Stella Passage Development

Fast-track Approvals Act 2024
Referral Application

Attachment 3: Stella Passage Development - Economic Effects Assessment

Port of Tauranga Limited

September 2025

NZIER
NEW ZEALAND INSTITUTE OF ECONOMIC RESEARCH

Stella Passage development

Economic effects assessment – Final

NZIER report to Port of Tauranga Limited

February 2025

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Executive Summary

Scope of assessment undertaken

This report assesses the economic effects of the Port of Tauranga Limited's (POTL) "Stella Passage development" (the Project), for which approvals are sought under the Fast-track Approvals Act 2024 (FTA).

The FTA's purpose is "*to facilitate the delivery of infrastructure and development projects with significant regional or national benefits*". POTL is New Zealand's largest port by volume throughput, but is approaching capacity constraints. An inability to ship goods out or bring them in at a time and location closest to where they are most valuable incurs an opportunity cost as a direct result of capacity constraint. This gives POTL and the benefits of its expansion - the Project - both national and regional significance.

The location of the port close to the fast-growing Waikato, Bay of Plenty (BOP) and Auckland regions makes it well placed to serve trade requirements for a shipping hinterland that includes much of these and other regions but also competes with other ports around boundaries that move depending on cost and circumstances. Most other ports in New Zealand are smaller or have less likelihood of accommodating future growth than POTL. Its current operations and future expansion are priorities in regional planning instruments.

Decision makers considering projects under the FTA must take into account the purpose of the FTA, as well as Part 2 (limited to sections 5, 6, and 7) of the Resource Management Act 1991 (RMA). The RMA provisions most relevant to economic assessment are section 5's reference to "*enabling people and communities to provide for their economic, social and cultural wellbeing*" and section 7 (b)'s "*efficient use and development of resources*", which cover raising incomes for New Zealanders and value from available resources.

This assessment quantifies benefits by estimating what would be forgone if the Project did not proceed. The economic case is that POTL's current wharf capacity constraints limit expected growth in trade and the size of ships in future. POTL aims to double the container volume capacity handled each year and upgrade wharves to handle changes in mixed goods.

Without wharf expansion, POTL will bear an opportunity cost from forgone income, and importers and exporters would face reduced choice of shipping services, longer waiting times and higher costs of services if wharf usage is limited to smaller ships. This would be wasteful and inefficient for both POTL and the wider regional and national economies that interact with the port.

Effects on the economic environment identified

Relevant effects on the economic environment are primarily those that relate directly to people's economic well-being, such as incomes and jobs created by the proposed Project and those relating to the efficiency of resource uses. POTL's pivotal role as the country's largest port adjacent to large and growing regions means it already provides significant regional and national benefits. The Project will alleviate constraints on its capacity and ability to do so which are already being experienced and will worsen if allowed to persist.

In the context of the Project, the principal economic effects include:

- Positive economic impacts of spending, jobs and incomes associated with the Project.
  - These include both spending and jobs created directly in undertaking the Project and those created indirectly by business stimulated in the Project's supply chain.
  - These provide a relatively short-term increase in spending during construction, which soon reverts to a lower level of operations and maintenance activity.
- Positive effects arising from the consequences of the Project, in enabling larger ships to more readily access the wharves, and efficiencies in port operations enabled by the new infrastructure and machinery operated on it. These provide a larger and longer term benefit than the stimulus of construction.
  - Efficiencies in handling larger ships, larger loads and spending less time in mooring and attending to smaller vessels;
  - Accommodating expected increases in the annual volume of container traffic by relieving constraints on, in particular, the Sulphur Point container wharf. The Project will increase the container terminal handling capacity, to some 2.6 million TEUs per year;
  - Access to larger ships increases the options of ship size available to businesses shipping from and to New Zealand, reducing costs per tonne transported
  - To the extent that larger ships predominate in shipping routes around New Zealand, the frequency of shipping will improve for New Zealand exports and imports[1]; and
  - Savings in shipping costs (or suppression of increases in shipping costs in the absence of access to larger, more modern ships) are available to fund business investment, enhance incomes and stimulate further spending on consumer goods.
- Positive effects arising from the consequences of the Project are likely to be larger, more enduring and more widely spread across the regional and national economies than the more short-term construction-related economic impacts.

Assessment of economic effects

This assessment addresses the purpose and requirements of the FTA in describing *the Project and significance of its regional and national benefits as sought by the FTA, as well as the Project's benefits in terms of enabling community well-being and efficient resource use, as anticipated by sections 5 and 7(b) of the RMA*.

Shipping services and affected businesses are not simply aligned to the regional geographic boundaries conceptualised by the RMA. The Project's economic effects transcend local administrative boundaries, and different types of effects vary in range: spending on operations and maintenance will be focused on localities close to the activity, but POTL affects a wider economic region of customers for both export and import services that spans Bay of Plenty, Waikato and Auckland and even further for some services.

POTL has become the largest of New Zealand's 13 ports by volume of trade with a focus on exporting produce from the central and upper North Island. POTL is the port that is

[1] We assume here that visits by large ships become more regular and improve availability of cargo space.

geographically best positioned to handle trade from these regions, but a lack of wharf space constrains it.

On current trade trajectories, sometime between 2027 and 2029, the POTL will be physically unable to accommodate more growth in container throughput. This presents a constraint on would-be exporters and importers. The potential alternative ports are also constrained for the reasons outlined below:

- Port of Auckland faces constraints on growth, with proposals under consideration for relocating the cargo port;
- Northport plans its own wharf extension and is appealing a consent application turned down in July 2024; it also requires substantial investment in inland transportation; and
- Other North Island ports, such as Napier and Wellington, incur high transport costs from the Waikato/BOP regions and currently lack the scale of Tauranga and Auckland.

There are no practical alternatives to expansion at POTL that do not involve extra transport costs in reaching the alternative port, eroding margins on trade and disincentivising production.

The Project is nationally significant in enhancing a significant infrastructure asset in accordance with the FTA's purpose and government aims, such as facilitating economic growth, that is likely to affect more than one region or district. It has particular significance in the BOP and parts of Waikato, in which POTL is the most cost-effective trade outlet. Within those combined regions, Tauranga and neighbouring districts benefit most from direct project spending, but consequences for trade facilitation spread more widely.

Capacity constraint hinders the ability to ship goods out or bring them in at a time and location closest to where shipping demands arise, detracting from the value of shipped goods and incurring an opportunity cost if trade contracts. The Project aims to double container volume capacity by relieving that constraint before 2030.

- The Project will increase the ports' capacity to berth three large container vessels at the same time, which will increase the number of vessels and volume of trade that can be handled in a year - including almost doubling container handling capacity. Widening the range of vessels able to visit the port will improve opportunities for exporters and importers to book on the right ship at the right time.
- Reducing the time ships spend waiting for a berth reduces the cost for carriers servicing New Zealand, which will lower freight rates in a competitive shipping market.
- Better freight rates and better timing of shipping will improve the profitability of exporters from New Zealand, increasing their ability to invest in further economic activity.

Opportunity cost of forgoing the Project

Constraining expansion at the Port of Tauranga by forgoing the Project would not just affect POTL but also have significant strategic implications for all of New Zealand in increasing the costs of exporting and distributing imports. This would be a drag on people and communities' ability to secure their well-being and is contrary to economic efficiency.

This report illustrates the scale of benefits from the Project through estimates of the opportunity cost in 2033 of trade forgone if wharf extensions do not proceed. It draws on a 2023 NZIER report that estimated the opportunity cost in 2032 of constraint on POTL's

container wharf at Sulphur Point, adjusting this to provide a new estimate for 2033 and applying a different method to illustrate the opportunity cost on POTL's non-containerised wharf at Mount Maunganui.

The results are summarised in the table below, which shows one-year opportunity costs in 2033 of not relieving wharf constraints of $792–$1,179 million nationwide, of which $54–$79 million would be borne within the Tauranga economy (presented as a partial regional proxy[2]). The modelling includes direct, indirect and induced flow-on impacts through the respective national and local economies. The estimates are equivalent to a reduction in gross domestic product (GDP) of 0.16–0.24% at the national level and 0.36–0.52% in Tauranga city in 2033.

Without the Project, such costs would recur each year and get larger with continuing growth in trade volumes forgone.

The table also shows the separation of opportunity costs of Stage 1 of the Project, which provides for a 285-metre extension of Sulphur Point container wharf, and Stage 2, which adds a further 100-metre extension to Sulphur Point and a 315-metre extension and other upgrades of the existing wharf at Mount Maunganui.

Combined economic effects of constraints for removal by project stage

Forgone GDP in 2033 at two levels of wharf constraint on containers and other cargoes

$ million in 2033	Stage 1	Stage 2	Total
National – Upper estimate	-669	-510	**-1,179**
National – Lower estimate	-459	-333	**-792**
Tauranga – Upper estimate	-45	-34	**-79**
Tauranga – Lower estimate	-31	-22	**-54**

Source: NZIER

Consenting Stage 1 only would not achieve the project aim of concurrently berthing three container ships of the larger size expected to be shipping companies' preferred choice in future and it would leave substantial forgone opportunities for POTL's customers. That would lower both the throughput of cargoes and the efficiency in utilising wharf space at POTL. It would also reduce the income for New Zealanders derived from trade and the economic surplus available for further investment and income earning. Only consenting the total project, including Stage 2, provides the requisite length of wharf to accommodate three large container ships at the same time.

These estimates illustrate rather than predict what will happen over the next 10 years. But they are still indicative of the regionally and nationally significant scale of the opportunity cost of wharf constraints and, hence, of the benefit of removing them through the Project.

[2] In 2023, Tauranga City accounted for 45% of the BOP's GDP contribution, and 2.6% of national GDP.

Recommendations

As the economic effects of the Project are positive, there are no recommendations for consent conditions for mitigation to be applied on economic grounds.

The Project (consisting of the provision of infrastructure to provide for growth in demand) will "*…facilitate the delivery of infrastructure and development projects with significant regional or national benefits*", in line with the purpose of the FTA and the following points:

- The port in its current configuration is nearing capacity. Therefore, its economic contributions (while significant) will face constraints in the near future.
- Forecast growth in population and primary industries in the surrounding regions leads to expected demand for additional capacity and functioning at the port.
- The Project, which includes a targeted TEU capacity to 2.6 million TEU, has been developed to meet long-term demand and capacity requirements for 15 years or more.
- The economic benefits of the Project, once operational, would consist of:
  - Increased tonnages handled annually through POTL, enabling more timely and direct access to port services for businesses in surrounding regions;
  - Increased access for larger container vessels, improving the frequency, reliability and shipping rates for services through the port; and
  - Improved security on the single berth liquid jetty and improved adaptability to changes in mixed product composition on the Mount Maunganui Wharf.
- If the Project is not consented and constraints at other ports continue to limit the scope for diverting trade elsewhere, the annual economic loss could be a reduction in national GDP in the range of around $790–$1,180 million per year and rising from the early 2030s, extending beyond the local scale and covering direct and indirect impacts across New Zealand.

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1 Introduction

This report assesses the economic effects of the Stella Passage development (the Project). The Port of Tauranga Limited (POTL) is applying for approval of the Project via the Fast-track Approvals Act 2024 (FTA).

1.1 Project description

The scope of the Project is separated into two stages:

- Stage 1 can be summarised as follows:
  - Sulphur Point: reclamation of approximately 0.88 ha of coastal marine area and construction of a 285 m wharf extension to the south of the existing wharf; and
  - Dredging of approximately 6.1 ha of the shipping channel to a depth of 16 m.
- Stage 2 can be summarised as:
  - Sulphur Point: reclamation of approximately 0.93 ha of coastal marine area and construction of a 100 m wharf extension to the south of the work completed under Stage 1;
  - Mount Maunganui: reclamation of approximately 1.77 ha of coastal marine area and construction of a 315 m wharf extension to the south of the existing Mt Maunganui wharf, installation of mooring dolphins by the cement tanker berth movement of jetties and ramps and installation of gull and penguin habitat; and
  - Dredging of approximately 4.45 ha of the shipping channel to a depth of 16 m.

This economic report covers:

- The economic considerations for the Project, including:
  - Delineation of the economic considerations for Stage 1 and Stage 2;
  - The Project's alignment with, and significance to, the purpose of the FTA; and
  - Economic effects relevant to the RMA under FTA assessments.

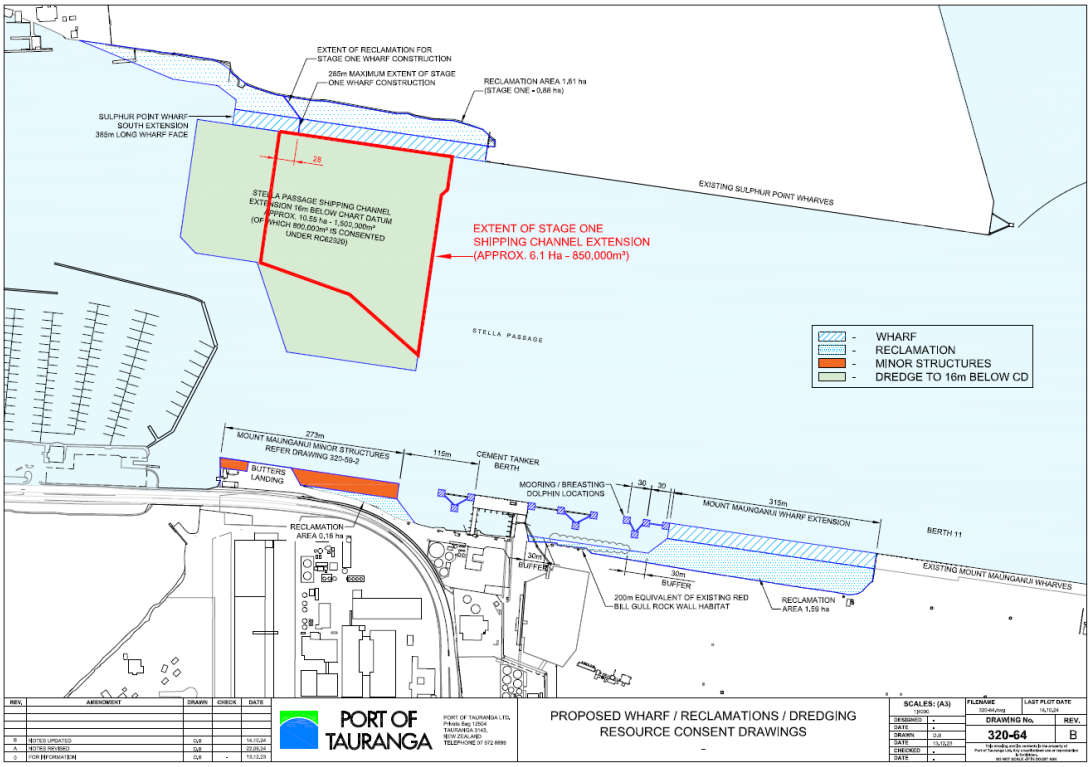
Table 1 Project summary

Item	Stage 1 works	Stage 2 works	Combined stages
Dredge area ha	6.1	4.45	**10.55**
Dredge volume cu-m	850,000	650,000	**1,500,000**
Dredge depth m	16	16	-
Reclamation ha	0.88	0.93	**1.81**
Sulphur Point Wharf Extension m	285	100	**385**
Mount Maunganui Wharf Extension m	Nil.	315	**315**
Mount Maunganui Reclamation ha	Nil.	1.77	**1.77**
Mount Maunganui mooring dolphins installed	Nil.	✓	✓

Item	Stage 1 works	Stage 2 works	Combined stages
Mount Maunganui Relocate/rebuild 3 jetties	Nil.	✓	✓
Construction of bunker barge jetty	Nil.	✓	✓
Development of gull & penguin habitats	Nil.	✓	✓

Source: NZIER

Figure 1 Project overview



Source: Port of Tauranga Limited – Stella Passage fast-track application

1.2 Economics in resource management and fast-track approval legislation

This assessment addresses the purpose and requirements of the FTA, including responding to relevant RMA considerations in the context of the FTA's requirements.

The purpose of the FTA is "*to facilitate the delivery of infrastructure and development projects with significant regional or national benefits*". FTA Schedule 5 details the information requirements and processes for an application that seeks RMA consents. These require consideration of economic effects and consideration of RMA sections 5, 6 and 7, at clauses 7(a) and 5(g) to Schedule 5.

The Project is of national significance as it will have significant regional and national benefits associated with facilitating economic growth in more than one region or district and will directly or indirectly support much other economic activity in surrounding districts. In this manner, the Project's national significance accords with RMA section 142(3)(a)(ix).

Regional significance, however, is unlikely to coincide with the administrative areas of regional councils or the economic data on regional and unitary council areas collected by Statistics New Zealand. These statistics are useful for comparing economic activity across the country, and the sum of regional contributions to GDP equals national economic activity and GDP. However, while economic activity may be centred on specific locations, it draws on resources and stimulates other activities that spread across administrative boundaries, so regional statistics do not define the region of economic influence of particular activities or projects.

POTL's reach into the economy varies with different categories of activity, for example:

- For POTL's routine operations and maintenance activity, much of the spending on inputs, labour and income generation will be focused on suppliers in Tauranga City and its nearest neighbouring districts, such as the Western Bay of Plenty.
- For construction and capital developments, the economic impact will draw on both the combined local districts and more distant suppliers that have specialist skills and equipment less widely available in New Zealand.
- POTL's customers engaged in exporting or importing through the port will be spread more widely in a hinterland[3] that is contestable with other ports. Customers are most likely to be primarily located in the upper and central North Island areas for which POTL is the closest port. However, POTL's customers may also include those from further afield, if POTL's shipping schedules or prices of service are more competitive or suitable than alternative ports closer to those customers – a circumstance that may result from the Project.

The economic consequences of the Project are likely to be felt across a region that includes Tauranga City and its neighbouring districts, other parts of the BOP, Waikato and other parts of the central North Island for which POTL is a preferred or feasible option for export and import trade. Conversely, parts of BOP are closer to and contestable[4] by ports in Gisborne and Napier, and parts of Waikato are contestable by the Port of Auckland. For computational reasons[5], this report does not attempt to splice a composite region of impact for this Project but focuses on estimates of national benefits and impacts for Tauranga City as a partial proxy for the full regional impact.

The significance of a new project at the regional or national level depends on the effects of a project that is not yet in existence in the future. Indicators of significance include:

- The scale of a given activity within the regional or national context;

[3] The term 'hinterland' is used in the shipping industry to describe the area served by a port in its trading activities. This is narrower than the term hinterland used in geographical literature, which refers to a usually rural area behind a port that relies on all social and economic services provided by the port city. In this report we use the term hinterland in its shipping sense.

[4] The term 'contestable' refers to areas feasibly served by different ports competing for business in the same space. In economic terms, ports do not have fixed 'catchments' which collect all the trade business, but rather have core areas in which they have competitive advantage over other ports and more contestable fringes where economic conditions determine moveable borders.

[5] Regional economic models are constructed by dividing national inter-industry tables into regional components, splitting sectors or industries among the regions and distributing the inputs and outputs of each region across other source or destination regions. The smaller the area being split, the more limited the data available and the greater the reliance on assumptions that proportional splits observed elsewhere remain valid to be applied in making the split: the smaller the region the less diverse the industry mix, the greater the leakage of business to other regions and the less likely are splits to be the same as in larger regions. To construct a composite region from bits of neighbouring region or district statistics therefore entails a high level of effort and complexity for a precision that is more apparent than accurate.

- The position of an activity within its economic context, the extent to which other activities would be stimulated by its presence or inhibited by its absence; and
- The activity's contribution to particular government goals or targets.

The FTA (and RMA) do not specify a method for economic assessment, but various approaches are accepted ways to inform decisions around consent approval, including:

- Economic contribution analysis (ECA) estimates how much of local economic activity can be attributed to a project or industry, both directly (focusing on a project's spending, employment and incomes) or indirectly (including indirect activity stimulated in the industry's supply chains and induced activity in other industries serving consumer demands in response to enhanced incomes);
- Economic impact analysis (EIA) examines how a new activity affects its receiving 'economic' environment, through changes in spending, production, labour and incomes. This is sometimes done using economic multipliers which are fixed ratios derived from input-output tables, or alternatively using computable general equilibrium (CGE) models that estimate how a new activity changes demands, prices and allocation of inputs and outputs across sectors after taking account of constraints in key inputs like labour;
- Cost-benefit analysis (CBA) compares the stream of value gained from an investment against a counterfactual situation without the investment and provides a measure of a new project's efficiency and societal return on investment; and
- Other complementary measures broaden the analysis to consider other effects on community well-being that are difficult to directly value and include in economic analysis, including ways in which effects on the environment can be attributed to economic harm borne by people.

These methods examine different aspects of POTL's economic activity, which can be used to infer the scale and significance of the Project. It will affect more than one administrative region, particularly the BOP and those parts of Waikato for which POTL is the most competitive port for trade activity. Within that, Tauranga and its neighbouring districts will benefit from local spending activity, but consequences for trade facilitation will be realised more widely.

This report provides estimates of the size of the potential benefit that would be forgone if the Project did not proceed.

POTL would not proceed with the Project unless it expected to obtain economic benefit and a positive return on its investment. Such returns are private benefits for the company and its shareholders, but the new activity also has effects that are external to the company's concerns, including enhanced spending, jobs, and incomes supported both directly through project spending and indirectly from its stimulus of other economic activity. The RMA defines environment to include the *"social, economic, aesthetic, and cultural conditions"* which affect, or are affected by, matters relating to ecosystems (including people and their communities), natural and physical resources and amenity values. As investment in a port stimulates other businesses in its supply chain and enables greater capacity to serve its customers' needs, its economic effects will be predominantly positive.

1.3 Outline of this report

This report assesses the economic effects of the Project against the likely situation in its absence, where constraints on its wharf capacity limit the ability to handle expected demands.

The report proceeds by outlining:

- The existing environment of Tauranga and BOP, including:
  - Economic conditions within Tauranga and BOP;
  - POTL's role within the network of New Zealand ports; and
  - Trends in the shipping industry that present risks of future constraints.
- The effect of the Project on economic activity in the regions and nationally, including:
  - The effect of relieving constraints on the container wharf, building on and adjusting NZIER's 2023 computable general equilibrium (CGE) modelling, which estimates changes in inter-industry transactions which allows for market adjustments such as price changes in response to new demands for input or outputs stimulated by the Project; and
  - The effects of improvements in the Mount Maunganui Wharf, which is less about relieving a quantitative constraint on space than about providing capacity to enable replacing aged structures without impacting current operations, enabling better equipment handling and reconfiguration of wharf space in response to changing demands for traded products.
- Assessment of the proposed Project stages in terms of national and regional significance, distinguishing between the Stage 1 and Stage 2 developments and illustrating the contribution of each to relieving the constraints on future activity posed by the current wharf configurations.

2 The existing economic environment of the Port of Tauranga

The Port of Tauranga's scale and significance for the regional and national economies is the baseline against which to compare the Project's economic effects.

2.1 Local economic environment

The Port of Tauranga occupies a central location in the City of Tauranga, the most populous district in the Bay of Plenty (BOP) region. The BOP region, particularly towards its western side around Tauranga, has experienced sustained growth as part of the Upper North Island's 'Golden Triangle' along with Hamilton and Auckland. Statistics New Zealand's regional GDP series shows that BOP achieved a Compound Annual Growth Rate (CAGR) of 4.8% over the 5 years 2019–2023.

Tauranga City has also experienced sustained growth greater than the national average on many key metrics. Table 2 shows it has achieved higher than national rates of growth in total GDP, average household income, per capita income, and total job numbers. However, despite long-established and higher annual growth, it trails behind some comparable national averages in dollar terms, for instance, in average income per household and per capita.

Table 2 The economic environment of the Port of Tauranga

Annual figures for year ending March 2024 (unless otherwise stated) and annual percent change (Δ)

	Tauranga			New Zealand		
	Number	*% share*	*% Δ*	*Number*	*% share*	*% Δ*
Population at end of June 2024	162,800	3.0%	1.60%	5,338,500	100%	1.80%
Total GDP $m	11,217	2.7%	2.30%	418,823	100%	1.40%
Past 10 years CAGR			4.80%			2.90%
Transport/Postal/Warehousing $m	777.1	4.7%	6.90%	16,672	100.00%	4.00%
Average per capita income $/cap	48,106		6.40%	49,857		5.90%
Mean annual earnings $/job	75,185		6.00%	78,731		6.90%
Average household income $/hhd	123,721		5.80%	132,812		5.70%
Transport/Postal/Warehousing #	4,858	4.30%	5.70%	112,938	4.00%	4.00%
Unemployment	3,399	3.80%		116,993	4.00%	
Total all sectors jobs #	86,051	3.06%	2.70%	2,807,834	100.00%	2.20%

Source: NZIER, drawing on Infometrics (2025)[6][7]

Compared to New Zealand at large, Tauranga's industrial structure has a smaller share of primary industries (2.9% compared to 5.8%) and of high value services (24.2% compared to 31.1%), a slightly higher share of goods producing industries (17.7% compared to 17.0%)

6 At time of writing, year ending March 2024 is the latest published data on local economic activity for Tauranga.

7 Infometrics (2025) Tauranga Regional Economic Profile 2024 https://rep.infometrics.co.nz/tauranga-city

and larger share attributed to 'Other services' (38% compared to 31%).[8] The city has relatively low proportions of the workforce in the highest paid occupations, and relatively high proportions in lower-paid occupations, and a relatively high ratio of dependants (people outside of working age 15–64 years) to the working-age population.

The POTL sits within the statistical sector of Transport, Postal and Warehousing which comes under the Other services category. Transport, Postal and Warehousing in the city employed 4,858 people in year ending March 2024, among which would be the 279 employees recorded in POTL's annual report of that year. In terms of direct employment, therefore, POTL accounted for about 0.3% of the city's total employment, as reported in Table 2 above, albeit well-paid employees whose mean salaries and wages are nearly 2.5 times those for Tauranga at large. But in the same year, Infometrics reported 677 jobs described under Stevedoring services in Tauranga, which will be connected to the port as contractors if not employees. So, POTL's direct labour generation in the local economy could be more than double that recorded in POTL's annual report.

By way of illustration and comparison with city activity, in its 2024 annual report POTL records operating revenues of $417 million and operating expenses of $219 million. These are rough comparisons as revenue is a gross figure, whereas GDP or economic value added is the net of inputs used up, and operating expenses are not all spent within Tauranga. POTL's declared profit of $117 million and its employee expenses of $54 million equate to 1.5% of Tauranga's GDP, and these may be taken as more indicative of the operating surplus and employee compensation that form the bulk of GDP.

POTL has a substantial presence in the context of Tauranga's economy, but its significance goes far beyond the value of its own operations. The value of infrastructure is in supporting other industries to create their own value. The value of the goods crossing the wharves at Tauranga and the value added they generate with further transformation and use in New Zealand, would be a more complete measure of the value of the port to New Zealand, compared to which POTL's revenues are only a small contribution.[9] These economic dimensions are captured in estimates using NZIER's CGE model of the opportunity cost of not relieving constraint on the Sulphur Point container wharf, and inferences drawn on constraints for non-container trade at Mount Maunganui Wharf.

2.2 POTL's wharf infrastructure

2.2.1 Sulphur Point Container Terminal

POTL is New Zealand's largest container port, and Sulphur Point is POTL's container terminal. It has ground space and equipment like cranes and straddle carriers to accommodate growth in container throughput. Restricted wharf length could be a significant constraint to accommodating expected growth, as with the increasing size of ships visiting Tauranga, the current 770-metre wharf is only sufficient to berth two ships at a time.

[8] The balance of these percentages to make them add to 100% are attributed to the accounting categories of "Owner occupied property" and "Unallocated" activities.

[9] Statistics New Zealand figures show the value of exports from Tauranga in year ending June 2024 was $29,205 million; and of imports was $10,361 million. These figures were below those for the year ending June 2023, partly due to Cyclone Gabrielle reducing output of key exports such as horticultural and viticultural products.

2.2.2 Mount Maunganui Wharf

The Mount Maunganui Wharf is used by ships carrying a mix of non-containerised freight, such as logs, cement, refined oil products and other chemicals. Towards the south, there is a single tanker berth used for receiving refined oil products and other fluid products that can be piped to nearby storage tanks. A single tanker berth is a constraint for a wharf that is used for a variety of product deliveries, the arrival time of which may sometimes coincide, resulting in vessels having to queue.

With the cessation of crude oil refining at the Marsden Point Refinery in 2022, the two 50,000-tonne coastal tankers used to distribute refined oil products to ports around New Zealand are being retired. Future deliveries will be of refined products loaded in overseas ports and carried in larger tankers of 55,000–80,000 tonnes. Fewer deliveries in larger ships increase the risk of supply disruption if the single liquid product jetty becomes inaccessible, which could be alleviated with more flexible berthing arrangements at the southern end of Mount Maunganui Wharf.

Part of the Mount Maunganui Wharf extension will be to provide a multi-purpose wharf next to the position of the current tanker wharf. This will increase the berthing capacity for tankers carrying fluid cargoes but also be capable of being used by solid cargoes at other times.

Another principal part of the Mount Maunganui wharf extension is to replace the existing original Mount wharf to the north of the tanker berth with modern infrastructure. The existing wharf was built in the 1950s and has a weight limit and condition that limits the cargo and equipment used alongside the wharf. Removing that limit will improve the efficiency of wharf operations.

2.3 Wider economic environment

2.3.1 New Zealand port infrastructure

Port of Tauranga is one of 13 ports around New Zealand handling freight and passenger shipping. It has the highest number of visits by both container ships and bulk cargo ships, and it handles the largest volumes of both containers and bulk freight. Tauranga handles about 50% more containers and bulk freight tonnage than Auckland, the second-largest port (see Table 3).

Tauranga is the largest port by volume throughput in New Zealand, which gives it both national and regional significance. This is attested by the New Zealand Ports and Freight Yearbook (Deloitte 2024)[10] and other trade statistics.

The POTL plays an important role in facilitating trade, handling 47% of the total value and 42% of gross weight of New Zealand merchandise exports each year. In the financial year 2023, Tauranga was the largest port by container throughput (1,177,400 TEU, 13.3 million containerised tonnes, 34% of New Zealand's total) and the largest port by bulk trade (11.7 million tonnes, with 25% of New Zealand's total). It had the largest number of ship visits to any port in the country for these two categories of freight, and it also has the largest area of port operating land and largest container terminal area of any port in New Zealand. POTL

[10] Deloitte's (2024) Ports and Freight Yearbook https://www.deloitte.com/nz/en/Industries/infrastructure/perspectives/new-zealand-ports-and-freight-yearbook-2024.html

and Northport are the only two ports that can currently accommodate ships of 14.5-metre draught.

Table 3 New Zealand ports capacity and throughput

'Bulk' refers to non-TEU cargo. Figures refer to ports' 2023 financial years; some data for Nelson is not available.

Ports in order of freight volumes	Draught m	Total wharf km	Bulk wharf km	Container wharf km	Bulk mega tonnes	TEU mega tonnes	Bulk ship calls	Container ship calls
Tauranga	14.5	2.8	2.1	0.8	11.7	13.30	715	660
Auckland	12.5	3.6	2.6	1.0	6.4	3.5	316	573
Lyttelton	13.3	2.3	1.8	0.6	3.8	4.9	515	372
New Plymouth	12.5	1.7	1.3	0.4	4.7		293	
Napier	12.4	2	1.2	0.8	3.2	1.4	272	251
Wellington	11.3	2.9	2.7	0.3	3	0.9	263	144
Bluff	7.0	1.9	1.5	0.4	3.1	0.5	296	38
Nelson	10.3	1.2	0.6	0.5	1.9	1.4	623	124
Otago	14.0	2.1	1.4	0.7	1.8	1.2	340	152
Northport	14.5	0.6	0.3	0.3	2.6	0.17	174	41
Eastport	10.2	0.4			2.2		109	11
Timaru	11.6	1.7	1.2	0.5	1.8	0.08	358	75
Marlborough	13.5	0.6	0.2		0.9		50	

Source: NZIER, drawing from Deloitte's Ports and Freight Handbook 2024

POTL has risen to pre-eminence and overtaken Auckland in the past 15 years, with a focus on exporting produce from the central and upper North Island, which has the country's most productive primary production region covering farming, forestry and horticulture and their processed products. POTL is closer to these productive areas and less congested in its inland transport connections than Auckland. Therefore, it is well-placed to handle exports from and imports to the upper North Island, which has some of the fastest-growing regions in New Zealand. POTL also scores well compared to other ports on a number of measures of port efficiency and utilisation.[11] One area where it does not score so well in comparative terms is in container wharf length, which is currently 770 metres, similar to the container wharf at Napier and shorter than that in Auckland. Its total wharf length is shorter than that of Auckland and Wellington. This leaves the port that is geographically best positioned to handle trade from highly productive North Island regions somewhat constrained by a lack of wharf space.

The port industry in New Zealand faces a number of other challenges, with uncertainty in prospects for international trade and geopolitical stability, potential trade wars in some quarters and shooting wars in others. Supply chains were strained and disrupted by the Global Financial Crisis in 2008 and again since the COVID-19 lockdowns in 2020. Ports are

[11] Deloitte's (2023) Ports and Freight Yearbook https://www.deloitte.com/content/dam/assets-zone1/nz/en/docs/industries/energy-resources-industrials/2023/nz-deloitte-ports-and-freight-yearbook-2023.pdf

also exposed to climate change risks, necessitating both a need to adapt and build resilience against rising sea levels and increased frequency of extreme weather events and a need to demonstrate to their markets effective measures to reduce their emissions and decarbonise their activities. For New Zealand at large, a wide range of climate change solutions involve goods that need to be imported, and ports will provide part of the supply chain to enable that to occur.

The solution to these challenges lies in not so much attempting to predict what changes will occur as in building flexibility and adaptability to enable effective, timely responses to what eventuates. Increasing wharf capacity and widening the range of ships that can access its ports is one way to maintain options for dealing with uncertainty.

Alternative ports are also constrained

Table 3 shows that most other ports in New Zealand are smaller or have less likelihood of accommodating future growth than Tauranga. The Port of Auckland is long established and well positioned for importing to the country's largest city, but there is debate over the suitability of its current port location and what might replace it if it were to be relocated. Northport has expansion plans for its business now that the closure of the Marsden Point Refinery has reduced the traffic of tankers in and out of the harbour, and it has natural deepwater berths that could handle larger ships. But located in Northland it has a restricted hinterland and tenuous land transport links that have proven susceptible to closure in extreme weather events. Northport has plans to extend its wharves, but the most recent application for consent to do so was refused in July 2024 (this decision has since been appealed to the Environment Court).

Given its geographical location, size and ability to serve market demands, as evidenced by its recent growth to be the largest port in New Zealand, and the likelihood of increasing demand for its services from around the North Island, the port at Tauranga is a nationally significant component of port infrastructure.

Trade and geographic characteristics play a significant role in POTL's ability to accommodate future growth in merchandise trade. However, it has a shorter wharf length and container wharf length than the Port of Auckland, increasing the importance of efficient use of wharf space, including the access and egress of ships berthing at the wharves.

Constraints on wharf space limit the timeliness of handling of goods through the port, reducing the efficiency of port utilisation over time. Wharf extensions are needed to both improve current utilisation efficiency and to accommodate future demands, which may be changes in volume and the mix of activities and goods crossing the Mount Maunganui wharf.

2.4 Recent trading patterns at Tauranga

Table 4 shows recent trading activity at the Port of Tauranga as recorded in POTL's annual report. This shows that after coming through the COVID disruption, cargo tonnages peaked in 2021 and dipped in years to 2024. Container cargo grew between 2020 and 2024 at an average annual rate of 1.1%, but over the same period, the average annual rates were –1.4% for other cargo and -0.2% for the combined total of container and other cargo. Cargo ship departures declined slightly, but berth occupancy, cargo ship port days and ship

turnaround days all increased, indicative of a slightly slower rate of unloading and loading per tonne handled than in 2020, immediately before the pandemic lockdowns.

Table 4 Recent trading activity at the Port of Tauranga

Annual figures for years ending March

	2020	2021	2022	2023	2024
Cargo throughput kt	24,808	25,768	25,616	24,698	24,649
Non-container cargo kt	12,396	12,427	11,858	11,605	11,700
Container cargo kt	12,412	13,341	13,758	13,093	12,949
Tonnes/TEU	9.9	11.1	11.1	11.1	11.3
Containers TEU	1,251,741	1,200,831	1,241,061	1,177,350	1,147,350
Net crane rate TEU/hr	35.8	29.7	32.1	27.92	30.1
Ship departures	1,515	1,307	1,369	1,432	1,427
Berth occupancy %	45	53	56	61	57
Cargo ship port days	2,441	3,072	3,078	3,112	2,930
Ship turnaround days	1.61	2.05	2.26	2.17	2.05

Source: POTL Annual Report (2024)

2.5 International shipping trends

As outlined in the New Zealand Shipper's Council's Big Ships reports (2010, 2012)[12], the trend in international shipping towards the use of larger freight ships has been well-signalled over many years. This trend was prominently featured in consent applications for Tauranga wharf extensions in 2011. That trend continues[13] and has implications for ports and land transport connections, although primarily originating with international shipping companies.

The increase in the size of merchant ships is long established, driven partly by economic factors and partly in response to regulatory changes. Ship-building has provided larger ships as it has gained the technical capability to do so and to include more fuel-efficient engines. As vessels became bigger, capable of carrying larger loads, more fuel efficient, and faster, the cost per unit freight carried came down compared to older, smaller ships. Larger vessels also make requirements of port infrastructure to accommodate them, such as bigger cranes, larger berths, robust systems and automation, and adequate storage space for loading and unloading freight. This has favoured a hub and spoke pattern of shipping, with the largest vessels serving the main shipping hubs and smaller vessels serving ports in more outlying destinations.

12 New Zealand Shippers' Council. (2010). The question of bigger ships: Securing New Zealand's international supply chain.; New Zealand Shippers' Council. (2012). The question of bigger ships: Securing New Zealand's international supply chain. Update. April 2012.

13 New Zealand Shippers' Council (2017) Bigger ships – what are the implications for New Zealand? NZIER Report to New Zealand Shippers Council https://nzcco.org.nz/wp-content/uploads/2020/10/NZIER-report-to-NZSC-Implications-from-Bigger-Ships-FINAL-5-December-2017.pdf

https://www.fortunebusinessinsights.com/cargo-vessel-market-108601

For shipping companies, the significant economies in fuel and operational costs for running larger modern ships have been reinforced by recent events. One was the introduction of the United Nations' International Marine Organisation's Annex VI of the International Convention for the Prevention of Pollution from Ships (sometimes referred to as "MARPOL VI"). These regulations were adopted in 1997 and require ships to lower their sulphur and nitrogen emissions when operating in designated Emission Control Areas along the coasts of Eastern North America, Europe's North and Baltic seas, and Asia's East China Sea. Since January 2020, the low sulphur rule has been extended to all open ocean shipping, creating an incentive for retiring older or smaller ships for which compliance is less economically viable.

In 2020, COVID-19 disruptions to production and trade volumes gave ship owners a further incentive to rationalise their fleets and retain only the most cost-effective vessels. As port facilities differ by region and country, the type of vessel suited to trade lanes is determined by the constraints of infrastructure and equipment at each destination, as well as by the volume of merchandise trade to be shifted between them.

2.6 Port responses to shipping trends

POTL has a commercial interest in improving its ability to handle ships of a size operating on the trade lanes to New Zealand, but there are also benefits that spill over to the wider community in the hinterland of the port. These include:

- Increasing the size of ships that can be berthed increases the range and number of vessels that are available to visit the port. This will improve the scheduling opportunities for exporters and importers to book space on the right ship at the right time;
- Reducing the time ships spend waiting at sea outside the port for a berth to become available also reduces the cost of carriers servicing New Zealand. This will be recognised by ship owners and passed on to customers at lower freight rates, given a competitive shipping market; and
- The economic consequences of better freight rates and better timing of shipping are likely to include increased profitability of exporters from New Zealand, increasing their operating surplus and ability to invest in further economic activity. It is also likely to improve wages for employees, especially at a time when labour supply is constrained, and many industries are having to find incentives to attract and retain staff.

As indicated in section 1.2 above, in shipping terms, a port's hinterland is the area served by a port for both imports and exports. POTL's hinterland will overlap and be contestable with the hinterlands of other ports, such as Auckland's. Other things held constant, such as efficiency gains in POTL's operations, will give it a competitive edge over other ports, firming up the contested edges of its hinterland. Consequently, the benefits described above will extend beyond the BOP and Waikato and include potential customers further away in the Central North Island and in Auckland.

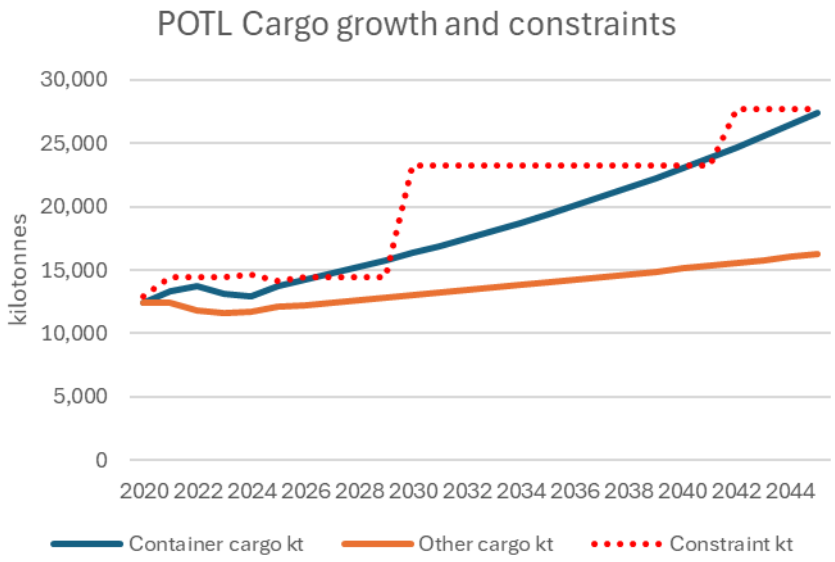
3 The project and changes to the economic environment

The Stella Passage adjacent to the existing wharf already has the depth and width to enable access by ships of the larger size expected to predominate in future trade: 347 metres length, 48 metres beam and 14.5 metres draught. However, extending the wharf southwards requires further dredging so ships can access the newly built wharf extensions.

The aim of wharf extensions and the associated dredging is fundamentally about adjusting wharf capacity to handle expected cargo growth. This is most evident with respect to the Sulphur Point container wharf, the current length of which restricts the number of large ships that can be berthed at a time, potentially slowing down the number of shiploads that can be loaded and unloaded in a given period, and restraining efficiency of port operations. Wharf extensions are needed to handle both growth in volumes of cargo and to accommodate the larger size of ships that will increasingly be seen as the most cost-effective by shipping lines in future.

Figure 2 shows that for container traffic growing at an average annual rate of 3.5%, shortfalls of capacity to handle expected annual volumes will occur from 2027. That could be alleviated if an extra 285 metres of wharf was built by 2029 under the Project's Stage 1. However, that enlarged capacity would be exceeded in about 2041 and would cause constraints unless an extra 100 metres of wharf is built by 2040 under the Project's Stage 2.

Figure 2 Adjusting wharf capacity is needed to handle growth



Source: NZIER

The proposed Stage 1 wharf extension would secure the adequacy of wharf capacity for growth expected over the next 15 years or so but require further wharf extension from around 2040 to avoid further constraint in handling expected demand. The Stage 2 wharf extension would be needed to prevent that constraint.

The precise pattern of these recurring wharf capacity shortages and relief, by extension, varies with different cargo growth rates and the starting point of the growth trajectory.

Table 5 illustrates this by showing the effect of different growth rates in trade volumes on the size and timing of volumes that cannot be accommodated on the wharf. It shows that at 2% growth, the constraint results in forgone cargo in 2029, but as the growth rate gets higher, the constraint is brought forward to 2028 or 2027 and also gets larger in volume terms. With annual growth of 3.5% as shown in Figure 2, a second period of constraint emerges in 2041, but it emerges earlier in 2040 or 2039 at higher annual growth rates.

Table 5 Effect of changing growth rates on tonnes diverted from wharf

Growth as average annual per cent change (aapcc); TEU diverted in kilotonnes.

aapcc	2027	2028	2029	2039	2040	2041
2.0%	0	0	-240	0	0	0
2.5%	0	-232	-603	0	0	0
3.0%	-88	-520	-973	0	0	0
3.5%	**-300**	**-812**	**-1,351**	**0**	**0**	**-559**
4.0%	-515	-1,109	-1,735	-644	-1,601	-2,595

Source: NZIER

The Figure 2 graph is based on the assumption that increased TEU growth occurs fairly regularly without periodic peaking. Variability around the mean in TEU growth rates may cause peaks that exceed current capacity and disrupt trade earlier, bringing forward the dates at which wharf constraints become binding and further expansion is required. As with any infrastructure with fixed physical capacity, there is a benefit in having some additional headroom capacity to meet above-average growth in TEU throughput and dampen the adverse effects of periodic peaks.

Mount Maunganui Wharf handles general cargoes, the volumes of some of which (e.g. logs) may vary with production cycles. This means they have flexible requirements for wharf space that could be put to more valuable uses for other goods. This could mean space for new commodities not currently handled at the port and perhaps more containers in the future, supplementing the space in the Sulphur Point Terminal.

On Mount Maunganui Wharf, the Project involves creating a multi-purpose berth with mooring dolphins to extend berthing capacity around the liquid goods jetty. This additional berthing capacity provides cover for the times when the current liquid goods jetty is not accessible to arriving ships. It also provides capacity for shifting berthing from some original wharves to allow their rebuilding and strengthening for heavier machinery and to provide greater options for temporary storage of goods on the wharf.

3.1 The situation with and without the Project

According to Deloitte (2024), in the financial year ending March 2023 there were around 660 ship visits to POTL's container terminal and 715 bulk ship visits. This is equivalent to a little under two ships a day on average at the container terminal, which reflects the constraint posed by the current container wharf: at 770 metres long, it can only accommodate two large ships at a time. The proposed full Sulphur Point wharf extension would enable three ships of up to 347 metres in length to be berthed at the same time, enabling a higher annual throughput of cargoes across the wharf.

If consent for full wharf extension (covering Stage 1 and Stage 2) were not granted, some of the expected benefits of berthing three large ships at the same time would not be realised as access for a third ship at the berth would be restricted to smaller ships and may also be slowed down by manoeuvring processes. Slower ship movements and lower freight throughput would lower the efficiency of the use of the wharf and its ability to meet future growth, as well as lowering the return on investment at the port. Lower and slower freight throughput also imposes costs external to the port, as exporters and importers would face delays in dispatching or receiving their cargoes. Those delays also affect the wider community across the North Island, with delays in obtaining their imported goods and potentially lower returns from exports. A three-berth operation sufficient to handle large modern vessels in future cannot be realised without the full extension at Sulphur Point.

3.2 Implications of the wharf extension

The economy-wide opportunity costs of wharf expansion not occurring are the benefits that would be realised if expansion did occur. Those benefits are predicated on ships of the size expected to predominate on shipping routes to Tauranga not being precluded from access because of insufficient berth space at the wharf.

3.2.1 The Sulphur Point Container Wharf

The current 770-metre container wharf accommodates about 700 ship calls a year, around two ships a day on average (Deloitte 2024). That may include ships up to 347 metres in length, two of which would almost fill the wharf, leaving around 70 metres of free space at the end of the wharf. This current arrangement allows an annual capacity of 1.3 million to 1.4 million TEU across the wharf each year.

POTL's wharf extension in Stage 1 would add 285 metres to the wharf to bring its total length to 1,055 metres. This would enable three ships to be berthed at a time, although in practice, at least one would need to be smaller than 347 metres as the extended wharf is only 14 metres longer than three 347 metre ships laid end to end and does not leave enough wharf space for effective mooring of three large ships. A mix of vessels of different sizes is the norm most of the time, but larger ships are expected to become more frequent over time.

Stage 1 would reduce the immediate constraint of a two berth operation due to the increasing length of vessels. It provides extra wharf length to meet the current and foreseeable demand, but in the future will again provide a constraint as ships continue to increase in size.

The Stage 1 wharf extension will enhance utilisation and efficiency in handling growth in container volumes for some years. But, at some future point constraints will emerge with increased frequency of larger ships arriving and seeking berthing concurrently, and as overall volumes increase. When the mix of ships and average length creates a physical constraint to accommodating arriving ships concurrently, wharf efficiency may decline and shipping costs increase with more delays in accessing the wharf. These costs will be passed on to customers in New Zealand.

As indicated in Figure 2 above, further wharf extensions will be required in the future. These would entail further occurrence of wharf constraint in the case of high growth in trade and further rounds of port disruption during future construction.

Stage 2 of the Project would add a further 100 metres to the Sulphur Point container wharf. This would remove the currently foreseen constraints and avoid the necessity of developing additional wharf extensions around 2040.

3.2.2 Illustrating the effect of not consenting the Project

In an earlier NZIER report on the economic impact of wharf expansion (2023)[14], NZIER used computable general equilibrium (CGE) modelling to estimate the inter-industry effects of constraints on the capacity of Tauranga to handle the expected growth in freight flows. This earlier modelling can be referred to as indicative of the economic impact of such constraints on the assumption that wharf expansion is not realised.

The modelling drew from the Deloitte Ports and Freight Handbook (2024) that indicated the Port of Tauranga handled about 1.24 million TEU in the financial year 2022.[15] NZIER (2023) is based on POTL estimates that current capacity constraints range between 1.3 and 1.4 million TEU. POTL's proposed wharf extension and associated land-side infrastructure are intended to enable the Tauranga Container Terminal to increase its capacity to a targeted 2.6 million TEU per year.

Modelling of inter-industry effects of change in constraints

In its 2023 report, NZIER estimated that POTL would reach full capacity by 2027 under a capacity constraint of 1.3 million TEU and by 2029 under a capacity constraint of 1.4 million TEU.[16] It used its CGE model of the regional and national economies to estimate the impact in ten years if there were no wharf expansion. Such modelling allows the flow-on effects of the investment, or the opportunity costs of non-investment, to be captured across the affected regions and sectors of the New Zealand economy. Growth in cargo flows in excess of wharf constraints results in forgone incomes and opportunity cost for the economy.

A CGE model is a representation of inter-industry interactions across an economy. NZIER's model includes 206 industries, 206 commodities and 88 districts based on inter-industry input-output tables released by Statistics New Zealand for the year ended March 2020. For the 2023 report, it was necessary to condense the model for computational efficiency, so the 206 commodities and industries were aggregated into 18 of each, and two regions were constructed to represent Tauranga and the rest of New Zealand. The model's industries and commodities were matched to those in Statistics New Zealand's Harmonised Trade database and aligned to actual trade data for the year to March 2022. The model was then used to examine the effects of scenarios of 'shock' on the status quo of the economy caused by reaching its TEU capacity.

The results of the NZIER (2023) report's modelling suggested that without wharf extensions, New Zealand could face a reduction in annual real GDP of $749 million if the constraint is 1.3 million TEU or $485 million if the constraint is 1.4 million TEU. The corresponding figures for Tauranga City are reductions in its contribution to annual real GDP of $50 million if the constraint is 1.3 million TEU or $33 million if the constraint is 1.4 million TEU.

[14] NZIER. [2023]. Economic impact of the wharf capacity constraint on the regional economies. A report for Port of Tauranga Ltd

[15] That annual total reduced to 1.17 million the following year according to the 2024 Ports and Freight Handbook.

[16] Although based on forecasts with a one year later start date, Figure 3 and Table 5 in this report are also based on the 1.3M TEU constraint being exceeded in 2027, and Stage 1 wharf extension being installed by 2030, the year following 1.4M TEU is reached.

As discussed above in section 1.2, the region most affected by these changes in trade will extend beyond Tauranga to include parts of the Bay of Plenty, Waikato and other regions engaged in supplying the port with inputs or sending their trade through it. Tauranga City is used as a partial proxy for the affected region as the changes in trade activity have a direct impact on the city's economy, which can be readily represented in the CGE model to show direct, indirect and induced impacts on the city's economy. Impacts on the broader region can only be incorporated in the model with much greater complexity of transactions and reliance on assumptions, and it is not feasible to provide reliable results for the composite affected region.

Updating of results by a year

To retain the 10-year timeframe of the NZIER report prepared in 2023, its implications for container cargoes have been updated by extending the forecast period from 2032 to 2033 by projecting the volume of container cargoes at the average annual growth rate of the previous forecast. A change in base year tonnages changes the forecast slightly, but with assumed 3.5% growth as in Figure 2 above, the 1.3 million TEU constraint will still be reached in 2027, and the 1.4 million TEU constraint will be reached by 2029.

The effect of such an update is still an increase in potential trade volumes that are not serviced because total volumes exceed the constraints on the wharf. Applying ratios of GDP impacts from changes in trade tonnages implies that the opportunity cost to New Zealand's GDP of constraint-induced trade reductions in 2033 would be $904 million if the constraint is 1.3 million TEU or $620 million if the constraint is 1.4 million TEU. Over the 10 years to 2033, New Zealand will lose 8.2% of the TEU trade it could have realised in the absence of a 1.3 million TEU constraint or 4.0% of what could have been realised without a 1.4 million TEU constraint.

Against a national GDP that could have grown to around $487 billion in 2033, the one-year opportunity cost of no extension of the container wharf equates to 0.7% if the constraint is 1.3 million TEU or 0.3% if the constraint is 1.4 million TEU. These are significant reductions in national income, given that consecutive quarters of negative growth are termed a recession, and they testify to the national significance of avoiding such losses by extending container terminal capacity at the Port of Tauranga.

Corresponding estimates of the opportunity cost to Tauranga City are a $60 million loss of GDP contribution assuming a 1.3 million TEU constraint and a $42 million loss of GDP contribution under a 1.4 million TEU constraint.

Most of the opportunity cost in GDP comprises loss of employee compensation (labour incomes), and most of these costs are borne outside Tauranga. The effects are spread widely throughout the economy, with many industries in New Zealand dependent on POTL for exports or imports and facing reduced production as a result of port capacity constraints.

Given the intra-year volatility with seasonal peaks and troughs, trade flows at certain points within a year could reach these estimated TEU capacities sooner than 2027 and 2029.

3.2.3 The Mount Maunganui Wharf

The Mount Maunganui Wharf is longer than the Sulphur Point container wharf, and its capacity constraint is less evident. The wharf extension is still intended to accommodate future growth in trade, but the issue with Mount Maunganui Wharf is more of a deficiency

in quality than in quantitative extent of the wharf. The wharf is old and lacks the strength to support new heavy equipment that would improve the efficiency of goods handling.

Two particular pressures face the Mount Maunganui Wharf:

- The single jetty used for loading/unloading liquid fuels, chemicals and cement can face congestion and delays in accessing the jetty, as even at 50% utilisation, it can involve long wait times for its single berth. It also presents a basic risk of loss of service in the event of failure of the single liquid goods jetty.
- The composition of goods being loaded/unloaded across the Mount Maunganui Wharf can vary, and with it, the requirements for onshore storage and marshalling of goods, which increases the need for wharves to enable flexible configurations to receive different types of goods; replacement with modern wharf structures to enable larger handling equipment to be used would also improve efficiency.

Stage 2 of the Project would add 315 metres to the southern end of Mount Maunganui Wharf and install mooring dolphins in lieu of a longer wharf extension to enable greater flexibility in berthing, allowing a second ship to connect to the liquid fuel jetty while another ship is moored at it. The increased mooring flexibility along the new wharf will allow the repositioning of ships from other parts of the wharf while undergoing replacement.

Illustrating the quantitative effect of Mount Maunganui wharf redevelopment

The Mount Maunganui Wharf faces a soft constraint in lacking the space and strength to deal with future (and currently unknown) changes in mixed good flows. Rather than modelling a targeted increase in goods volume as a means of estimating opportunity cost, we illustrate the effect of wharf improvements to enable operational efficiencies that improve the adaptability of the wharf and enable future throughput to increase.

The mixed goods going through Mount Maunganui have experienced variability over time and a decline in volume between 2020 and 2024 and are likely to experience a lower growth rate than containers over the years ahead. They include those with specific production cycles (such as forest products, stock feed and coal during dry years) which are not constant over time.

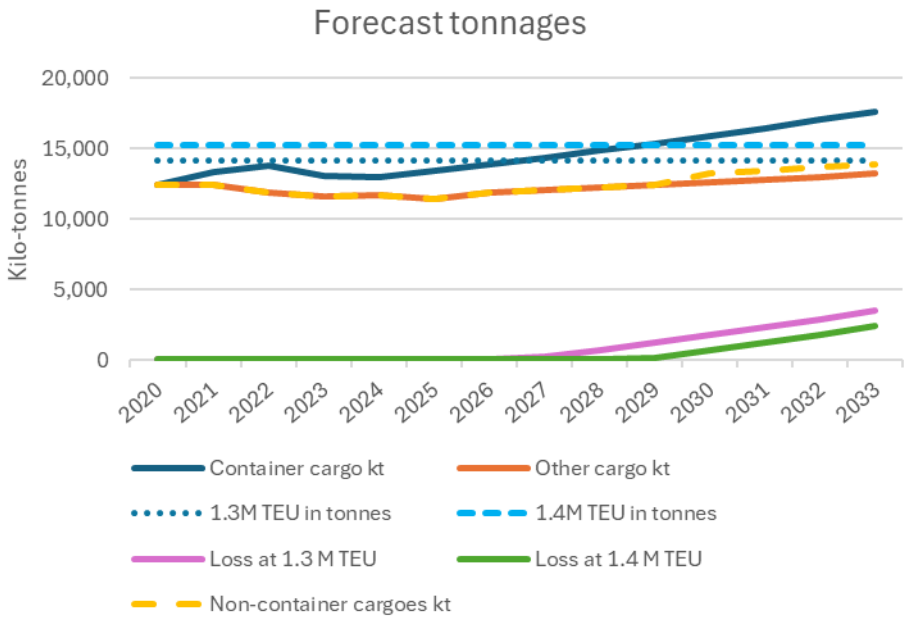
In providing estimates here of the future with or without wharf extensions, we use broad assumptions on total volumes rather than attempting to predict different goods flows. If we assume that the Stage 2 Mount Maunganui Wharf improvements are completed by 2030 and forecast non-containerised goods at POTL to increase at an annual average of 1.3% per year,[17] and that these enable a 5% increase in volume handled over the wharf, the result is a divergence from 2024 between potential with extensions and actual without them, as illustrated in Figure 3.

Those assumptions imply tonnage forgone of about 2,580 tonnes over the four years 2030–2033. Using the same ratios of GDP per tonne as in the container estimates, this implies an opportunity cost of reduced GDP of $673 million over the 4 year period, or about $170 million a year on average. This is a reduction of about 4.7% of the unconstrained tonnages in 2033. Changing the assumptions from 5% to 8% of additional volume accommodated results in forgone tonnage without wharf improvements about 7.2% of the unconstrained

[17] Based on the Ministry for of Primary Industries' Situation and Outlook for Primary Industries (2024) forecasts of real GDP tracks to 2028, then extrapolated as a 5 year running average in years after.

tonnage in 2033. These can be compared to the range of reductions in container tonnages of 4% or 8.2% if the current constraint is 1.4 million TEU or 1.3 million TEU, respectively. The opportunity cost of forgoing an 8% increase in tonnage would be a reduction in GDP of $1,076 million over 4 years, or $269 million on average each year.

Figure 3 Effect of constraint on container terminal



Source: NZIER

Figure 3 shows the effect of current constraints on the container terminal, with annual capacity in the range of 1.3 million and 1.4 million TEU shown as the dotted and dashed lines, respectively. As modelled by NZIER (2023), a 1.3 million capacity constraint would become binding in 2027, and a 1.4 million capacity constraint would become binding in 2029 if container tonnage grows at an annual average rate of 3.1%. In the years after the constraint becomes binding, recurring losses of cargo are experienced, which increase year by year. The lower the current capacity, the larger the loss of cargoes diverted from Tauranga to another port in New Zealand, deferred to a later year, or perhaps lost to New Zealand entirely (noting the existing capacity limitations in the national port network detailed in section 2). The inability to ship goods out or bring them in at a time and location closest to where they are most valuable incurs an opportunity cost as a direct result of the capacity constraint.

Extending the timeframe from 2032 to 2033 increases the final year GDP cost of the 1.4 million TEU container wharf constraint to $671 million (from $485 million) and of the 1.3 million TEU constraint to $927 million (from $749 million). When there is growth in volumes in excess of a capacity constraint, the opportunity cost in successive years gets bigger.

Figure 3 also shows the tonnage of non-containerised freight increasing at a slower annual average rate of 1.6%. The constraint on the mixed goods on the wharf is less easy to quantify as the goods do not come in regular-sized containers, and there is some flexibility on the wharf for multiple uses amongst different goods depending on relative demand. Future changes in the mix of non-containerised freight place different demands on wharf

and yard space which is hard to predict, and the Mount Maunganui Wharf extensions and upgrades are intended to better position POTL to handle such future growth.

One item of non-containerised freight that might be more predictable than others is refined petroleum products brought in on the liquid fuels' jetty, which may be expected to decline in the long term as New Zealand pursues net zero carbon emissions by 2050. Oil accounts for about 50% of New Zealand's primary delivered energy,[18] and transport accounts for 36% of energy consumption (almost all of it from petroleum fuels) and 17% of New Zealand's greenhouse gas emissions inventory. New Zealand has a stock of about 4 million light vehicles, 0.2 million heavy commercial vehicles,[19] and a little over 0.1 million battery electric or plug-in hybrid electric light vehicles, which do not depend on fossil fuels as their primary energy source.

However, while reducing oil product consumption, particularly from transport, features prominently in carbon reduction plans, the rate at which that occurs depends on both domestic policies to bring that about and international influences (such as development, availability and cost of low emissions or alternatively powered vehicles by overseas suppliers). Alternative fuelling for heavy vehicles is currently limited to a few short-range electric buses and trucks, and other potential options like green hydrogen-powered fuel cells are not yet commercially feasible at scale. Given the recent withdrawal of the clean car rebate and consequent reduction in electric vehicle sales, it will take some years to turnover the car fleet to achieve significant replacement of fossil-fuelled vehicles by cleaner alternatives, so there is likely to be a continued need to import liquid fuels over the 15-year timeframe of Figure 3 and a continuing benefit in reducing risks of disruption at the liquid fuel jetty.

There are limitations to these estimates, which are initial estimates of tonnage forgone and impacts on the economies of New Zealand at large and Tauranga. We refrain from more detailed and complex modelling that could be undertaken but may not be any more correct to avoid presenting an impression of spurious precision.

3.3 Other economic effects not included in the modelling

If there are significant impacts on POTL's freight throughput, there may be some diversion of trade to other New Zealand ports if they have the capacity for large ships to berth, which may or may not be the case, given the existing limitations at other ports. Trade diversion is not just a matter of value being transferred to other ports. As the geographically closest port to highly productive regions in BOP, parts of Waikato and other locations in the central and upper North Island, POTL will be the first choice for trade from those regions if it is economically competitive. So, business diverted elsewhere due to wharf constraints will face a range of additional costs for being forced into using the second best option. These include extra costs of transport and delay, which can be both financial for business and environmental for communities facing the consequences of diverted traffic. Diversion of trade away from POTL because of wharf constraints is not a zero-sum game. It includes real

[18] Delivered energy refers to all energy that is supplied through fuel and delivery processes, including all fossil fuels for combustion and electricity and heat recovery from all processes (including geothermal extraction). It excludes heat from the sun that provides energy to growing crops and passive heating of buildings. Proportions cited are from https://www.energymix.co.nz/our-consumption/new-zealands-consumption/

[19] https://www.transport.govt.nz/statistics-and-insights/fleet-statistics/annual-fleet-statistics/

costs apart from transferred value due to diversion away from a first-choice location for port activity, which would add to potential value loss for the nation and affected regions.

4 Assessment of economic effects

Consideration of projects under the FTA is required to include an assessment of activity against the FTA's purpose in facilitating the delivery of regionally or nationally significant infrastructure and development projects with significant regional or national benefits, and sections 5, 6, and 7 of the RMA. Criteria for determining national benefits include the likelihood of affecting more than one region or district.

An assessment of the economic effects of a project under the FTA may cover a range of broad topic areas. These are discussed below and include:

- The economic contribution of POTL regionally and nationally;
- The economic impacts of the Project; and
- The economic consequences of the Project for future trade.

4.1 POTL and the Project make a significant economic contribution

POTL is New Zealand's largest port by volume, handling 42% of New Zealand's merchandise trade by volume and 16% of its imports. Sulphur Point is New Zealand's largest container terminal, but with the increasing size of ships visiting Tauranga and the restricted container wharf length (currently 770 metres), it is only sufficient to berth two large container ships at a time. As illustrated by the analysis presented earlier in this report, this is a significant constraint for handling growth in future trade.

On the longer Mount Maunganui Wharf, the constraint is more from the age and strength of existing structures limiting the ability to adapt the wharf to new goods traffic and the risk of disruption in handling goods on the single berth jetty used for liquids and cement.

As the port closest to productive primary industry sectors in BOP and Waikato, including dairy, horticulture, forestry and fishing, POTL should be the least costly to reach outlet for exports from most parts of these regions and also have lower the environmental effects of transporting goods from production point to port. Providing port services to some parts of these regions will be contestable with other ports, so maintaining efficiency at POTL is important for maintaining its competitiveness and the efficiency of choice of port services across the market.

These characteristics make POTL a component of nationally significant infrastructure with the likelihood of affecting more than one region. It also has regional significance, although, as described earlier, in economic terms, its region of significance is not confined to any one regional or district council territory but spreads across boundaries.

Statistics New Zealand's regional GDP figures show the BOP and Waikato are the regions with the highest annual average percent growth over the 20 years to 2023. In terms of annual increments of GDP, Waikato and the BOP continue to be ranked 4th and 6th largest, respectively, behind the big three metropolitan regions of Auckland, Canterbury and Wellington but ahead of other regions like Hawke's Bay, Manawatu and Southland where growth rates rose, albeit from lower bases, in post-COVID recovery.

Population data shows a similar picture, with the BOP having the fastest annual growth of any region over the 5 years to 2023 and Waikato having the third highest growth (with the smaller Tasman region holding 2nd place ranking). The BOP and Waikato remain drivers of New Zealand's economic growth, built on the production and export of primary sector commodities, particularly dairy from Waikato and horticulture and forestry from the BOP. The continued prosperity of these sectors in these regions depends on access to port services, which provide benefits to the national economy.

Tauranga City is at the core of the POTL hinterland, being the location of direct expenditures by the company and the source of many of their purchased inputs, employees and contractors who work at the port. POTL's annual report identifies approximately 280 employees paid around $54 million in employee benefits. This is more than double the average earnings per job in Tauranga and more than three times the region's average per capita income.

POTL is a sizeable employer in Tauranga with highly productive and well-paid staff, and its spending on labour and other inputs is a stimulant for other businesses in the local economy. Continuation and improvement of its operation by removing constraints will benefit the local economy and other regions that interact with it, giving it both regional and national significance.

4.2 The Project will have a significant economic impact

The Project will bring about change to the economic environment in which POTL operates, with three principal components:

- Operations and maintenance of infrastructure: this mostly involves limited annual spending recurring over many years, predominantly using local suppliers and labour
- Building and construction of the Project: these may involve substantial expenditures and employment over a short period and generally focused on local suppliers of inputs and labour, but supplemented by the import of specialist equipment and skills, which spreads economic stimulus beyond the local economy
- Trade consequences of the Project: how port efficiencies enable more timely and profitable export of goods from the region and reduce the costs of imports, which affects not only those in POTL's existing hinterland but can also extend its boundary by changing the economic competitiveness of using POTL compared to other ports.

The operations and maintenance of infrastructure after development is generally a small recurring increment from the value of operations and maintenance before or without development. The building and construction (and, in this case, dredging) have a more substantial economic impact but of short-term duration. The Project's largest and most long-lasting economic impact is from the trade consequences of the removal of constraints and the resulting improved access to shipping services at the port.

4.2.1 Quantified estimates for the Sulphur Point container wharf

One way of illustrating these economic impacts is to estimate the opportunity cost or forgone value of not removing the wharf constraint in the face of future growth in trade volumes. NZIER (2023) used its CGE model to examine inter-industry impacts of different levels of capacity constraint on POTL's container handling, identifying effects on two regions, Tauranga City and the rest of New Zealand. That model identifies both the direct

effects of forgoing value on potential trade through the port, and indirect and flow-on effects on other industries and regions that either use or supply POTL's trade and also face opportunity costs from lower volumes and value of goods being traded.

The 2023 report found there were significant opportunity costs associated with such constraints, which could be alleviated by easing constraints with wharf extension. This report has built on that earlier work, extended its timeframe by a year and provided a similar estimate through different methods to estimate the opportunity cost caused by the constraints on the Mount Maunganui Wharf (see section 4.2.2 below).

The scale of these economic effects is illustrated in the table below (Table 6), in which container traffic is forecast to increase from 2024 at a compound annual growth rate of 3.5% and non-container traffic at 1.5% (as in Figure 2 above) so the annual containers exceed 1.3 million TEU in 2027 and 1.4 million TEU in 2029. If the wharf constraint is 1.3 million TEU, New Zealand will shift 8.2% fewer containerised tonnes over the 10 years to 2033, compared to the potential total in the absence of wharf constraint. If the constraint is 1.4 million TEU, New Zealand misses out on 4.0% of the total containerised tonnes it could have handled over the 10 years to 2033.

The opportunity cost to New Zealand in 2033 would be around $904 million if the current constraint is 1.3 million TEU or $620 million if the current constraint is 1.4 million TEU. Within this, Tauranga City would bear a corresponding opportunity cost of $60 million or $42 million if the current constraints of 1.3 million and 1.4 million TEU, respectively, occur.

The table shows results for Tauranga City as a partial proxy for the most affected region. That most affected region would also include neighbouring districts in both western BOP and Waikato, although parts of eastern BOP are closer to and hence contestable with the ports at Napier and Gisborne, and on the same basis, parts of Waikato are contested by Auckland. For computational simplicity, these have not been combined with Tauranga.

The impacts on Tauranga echo the national results on a smaller scale. Most of the opportunity cost in GDP comprises loss of employee compensation (labour incomes), and most of these losses are borne outside Tauranga, in industries across the country that depend on the Port of Tauranga for exports or delivery of imported inputs.

Table 6 Economic effects of constraints not being removed by the Project

Economic opportunity costs at two levels of container wharf constraint, and two levels of other cargoes forgone

	Constraint	Stage 1	Stage 2	Total
Sulphur Point Wharf impacts		*$m*	*$m*	*$m*
Loss of GDP – NZ	1.3M TEU	-669	-235	-904
Loss of GDP - NZ	1.4M TEU	-459	-161	-620
Loss of labour income - NZ	1.3M TEU	-347	-122	-469
Loss of labour income - NZ	1.4M TEU	-238	-84	-322
Loss of GDP - Tauranga	1.3M TEU	-45	-16	-60
Loss of GDP - Tauranga	1.4M TEU	-31	-11	-42

	Constraint	Stage 1	Stage 2	Total
Lost labour income - Tauranga	1.3M TEU	-23	-8	-31
Lost labour income - Tauranga	1.4M TEU	-16	-6	-22
Mount Maunganui Wharf impacts				
Loss of GDP - NZ	8% forgone	NA	-275	-275
Loss of GDP - NZ	5% forgone	NA	-172	-172
Loss of labour income - NZ	8% forgone	NA	-143	-143
Loss of labour income - NZ	5% forgone	NA	-89	-89
Loss of GDP - Tauranga	8% forgone	NA	-18	-18
Loss of GDP - Tauranga	5% forgone	NA	-11	-11
Lost labour income - Tauranga	8% forgone	NA	-10	-10
Lost labour income - Tauranga	5% forgone	NA	-6	-6

Source: NZIER

4.2.2 Quantified estimates for the Mount Maunganui mixed goods wharf

At the Mount Maunganui Wharf, where the constraint is due to insufficient strength and adaptability to deal with the variation in mixed cargoes using the wharf, we use a different approach to estimate the opportunity cost on the assumption that wharf upgrades and strengthening could result in between 5% and 8% of increased tonnages across the wharf. Table 6 shows the opportunity cost of not upgrading the wharf is the loss of these potential gains, which in 2033 amounts to around $172 million to $275 million of potential gains forgone at 5% and 8%, respectively. Within this, Tauranga City would bear a corresponding opportunity cost of $11 million or $18 million at 5% and 8%, respectively.

The table also shows a division of container terminal opportunity cost between Stage 1 and Stage 2, roughly in proportion to the amount of wharf extension under each stage. On these assumptions, completing Stage 1 only would not alleviate the full opportunity cost, as Stage 1's 285m wharf extension is too short to simultaneously accommodate three larger ships of the type expected in future, so in practice, a third ship berthed at the wharf would be smaller. In comparison, the full Project provides superior flexibility to provide for vehicles of differing lengths, including three of the largest vessels berthed simultaneously.

It is difficult to predict the precise arrivals and berthing of ships of different sizes and how the changing configuration of ship arrivals and shore facilities would affect the efficiency and economic benefits of the investment. However, the wharf dimensions for Stage 1 are insufficient to clear the current constraint on berthing three large ships simultaneously, so some opportunity cost remains until Stage 2 is completed. That opportunity cost would recur each year and build cumulatively over time as trends in the shipping industry towards larger ships make use of smaller ships an increasingly costly way of dealing with increasing exports and imports driven by New Zealand's population and economic growth.

Stage 2 adds another 100 metres to the wharf which would allow three large ships to be berthed at the same time with extra room for manoeuvring.

4.3 The principal significance is in the Project's consequences for trade

The principal significance of the Project is its consequences for trade, which will have a lasting effect on the accessibility of the port. These are largely covered by the quantitative release of the constraint as modelled in the estimates above, but there are other benefits to prices and the availability of shipping access that may not be captured in that estimation.

To put the impacts of quantitative constraints into perspective, New Zealand's GDP, which stood at $389 billion in the year ending March 2023, could be around $488 billion in 2033, drawing on forecasts for economic activity from the New Zealand Treasury's Budget Economic and Fiscal Update[20] and OECD.[21] Drawing on Table 6, Table 7 combines the lower estimates of the opportunity cost of forgoing both stages of the Project and also the higher estimates for both wharves (e.g., 904+275=1,179; 620+172=792 and so on). The annual opportunity costs of going without wharf extension are repeated and grow over successive years as long as the constraints remain, reaching around 0.16% to 0.24% of GDP in 2033, and accumulating over the years 2027 to 2033 to low and high estimates of $2.6 billion and over $4.3 billion, equivalent to between 0.55% and 0.89% of the expected $488 billion GDP in 2033.[22]. They are not inconsequential numbers and testify to the national significance of extending capacity at POTL's wharves.

Table 7 Combined economic effects of constraints for removal by project stage

Economic opportunity costs at two levels of container wharf constraint, and two levels of other cargo forgone.

	Stage 1 ($m)	Stage 2 ($m)	Total ($m)
National – Upper estimate	-669	-510	**-1,179**
National – Lower estimate	-459	-322	**-792**
Tauranga – Upper estimate	-45	-34	**-79**
Tauranga – Lower estimate	-31	-22	**-54**

Source: NZIER

For Tauranga, where the contribution to GDP in 2033 is forecast to be around $15 billion (3.1% of the national total based on population shares), the proportional impact of the opportunity costs on the local economy is likely to be higher, equivalent to between –0.36% and -0.52% of the city's contribution to GDP. In the same way that POTL's contribution to the local or regional economy will be proportionally larger than in the national economy, the smaller the region of interest, the larger the proportional impact of the opportunity cost.

The modelled estimates change in value arising from changes in the volume of trade across the wharf but do not distinguish how such changes are brought about, other than being triggered by a change in the wharf infrastructure. Other economic consequences of

20 https://www.treasury.govt.nz/publications/efu/budget-economic-and-fiscal-update-2024

21 https://www.oecd.org/en/data/indicators/real-gdp-long-term-forecast.html?oecdcontrol-eb3e37581e-var1=NZL

22 The lower limit combines the estimates of 1.4M TEU constraint and 5% Mount Maunganui opportunity cost, and the upper limit combines the estimates of 1.3M TEU constraint and 8% Mount Maunganui opportunity cost. Opportunity costs of cargoes exceeding capacity start rising in 2027 with the higher constraint level and from 2030 with the lower constraint level.

undertaking the Project, particularly at Sulphur Point with the increased capacity for larger ships (compared to no wharf extension), would be:

- In recognising a relaxation of constraint and expectation of more timely berthing and exiting of the port, shipping companies would be more likely to assign larger ships to the route, lowering the per unit cost per tonne carried;
- Access for freight agents to a wider range of vessels on international shipping services (including larger ones) will alleviate some of the supply chain disruption that has persisted since the COVID-19 pandemic, reducing likely costs and delays; and
- Accommodating an increase in the annual volume of traffic at POTL will minimise the need for exporters and importers of freight in the BOP and Waikato regions to seek alternative, more distant ports with their attendant additional travel costs and environmental effects.

The Project would alleviate the drag on regional and national economic benefit caused by seeking more distant ports to export produce. It would increase the economic value added for businesses sending goods through the port, and stimulate multiplier impacts on suppliers to those businesses and to other businesses that benefit from increased consumer spending of incomes enhanced by Port efficiencies. To that extent, it would be beneficial for resource use efficiency and community well-being both regionally and nationally, lifting incomes for people engaged with POTL's business.

It is not clear to what extent such consequences would add to the benefits of the wharf extensions or whether they are implicitly included in the growth included in the modelled estimates. However, these consequences are positive in delivering benefits that would not arise without wharf extension, underpinning the delivery of national and regional benefits.

The Project will further enhance the efficient use of the port's physical resources. Achieving higher throughput will also produce higher incomes for New Zealanders, both in port operations and in industries that use the port. Conversely, failure to consent the Project would have opportunity costs. While this report does not claim to predict the costs precisely, it has demonstrated that there could be significant income forgone, an outcome which fails to enable community well-being and use resources efficiently, in the manner that Part 2 of the RMA promotes.

4.4 Summary assessment

The effect of not consenting the Project would be to constrain the ability of POTL to meet growth in demand for shipping services to and from New Zealand. At a time when other ports are facing their own constraints on infrastructure capacity and environmental limits, such constraint has implications well beyond Tauranga. It will put a drag on export activity in the wider Waikato and BOP regions. These are large, fast-growing regions within New Zealand's economy, so constraints on their ability to export have significant implications at both national and regional levels.

In resolving that constraint, the Project would enable improvements in economic activity across the wider region and country. The economic advantages of the Project are likely to be greater for Sulphur Point than for Mount Maunganui, at least in the short term. This is because recent growth in container traffic has been greater than in other general freight traffic and because wharf space at the container terminal is more constrained.

The larger ships that the Project seeks to accommodate are also often newer ships. The Project would therefore also facilitate improvements in the environmental impacts of shipping accessing the port because new vessels operate with higher standards of environmental performance.

This report draws on recent trends in economic activity and shipping needs. The future may be different from the recent past in many ways as new technologies, market trends, and regulations arise (for instance, greenhouse gas emission reductions being applied to international shipping). But, recent trends in population distribution support the expectation of growing demand in the BOP and Waikato for shipping services for both importing consumer goods and exporting future production. Even if there are changes in trade patterns and shipping propulsion, larger ships are still likely to be more efficient and cost-effective than smaller ones. Therefore, improvements enabling the port to accommodate a wider range of ships, including larger ones, provide the most options and the greatest flexibility in meeting whatever the future brings.

These estimates are illustrations rather than predictions, but they suffice to show the broad economic outcomes from choices over wharf developments. These are:

- If the Project is not consented, the opportunity cost of trade forgone will arise once trade has grown to the level of constraints, and any further growth will lead to recurring forgone trade, which will grow with each successive year;
- Consenting just Stage 1 of the Project (285 m Sulphur Point extension) will not achieve one of the fundamental Project objectives, of improved access for larger ships in the future. The opportunity cost will be alleviated but not removed, and a hard constraint will be faced again at a future date, raising questions over future disruption to operations at POTL; and
- If the full Project of Stage 1 combined with Stage 2 is consented, then both aims of the Project around relieving immediate wharf constraints and improving access for larger ships will be achieved, and questions over further port expansion and operation will be deferred further into the future.

4.5 Caveats on the estimate

The modelling indicates there are significant impacts of forgoing the Project that would flow beyond Tauranga and affect a larger region comprising principally the upper and central North Island, and at further remove across other regions in New Zealand. Relieving the constraint has the scale to be considered of national significance, and it will have a proportionately higher significance for the principal affected region around Tauranga and surrounding BOP and Waikato regions.

The CGE modelling reported above is not a forecast of what will happen. Rather, it estimates impacts of given restrictions in wharf space applied to an economy with the industrial composition and characteristics of the inter-industry model, which is based on Statistics New Zealand's latest inter-industry transaction tables. The modelling estimates effects in 2032 with and without the productivity gains that the wharf extension would bring. This report extends that to 2033 by a simple scaling method. It assumes the same inter-industry flow-on effects for non-containerised mixed goods as for containerised goods, which is unlikely to be correct, especially since the purpose of the Stage 2 Mount Maunganui Wharf extensions is to better position that wharf to handle future but as yet

unknown changes in the composition of mixed goods. The assumption of the same flow on effects is a reasonable approximation, given the uncertainty around those future changes.

By 2033, new industries may have emerged, and economic conditions changed, but attempting to forecast such changes would obscure the effect of consenting or not consenting the wharf extension. The modelling is based on current industry structure and interactions to focus on the with/without comparison undistorted by other exogenous changes in economic activity.

This assessment focuses on effects on aggregate incomes, not those on particular occupation categories or subsets of the population. This is because disaggregating labour and income impacts is difficult to do without creating a misleading sense of precision in results which are not intended to be forecasts.

5 Conclusions

POTL has a substantial presence in the economic activity of Tauranga and surrounding districts in the Bay of Plenty and Waikato. Its significance to this composite region is far greater than is suggested by the size of the port company's accounts. As infrastructure, its full value is in supporting other industries in producing their value. Therefore, the port's efficient operation contributes to the value added of all industries whose goods are exported or imported through POTL.

As the port is shifting the largest volumes of containers and bulk goods within New Zealand, POTL has national as well as regional significance. This is reinforced by its geographic characteristics of having deepwater access capable of accommodating larger ships of the size that are expected to predominate in New Zealand's future trade, and proximity to highly productive upper North Island export regions. POTL serves a hinterland for shipping services that includes Waikato, the BOP and Auckland which together accounted for around 53% of GDP in 2023. POTL has a pivotal position in being widely accessible to these combined regions, although competing with other ports in portions of this area.

POTL's leading position in terms of volumes traded and its geographical location near the fastest-growing regions make it both a regionally and nationally significant infrastructure asset facing constraints on its capacity, which the Project can alleviate with high potential economic gain.

The Project is proposed to retain efficiency in response to two drivers of pressure on the port operations: first, meeting the needs of continued growth in merchandise trade in the northern North Island and second, accommodating the trend in the international merchant marine fleet towards larger ships.

The Project is necessary to enable the greatest economic benefit to be realised from larger ships accessing the port. To the extent that failure to consent the Project reduces the attainable benefit, it would create an opportunity cost (or benefit forgone) detrimental to both the efficiency of the port and the economic hinterland that depends on it and to income earning within the economy as a component of community well-being.

Consenting Stage 1 of the Project allows sufficient wharf extension to allow the container terminal to return to a three-berth operation. As ships continue to increase in size and to provide for the ability to berth three large ships at the same time the Stage 2 extension will

be required. Furthermore, consenting Stage 1 alone makes no difference to the capacity of the Mount Maunganui wharf.

Consenting both stages of the Project would remove the constraint on the Sulphur Point wharf, allowing three ships of 347 metres to berth with 114 metres to spare for mooring arrangements. It also allows the upgrading of the Mount Maunganui Wharf, better positioning it to accommodate future changes in mixed cargoes across the wharf.

This report demonstrates that the opportunity cost of not consenting the Project will be significant for the port company and its client industries, for the city of Tauranga and for businesses in the shipping hinterland centred on the Bay of Plenty, Waikato and neighbouring districts. Of the 13 ports around New Zealand, POTL has the highest number of ship visits and handles the largest volumes of both containers and bulk freight. Upgrading the capacity to do so gives the Project both national and regional significance and would deliver commensurate benefits.

Key estimates at a glance

Tables below replicate Tables 6 and 7 in the report above. Table 7's total project estimates are derived from 904+275=1,179 and 620+172=792 and so on.

Economic effects of constraints not being removed by the Project

Economic opportunity costs at two levels of container wharf constraint, and two levels of other cargo forgone.

	Constraint	Stage 1	Stage 2	Total
Sulphur Point Wharf impacts		*$m*	*$m*	*$m*
Loss of GDP – NZ	1.3M TEU	-669	-235	-904
Loss of GDP - NZ	1.4M TEU	-459	-161	-620
Loss of labour income - NZ	1.3M TEU	-347	-122	-469
Loss of labour income - NZ	1.4M TEU	-238	-84	-322
Loss of GDP - Tauranga	1.3M TEU	-45	-16	-60
Loss of GDP - Tauranga	1.4M TEU	-31	-11	-42
Lost labour income - Tauranga	1.3M TEU	-23	-8	-31
Lost labour income - Tauranga	1.4M TEU	-16	-6	-22
Mount Maunganui Wharf impacts				
Loss of GDP - NZ	8% forgone	NA	-275	-275
Loss of GDP - NZ	5% forgone	NA	-172	-172
Loss of labour income - NZ	8% forgone	NA	-143	-143
Loss of labour income - NZ	5% forgone	NA	-89	-89
Loss of GDP - Tauranga	8% forgone	NA	-18	-18
Loss of GDP - Tauranga	5% forgone	NA	-11	-11
Lost labour income - Tauranga	8% forgone	NA	-10	-10
Lost labour income - Tauranga	5% forgone	NA	-6	-6

Source: NZIER

Combined economic effects of constraints for removal by project stage

Economic opportunity costs at two levels of container wharf constraint, and two levels of other cargoes forgone

	Stage 1 ($m)	Stage 2 ($m)	Total ($m)
National – Upper estimate	-669	-510	**-1,179**
National – Lower estimate	-459	-322	**-792**
Tauranga – Upper estimate	-45	-34	**-79**
Tauranga – Lower estimate	-31	-22	**-54**

Source: NZIER