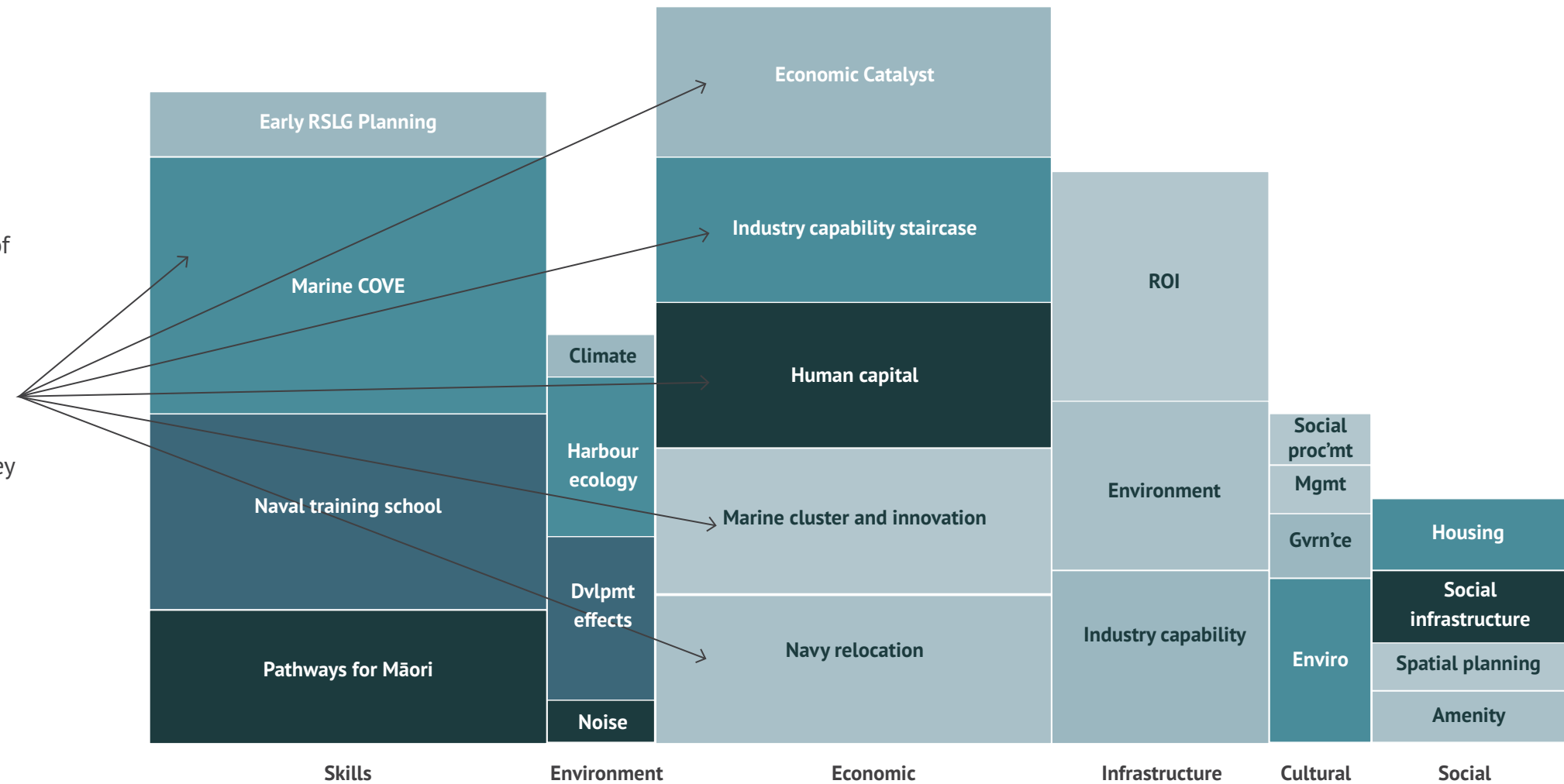
Stakeholders frequently viewed the shipyard/drydock as a catalyst to wider marine activity

Qualitative data: Dry dock theme importance
 (width = # of mentions, height = importance assessment)

A key qualitative finding was the importance of using the dry dock / shipyard as an economic catalyst to develop a wider marine cluster.

We used this input to help frame the scenario analysis.

The highly-rated Skills and Economic themes surfaced in the qualitative research became key value drivers in the quantitative analysis that followed.



Source: Stakeholder interviews, 2022. Note: views presented are those of stakeholders and are not necessarily representative of the review team



Stakeholders consider that a shipyard and drydock facility will bring industry development benefits to Northland

Qualitative findings (1)

There is an opportunity for Northland to become one of NZ's leading marine centres. Smart specialisation in Northland's already developed marine industry could lead to a regional competitive advantage.

- The shipyard will complement other marine services currently provided in the region
- It will leverage the talent within the existing marine industry centred in and around Whangarei
- It will also provide for economies of scale and scope in the marine industry.

A new shipyard/drydock facility would complement the established Devonport Naval facility and provide opportunities for home-basing some ships and training facilities.

- A full service marine cluster and centre of vocational excellence located in Whangarei would complement Naval training that currently employs up to 1000 FTEs.

The development of the shipyard/drydock and the expansion of the marine sector will lead to commercial and population growth, which could translate into increased community wealth, amenity and social infrastructure for locals if planned for and supported.

Source: Stakeholder interviews, 2022.

The significance of smart specialisation and clustering – especially when competing with larger competitors

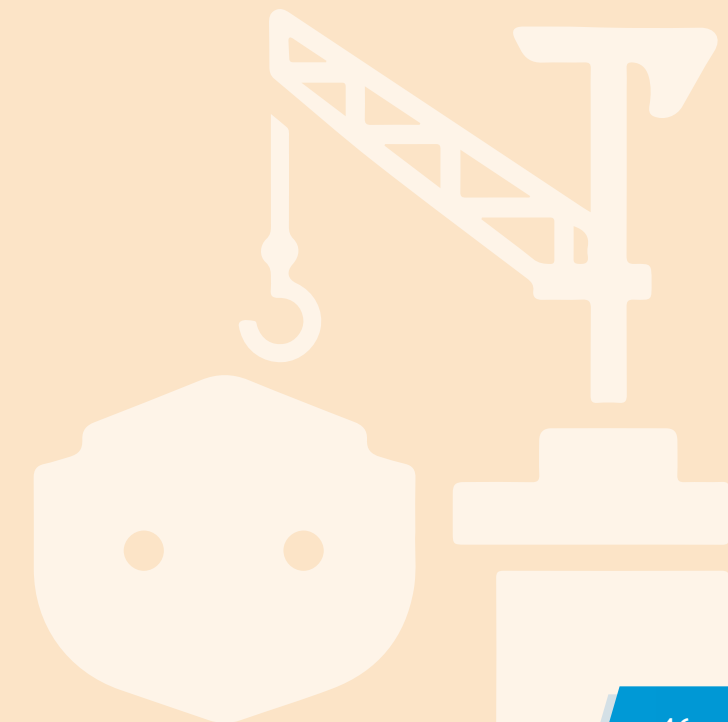
Today's economic environment is dominated by smart specialisations – critical masses in one place of unusual competitive success in a particular field.

Smart specialisation is a placed based approach which contributes to the growth of a region by building on the strengths of an area and embracing innovation.

Partnerships between public, private, and educational institutes form the foundation of smart specialisation.

A cluster of linked industries can extend to upstream and downstream channels and lateral complementary or related industries.

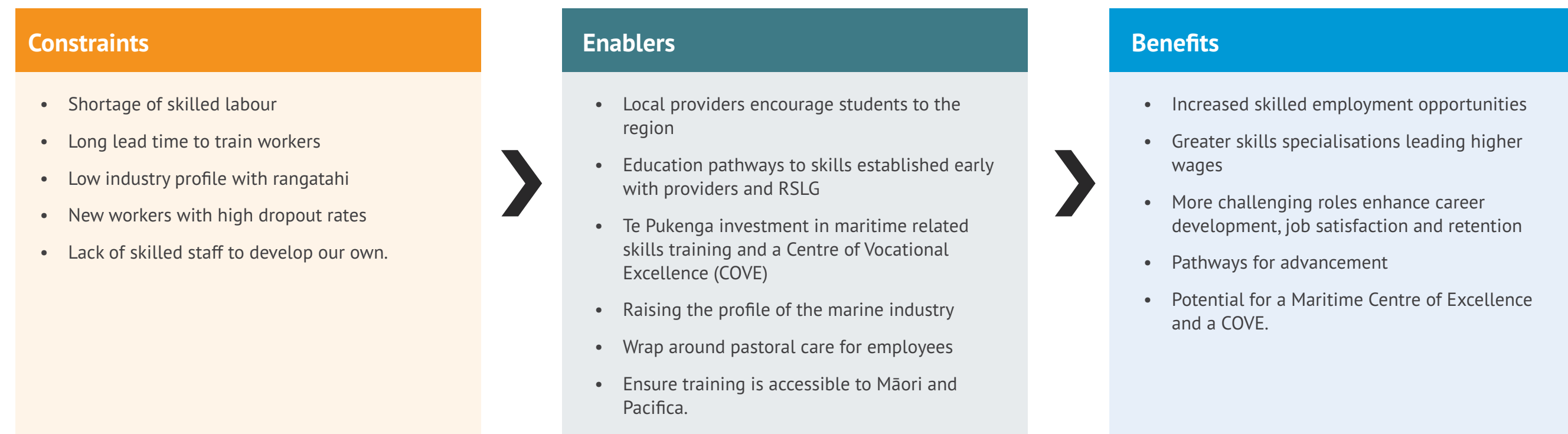
An extensive complement of industries can create synergies and competitive advantage for the region and develop a whole that is greater than the sum of the parts.





Stakeholders told us that skills and career development would benefit from enablers that address constraints and meet demand

Qualitative findings (2)



Stakeholder conclusion: The shipyard /dry dock could significantly improve career and skill development opportunities in Northland...
.....but constraints need to be addressed before benefits can be realised.

Source: Stakeholder interviews, 2022. Team analysis.



Stakeholders consider that a shipyard/drydock would be economically and environmentally beneficial to Northland

Qualitative findings (3)

New Zealand has a fleet of commercial and naval vessels that require periodic maintenance in a shipyard/drydock.

- This fleet is expected to grow in number and size in line with international shipping trends, with many vessels already outgrowing New Zealand's existing docking facilities.

It will be cheaper and beneficial for NZ ships to be serviced at Northport.

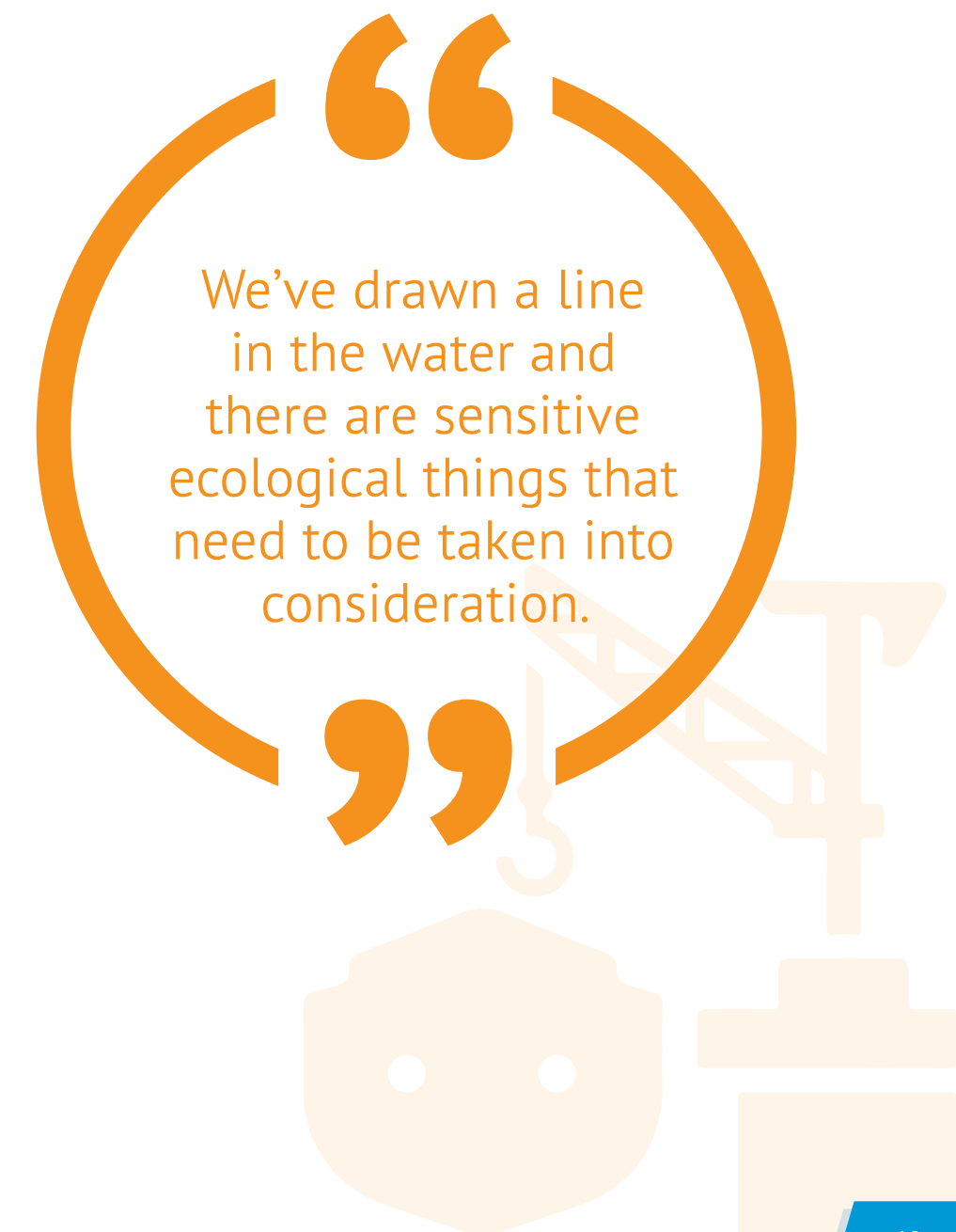
- It will reduce fuel and travel costs
- Reduce the opportunity cost of large vessels being out of action
- Local maintenance will have continuity and life-of-vessel maintenance benefits that outweigh the benefits of cheaper labour elsewhere and provide substantial economic impact to NZ.

Maintenance of large vessels at home has environmental benefits.

- NZ will deal with its own environmental impact from servicing large vessels
- By capitalising on Northport's environmental stewardship and experience and purchasing modern more environmentally sound equipment, NZ can provide a more sustainable solution than its competition
- Reducing our carbon footprint by not steaming to overseas drydock and maintenance facilities.

An established shipyard and drydock will encourage increased vessel activity in Northland and New Zealand

- Superyachts will be encouraged to service their vessels in NZ with modern facilities at Northport and will bring the added benefit of providing assurance to owners that servicing facilities are available. As on informant quipped superyachts bring "big crews and big money"
- Commercial ships and Cruise ships will also be encouraged to Northport where both port and maintenance facilities are available.



Source: Stakeholder interviews, 2022. Note: views presented are those of stakeholders and are not necessarily representative of the review team

Inshore fishing opportunity



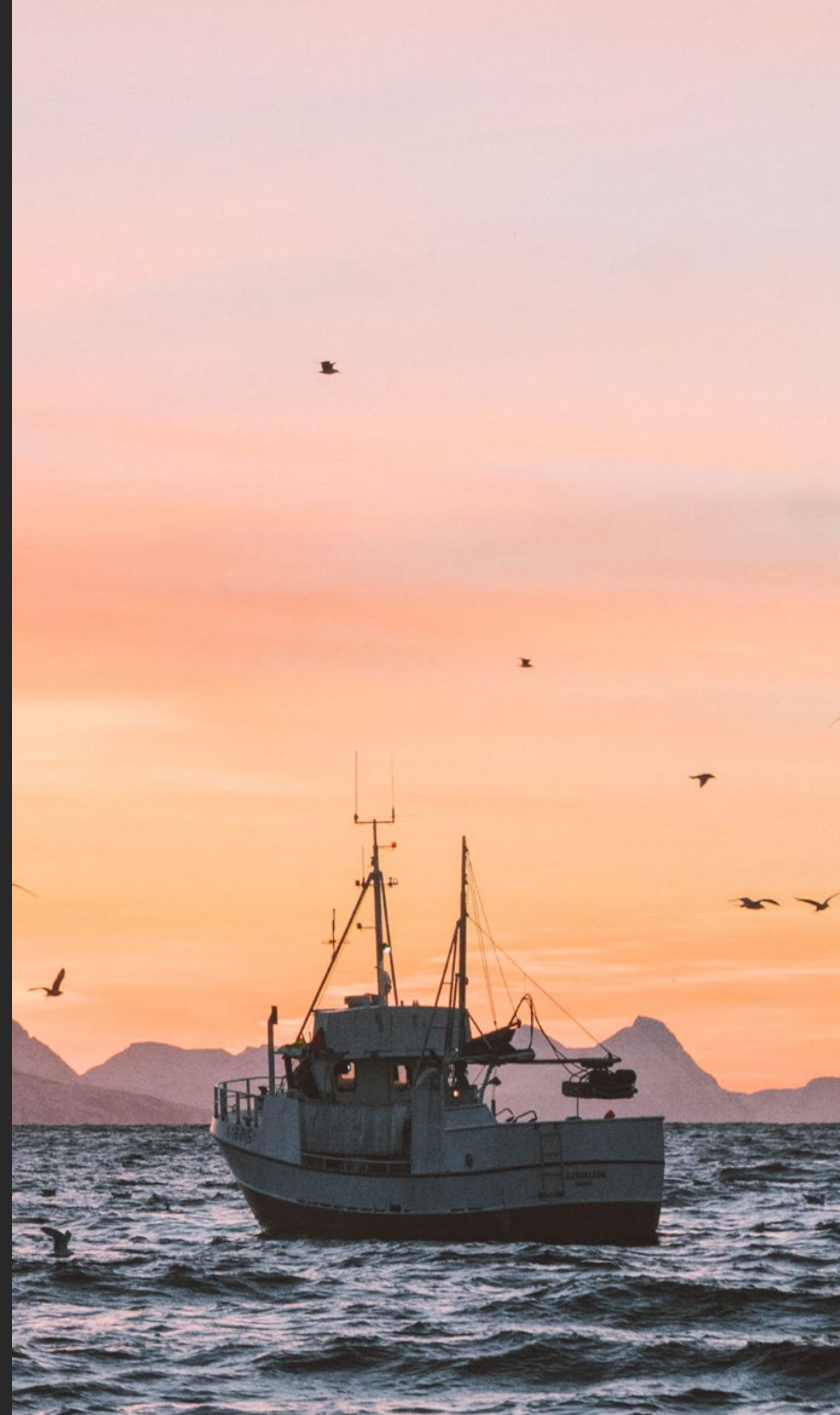
New Zealand's inshore fishing fleet has an average age of 38 years and is facing pressures from high operating costs and widening obsolescence.



It has been suggested that the fleet replacement should be built in NZ, creating 1345 jobs and returning \$284 million to the NZ economy. The technology used will also save 10,800 tons of CO2 and 330,000L of fuel per year. New Zealand does have a well-positioned marine industry but if it were to undertake this large project it would require uplift in commercial shipbuilding capabilities.



The proposal of the construction of a replacement Inshore Fishing Fleet should be leveraged by Whangarei. **Whangarei has an opportunity to extend its boat and shipbuilding capabilities, and capture some of the upcoming work.** This should lead to consideration of wider shipbuilding capabilities that would complement a shipyard, COVE and marine centre of excellence.





Quantitative findings

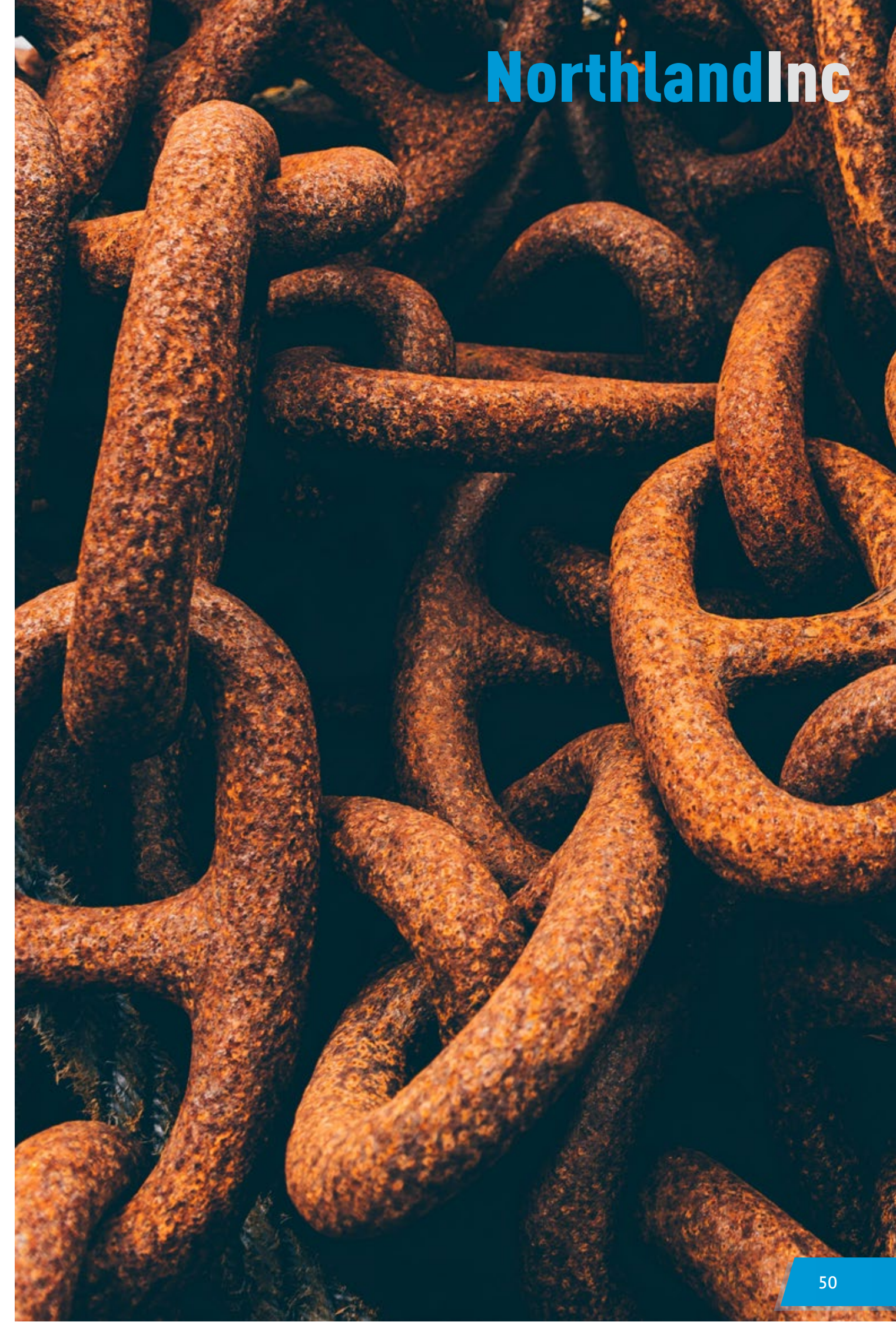
Process


- Building a model based on key qualitative hypotheses.
- Selection of key parameters and proxy data for estimates.
- Running multiple iterations to produce a reliable result range.
- Naval training relocation has been modelled separately due to uncertainty.



Result

- One scenario with long term utilisation growth estimates.
- Cluster benefits derived from 2040 once utilisation threshold is reached.
- GDP and jobs estimates derived.
- Risks, mitigations and interdependencies assessed.
- Navy training relocation GDP and jobs estimates derived.





Quantitative modelling estimated \$290m regional GDP per annum and 1135 FTE jobs by 2060.⁽¹⁾

Quantitative methodology was built to test shipyard/drydock and navy relocation benefits.

Quantitative modelling found that benefits to Northland primarily depend on the ability to strengthen the marine cluster.

A shipyard/drydock could bring an additional **\$290m GDP per annum to Northland by 2060**, including indirect and induced effects.⁽¹⁾

The shipyard/drydock catalyses the creation of **1,135 additional jobs by ~2060.**⁽¹⁾

The shipyard and marine cluster encourages a more substantial Navy training relocation to Whangarei which would lead to ship home basing and a further **500 to 1000 direct jobs in Northland.**

Known risks of shipyard/drydock development can be substantially mitigated.

Northland stakeholders will have to be active to capture benefits.

Note (1): estimate are based on the middle of a probability range using input assumptions tested using random sampling methodology. Estimates are a decade average 2060-69 in \$2022.



Quantitative methodology was built to test shipyard/drydock and navy relocation benefits

Shipyard

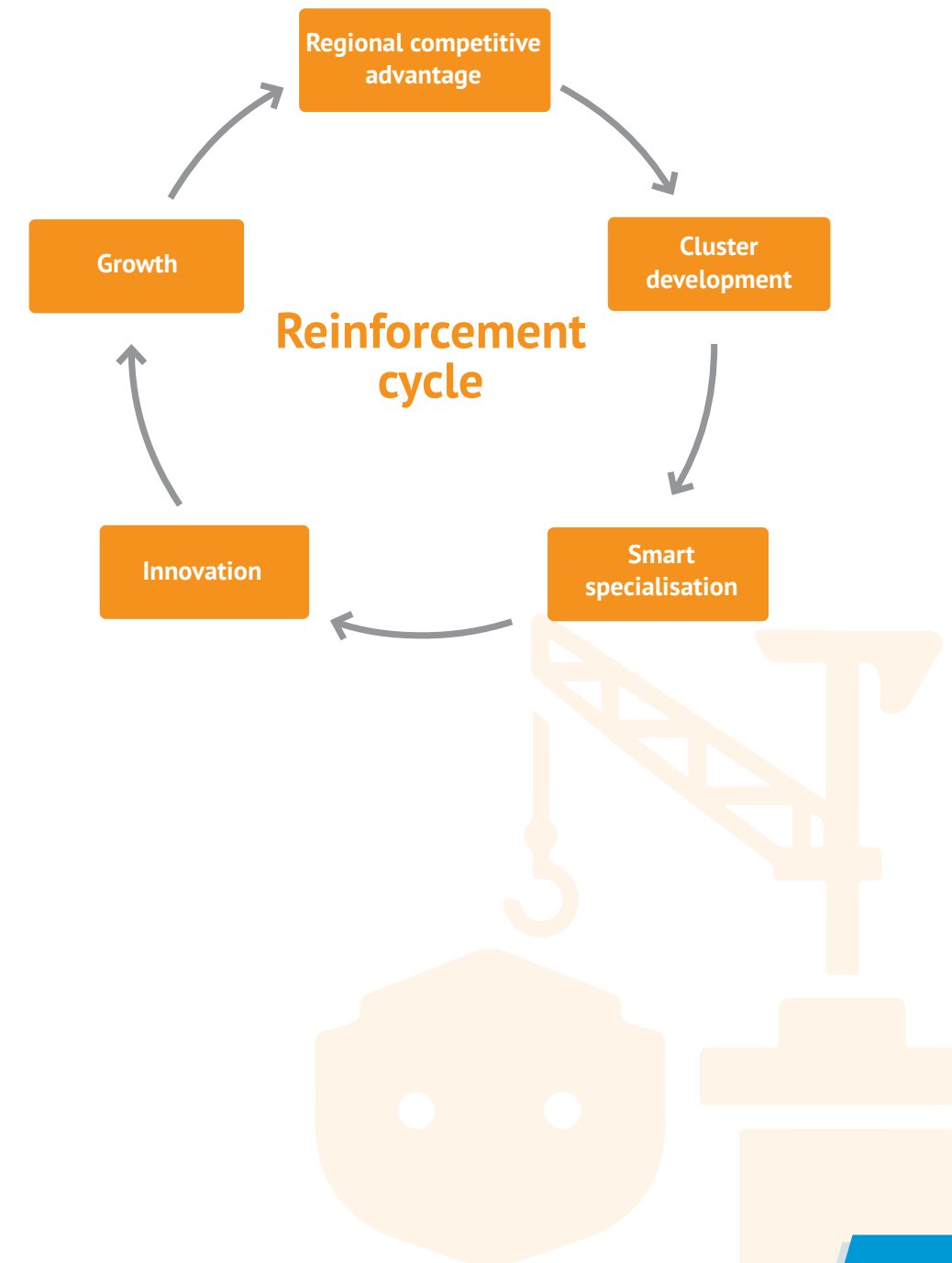
Modelling assumes a dry dock is built and operates at 60-90% capacity. In 2040, a marine maintenance hub has formed around the shipyard and a strengthened marine cluster has formed with high spill-overs into the region:

- **Direct Shipyard and Drydock:** Direct benefits include direct drydock benefits and related engineering services, and a supporting marine maintenance facility located at or adjacent to the Shipyard
- **Cluster:** This includes potential impacts from a COVE, shipbuilding*, and other marine activity not directly related to the shipyard. Modelling includes the ramp up of related activity, over and above expected marine maintenance, from 2040.
- **Indirect and induced:** The upstream and downstream activities that arise as a result of the shipyard and drydock, and related uplift in the marine cluster.

Navy training hub

Navy training hub employment and value added to Northland was modelled separately, in two scenarios.

- **¼ Navy relocate (mid case):** Navy training hub relocation to Whangarei with 500 FTE + families. Includes direct, indirect, and induced benefits
- **½ Navy relocate (high):** With a wider industry cluster formed alongside the shipyard and drydock facility, there is an opportunity for 1000 FTEs relocating to Whangarei in 10-15 years. Includes direct, indirect, and induced benefits
- **Modelled separately** but contingencies and adjacencies noted in concluding section of report.



Note: We have not modelled increased shipbuilding activity separately as this is too much of an unknown at this stage but believe this is a possibility that would improve returns to Northland. Impacts of shipbuilding are instead captured in the additional 'cluster' value.



Quantitative shipyard/drydock methodology used value drivers derived from qualitative interviews and available data

The modelling simulation uses random sampling and statistical modelling to mimic real-life scenarios:

- Only one scenario, with different probabilities of utilisation, is modelled
- The distribution reflects the large range of impacts that could arise from the marine cluster.

A triangular distribution was used because exact data (e.g. drydock utilisation) is uncertain, but we were able to make informed estimates on the low, high and most likely outcomes due to earlier demand studies and informant estimates. These are the parameters:

- Values can occur anywhere within the low and high parameters but are most likely to occur around the 'likely' value
- A filter is applied, so the additional cluster GDP only shows once a critical mass is met
- Multipliers were used to calculate the indirect and induced effects of the estimated direct economic impact
- The model was run 3000 times to derive means and standard deviations for each value of interest.

This technique is a good way to account for uncertainty, but it does not provide us with precise results, and results should be interpreted as directional:

- Results are therefore shown as a ranged value (presented in a box and whisker graph)
- In situations where one value is given, the mean value is used. While this is the most likely result, it is not precise.

Note: Additional detail is set out in the Appendices: Sections 5 and 6

Modelling process

Key value drivers (triangular PDF*)

- Capacity utilisation
- Revenue
- Engineering and related services

Estimate drydock GDP contribution + engineering services GDP

Filter reflecting development of critical mass, if met, include Cluster GDP contribution

Apply multipliers for Indirect and Induced GDP contribution and employment

Model iterated 3,000 times to derive means and statistical summaries



Additional GDP could reach \$290m per annum by 2060, including indirect and induced effects¹

The shipyard facility is of regional economic significance and national strategic importance. \$54m regional GDP per annum is estimated from the shipyard / drydock and directly related engineering services, the remainder comes from cluster activity*, indirect and induced benefits¹:

- This will strengthen Northland's robust manufacturing sector and address a potential productivity decline with the closure of the refinery.

The shipyard / drydock is a catalyst to building smart specialisations and a focus on marine excellence in Northland:

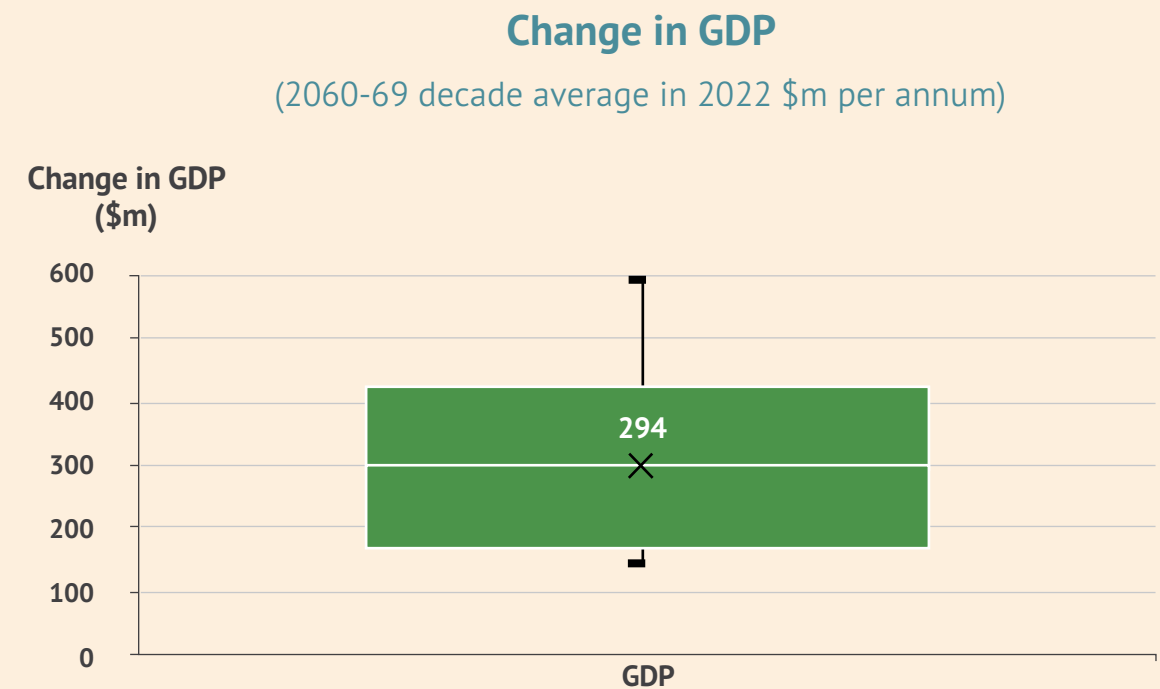
- A marine maintenance hub is expected to form around the shipyard
- Existing marine capability will be extended from 2040, with cluster activities kicking in to provide wider marine services established in Northland.

The cluster brings 3x GDP and other benefits to Northland above what would be expected from a shipyard/drydock alone (shaded area).

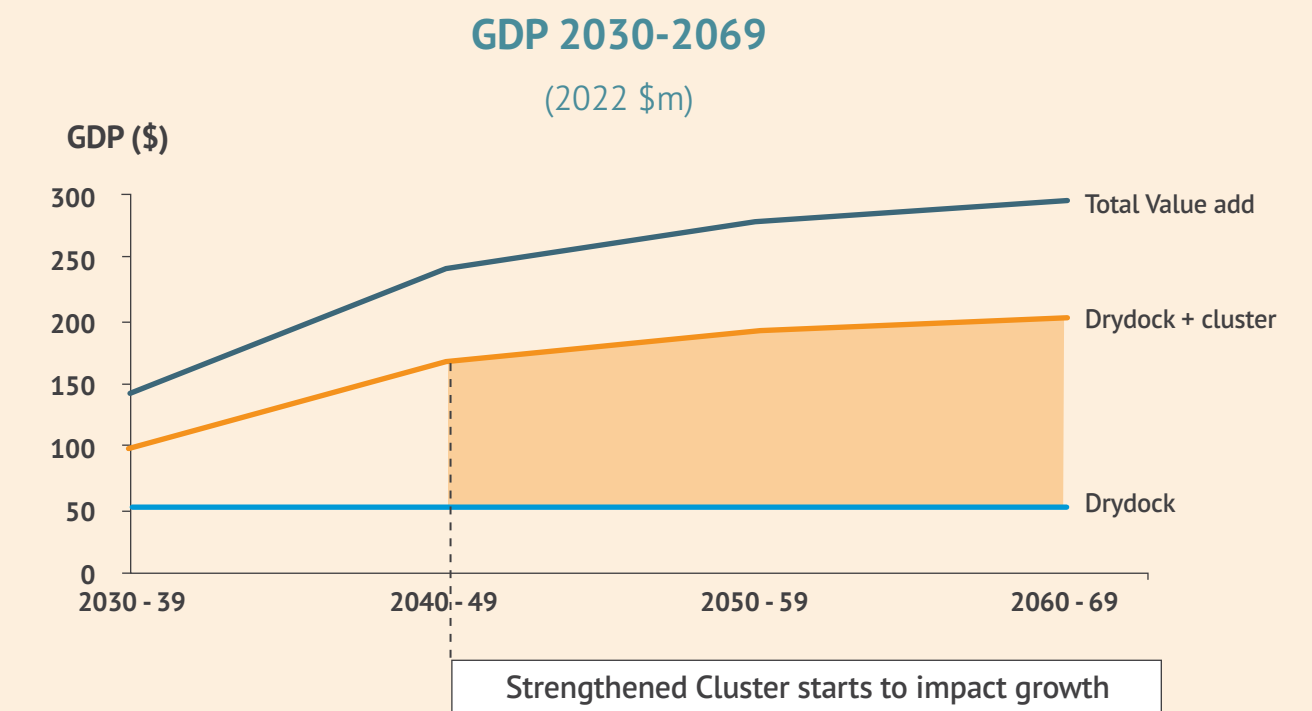
*Cluster activities include: Inshore fishing fleet build and maintenance, ship building capabilities, other marine services not directly related to shipyard

Source: Polis Stochastic model

¹ All GDP estimates described here is based on mid-range estimate of scenario based on interview outputs and key value drivers, through random sampling and statistical modelling. Change in GDP is based on decade average, 2060-69 (in \$2022).



Source: Polis Stochastic model



Source: Polis Stochastic model



The Shipyard/drydock catalyses the creation of 1,135 additional jobs by 2060¹

The facility creates approximately 1135 new jobs for Northland:

- Approximately 270 are for skilled engineering and other shipyard / drydock services roles
- Approximately 690 are from the wider marine cluster (majority skilled), which is 2.5x the impact from direct drydock impacts. Cluster effects are displayed in the shaded area.

This marine cluster will attract new high paying, skilled jobs into Whangarei:

- Northland is confronting challenges with the closure of the refinery, and this is an opportunity to offset the drop in skilled employment
- The majority of jobs are expected to be above Northland's median wage.

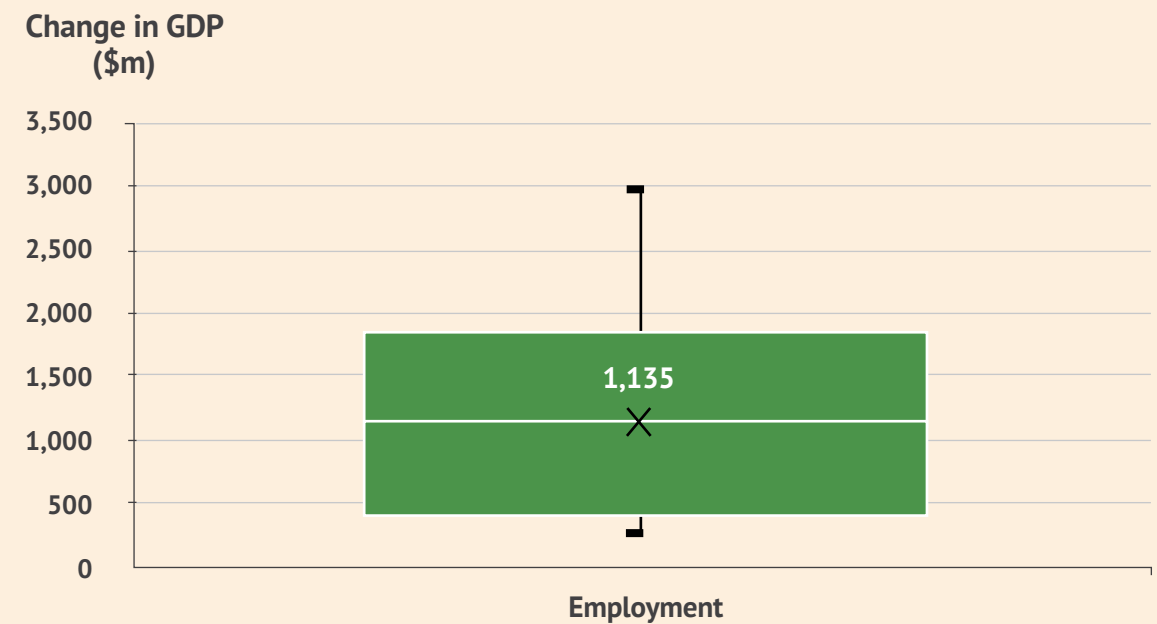
These skilled jobs are long-term and become viable career opportunities for Northland rangatahi:

- Demand pathways are critical for Northland, a region with low labour force participation, low L3 qualification rates, and higher Māori and youth unemployment than most other regions.

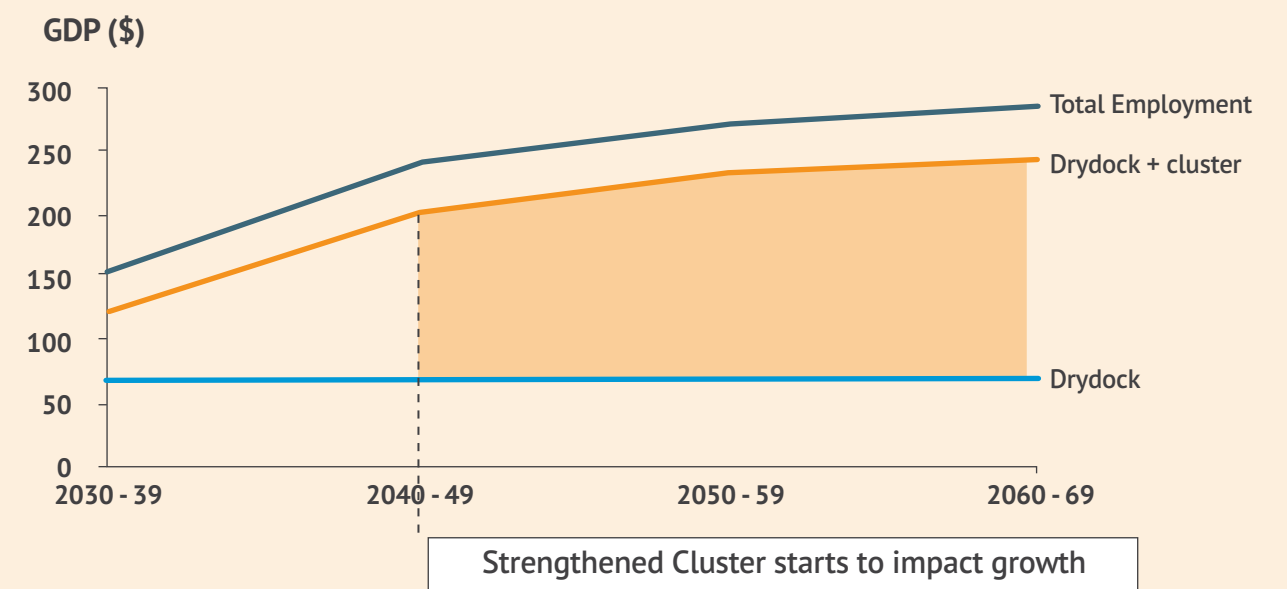
Source: Polis Stochastic model

¹ Estimate based on mid-range of probability distribution created using key value drivers (See p53) and random sampling probability distribution. FTE numbers are a decade average 2060-69 in cumulative terms

Change in employment
(2060-69 decade average, FTE cumulative)



Increase in jobs, 2030-2069
(FTE cumulative)



Source: Polis Stochastic model



The shipyard and marine cluster encourages a more substantial navy training relocation to Whangarei, including OPVs

Mid case: There is an estimated 10% likelihood of the Navy training facility moving to Whangarei within 5 years, with +500 FTEs plus families in Whangarei.

- Including indirect and induced effects, this leads to a mid point value estimate of ~\$5.6m GDP and 127 additional jobs by 2060-69.

High case: If a marine cluster is strengthened in Whangarei, there is an estimated 50% likelihood of some Navy training moving to Whangarei within 5 years.

- There is an additional 5% likelihood that the size/offering and number of Navy personnel at the Whangarei training hub would double (+1000 FTEs) within 10-15 years, and offshore patrol vessels will be based in Whangarei / Marsden Point
- Including indirect and induced, this leads to ~\$33.7m (+\$28.1m from mid) GDP and 761 (+634 from mid) additional jobs by 2060-69.
- Basing Offshore Patrol Boats (OPVs) at Port Nikau or Marsden Point would increase the throughput of navy vessels at the Marsden Point dry dock and underpins the larger potential training relocation.

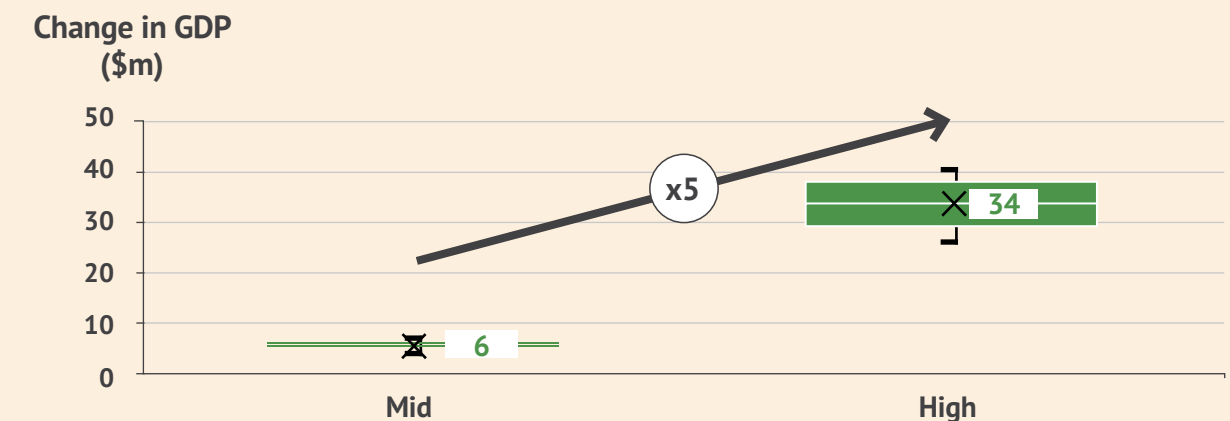
In addition, a Navy training base would bring:

- Construction activity
- Career options with strong modelling for rangatahi
- Increased naval (and integrated defence) security, resilience and sustainability
- Connections to a Marine Centre of Vocational Excellence

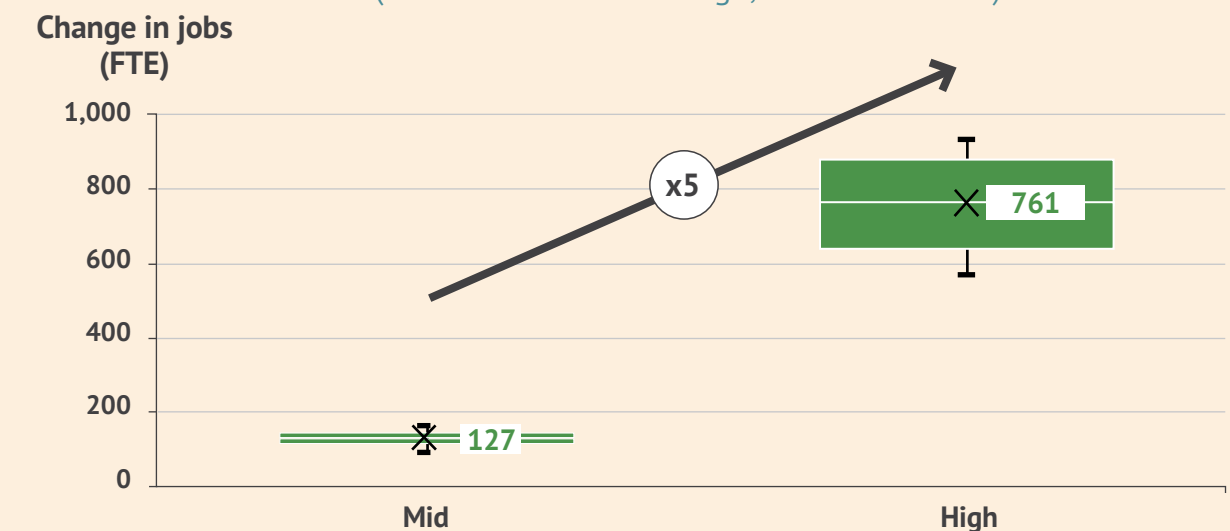
Source: Senior Naval Officers interviewed (x2, in May and June 2022).
Subject to cabinet decision. Polis Stochastic model.

Navy considers the presence of a full service marine cluster would be a key driver of shift from mid to high case

Navy change in GDP,
(2060-69 decade average, 2022 \$m p.a.)



Navy change in employment,
(2060-69 decade average, FTE cumulative)



Source: Polis Stochastic model



The shipyard/drydock development has risks that can be substantially mitigated

Risk Matrix

As the project progressed, we assembled a list of risks from respondents, other literature and reports, and the Polis team. We assessed these risks under likelihood of them occurring against their potential impact on a traditional heat map. Then we assembled the mitigations that were conveyed to us from various sources. This table gives two ratings, one where the risk is assessed prior to mitigation measures, on the left, and second, assessments post mitigating factors on the right. Colours denote low risk (green), medium (orange) and High (Red).

Risk	Description	Rating	Mitigation	Mitigated risk rating
Regulatory requirements	Newly designated Significant Ecological Area (SEA) impinging on Shipyard footprint.	High (Red)	Northport is planning underway to mitigate the SEA and develop the Shipyard.	Medium (Orange)
Policy decisions	Both shipyard/drydock investment and navy relocation are subject to political level decision making.	High (Red)	Strong business casing and active collaboration led from local and regional level by Northland Stakeholders.	Medium (Orange)
Māori support	Confidence is needed that development/s will benefit Māori and environmental impacts are minimal (addressed below).	High (Red)	Consultation and clarifying of mutual benefits, projects in place to demonstrate partnership and inclusive growth. Key areas to discuss: <ul style="list-style-type: none"> • Skills and career pathways, particularly into management • Mana whenua participation in governance and or ownership • Use of an MEA (Mana Enhancing Agreement). 	Medium (Orange)
Unable to raise capital	Unable to raise long term / patient capital to fund development.	Medium (Orange)	Early discussions with potential investors. Updated demand study and completed business case.	Medium (Orange)
Stranded or underutilised assets	Overestimated demand leading to stranded / underutilised assets.	Medium (Orange)	Demand, feasibility and business cases completed.	Low (Green)
Skills and staff shortages	There are challenges to smaller businesses to retain skilled staff, current skills shortages and new skills required.	Medium (Orange)	Skills development planning, including early engagement with the Regional Skills Leadership Group and the development of a Centre Of Vocational Excellence.	Low (Green)
Environmental impact	There are environmental risks in construction and operation, including toxic materials, pollutants, noise and light.	Medium (Orange)	Following RMA process and procedures. Purchasing modern equipment. Environmental management policies and practices.	Low (Green)

Source: Qualitative interviews, literature reviews, team analysis



Conclusion: A shipyard and drydock development would be a major boost for Northland

The development of a new shipyard and drydock would be a catalytic investment in Northland, significantly improving skill and career opportunities and contributing to regional GDP and productivity growth:

- A shipyard/drydock would bring an estimated \$290m in regional GDP per annum to Northland by 2060
- The shipyard/drydock is estimated to catalyse the creation of 1,135 additional jobs by 2060.

A Shipyard/drydock would open the opportunity for Northland to become one of NZ's leading marine centres including skills development, new careers, boat and ship building, marine maintenance, refit and repair.

- Clustering, innovation and smart specialisation in Northland's already developed marine sector would lead to a regional competitive advantage and endogenous industry growth
- A shipyard /drydock would reduce transaction, life-of-vessel maintenance and carbon costs for NZs larger vessels, thus attracting cornerstone usage for NZ flagged vessels
- It enables the local marine industry to increase capabilities and penetrate new market segments such as superyachts, cruise and commercial vessels.

A shipyard/drydock facility would also be a significant factor contributing to a naval training base in Whangarei attracting between 500 to 1000 full time employees with associated families, infrastructure and housing.





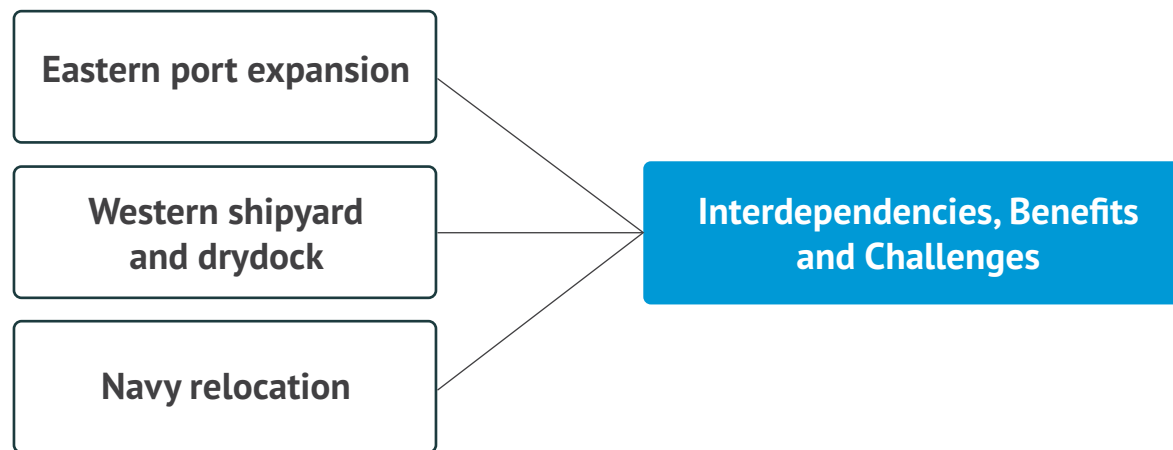
Interdependencies, Benefits and Challenges

Socio-Economic Impacts of Northport's Growth
on Te Tai Tokerau/Northland





Interdependencies, Benefits and Challenges



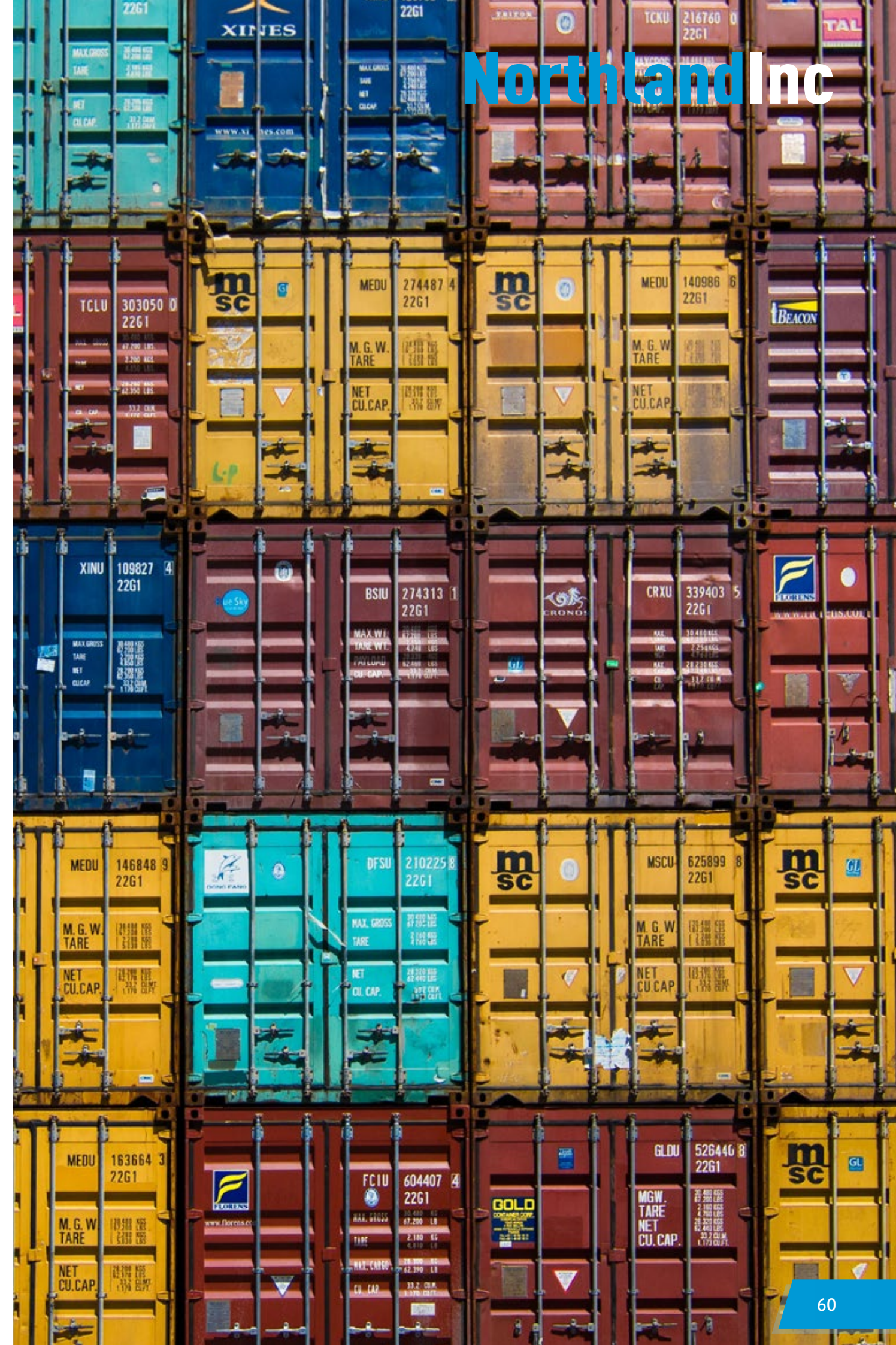
Process

Port expansion and drydock facilities were modelled separately.
 Naval relocation was linked to shipyard and skills cluster.
 Interdependencies and Challenges were considered subsequently and qualitatively.



Result

A range of second tier effects were identified for further examination in business case work.
 Overall, these interdependencies are hypothesized to be positive rather than negative.
 Projects require integrated local/regional/central government decision making and spatial planning.





Northport's vision for growth presents some interdependencies, mutual benefits and challenges

Interdependencies exist between the two projects. However, these do not appear to be strong enough to constrain either.

- Binding constraints are more likely to be exogenous (Government transport investment, capital availability).

Mutual benefits could be gained:

- During construction, including \$20-\$50m estimated benefit from the re-use of fill from a new shipyard supporting port expansion
- Post construction there exists opportunities for shared skill sets around navigation, barging and port and shipyard management and operations.

Significant challenges exist for both projects in environmental stewardship, and investment in public good infrastructure:

- Design solutions are likely to be available and decisions reached via (out-of-scope) consenting processes.

Challenges also exist in Māori / mana whenua concerns around environmental impacts, historical land grievances and settlement outcomes.

- It is vital that any new developments provide enduring opportunities for Māori.



Source: Qualitative interviews, literature reviews, team analysis. MBIE.



There are a range of interdependencies between the two projects

Interdependencies

Interdependency	Description
Supports long term spatial planning	A long-term integrated plan for Marsden point /Ruakaka will enable improved social infrastructure.
Naval adjacency	An adjacent Naval facility presents some issues with security that can be addressed alongside port security. There is the short- to medium-term possibility of berthing Offshore Patrol Vessels and housing training facilities. Training facilities could also be developed in Whangarei.
Site preparation and dredging	Site preparation for both developments could benefit from fill extracted from the shipyard development being used for the port expansion. This could provide savings of between \$20 - \$50m (1).
Spur line design	If the full navy were to re-locate to Northport/ Marsden Point there may be issues with the current rail spur designation, requiring further path and point design changes.
Servicing commercial boats	Commercial customers to the port will benefit from having marine maintenance facilities close by.
Supply chain constraints	Supply chain delays could be mitigated if construction materials, especially imported materials, were ordered together.
Pressure on the local housing market	Rapid increase in demand would see prices rise for locals. However, increased demand would not all fall on Ruakaka and current spatial plans indicate that the growth can be accommodated.
Labour force pressures	Skills shortages can be addressed by a COVE and there are some related skills in both developments.

Comment: Although we treated the two expansion opportunities as independent for modelling purposes, there is qualitative evidence of positive externalities between the two. These factors along with strategic and resilience factors imply strong benefits from taking a national and regional strategic planning lens.

Source: Qualitative interviews, literature reviews, team analysis. Note (1) estimate provided by MBIE



Mutual benefits are possible both during and post construction

Benefits: during construction

Combining both the port expansion and the shipyard/drydock projects may provide improved returns to stakeholders and reduce the overall project time and cost by an estimated \$12m(1).

Further savings and efficiencies could be achieved in:

- Site preparation and dredging (\$20-50m savings, MBIE) where dredging from the construction of the Shipyard facility can be used for fill to expanded Port facilities reducing overall capital costs
- Supply chain delays could be mitigated if construction materials, especially imported materials, were ordered together.

Benefits: post completion

The management and operations of both developments have synergies in logistics, ship navigation and docking, and scope economies may apply:

- Mutual use and increased capacity for tugs
- Extended berthage for commercial and cruise ships.

Commercial shipping lines will benefit from the added servicing facility at Northport:

- Aligning freight movements with servicing could be beneficial to both the port and the shipyard.

Cruise ships will be attracted by increased berthage available (reducing the reliance on ferrying passengers), the opportunity for drydocking and maintenance, and access to increased tourism product.

There will be mutual benefits in managing overflow capacity in either operation.

Higher usage of the port will bring benefits to Northland via increased freight and logistics opportunities.

- Strengthens the business case for logistics and infrastructure improvements between Northland and Auckland in particular.

The development of both projects will ensure growth in both the marine and logistics sectors in Northland, with associated multiplier and agglomeration effects.

The combined projects will increase skills and career opportunities, provide for higher incomes and productivity, new business opportunities, attract new families and provide for increased social and community infrastructure.

Sources: Crown Infrastructure Partners. (2021). Shovel ready Infrastructure Projects: Project Information Form. MBIE, Qualitative interviews, team analysis





Major challenges confronting Northport's growth are infrastructure investment, environment, and improving outcomes for Māori

1. Port expansion and the development of a new Shipyard/drydock facility will rest on related public sector support, investment and infrastructure.

A. Private-sector ROI is challenging for the Shipyard/Drydock, which needs commercial access with a naval override and appropriate incentives.

- The facility, therefore, will need patient capital to provide the cornerstone for medium- to long-term development and returns.

B. To gain maximum benefit from port expansion supporting transport infrastructure will need to be improved in rail, road and coastal shipping.

- Only central government can make these infrastructure investments
- These investments are consistent with Te Waihanga's 30-Year Infrastructure Strategy.

2. Environmental challenges are real, given the environmental record of some overseas drydock facilities, handling site development and fill and maintaining harbour ecology will be important. However, modern design mitigates risk.

- An interdependent issue is that RMA consenting process will take time, potentially too much time to gain benefits from Shipyard and Port developments in parallel.
- Environmental factors are out of scope of this study.

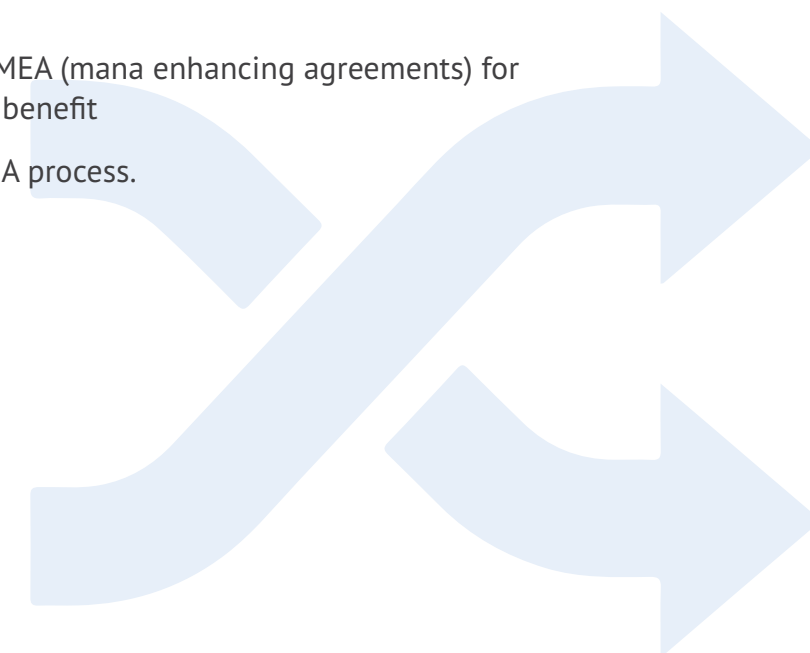
3. Major Māori/mana whenua concerns were environmental, historical land grievances and settlement.

Alongside those primary concerns were ones concerning sub-par benefits for Māori over time from both the refinery and port developments. They believe these developments did not deliver on the promises made in the beginning.

Concerns include insufficient skills pathways developed for Māori past entry level jobs, and Māori have not attained significant management, ownership and governance positions.

There are opportunities to address these concerns via:

- Exploring Māori/mana whenua participation in governance and/or ownership, possibly through settlement processes
- Social procurement programmes supporting new Māori business opportunities
- Skills and career pathway development through a COVE
- Use of MEA (mana enhancing agreements) for mutual benefit
- The RMA process.





Conclusions and Recommendations

Socio-Economic Impacts of Northport's Growth
on Te Tai Tokerau/Northland





Key conclusions

Northland lags in the NZ economy and is losing GDP at the Refinery. Northport and its adjacent marine cluster hold the potential to underpin a rebound.

Northport expansion is estimated (mid case) to create \$160m p.a. and 1500 new jobs by 2060 assuming efficient transport links to Auckland.

Shipyard/drydock mid case estimate is to bring an additional \$290m GDP per annum to Northland by 2060, including indirect and induced effects, creating 1,135 additional jobs by 2060.

The shipyard and marine cluster encourages a more substantial Navy training relocation to Whangarei, including OPVs, leading to a further 500 to 1000 direct jobs in Northland.

There are likely to be positive externalities between the two key projects, but they can be undertaken separately.

These results are predicated on and constrained by:

- A rail spur to Northport (with further expansion potential from a four-laned highway to Auckland)
- A marine skills cluster, a commercial access regime and patient capital for the shipyard
- Appropriate legal, consenting, social license and Treaty of Waitangi conditions being satisfied.

“Because the key constraints (land transport, logistics and shipyard investment) rely on central government decisions, a long-term strategic view of both UNI supply chains, and Northland regional development is required.”

¹ Estimates based on the Medium Case and mid-point ranged estimates derived from the methodologies and assumptions outlined in the report. They are approximate and subject to scenario assumptions



Recommendations

The following recommendations are offered for consideration by Northland Inc as an advocate for the Northland region. While they are congruent with the findings of this Report, they reflect the role of the client rather than that of the authors

Near term actions

1. Advocate for Northport's Vision for Growth and plan to capture benefits to Northland, making clear the need for integrated logistics.
2. Support an updated demand study, benefit cost analysis, and business case for the Shipyard /Drydock.
3. Facilitate Naval training facilities locating in Whangarei via active engagement with the NZ Navy.
4. Work with the RSLG to develop a Centre Of Vocational Excellence including:
 - Partnership with the Navy and marine sector, and including pathways for rangatahi.
5. Strengthen Marine Cluster activities to support:
 - Collaboration on commercial projects that lift industry capability
 - Business development and industry capability staircasing.

Medium term actions

1. Examine and advocate for opportunities to gain mutual benefits and cost savings from interdependencies.
2. Develop an Inclusive Growth Programme to ensure benefits accrue to locals from Northport's growth including:
 - Local suppliers are supported to meet demand
 - Social procurement opportunities are identified and landed
 - New business opportunities are developed and supported
 - Partner with Māori to provide skills pathways, and explore ownership and governance options
 - Partner with the local community and mana whenua in contributing to housing, community wealth and amenity.



In the 70s, Tauranga Port was in a very fledging state - a relatively small city, not very export-focused, small horticulture, forestry, but it was a pretty sleepy port, no cruise ships, and so on... Today, huge...

In 30 years' time, Northport needs to look like the Port of Tauranga today.

...And so wouldn't it be great if for a change New Zealand got in front of that curve and actually built the infrastructure to facilitate those opportunities.

Brett O'Reilly, CEO, EMA (and former CEO, ATEED)

Appendices

1. Key references
2. Interviewees



1. Key references

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2. Interviewees

Name	Position	Organisation
Local interest groups		
Jules Flight	Chair	Ruakaka Residents and Ratepayers Association
Darryll Trigg	Managing Director Trigg Construction and President	Chamber of Commerce (NorthChamber)
Steve Smith	CEO	Chamber of Commerce (NorthChamber)
Greg Innes	Chair	Bream Head Conservation Trust
Darren Turner	Despatch Ltd.	Northland Freight Group
Local/Central government		
Malcolm Nicolson	CEO	Northland Regional Council
Rob Forlong, and Tony Collins	CEO, and District Development Manager	Whangarei District Council
Alan Piper	Executive GM Sales & Commercial	Kiwirail
Walter Rushbrook	Executive GM Interislander	KiwiRail (Ferries)
Caroll Barnett, Jude Hughes	Regional Skills Leadership Group	MBIE- Skills/Education
Natasha Clarke- Nathan	Principal Regional Advisor	MBIE- Kanoa / Provincial Development Unit
Robert Pigou, Eleanor Green	Head of PDU/ Kanoa, MBIE	MBIE : Kanoa / Provincial Development Unit
Tony Norton, with Tariq Ashraf, Chris Langstaff	Director Regional Relationships	Waka Kotahi / NZ Transport Agency
Harriet Shelton, with Callum Gill, Shuqi Thng	Manager, Supply Chain	Ministry of Transport
Marine Sector		
Rob Kirwan	Managing Director	Culham Engineering
Lindsay Faithfull	Managing Director	McKay Ltd
Greg Kroef	Managing Director	Heron Construction
Nick Eilering	GM Ship Repair	Heron Construction
Martin Gleeson	Managing Director	Oceania Marine Group
Mark Wightman	Managing Director	Shipco 360
Murray Jagger, Jon Moore, Greg Blomfield	Director and Chair Marsden Maritime Holdings, CEO, Facilities Mng	Northport Ltd

2. Interviewees cont.

Name	Position	Organisation
Other key organisations		
Rear Admiral David Proctor	Chief of Navy	Navy
CDRE Andrew Brown	(Commander Logistics: Defence Logistics Command	NZ Defence Force
CDRE Shane Arndell	Deputy Chief of Navy	NZ Defence Force
John Harbord	Executive Director	NZ Shipping Federation
Brodie Stevens	Country Manager	Swire Shipping NZ (incl. Pacifica)
Steve Chapman	CEO	Sealink
James Morton	General Manager NZ (Marine)	Babcock NZ Ltd
Brett O'Riley	Chief Executive	EMA
Azeem Khan	Policy Advisor	Infrastructure New Zealand
Toa Faneva	Chief Executive	Northtec & Co-Chair RSLG
Māori		
Deborah Harding	Trustee	Patu Harakeke Te Iwi
Juliane Chetham	Resource management and Fisheries	Patu Harakeke Te Iwi
Mira Norris	Trustee	Te Parawhau Hapū Authority Charitable Trust
Piripi Moore	Kaiwhakatere - GM Māori	Northland Inc
Others		
Paul McCreedy	Director	Forme Consulting (Forestry)
Kevin O'Sullivan	CEO	Cruise NZ
John Tucker	Technical Director (Drydock Background)	Beca
Andy Harvey	Technical Director (Ports & Marine)	Beca
John Williamson	Director	Ascari Partners

Additional Appendix Material:

Polis Consulting Group has provided direct to Northland Inc a range of detailed supporting material as additional appendices not reproduced here, including:

1. Selected reference material (summarized above)
2. Qualitative interview summaries, composed by theme and draw from raw interview transcripts, and including quantitative responsive analysis by topic.
3. Literature review summaries covering key previous port studies by EY, Sapere, and Market Economics; as well as more general literature reviews on port expansion and dry-dock economics including work by Brown, Copeland & Co, and Thompson and Clarke.
4. Detailed methodological and quantitative analysis appendices covering the stochastic modeling of benefits assessment scenarios, including model process maps and excerpts.

Disclaimer: This report was produced by Polis Consulting Group for Northland Inc. in June 2022, based on research and analysis conducted between January and May 2022.

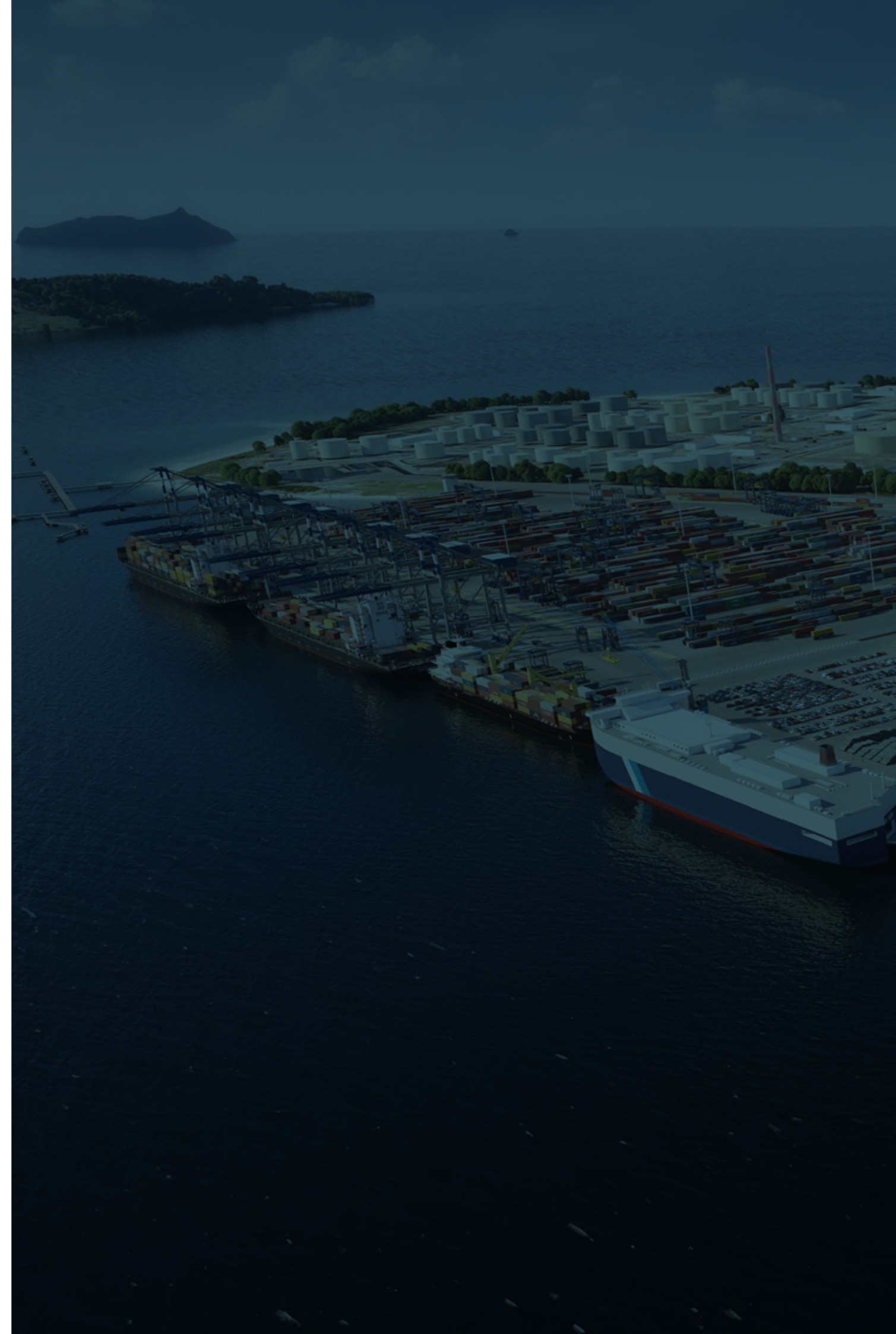
While every effort has been made to ensure accuracy and balance in assessing and integrating information, the accuracy of the outputs is conditional on the fullness and accuracy of the input information received from other parties (same font please)

While all care has been taken to ensure the fairness and accuracy of data and inferences, Polis does not warrant the accuracy of the resulting scenario and other estimates.

In particular, while this report contains some indications of employment, GDP and value, it does not constitute formal valuation advice.

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Northland Inc

Growing Northland's Economy

Kia tupu ai te ōhanga o Te Tai Tokerau