Southern Link Inland Port

Economic Assessment

Prepared for: Southern Link Property Limited

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Economic Assessment

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Executive Summary

This report provides a comprehensive assessment of the actual and potential economic effects of the proposed **Southern Link Inland Port** (Inland Port) in Mosgiel, Dunedin City It brings together:

- an analysis of Port Otago's import and export data, focussing on import and export container activity;
- a detailed understanding of Port Otago's container related facilities, the way that full and empty containers move to and between them, and the constraints Port Otago is facing with regards to its container operations;
- an overview of the container logistics sector in Dunedin City, focussing on the operations of Icon Logistics, including the nature and location of services they provide to importers and exporters within the southern South Island and the constraints Icon, and its supply chain customers are facing with regards to container logistics;
- several case studies to understand export container supply chains in more detail; and
- an understanding of how the Inland Port will transform Port Otago's container trade, the wider container logistics sector in Dunedin City and export and import supply chains in the southern South Island and deliver significant regional and national economic benefits.

Based on this assessment, a business-as-usual future for Port Chalmers and the wider Dunedin logistics sector is not considered sustainable. There is limited capacity for growth and no resilience to unexpected disruptions and natural hazard events. Despite 70% of export container product currently arriving by rail, many existing import and export supply chains that use Port Chalmers are still reliant on heavy truck movements. Those truck movements within and through Dunedin's main urban area are increasing freight times and risk for importers and exporters, generating significant Green House Gas (GHG) emissions, impacting road safety, reducing air quality and increasing road maintenance costs for the Dunedin City Council and New Zealand Transport Agency.

The Inland Port will provide an opportunity to consolidate some of Port Otago's and Icon's container operations in a single, strategically located, rail-enabled site. The integrated warehouse, container depot, container terminal and rail siding facility will transform the way that import and export containers move to and from Port Chalmers. The mode shift to rail is initially estimated to take 15,000 (one-way) heavy vehicle movements off the streets and state

highways within the main Dunedin urban area each year – with capacity for this to increase over time. Based on the analysis carried out, this mode shift will create significant productivity and efficiency benefits for import and export supply chains – saving time and GHG emissions.

Savvy considers that the Inland Port will improve the Southern Region's ability to absorb, adapt, and respond to stresses and shocks that affect import and export supply chains. It will significantly improve the resilience of Port Chalmers' existing infrastructure and the competitiveness of Port Otago in the South Island container trade market In doing so, the Inland Port may facilitate a more efficient distribution of import container activity across South Island ports (attracting Otago destined imports away from Lyttleton Port to the much closer Port Chalmers) and a greater market share of existing dairy product and meat exports potentially passing through Port Chalmers – with GDP and employment impacts associated with this growth in activity for Otago Region. It is likely that the Inland Port will help promote the southern South Island as an efficient location for new import and export manufacturing investment.

The Inland Port provides for long term, sustainable growth of container imports and export in the Southern Region that is not considered possible under the status quo. It will contribute to increased GDP and employment in Dunedin City over the long term and has the potential to stimulate more value added economic activity.

While some of the Inland Port's expected economic benefits have been quantified, and some monetised, it has not been practicable to monetise all potential economic benefits. Nonetheless, when accounting for quantified and qualified economic benefits, and the extent of those benefits spatially and according to the range of businesses and wider industries positively impacted, Savvy considers that the Inland Port will deliver significant regional benefits, and that these may also be material in a national context given the importance of the dairy and meat processing sectors to the national economy, and that the efficient operation of nationally significant infrastructure (i.e., Port Chalmers) has wider economic benefits, including for New Zealand's reputation as a trade partner.

* * * * * *

The following provides a high level summary of how the Inland Port satisfie l relevant criteria set out in the Fast Track Approvals Act 2024 (FTAA) for referral applications While specified in the FTAA for referrals and not substantive applications, these criteria still provide a useful framework for describing the Inland Port's economic benefits and so are included below:

Section 22(2)(a)(ii): will deliver new regionally or nationally significant infrastructure or enable the continued functioning of existing regionally or nationally significant infrastructure.

- The Inland Port in itself will be a significant regional infrastructure asset for the southern South Island. Port Chalmers is a nationally significant infrastructure asset facing a range significant challenges going forward that the Inland Port will solve. It will be pivotal to import and export businesses using Port Chalmers – driving efficiency and productivity gains in container-based supply chains.

Section 22(2)(a)(iv): will deliver significant economic benefits.

- The Inland Port is expected to deliver significant economic benefits across the southern South Island. The construction of the facility is estimated to generate up to $_{2020}$218.6 million in gross value added (GDP) and create or sustain up to 1,705 gross FTEs across a wide range of sectors. Spread over 3 development stages and indicatively 10 years of construction, the net present value of this capital investment is estimated at $_{2020}$162.6-$201.9 million (based on an 8% and 2% discount rate) and will be significant at the Otago Region level. Deducting comparable opportunity costs (valued added and employment) for long-term primary production foregone on the site does not materially reduce these significant construction impacts. While economic impacts cannot be wholly equated with enhancement of economic wellbeing, a substantial portion will support local businesses, provide meaningful, well-paid employment and provide incomes for households that support their standard of living.

- Once fully developed and operational, the Inland Port will directly create 136 net additional, high-value jobs based on information provided by Icon and Port Otago, with total employment on-site estimated at 157 FTEs by the end of stage 3. It will be a significant employer at the regional level.

- In terms of the upstream economic impact of the Inland Port as an operating business entity, the initial operation (stage 1) is expected to be a transfer (consolidation) of existing business activity by Port Otago and Icon Logistics. However, when the capacity and efficiency of the Inland Port start to generate new container trade for Port Chalmers (i.e. expected with stage 2 and 3 of development), this will drive net additional operating expenditure (and flow-on economic activity) that would not have been possible under the status quo. While unquantified, the ongoing net additional value added and employment (upstream) impacts of the Inland Port are estimated to be significant at the district level and potentially the regional level.

- In terms of other economic benefits, the Inland Port will significantly improve the utilisation of KiwiRail assets, with an estimated initial uplift of 15,000 containers (30,000 TEUs) on the line between Mosgiel and Port Chalmers. Savvy considers that it will

create opportunities for further mode-shifts of freight to rail across Otago, Southland and South Canterbury.

- It will remove an estimated 15,000 heavy vehicle movements per annum from roads in Urban Dunedin and State Highway 88 (SH88) (with this increasing over time as container trade grows in the Southern Region and the Inland Port delivers stages 2 and 3 of its planned development). This will help reduce congestion and road maintenance and improve road safety, reduce accidents, and improve air quality in the Dunedin urban area.

- For importers and exporters using Port Chalmers, the Inland Port is considered likely to reduce their overall logistics costs (when taking into account transport costs, empty container transport costs, warehousing costs, and time costs). It could be the driver of long-term growth in the output of Port Otago and the Dunedin logistics sector.

- The Inland Port also provides opportunities for significant value added manufacturing to support existing export customers. Where there is capacity to do so, these new manufacturing businesses/activities would be expected to agglomerate in Mosgiel close to the Inland Port (for example, a wood-pellet factory to fuel one of Fonterra's processing plants is being considered), or potentially within the Inland Port warehousing space itself (for example, a canning plant [redacted]. Such business opportunities are contingent on the Inland Port because they would be integrated with the rail-focussed export supply chains.

Section 22(2)(a)(v): will support primary industries, including aquaculture.

- Dairy and meat exports are the primary focus of Port Otago's container operations, followed by wood products. Port Otago states that it wants to be the port of choice for these export commodities in the southern South Island. The Inland Port will directly support primary producers by significantly improving export and import supply chains – driving productivity, efficiency and resilience gains and helping them to reduce their transport emissions which is a key focus for many international customers purchasing our export products (and is therefore critical to New Zealand exporters remaining competitive in the international market).[1]

[1] For example, Mondelēz International documents Supplier Performance Expectations: they specifically require all aspects of their supply chain to look for opportunities to reduce their environmental footprint. Nestlé also has a Net Zero Roadmap: "natural climate solutions within our supply chain will form a significant part of our decarbonisation pathway".

Section 22(2)(a)(vii): will support climate change mitigation, including the reduction or removal of greenhouse gas emissions.

- GHG emissions from the Transport, Postal and Warehousing industry is a major environmental issue for Dunedin City.[2] In 2023 it was the second highest contribution to GHG emissions. However, every tonne of freight carried by rail delivers a 70% CO2e emissions saving over road freight. Three case studies on current export supply chains (which account for an estimated 44% of containerised export receipts at Port Chalmers in 2024) show that the Inland Port could reduce CO2e emissions by a combined total of 261 tonnes per annum across just those 3 supply chains.[3] Scaling this up across the total import and export TEUs (30,000) expected to shift to rail in stage 1 of the Inland Port, the CO2e reduction could be in the order of 1,050 1,100 tonnes per annum.[4]

Clause 22(2)(a)(viii): will support climate change adaptation, reduce risks arising from natural hazards, or support recovery from events caused by natural hazards.

- All road freight to Port Chalmers is dependent on SH88, yet this road sits between cliffs and Otago Harbour and is vulnerable to slips after heavy rain events. In October 2024, for example, multiple slips blocked SH88 for four days, creating major disruption for export and import supply chains that were dependent on road freight. Yet, the rail line was unaffected as it sits seaward of the highway. By shifting all export container receipts and import container releases to the Inland Port via rail, the risks associated with SH88 (natural hazard or otherwise) will be avoided.

- Climate change is expected to cause more frequent ship arrival delays. The additional capacity provided by the Inland Port container terminal will buffer the effects of these disruptions, allowing export production in the southern South Island to continue uninterrupted. The Inland Port will be connected to other South Island ports and inland ports through the road and rail network, improving the resilience of all South Island import and export trade in the event that any one port is out of action, or connections to them interrupted.

[2] Relevant for Clause 22(2)(a)(ix) of the Fast Track Approvals Act.

[3] Based on the shadow price of carbon per tonne of CO2e for 2024 ($2023) this equates to $18,300-36,500 per annum (Low-High) (Source: NZTA, Monetised Benefits and Costs Manual).

[4] The monetary value of this benefit is $73,500-$154,000 per annum (Low-High).

1 Introduction

1.1 Research Purpose

Savvy Consulting Limited ("Savvy") has been contracted by Southern Link Property Limited ("SLPL") to deliver an economic assessment of the proposed Southern Link Inland Port in Mosgiel, Dunedin City (herein referred to as the "the Inland Port" or "Project")[5] to support a consent application under the FTAA

The purpose of this assessment is to examine how, and in what ways, the Inland Port will transform Dunedin's transport, logistics and supply chain infrastructure to enable improved economic performance of the container logistics sector and support significant economic benefits for the Otago Region, as well as for importers and exporters across the southern South Island.

Specifically, it considers how a substantial shift in the remaining export freight (not already railed) and nearly all import freight, from road to rail within Dunedin City will increase the economic efficiency of several industry sectors and Port Otago's container operations - improving productivity and increasing the resilience of southern South Island export and import supply chains. It also considers the other positive economic outcomes that may be indirectly unlocked by the Inland Port.

The author of this report is Natalie Hampson (Director of Savvy Consulting). While this report has been written with reference to "Savvy's" views and expertise, they are wholly the views and expertise of the author (unless otherwise stated). A CV setting out the qualifications and experience of the Natalie Hampson is contained in Appendix A.

Code of conduct

I (Natalie Hampson) have approached this assessment on the basis that it is prepared in the same way as it would be for expert evidence in Environment Court proceedings.

I therefore confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023 and confirm that I have complied with it in preparing this assessment. I confirm that the issues addressed in this assessment are within my area of

[5] Somes images and tables in this report may also refer to the project as the "Logistics Park". They are one in the same.

expertise, except where I have indicated that I am relying on others' opinions. I have not omitted material facts known to me that might alter or detract from my opinions expressed.

1.2 Research Approach and Scope

The overarching approach of this economic assessment can be summarised as follows:

1. To develop a detailed understanding of current import and export activity handled by Port Chalmers and the role of the Dunedin logistics sector in those supply chains. This is set out in Sections 2-4 of the report.

2. From that assessment, identify the risks and constraints facing Port Otago and those supply chains currently, and the economic implications of a business-as-usual future. This forms *the problem statement* and is summarised in Section 5.

3. Provide an overview of the Inland Port and how it helps address the problem statement (through direct solutions and future opportunities). Where practicable, measure the potential economic outcomes delivered by the Inland Port across key export supply chains and for Port Otago. This is covered in Sections 6 and 7.

4. Section 8 considers wider economic effects potentially facilitated by the establishment of the Inland Port.

5. Key findings and conclusions on economic benefits are set out in Section 9.

The scope of the assessment is primarily focussed on **container related freight activity** (imports and exports) via Port Chalmers as this is the main role of the Inland Port (although it is also designed to offer mode-shift benefits for some bulk commodity exporting and importing where possible).

The research sets out the current container-based **operations of Port Otago and Icon Logistics** (two key stakeholders behind the Inland Port),[6] and the interactions between them. Icon Logistics has the largest market share of the Dunedin container logistics sector after Port Otago, so together with Port Otago, the assessment provides a comprehensive, although not complete picture truck-based container freight activity in the study area.

Even when focussing on just the operations of Port Otago and Icon Logistics, the customer supply chains are complex and difficult to portray in their entirety and in combination. Quantifying all truck-based freight movements (for example) with the data that is available is challenging (and may differ slightly from the approach taken by Stantec for the Integrated

[6] Icon Logistics is a subsidiary of Dynes Transport – one of the Joint Venture partners of the Project.

Transport Study).[7] A pragmatic approach was needed to help identify and measure the economic changes enabled by the Inland Port.

A **case study approach** has been adopted for a sample of existing export supply chains currently reliant on truck transport. Examination of these supply chains is considered representative of the sorts of economic benefits that the Inland Port will offer to other exporters and importers based in the study area Complimenting this, is a case study of a supply chain that exemplifies the economic benefits of using rail for container transport to and from Port Chalmers from Mosgiel – a logistics model that the Inland Port is seeking to replicate on a far greater scale.

Last, to fully appreciate and understand the current supply chain constraints, inefficiencies and risks faced by exporters and importers of containerised product through Dunedin's truck-dominated logistics sector (other than Port Otago's logistics operations contained within Port Chalmers), and how this will change with the Inland Port, a spatial approach to analysis has been adopted. This assessment relies on simplified maps to illustrate the movement of commodities and containers, with a key focus on supply chain movements occurring within the Dunedin urban environment.

1.2.1 Role of Report in the Proportionality Assessment

For clarity, this economic assessment considers economic costs and benefits but does not contain a Cost Benefit Analysis ("CBA") (formal or otherwise) that assesses all effects of the Project. The economic assessment is one of several technical assessments for the application. The substantive application report prepared by Mitchell Daysh brings the conclusions of those technical assessments together (including their respective benefits and costs (impacts)) to form a view on whether any adverse impacts are sufficiently significant to be out of proportion with the Project's benefits.

Part of this economic assessment relies on modelling that uses economic multipliers within an Input-Output model framework. I consider that Input-Output modelling is an appropriate methodology (particularly when appropriately caveated and coupled with assessment of wider economic wellbeing benefits) and is consistent with the purpose of identifying economic benefits of a Project under the FTAA. While it has been raised in other FTAA projects that applicants should use a CBA approach,[8] the FTAA does not contain a direction requiring this.

[7] This arises from looking at the available or requested data from different perspectives, and for different assessment purposes. Some differences have been unavoidable due to the different time frames of the respective modelling, and potentially with some different assumptions. Any differences between the economic and traffic report do not undermine or diminish the conclusions of either report.

[8] See for example, the peer review of the Delmore FTAA economic assessment, and others.

For example, the FTAA framework is different to s 32 of the RMA which requires the identification, assessment and netting of the benefits and costs of a proposal to determine efficiency. However, there are no equivalent provisions in the FTAA, which instead relies on the approach described in s 85(3).

1.2.2 Data and Information Sources

This research topic is both complex and data intensive. This economic assessment draws on a range of primary and secondary data sources and literature (with the main sources listed in Appendix B). Savvy has worked closely with Port Otago,[9] Icon Logistics,[10] and Dynes Transport Group[11] to collate relevant business and operational data and to develop a number of customer case studies. Savvy is also grateful to these organisations for facilitating a comprehensive site visit so that all of the main industrial areas, main logistics sector facilities, Inland Port site and Port Chalmers operations could be viewed in person.

1.2.3 Wider Study Area

Otago Region is the key focus of this assessment in terms of realising significant economic benefits. However, actual and potential benefits for Otago Region require consideration of export and import supply chains that occur both inside and outside the region. This aligns with Port Otago's goal to be the 'port of choice' for exporters and importers in the lower South Island.

Figure 1.1 illustrates the indicative study area for this assessment (herein referred to as the "Southern Region"). This area is defined using territorial authority ("TA") boundaries. It includes all of Southland Region and Otago Region and the southern portion of Canterbury Region. The State Highway and rail network are also shown.[12] Broadly, the study area represents the area within which most importers and exporters currently using Port Chalmers are based (with companies specifically referred to in the report identified in the map). It also represents the catchment within which potential future (new) import and export customers of Port Chalmers are expected to be located if attracted by a highly productive, efficient, cost effective and resilient service that the Inland Port will provide.

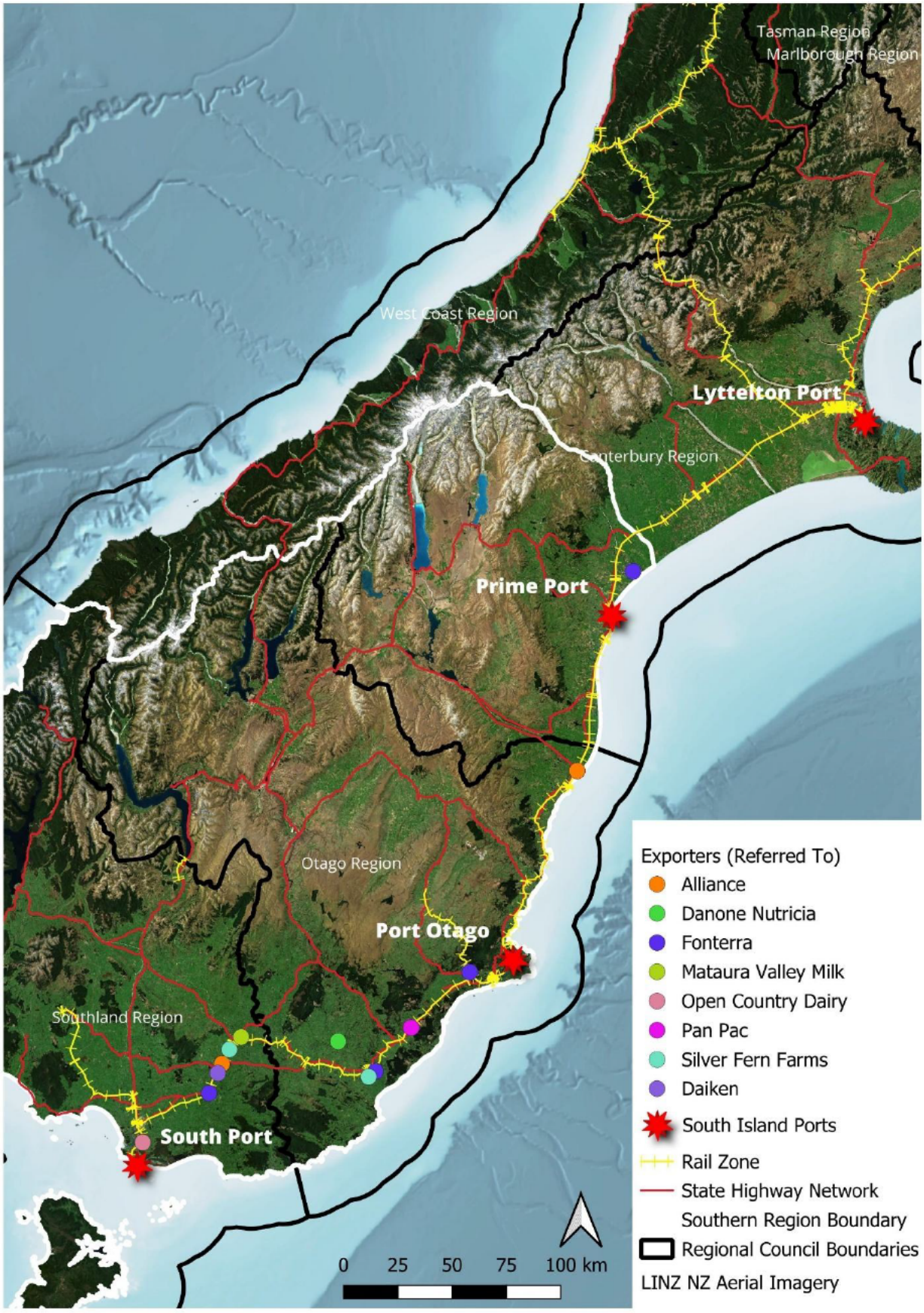
[9] Interviews/correspondence with [redacted]

[10] Interviews and correspondence with [redacted]

[11] Interviews and correspondence with [redacted]

[12] While Figure 1.1 includes the Ohai to Invercargill railway line, this has since been closed by KiwiRail.

Figure 1.1 - Study Area – Southern Region Including Export Companies Identified in Report



The northern extent of the study area recognises (and excludes) the locality closest to Lyttelton Port and its inland ports (notably the one in Rolleston) for competitive reasons. Within the study area is Prime Port (Timaru) and South Port (Bluff), both of which have lower levels of container freight activity than Port Otago.

Otago Region is a sub-area of the wider study area. Dunedin City is the largest economic centre of Otago, and the home of Port Otago and the Inland Port. While the economic benefits of the Inland Port are expected to extend across the whole study area, those benefits will be concentrated in Dunedin City and the wider Otago Region.

1.3 Commonly Used Terms

Term	Meaning
The Inland Port	Proposed Southern Link Inland Port, Mosgiel (the Project)
Ambient container	A non-refrigerated container. Suitable for dry-food products and non-food commodities.
Container depot	Storage area for empty containers. Also, a location where container servicing occurs.
Container servicing	Applies to containers required for food exports. Servicing includes sweeping and inspection of returned empty containers, painting of inside surfaces, repair of floor/wood surfaces, and re-certification as a food-grade container that is available for hire. Container servicing applies to ambient containers and refrigerated containers.
Container terminal	Storage area for full and empty containers. Can include storage of ambient containers and reefer containers (which are required to be 'plugged in' to maintain refrigeration if full).
CO2e	A common measure for evaluating the impact of different greenhouse gas emissions on global warming – i.e., in carbon dioxide equivalents.
Curtain-sider	Refers to a either truck of rail wagons that are loaded/unloaded from the side (through an opening side curtain). Curtain-siders are preferred because they can accommodate more tonnes of product per unit than transporting product in containers (i.e. 36% more tonnes per

	trip). As such curtain-siders are preferred for long distance freight.[13]
Dunedin City	The Dunedin territorial authority as defined by Statistics New Zealand and administered by Dunedin City Council. Includes the urban and rural areas.
Dunedin Urban Area	The portion of Dunedin City that contains urban residential and business zones. Includes the main Dunedin Urban area and Mosgiel.
Efficiency	Maximising output relative to inputs. Also refers to achieving the most output with the least waste. Increasing efficiency means doing more with less inputs. Inputs may be resources or money (i.e. less cost).[14]
Container skel truck	Referred to in this report as the truck type used to transport containers. The same can apply to flat-deck rail wagons.
Food grade container	A container certified for food storage. May be an ambient or refrigerated container.
Hub Port	A hub port is a major seaport that connects different shipping routes and facilitates the transfer of goods between multiple origins and destinations. Hub ports can receive larger vessels than other ports. Containers/goods may arrive on smaller vessels from a range of smaller ports, and those goods are then stored at the hub port until the larger vessel arrives. Port Chalmers, although primarily an export port, is capable of acting as a Hub Port for the South Island and is currently delivering this capacity at a high level.
Main Dunedin Urban Area	The urban residential and business zones of Dunedin City excluding Mosgiel urban area. Includes south and central Dunedin through to (and including) Port Chalmers.
Open Highway Zone	Refers to the area within Dunedin City (and outside Dunedin Cit) that is outside the Rail Zone and the Urban Area Zone – see Figure 7.1. Used to distinguish freight costs and travel times per Km in the case study modelling.
Point to point rail transport	Transport of goods by rail between one rail siding and another siding. Can relate to containerised product or bulk

[13] Further information on weight and ratios used in this report are contained in Appendix E

[14] In RMA Section 32 terms, efficiency refers to achieving greater benefits than costs (net benefits).

	product. Does not rely on trucks for transport between the origin and destination.
Productivity	Amount of work or output achieved in a certain time. Increasing productivity means doing the same job in less time. Labour productivity refers to achieving more output per unit of labour.
Rail siding	A short track at the side of and opening on to a railway line, used chiefly for shunting or stabling trains as well as loading and unloading of rail wagons.
Rail marshalling yard	A large railway yard in which freight wagons are organized into trains for their respective destination.
Rail Zone	Refers to the rail corridor – see Figure 7.1. Used to distinguish freight costs and travel times per Km in the case study modelling.
Ravensbourne Depot	This is the Port's newest (but temporary) empty container depot adjacent to the Ravensdown Fertiliser plant and Ravensbourne wharf.
Reefer	A refrigerated container – used for chilled/frozen products.
RMP	Risk Management Program administered by MPI and required for all food exports. The program is audited by Assure Quality on either a 6 or 12 monthly frequency to ensure compliance.
Southern Region	The wider study area of this report as shown in Figure 1.1.
Strathallan Street Depot	Also referred to as the Dunedin Depot by Port Otago. This is the Port's empty container depot on Strathallan Street in the main Dunedin industrial area.
TEU	Twenty Foot Equivalent Unit. This is the common unit of quantifying container trade. One 20 foot container is one TEU. One 40 foot container is 2 TEUs.
Transitional Facility	TF is required and administered by NZ Customs for all import containers to be checked to ensure our borders are kept safe and secure.
Trans-shipping	The transfer of goods from one ship to another. Transhipping is a key feature of hub ports. Trans-shipped containers must stay at the port as this is a requirement for customers certification.

Urban Area Zone	Refers to the portion of the Main Dunedin Urban Area starting from the end of the Southern Motorway through to (and including) Port Chalmers but excluding the Rail Zone – see Figure 7.1. Used to distinguish freight costs and travel times per Km in the case study modelling.
3PL	Third party logistics. Refers to companies that provided an integrated freight, warehousing, storage, packing/unpacking and customs/quarantine service to exporters or importers.

2 Port Otago's Exports & Imports

Port Otago is a regionally and nationally significant infrastructure asset. Recent research by NZIER estimates that Port Otago's operations contribute around $_{2020}$154m to Otago Region's annual direct and indirect GDP and $_{2020}$118m to New Zealand's annual GDP.[15] The Port sustains a workforce of approximately 300 people across a range of occupations. Examples of key customers of Port Otago's export shipping services are Fonterra, Alliance Group, Silver Fern Farms, Daiken, Pan Pac, Danone Nutricia, Open Country Dairy, ANZCO, Affco, Wenita Forest Products, Mataura Valley Milk, Kiwi Crunch and City Forests. In addition to its import and export role, Port Otago is one of the key cruise ship ports for New Zealand, receiving more than 200,000 cruise passengers per annum.

2.1 Imports (YE June 2025)

StatisticsNZ data for the year ending (YE) June 2025 can be used to summarise and contextualise Port Otago's total import activity. With around 209,000 tonnes (gross) of imported goods (mainly in the form of bulk goods), with a domestic value of $541 million, Port Otago accounts for just 1% of total goods imported to New Zealand by value and weight, and 1% of goods imported through the country's seaports by value and weight, ranking it 9th and 10th respectively of all seaports for imported goods (Figure 2.1).

When considering just seaports in the South Island, Port Otago handles 4% of imported goods by gross weight and 6% of imported goods by value, ranking it 4th highest of South Island seaports (after Lyttelton Port (1st), South Port (2nd)[16] and Prime Port (3rd).[17]

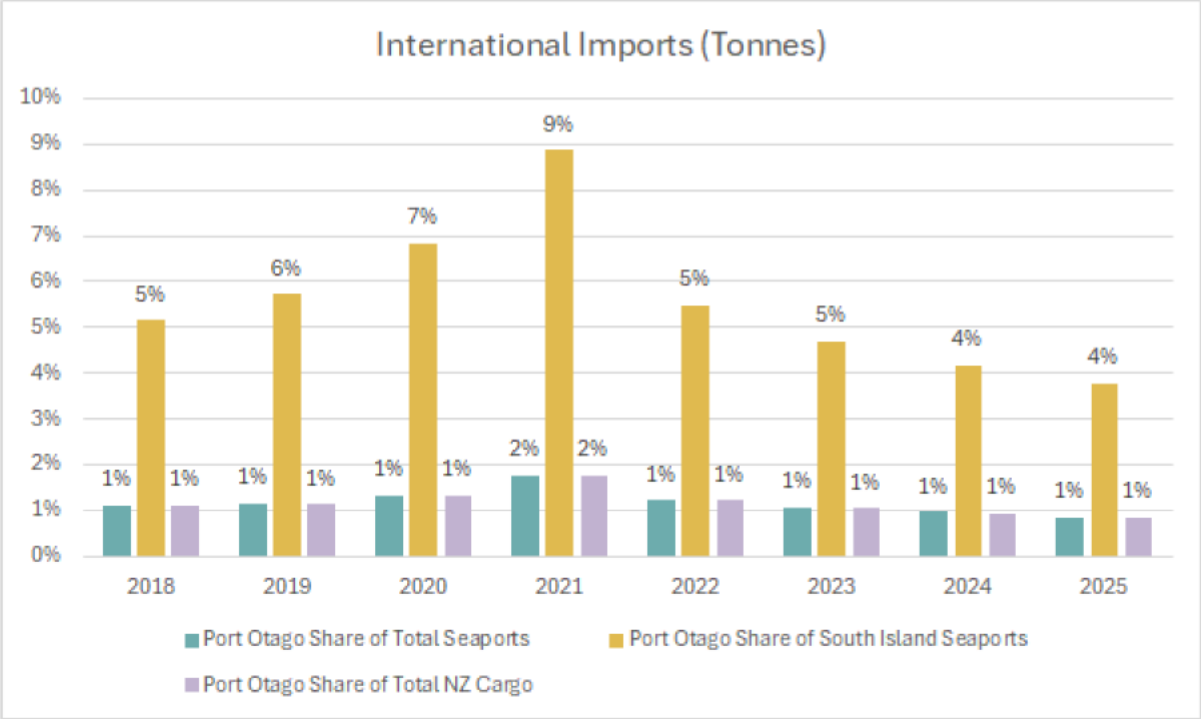
Importing (whether bulk or container) is not a key role for Port Otago at present, with just 9% of all goods passing through the Port (by weight) in the YE June 2025 being imported goods. This compares with 52% of South Port's total trade being imports, 68% of Prime Port's total trade being imports and 45% of Lyttelton Port's total trade being imported goods.

While imported goods are driven by a combination of business demand (intermediate inputs to production) and household (and other) final demand, a 1% share of national imports is disproportionately low when considering that the Otago Region has a 5% share of the

[15] This figure is considered conservative as induced economic impacts (those arising from household spending using wages and salaries sustained directly and indirectly by Port Otago) are not included in the NZIER report.
[16] South Port in Bluff imports mainly alumina (for the Tiwai Smelter), petroleum products, fertiliser, stock feed and acid. Port Chalmers does not have facilities for bulk liquid storage (although there is some at the Dunedin Wharves), which is a factor in its ranking.
[17] Prime Port in Timaru imports mainly fertiliser, stock feed, petroleum and cement.

national population (YE June 2025). This suggests that some of Otago's demand for imported goods arriving by sea is being met by other seaports (i.e., demand leakage).

Figure 2.1 – Port Otago's Imports (Gross Weight Tonnes) Relative to Total Port and Seaport Imports 2018-2025



Importing (particularly container imports discussed further below) represents an important growth opportunity for Port Otago in the future and prior to 2022, its import role relative to South Island seaports had been increasing to reach a peak of 9% market share (Figure 2.1). Improving the efficiency and productivity of container import supply chains from Port Chalmers to customers will be key to Port Otago's ability to compete more strongly in the import market going forward.

2.2 Exports (YE June 2025)

The same StatisticsNZ data for the YE June 2025 can be used to summarise and contextualise Port Otago's total export activity. With around 2.23 million tonnes (gross) of exported goods, with a free on board value[18] of $7 98 billion, Port Otago accounts for 10% of total goods exported from New Zealand by value and 6% by weight. When considering only goods exported by seaport, Port Otago accounts for 12% of goods exported by sea by value (ranking

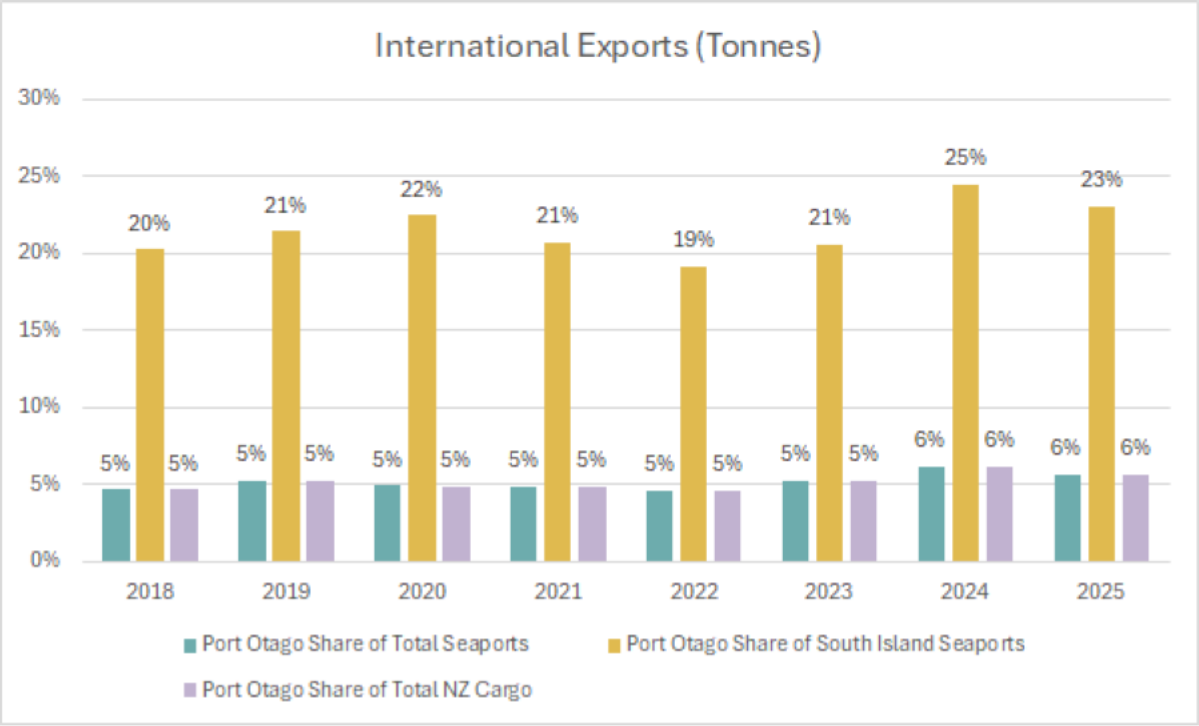
[18] Refers to the price payable to the exporter for a good at the point at which the good is loaded onto a carrier at the export port.

it 2nd after Tauranga and ahead of Lyttelton Port), and 6% of goods exported by weight (ranking it 5th of the seaports) (Figure 2.2).

When considering just seaports in the South Island, Port Otago handles 23% of exported goods by gross weight and 39% of exported goods by value, ranking it highest of South Island seaports (ahead of Lyttelton).

Exporting is Port Otago's primary economic role, with 91% of all goods passing through the Port (by weight) in the YE June 2025 being export goods. Since 2018, Port Otago's export market share (by weight) has been relatively stable, although trending marginally higher in the last two years. As discussed later in this report, further growth in export volumes at Port Otago is becoming constrained (if not already) by the capacity of the container terminal at Port Chalmers. However, if this constraint can be addressed, and the efficiency and productivity of export supply chains through to Port Chalmers can be improved, Port Otago will be even more competitive and in a good position to increase its export market share (by weight) over the medium and long term.

Figure 2.2 – Port Otago's Exports (Gross Weight Tonnes) Relative to Total Port and Seaport Exports 2018-2025



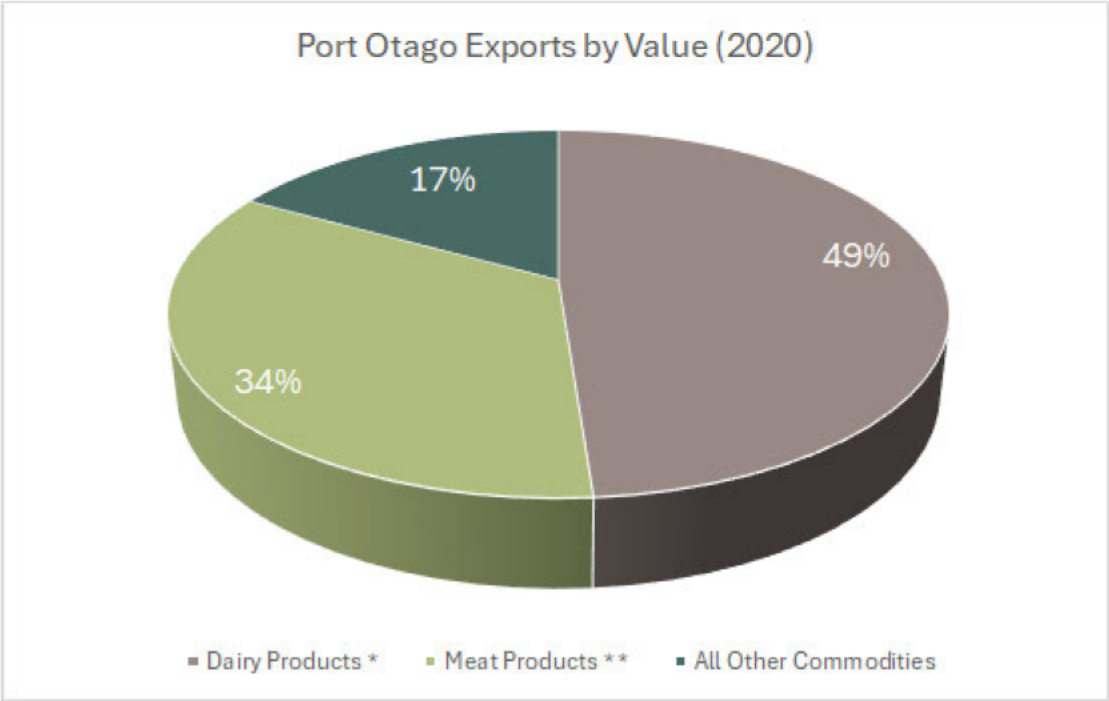
2.2.1 Export Commodities (2020)

Export data by commodity is available for the 2020 calendar year. When examining the make up of Port Otago's export trade:

- Dairy products account of nearly half (49%) of exports by value (and 14% of all New Zealand dairy exports by value).
- Meat products account for just over a third (34%) of exports by value (and 20% of all New Zealand meat exports by value).

Figure 2.3 shows that dairy and meat exports combined account for a significant 83% of Port Otago exports by value. The next three highest export commodities by value are wood/wood products, flour/cereals and seafood. These three commodities make up 10% of the remaining 17% shown in Figure 2.3.

Figure 2.3 – Port Otago Exports by Commodity Value (2020)



Overall, the above data highlights that dairy and meat export supply chains are key to Port Otago's operations. Further, all dairy and meat products are containerised for export, in a mix of chilled and dry/ambient containers. The remainder of this report is focussed on those Port Otago container-based supply chains.[19] Port Otago's Container Business

[19] There are different supply chain configurations for non-containerised bulk products such as logs and the Inland Port is not (at least initially) going to have a role in those because they have different requirements.

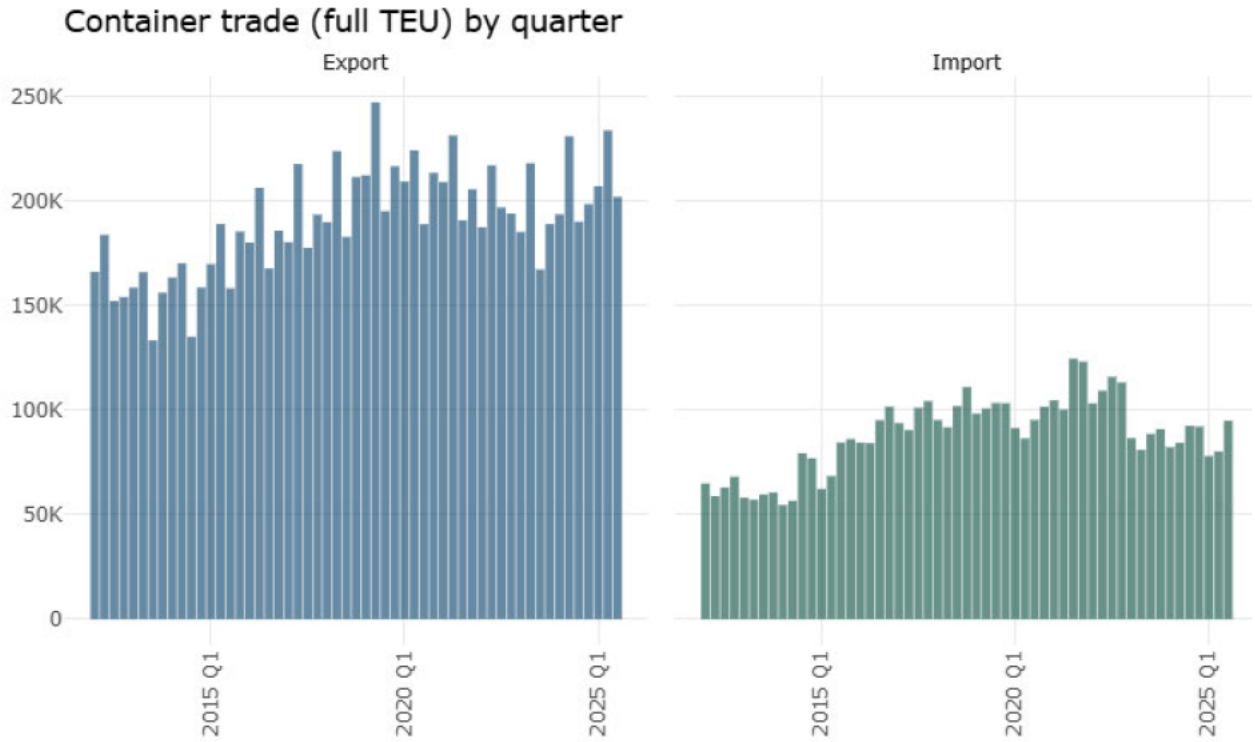
3 Port Otago's Container Business

3.1 Port Chalmers Container Activity

3.1.1 Port Otago in the Context of National Container Activity

Container trade in New Zealand experiences seasonal peaks and troughs, with container exports peaking in the second quarter of each year (Figure 3.1).[20] Nationally, annual container trade (imports and exports) grew steadily between 2014 and 2019, after which Covid-19 had a dampening effect, and full container activity declined through to the end of 2022, early 2023. While Q2 2023 full container export trade appears to be a turning point, with growth in 2024 strong, followed by a slight increase in the Q2 peak in 2025, it is too soon to confirm a return to sustained growth at a national level.

Figure 3.1 – National Full Container Imports and Exports by Quarter (Source: FIGS)



In 2024, Auckland and Tauranga ports captured the major share of full container trade (67% combined). Of the nine main container ports, Port Otago accounts for 7% of the national total of full container trade. Container activity in the South Island is dominated by Lyttelton Port (13%

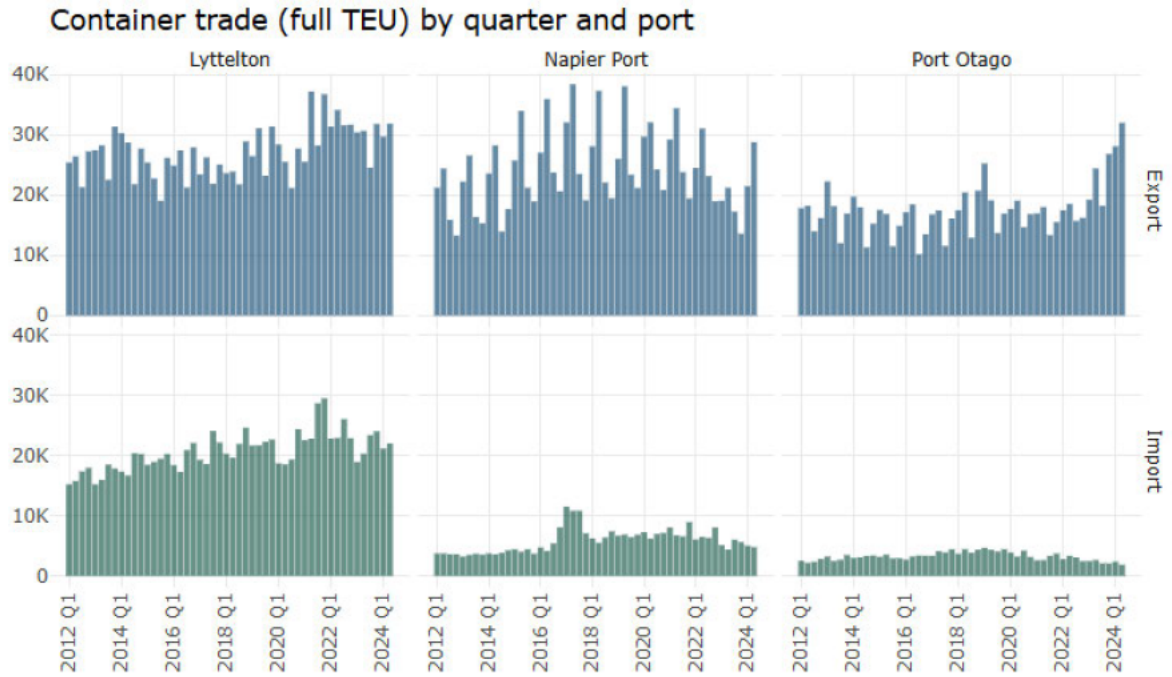
[20] Source: Freight Information Gathering System (Ministry of Transport).

of the national total – nearly double the trade passing through Port Otago). The combined container trade of the remaining South Island seaports (South Port, Port Nelson and Prime Port) is still less than Port Otago's.

When considering just full export containers, Port Otago has a more important role (with 12% of the national total), only moderately less than Lyttelton Port (13%). The Port of Tauranga dominates export container trade, with 49% of the national total. Conversely, when considering only import container trade, Port Otago's small import role (discussed above) results in just a 1% of total full containers imported nationally. Auckland and Tauranga combined have a 78% market share of imported full containers (2024). Lyttelton Port has the third highest share of imported full container (12% of the total market).

Port Otago's full container export and import trade by quarter is compared with Lyttelton Port and Napier Port (2012-2024) in Figure 3.2. Historically, Port Otago's export container activity has been at the bottom of this 'medium volumes' group of ports, but in the most recent quarter in this series (Q2 2024), full export container volumes have exceeded even Lyttelton, by a small margin. Importantly, while full container import trade at Port Otago has continued to decline since the onset of Covid-19, Port Otago's export container trade is on an upward trajectory (compared with a relatively flat level of trade in Lyttelton). We discuss the sustainability of this growth trend later in the report.

Figure 3.2 – Comparison of Full Container Trade in Lyttelton, Napier and Otago Ports (FIGS)

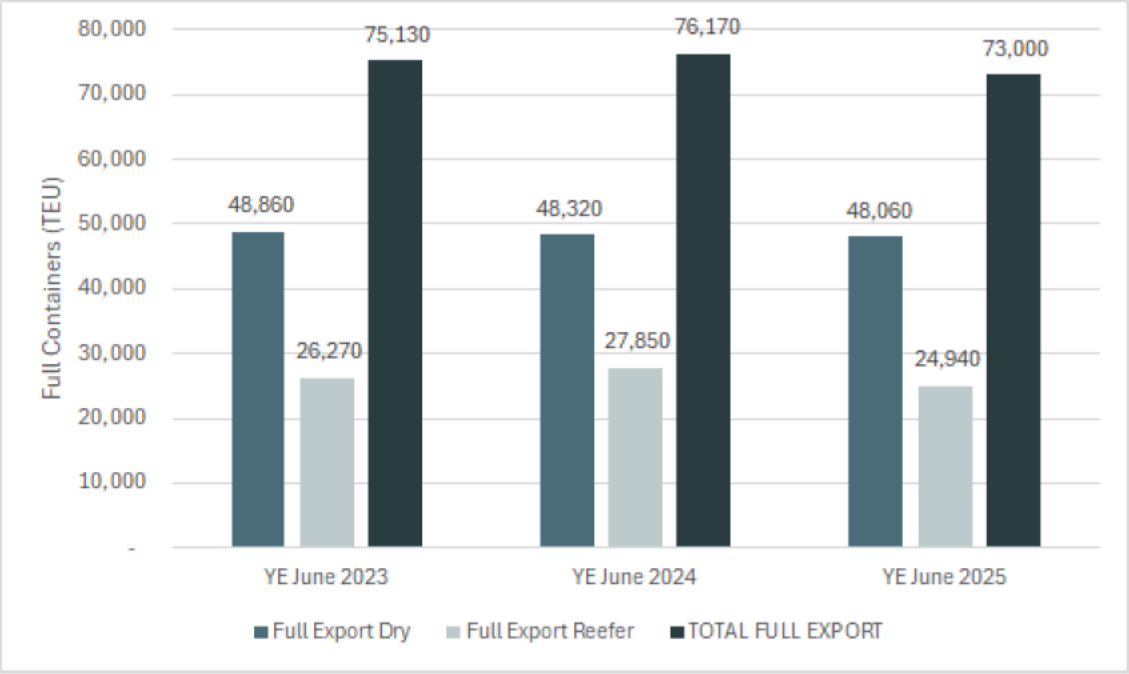


3.1.2 Export Container Activity

This section relies on Port Otago's container movement data for Port Chalmers, comparing the last two financial years (YE June). Based on additional data provided by Port Otago, the export container activity can be examined through a transport lens, as this provides the relevant context against which the impact of the Inland Port can be measured.

Figure 3 3 shows annual full container (TEU) exports for Port Chalmers over the last three years, including the mix of dry/ambient and reefer containers. This data captures only exports received at the port gates by road or rail and excludes trans-shipped export containers that arrive from other New Zealand ports but leave for overseas ports from Port Chalmers. Trans-shipped exports add an additional 14,530 TEU in the YE June 2023, 51,790 TEU in the YE June 2024 and 45,990 TUE in the YE June 2025 (a significant annual increase in the last two years in trans-shipping export volumes compared with 2023).[21]

Figure 3.3 – Port Chalmers Full Container Exports YE June 2023-2025 by Dry/Ambient and Reefer



Over the 2023-2025 period, the mix of dry/ambient and reefer full export TEUs has been relatively stable at around 63-66% of the total being dry/ambient (Figure 3.3). The YE June 2025 has seen a minor decrease in full exported TEUs from Port Chalmers over the previous two

[21] Total trans-shipment volumes are recorded as 29,054 TEU in 2023 increasing to 105,200 TEU in 2024 and down to 91,970 TEU in 2025. Trans-shipped containers are counted twice, once as an import and once as an export. The figures above count only the export component. Of the total growth in trans-shipped TEU (62,920 TEU 2023-2025), half of that growth was export trans-shipments (i.e. an increase of 31,460 TEU).

years. Dry export TEUs decreased by 2% to equal 48,060 between 2023 and 2025 while reefer export containers decreased by 5% to reach 24,940 TEU (for a 3% net decrease of total export TEU to reach 73,000).

The following more detailed data ratios relate to the YE March 2024 year, although it is considered representative of the YE June 2024 period which is applied to (which in turn is considered generally representative of the 2025 financial year as shown in Figure 3.3 above). Port Otago's data shows that 71% of the total full TEUS exported in the YE March 2024 comprised of meat or dairy products.[22] Meat products accounted for 84% of all full reefer TEU exported and dairy products accounted for 65% of all dry/ambient TEU exported.

When measured in TEUs, around 70% of export product that arrived at the Port Chalmers gate (i.e., excluding trans-shipping) arrived by rail – either already containerised (around 62% of all railed export product and almost entirely reefer containers) or in bulk (38% of all railed export product, arriving on curtain-sider rail wagons) and was then packed into containers by Port Otago in their Port Chalmers' warehouses. This is the highest utilisation of rail of any port in New Zealand.

Applied to an annual total of 76,170 export TEU (excluding trans-shipping containers) for the YE June 2024, this is approximately 53,570 TEU arriving by rail and avoiding heavy truck movements through Dunedin's urban area. Railed export product comes from a combination of:

- 61% from producers based south of Dunedin City (a mix of containerised and bulk) (indicatively 32,690 TEU).
- 13% from producers based north of Dunedin City (all containerised) (indicatively 6,830 TEU).
- 26% indirectly from the Fonterra Taieri Distribution Centre in Mosgiel (all containerised) (indicatively 14,050 TEU).

The remaining 30% of goods that make up container exports at Port Chalmers (excluding trans-shipping containers) arrives by truck. Indicatively this equates to 22,610 TEU in the YE June 2024. Most (72%) of this trucked export product arrives at Port Chalmers already containerised, with the balance arriving by truck for packing by Port Otago in its Port Chalmers' warehouses. The latter includes wood products from the Pan Pac factory in Milburn south of Dunedin.

[22] Wood products accounted for approximately 14% of total full export TUE.

Trucked export product therefore has the following spatial breakdown (adjusted to YE June 2024):

- 27% from south[23] of Dunedin City (a mix of containerised and bulk) (indicatively 6,100 TEU).
- 8% from north of Dunedin City (all containerised) (indicatively 1,710 TEU).
- 65% local (i.e., Dunedin City) (indicatively 14,800 TEU)

An estimated 23% of trucked export TEUs that arrive already containerised is packed outside of Dunedin City (3,760 TEUs), but the majority of it (77% or 12,620 TEUs) is packed by 3PL service providers with warehouses in either Mosgiel or Dunedin.

At indicatively 22,610 TEUs heading to Port Chalmers for export in the YE June 2024 by truck, this would require **an estimated 10,480 heavy truck movements (one way) passing through some (or all) of Dunedin's urban area** on route to Port Chalmers.[24] This excludes the truck movements (one way) that brought the bulk product to those local 3PL warehouses based in Central Dunedin and the movement of empty containers also to those warehouses (and warehouses in Mosgiel). This is discussed further in Section 4.

3.1.3 Import Container Activity

This section relies on Port Otago's container movement data for Port Chalmers, comparing the last three financial years (YE June). Based on additional data provided by Port Otago (YE March 2024), the import container activity can be examined through a transport lens, as this provides the relevant context against which the impact of the Inland Port can be measured.

Full Container Imports

Figure 3 4 shows annual full container (TEU) imports for Port Chalmers over the last three years, including the mix of dry/ambient and reefer containers. This data captures only imports released from the port gates by road or rail and excludes trans-shipped import containers that arrive from overseas ports at Port Chalmers but leave again for other New Zealand ports.

Over the 2023-2025 period, the mix of dry/ambient and reefer full import TEUs has been relatively stable at around 98% of the total being dry/ambient (Figure 3.4). The YE June 2025 has seen a minor increase in full imported TEUs to Port Chalmers over the previous two years. Dry import TEUs increased by 4% to equal 14,880 in 2025 while reefer import containers

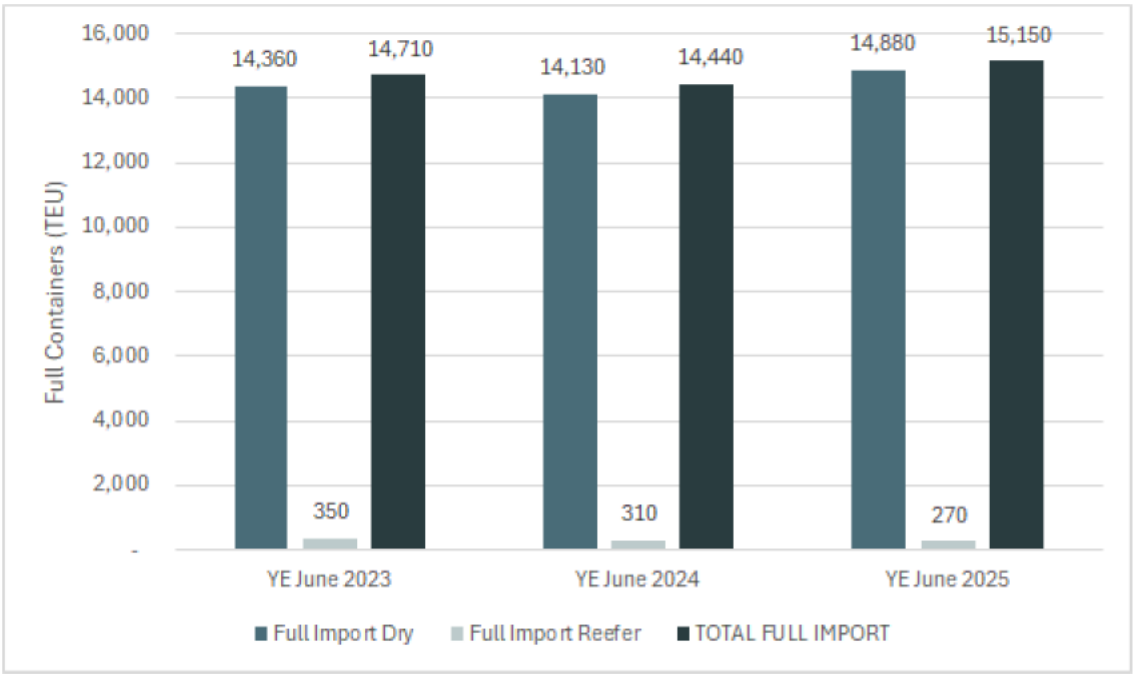
[23] Includes Milburn (Pan Pac).

[24] Based on 16,380 containerised TEU on container skel truck (2 TEU per load equals 8,190 container skel truck movements) and 6,230 TEU on curtain-sider trucks (2.72 TEU per load equals 2,290 curtain-sider truck movements).

decreased by 23% to reach 2700 TEUs (for a 3% net increase of total import TEUs to reach 15,150).

Port Otago has indicated (based on YE March 2024 data) that around 10% of these full imported containers (1,440 TEUs when adjusted to YE June 2024) departs the Port on rail. Approximately 500 TEUs are taken to Port Otago's warehousing in Port Chalmers where they are de-vanned and then predominantly trucked to customers throughout the Southern Region. Indicatively this generates 184 (one-way) curtain-sider truck movements in the YE June 2024, passing through some or all of urban Dunedin. The remaining ,500 full imported TEUs are collected by container skel truck at Port Chalmers by 3PL service providers (and some freight companies) to be devanned elsewhere.[25] This indicatively generates 6,250 container skel truck movements in the YE June 2024, passing through some or all of urban Dunedin (depending on the location of the 3PL warehouses). Those un-packed goods are then transferred to curtain sider trucks for delivery to customers (i.e. a further 4,600 (one-way) curtain-sider truck movements, the majority of which will also transit through some or all of the Dunedin urban area) .[26]

Figure 3.4 – Port Chalmers Full Container Imports YE June 2023-2025 by Dry/Ambient and Reefer



[25] Section 4 identifies the key players in the Dunedin City 3PL sector.

[26] Some general freight companies may also collect full imported containers and deliver these directly to customers.

Once de vanned (whether at Port Chalmers or elsewhere), empty containers need to be returned to a container depot within 7 days[27] of being unloaded from the ship. Port Otago facilitates this activity on behalf of the shipping companies.[28] This means all containers need to make their way back to either Port Chalmers or the Strathallan Street container depots (discussed further in Section 3.2) where they are either cleaned or serviced and then stored ready for hire. The only exception is when a container can be 'flipped' or repacked with general (non-food) goods. In such circumstances, the 3PL service provider can notify the shipping company that it is de-hiring and re-hiring the same container.

The return of emptied import containers generates additional truck movements (assumed at a rate of 2 TEUs per container skel truck)[29] within urban Dunedin.

Empty Container Imports

As Port Otago's container activity is heavily weighted to exports, there is a significant imbalance in container stock (Figure 3.5). For every 100 full export TEUs that pass through Port Chalmers per annum (excluding trans-shipped containers that arrive and depart again from the container terminal), there is around 19-20 full TEUs imported (YE June 2024) .

[27] This time period can vary.

[28] All hiring of containers is via the shipping companies. Port Otago cannot release an empty container until approved to do so by the shipping companies. Businesses are charged for shipping containers on a daily basis. Charging starts when the empty container leaves the depot to being returned to a depot. Hence, the disincentive to hold on to empty containers for any longer than needed.

[29] This report has assumed that all truck movements carry 2 TEU (i.e. operate at maximum efficiency). It is acknowledged that this may not always be practical, and trucks may also be transporting just 1 TEU. Truck movements quantified in this report may therefore be conservative.

Figure 3.5 – Port Chalmers Full Container Imports and Exports and Empty TEUs (All Types) YE June 2023-2025

To manage export customer demand for empty containers, Port Otago imported 70,200 TEUs of empty containers in the YE June 2024 to help maintain supply/availability of empty containers for hire within the Southern Region 3 5).

Based on full export TEUs, an estimated 26,360 empty TEUs are required by Port Otago for their warehouse packing at Port Chalmers throughout the year (and so do not require any transport other than within the Port). A further 14,050 empty TEUs are required throughout the year at the Fonterra Taieri Distribution Centre (which can be railed due to that facility's rail siding[30]). An estimated 12,580 empty TEUs are required throughout the year at other Dunedin 3PL warehouses (in the Dunedin urban area or Mosgiel). The rest are required north or south of Dunedin (i.e., at processing plants that do their own packing for export). This is indicatively 19,380 empty TEUs (all of which can be sent via return rail)

The majority of the empty containers needing to be shipped into Port are food grade. These tend to arrive in New Zealand already serviced and available for hire (this servicing may have been done in large depots in Australia for example) or will need to be serviced by Port Otago at one of their service depots (discussed below).

[30] Once serviced at the Port Chalmers depots.

Storage of empty containers is a critical issue for Port Otago and the movement of empty containers – for servicing, storage and hire all generate additional vehicle movements within or through urban Dunedin, by truck and by rail. This is discussed further below.

3.2 Port Otago's Container Operation Sites

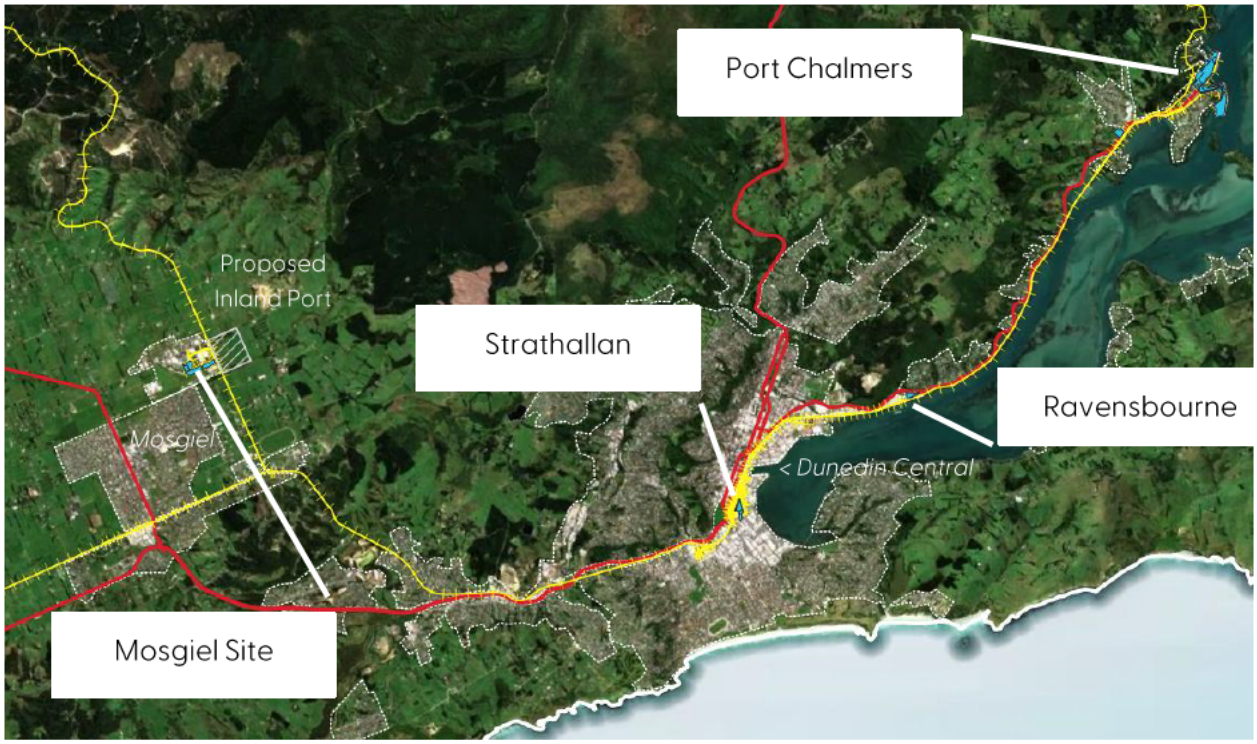
As discussed above, Port Otago's direct role in container-based supply chains (export and import) is comprised of:

- container terminal (including trans shipping) operation at Port Chalmers,
- container depot activity. I.e., receiving, servicing, and storing empty containers on behalf of the shipping lines who own the container stock, and
- third party logistics ("3PL") services offered from its warehouse facilities at both Port Chalmers and at nearby Sawyers Bay[31]. This logistics operation is discussed in more detail in Section 4.

Initially, Port Otago's container terminal and container depot (and warehousing) operations were all located in Port Chalmers, but as container trade grew and space became more limited at Port Chalmers, a second container depot in central Dunedin was added on Strathallan Street. More recently, as the Strathallan Depot has reached capacity, a third container depot has been added to increase capacity (Ravensbourne). These sites are mapped in Figure 3.6.

[redacted]

Figure 3.6 – Map of Port Otago Container Business Operational Sites in Dunedin



Included in the map is a vacant site purchased some years ago by Port Otago in Mosgiel (now owned by SLPL), which was earmarked for an inland container terminal and depot but not pursued for that purpose to date. The location of the Inland Port is included for context in Figure 3 6 [32] Each of Port Otago's container sites are discussed in more detail below.

3.2.1 Port Chalmers

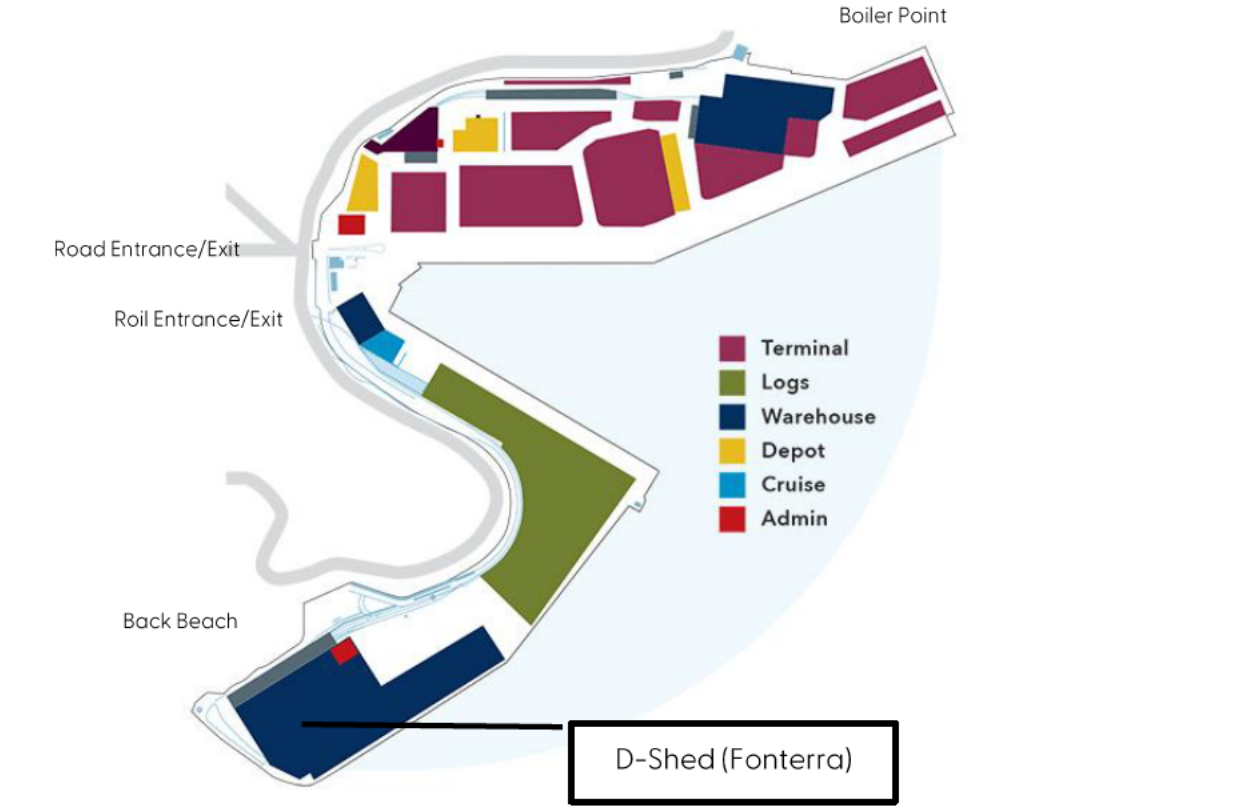
Port Chalmers has evolved over the past 150 years in response to changes in shipping and export activity in the Southern Region.[33] An ability to be responsive to changes in demand and supply will be equally important for Port Otago in the future if it is to remain resilient and competitive.

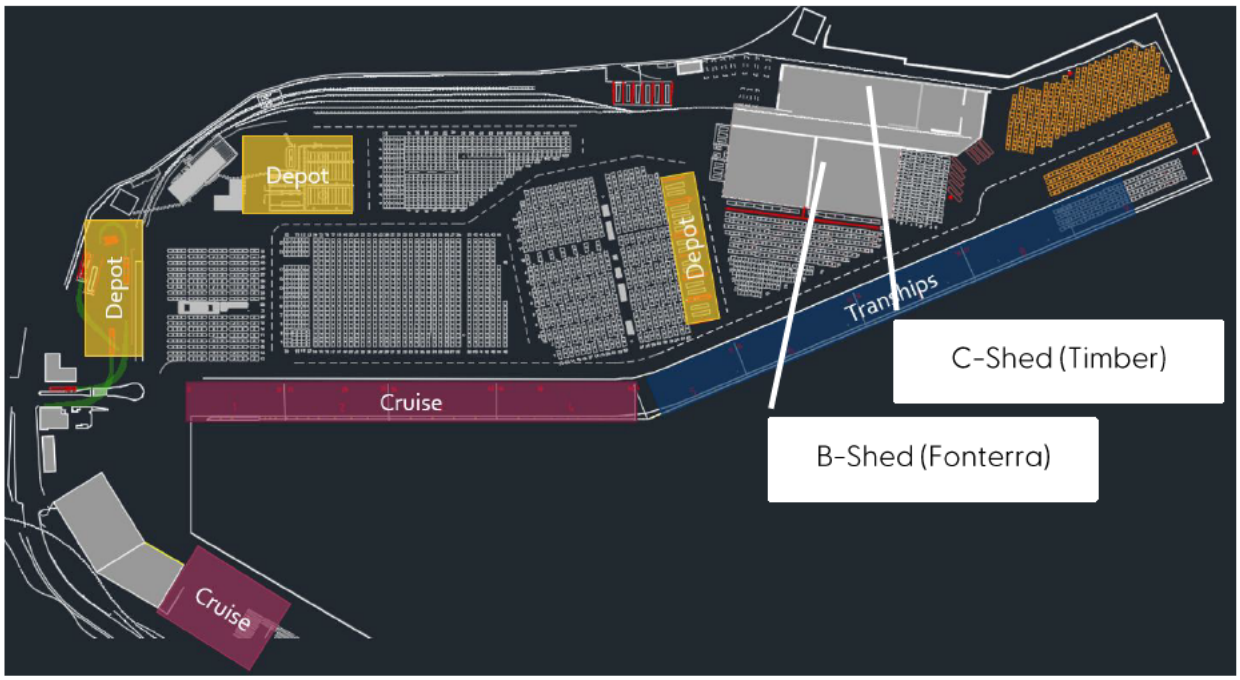
Today, Port Chalmers is one of New Zealand's two deepest container ports and can service the largest container ships visiting New Zealand. This has contributed to Port Chalmers recently being designated as a 'hub port for Maersk Shipping.[34] This means that, along with the Port of Tauranga, it provides trans shipping services. Export containers from other smaller ports in the South Island (i.e. Nelson, Prime Port, South Port) are brought to Port Chalmers by coastal shipping. These are off loaded and stored on the wharves before being re loaded

[32] Labelled Logistics Park.
[33] This includes the major shift from sheep farming to dairy farming in the 1990s and 2000s.
[34] The emergence of hub ports for global shipping started around 5 years ago.

onto larger international bound container ships.[35] The hub port status has been a contributing factor in increased total container activity at Port Chalmers recently (discussed above).

Figure 3.7 – Maps of Port Chalmers, Including Warehousing and Container Terminal/Depots





[35] Port Chalmers also provides import trans shipping, but this activity is relatively minor.

Port Chalmers can store more than 7,000 full and empty TEU and has one of the highest counts of reefer plug in points of any New Zealand port, with 1,650. The combined container terminal and container depots at Port Chalmers cover 17.7ha (approx.) (Figure 3 7).

Warehousing space at Port Chalmers totals 63,400sqm, dominated by the substantial 38,000sqm of food grade warehousing (D Shed) contracted and operated by Fonterra at the Back Beach end of the Port. D Shed and B Shed (also contracted by Fonterra but operated by Port Otago) receive dry-dairy product directly by rail from Fonterra's Edendale plant on curtain sider rail wagons. In its role as a 3PL service provider, Port Otago packs the Fonterra product into containers, carries out/organises all the necessary customs checks, and moves the packed containers over to the container terminal to await shipping.

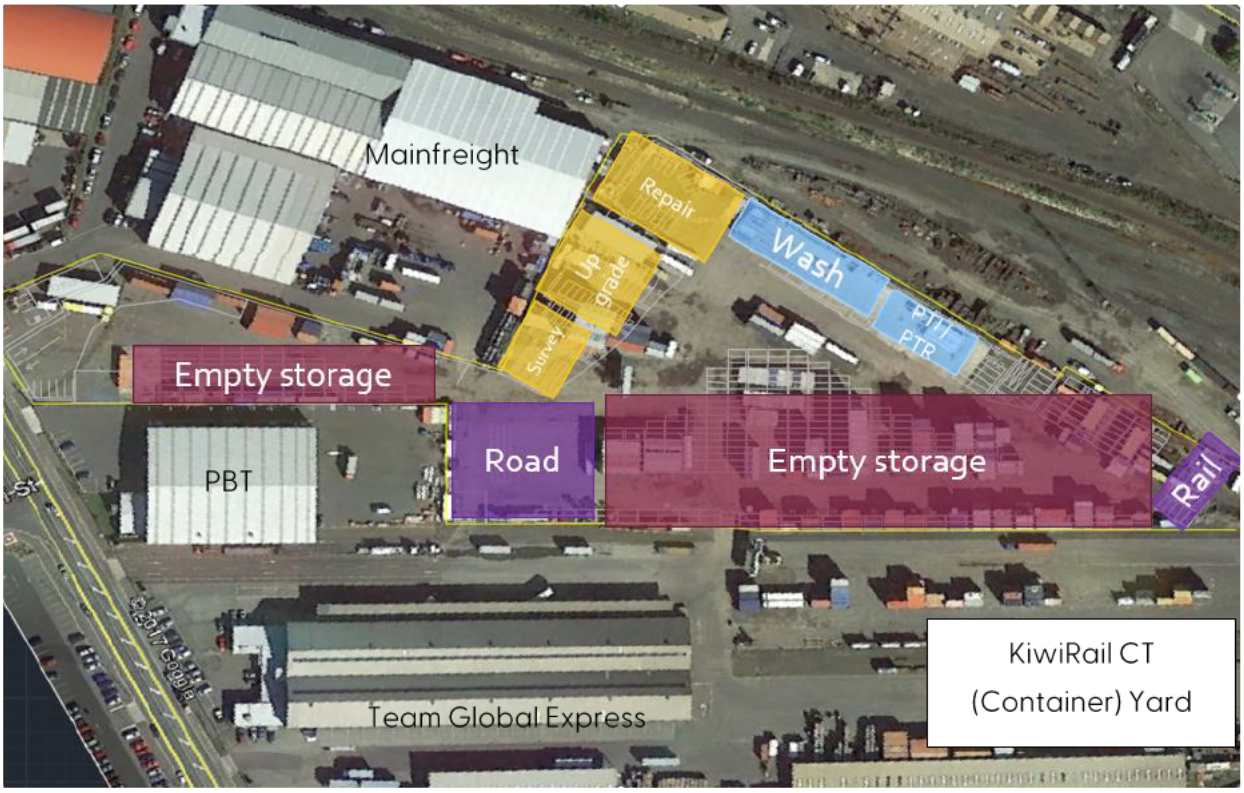
C shed is used by Port Otago to provide a 3PL service for the packing of MDF from Daiken. Port Otago packs the MDF that has arrived by rail in bulk curtain sider wagons. The packed containers are then exported by container vessel.

Port Otago is in the process of transitioning its 4.6ha log storage area at Port Chalmers 3 7) to land near the Dunedin wharves (to consolidate log activity near the Bulk Port). The transition of logs out of Port Chalmers will not create more capacity for container storage. It will however reduce log truck movements to Port Chalmers by up to approximately 105/per day (effectively year round).

3.2.2 Strathallan Street Container Depot (Dunedin Depot)

Also referred to as the Dunedin Depot by Port Otago, this 2.7ha site in Dunedin's central south industrial zone provides critical empty container storage and servicing capacity for Port Otago's container operations. As shown in Figure 3.8, the site has an unusual shape, that is far from the ideal rectangular shape of an efficient container terminal or depot. While close to the rail line, the site does not have its own rail siding.

Figure 3.8 – Aerial Image of the Strathallan (Dunedin) Container Depot



Rail access is provided via the neighbouring KiwiRail CT (container) yard. KiwiRail lifts empty containers off the trains arriving from Port Chalmers and places them over the boundary into the depot (and vice versa if empty containers are needed back at Port Chalmers).

Other neighbours of the Strathallan Depot include MainFreight's Dunedin distribution centre (treated as a 3PL service provider and part of the Dunedin container logistics sector for the purpose of this report), as well as Peter Baker Transport and Team Global Express – both classified as freight companies for the purpose of this report. The site therefore forms part of a freight and logistics cluster on Strathallan Street (where a lot of truck movements are generated. The Strathallan Depot alone generates around 4,000 truck movements per annum). Aside from its rail access, other positive attributes of the Strathallan Depot are its relative proximity to State Highway on/off ramps in central Dunedin. It is relatively central to existing container logistics providers in central Dunedin (including Icon Logistics discussed further in Section 4).

Strathallan has capacity to store 1,500TEUs. It receives empty containers from other 3PL service providers (such as Icon Logistics) and from the Port Chalmers depot(s). It has been operating at capacity for several years.

One driver for the Inland Port is the termination of Port Otago's lease of the Strathallan site in 2030. With no ability to renew, and no other vacant industrial land readily available (with or without rail access) in Dunedin City's industrial zones, container depot activity will need to shift from 2030 to a combination of the Ravensbourne Depot (discussed below) and the site the Port originally purchased in Mosgiel (discussed below). The optimal outcome for Port Otago is to transfer its container activity occurring at Strathallan (and Ravensbourne) to the Inland Port prior to the lease expiring in 2030.

3.2.3 Ravensbourne Container Depot

Ravensbourne is Port Otago's newest empty container depot. It is 2.0ha in size and has total capacity for approximately 1,000 TEUs. It is located on vacant land adjacent to the Ravensdown Fertiliser Plant[36] and wharf (Figure 3.9). As discussed above, this vacant site was necessary to address capacity shortages at Port Chalmers and Strathallan (i.e. it provides over-flow storage for already serviced (i.e., available for hire) containers). Unlike Strathallan and Port Chalmers, no servicing occurs at this depot and therefore it does not receive de-vanned containers from 3PL service provides (or other customers).

Figure 3.9 – Aerial Image of the Ravensbourne Container Depot

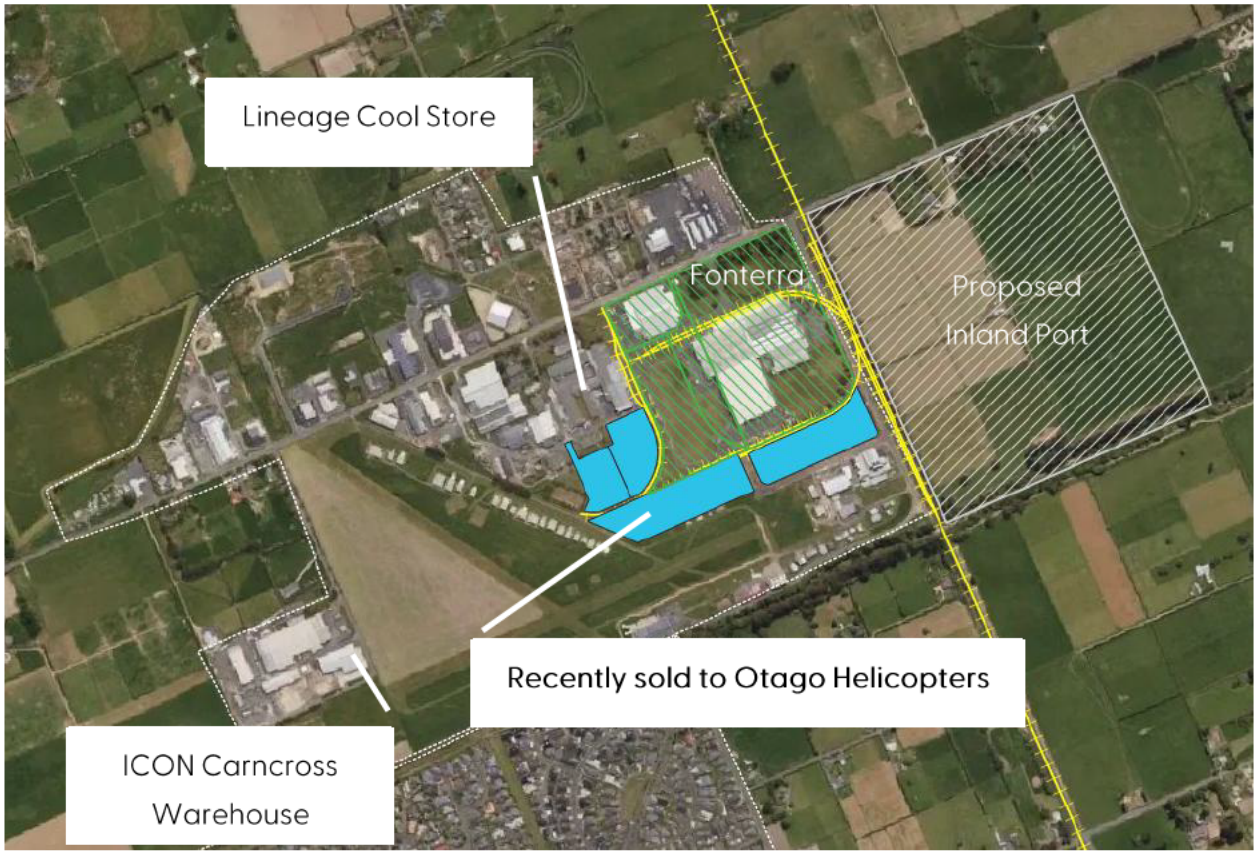
[36] The closure of the Ravensdown Fertiliser plant has recently been announced.

The site is well located relative to State Highway 88 between central Dunedin and Port Chalmers. The site is adjacent to the rail line, but no rail access/siding is available. All containers arriving and leaving this depot are therefore transported by truck. If the Inland Port is established, Port Otago will decommission this site as it has only been established as a temporary depot solution.

3.2.4 Mosgiel Site

Purchased in 2005, this 7.6ha site (Figure 3.10) was originally ear-marked as a future inland container port (terminal and depot). While it has the requisite rail siding infrastructure (owned and operated by KiwiRail) and is now close to existing Port Otago customers (including Fonterra's Taieri Distribution Centre, Lineage Coolstore and Icon's Carncross Street Warehouse) the 'L' shape of the site does not meet the modern needs of an efficient container terminal/depot (with a rectangular or square shape being optimal with a rail siding on one side). In this case, the side opposite the rail siding very closely borders the aerodrome runway. The proximity to the aerodrome also limits the height at which containers could be stacked on the site.

Figure 3.10 – Aerial Image of Southern Link Property Limited's Vacant Mosgiel Site (Blue Parcels)



In the absence of the Inland Port, Port Otago may be forced to utilise this land in the short-medium term (tied to the lease ending at Strathallan in 2030) given the absence of vacant industrial zoned land elsewhere in Dunedin City (with or without rail siding infrastructure). However, the si e is considered too small now to provide an effective medium-long term growth/buffering solution for Port Otago's projected container trade (and the bottom left parcel shown in Figure 3.10 has since been sold to Otago Helicopters). The remainder of the land, separated by Otago Helicopters Site, has recently been sold to SLPL (the joint venture between Port Otago and Dynes Transport Group) and is being used in the interim as the Dukes Road West Yard. It is operated by Icon Logistics to facilitate container activity for the Lineage Cool Store.[37]

3.2.5 Summary of Transport Links

Figure 3.11 summarises the flow of empty containers between Port Chalmers and its two operational container depots.[38]

When required, empty containers are transported by road and rail between Port Chalmers and Strathallan (i.e. the rail access does not mean that all empty containers are transported by rail). The majority of empty containers serviced and stored at Strathallan Street are however those received back from Dunedin's other 3PL service provides (i.e. de-vanned import containers).[39]

Empty containers are only trucked to Ravensbourne from Port Chalmers or Strathallan. Ideally there is no movement of serviced empty containers from Ravensbourne to Strathallan. Occasionally empty containers are transported from the two Dunedin depots back to Port Chalmers if the Port Chalmers depot is running low.

While the movement of empty containers by Port Otago using rail is considered efficient and contributes to the productivity of container operations, the movement of empty containers by truck – all of which is occurring within the main Dunedin urban area - detracts from the efficiency and productivity of Port Otago's overall container trade, contributes to congestion on urban roads and road degradation, and increases GHG emissions and fuel consumption relative to the rail alternative.

[37] This recent change in use noted in the report) has occurred after the detailed analysis in the report was completed. As such, it may create minor inconsistencies with any other references to Lineage Logistic ' containing movement pathways in later sections This is not material to report findings.

[38] To clarify, Figure 3.11 does not show the flow of empty containers to and from these depots to customers or other 3PL service providers. Those movements are in addition to those mapped, with examples mapped in Section 4.

[39] This circulation of 'import full, empty, export full' containers within Dunedin Central is not shown Figure 3.12.

Figure 3.11 – Empty Container Flows Between Port Otago Depots

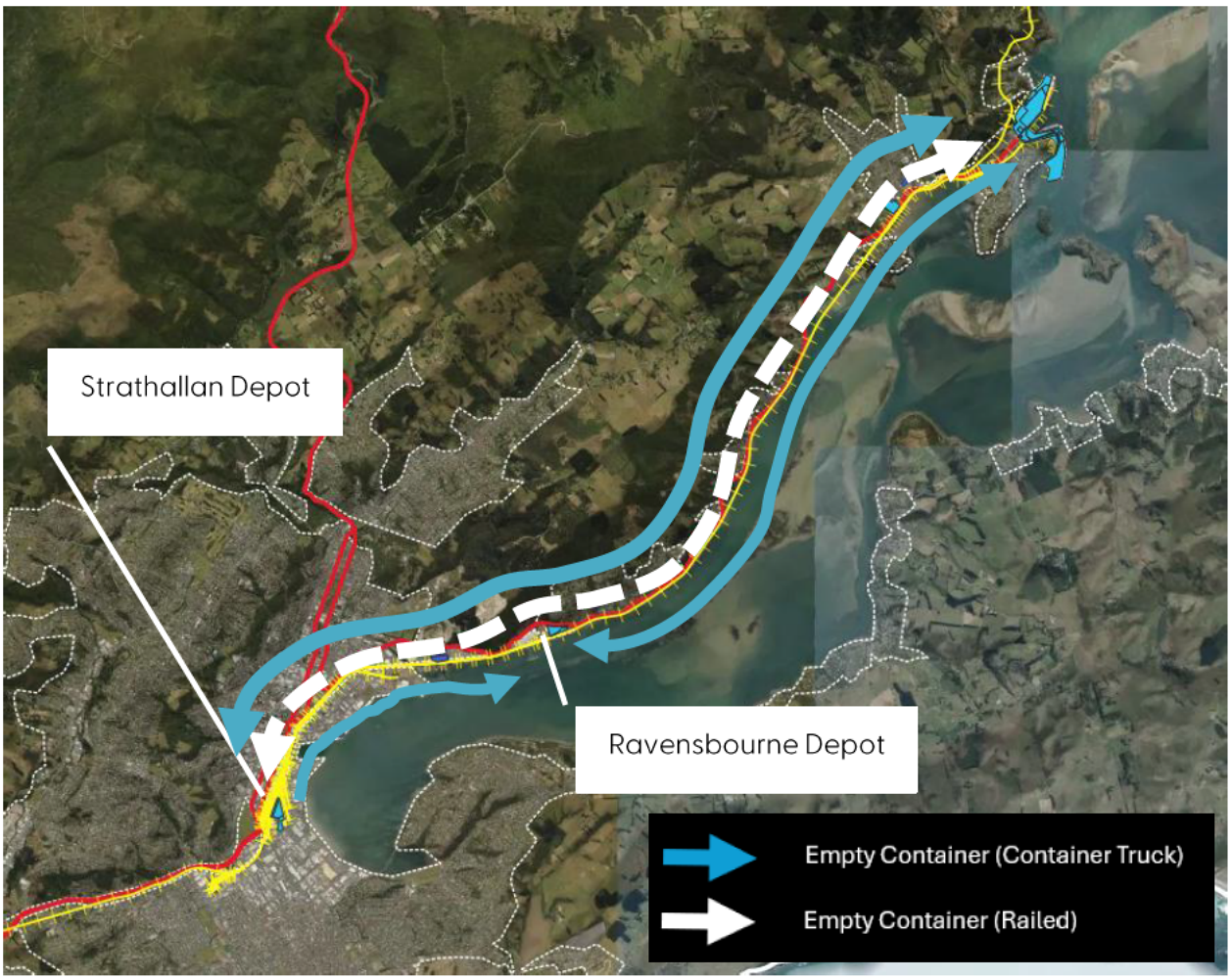


Table 3.1 provides the road and rail distance between Port Otago's container facilities (including the SLPL facility). As noted, only Port Chalmers, Strathallan and the Mosgiel site are rail-connected. Further, the distance between the Mosgiel site and Strathallan are not shown in Table 3.1 because the Mosgiel site is only likely to be used when the Strathallan Street lease expires (and *if* the Inland Port is not operational).

Table 3.1 – Distance Matrix by Mode Between Port Otago's (Incl. JV) Container Facilities

	Road Distance (km)				Rail Distance (km)			
Origin/ Destination	To Port Chalmers	To Strath-allan	To Ravens-bourne	To Mosgiel*	To Port Chalmers	To Strath-allan **	To Ravens-bourne	To Mosgiel*
From Port Chalmers		14.4km	9.0km	31.3km***		14.4km	N/A	27.6km
From Strathallan	14.4km		5.4km		14.4km		N/A	
From Ravens-bourne	9.0km	N/A		22.3km ***	N/A	N/A		N/A
From Mosgiel *	31.3km***		22.3km		27.6km		N/A	

** Currently being used by Icon as the Dukes Road West Yard – could be used to help replace capacity at Strathallan if the Inland Port is not established at all (or not established before Strathallan's lease expires).*

*** Rail access courtesy of KiwiRail yard on shared boundary. *** Via State Highway 1.*

Note, the rail distance between Mosgiel and Port Chalmers shown here would be the same for the Inland Port if established (28km).

Table 3.1 shows that from a distance perspective, there is no difference between road and rail between Port Chalmers and Strathallan. If the Mosgiel site was utilised instead of Strathallan, then the road distance from Port Chalmers is more than double. The rail distance is slightly less than the road distance, and while the rail distance to Mosgiel is further than Strathallan from Port Chalmers, the additional distance is relatively less important on rail because the payload of shuttle trains is substantial relative to trucks and the costs and GHG emissions per tonne-km are also lower (among other benefits).

3.3 Port Chalmers Operational Constraints

Port Otago is operating profitably, and total export container activity has increased recently (due mainly to trans-shipping activity), however, Port Otago's container trade operations are not as efficient or productive as they could be. This is despite Port Chalmers having the highest share of export goods arriving by rail of any New Zealand port (estimated at 70% for the YE June 2024). Critically, continued growth in Port Otago's container trade is not sustainable over the medium and long-term if the identified operational constraints are not addressed.

The following summarises key constraints facing Port Otago's container operations:

- Port Otago has made a commitment to iwi and the community that it will not seek any further reclamations of the harbour to increase the area of Port Chalmers to provide for growth. This decision plays a key part in their social licence to operate.
- The land (including existing reclaimed land) available at Port Chalmers is narrow in shape which restricts the container terminal's scale and operational use. A master planning exercise carried out in 2017 resulted in the advice for Port Otago to develop an inland port to improve container operations and cater for growth off-site (and move log activity to the Dunedin Wharves).
- The container terminal at Port Chalmers can store up to 7,000 containers, including 1,650 reefers. It has reached near this capacity, with adverse impacts on productivity within the terminal (i.e., containers are often needing to be moved or restacked multiple times at the terminal before ships arrive – double handling).
- Empty container arrivals congest the wharves and while some empty containers are required at Port Chalmers to meet Fonterra's D Shed container packing and Port Otago's 3PL activities (carried out within its Port Chalmers (and Sawyers Bay) warehouses), storing empty containers at Port Chalmers takes up space better used for full containers.
- Servicing of empty containers at Port Chalmers takes up space better used for full containers.
- Trans shipping exports are a profitable activity that will remain as a key service offering. Trans-shipping requires containers to be stored at Port Chalmers before being re loaded on another vessel,[40] this reduces capacity for direct export containers and for other activity. While capacity issues caused by trans-shipping have been managed to date, this has only been possible by encroaching on log storage and establishing the Ravensbourne depot. Such responses can no longer be replicated easily.
- Global shipping schedule reliability ha decreased significantly in recent years and average around 65% (2024) arriving on time (compared to 83.5% around 2019 for example). While Covid 19 was a key disruptor to shipping reliability, reducing shipping reliability globally to around 30% at that time, reliability has continued to improve but shipping schedule reliability can still be an issue, including as a result of climate change

[40] This is a customs requirement.

impacts.[41] Delays in ship arrivals requires ports to have much greater container terminal storage capacity for export containers (referred to as buffering capacity). The container terminal at Port Chalmers has no meaningful buffering capacity to deal with ship delays and as a result, efficiency of the container terminal has started to decline – particularly in peak season.[42]

- Export customers/3PL service providers are sometimes unable to deliver containers to Port Chalmers because the terminal is full with the next voyage's export loadings.[43] This has ramifications back through the supply chain, including for the food processors themselves.[44] It puts pressure on 3PL providers and processors to store the full containers until space is available at Port Chalmers, delay packing of containers (which puts pressure on warehousing space), or worst case, slow/delay production (particularly for short-shelf life chilled products).[45] When this occurs, it reflects poorly on Port Otago's service reputation and can lead to leakage of export demand in peak season to other ports creating opportunity costs for Otago Region's employment and GDP.

- The secondary impact of unexpected shipping delays that is critical at Port Otago is the delays in receiving empty container imports. Port Otago have stated that shipping lines have requested them to hold more than the current empty containers capacity for use within the Southern Region at any one time (and particularly during peak export periods). The current total capacity of 4,000 containers could almost be doubled to 8,000 to make the supply chains more resilient to both shipping delays and supply chain demand changes. Additional capacity is therefore needed to buffer the storage of empty containers.

- Port Otago could handle more ship arrivals but cannot realise this opportunity without a more efficient export and import container supply chain that is also more resilient to disruptions (including natural hazard events) and unexpected delays.

- The lease on the Strathallan depot terminates in 2030 with no right or renewal.

[41] Source: New Zealand Ports and Freight Yearbook 2024, Deloitte Access Economics, Port Otago.
[42] Port Otago can utilise its two other land-side depots in such situations (to store full containers) until they too are full. As discussed, the Strathallan Depot is already operating at full capacity so offers no meaningful back up for full container storage.
[43] In such circumstances, Port Otago physically closes the Port so that no new containers can be delivered.
[44] While the Strathallan Depot is a transitional facility, it has no real capacity to meaningfully assist with full container storage when the Port Chalmers Container Terminal is full.
[45] As discussed later in Section 4, the 3PL sector in Dunedin is also constrained in terms of full container storage and warehousing capacity so this compounds the issues facing Port Chalmers.

- The Ravensbourne depot provides additional capacity for empty serviced container storage but is wholly truck dependent which drives up costs and decreases productivity.
- The Mosgiel sites adjacent to the Fonterra Taieri Distribution Centre and Lineage Cool Store are not fit for a depot and logistics hub of any significant scale and would only provide for short-medium term servicing.

3.4 Port Chalmers Optimal Future Container Operation

Port Otago's aim is for Port Chalmers to be the port of choice for exporters within the Southern Region and to reduce leakage of export freight from Otago and grow import container trade. Key moves that Port Otago considers will improve productivity, efficiency and resilience container operations at Port Chalmers, and enable sustainable growth, include (but are not limited to):

- Relocating non-Fonterra warehousing (and 3PL services associated with those warehouses) away from the Port Chalmers (freeing up valuable land within the Port if sheds are removed but also reducing the associated empty container servicing/storage area required for that warehouse activity). This will require new warehousing capacity/land (with rail access) to be found elsewhere.
- Closer to 100% of export product arriving by rail (and already containerised) (up from 70% currently). This net increase will require a fundamental restructure of the 3PL service sector in Dunedin to accommodate a mode shift to rail. It will require export goods warehousing to have rail access (something that does not exist in Dunedin City). For its part in achieving this goal, Port Otago is currently investing in a $13.5 million upgrade of its rail sidings at Port Chalmers to replace an end of life asset and maintain the high level of rail capacity.
- Closer to 100% of full containers imported to leave Port Chalmers by rail (up from 10% currently). This net increase will require import goods warehousing to have rail access (something that does not exist in Dunedin City).
- The majority of empty containers imported (excluding reefers which will be retained at the Port) leave Port Chalmers by rail. This will free up depot capacity at Port Chalmers by removing 30-40% of current dry/ambient empty container servicing. This in turn will require all container depot capacity to have rail access (something that only partially exists today, and that will not exist when the Strathallan lease expires).

- Port Chalmers attracts new export and import customers, growing its market share and economic activity in Otago Region. This will require demonstrable improvements in the supply chain efficiency, productivity and resilience of services able to be offered by Port Otago and its affiliated 3PL service providers in Dunedin to be more competitive.

These required changes are significant and transformative in economic terms. They would impact directly on multiple actors in the export and import container trade: Port Otago, the 3PL service sector, export and import customers, and Kiwi Rail. It would require a coordinated and strategic restructure of supply chains, including changes in the distribution of supply chain activity on the ground. Such changes (including land use changes) would require significant investment.

The potential to realise these changes (through the Inland Port), and the economic benefits that will flow directly and indirectly from them, are discussed later in this report.

4 Dunedin's Logistics Sector

4.1 The Logistics Sector's Key Economic Role

Logistics companies, specifically 3PL service providers, play a key role in container focussed export and import supply chains. At a high-level, demand for 3PL services is driven by the following key factors:

- For exporters like food processors, investing in on-site warehousing is a significant capital investment (with associated operational costs), particularly when that space is not utilised consistently. It is more cost efficient to outsource warehousing (including on an as-needed basis)[46].
- For many exporters (i.e. food processing plants), their site is not adjoining a rail line. Even when adjoining a rail line, few have a rail siding. Rail sidings are a significant capital investment for construction and maintenance. For exporters highly dependent on road transport to move product, outsourcing that transport function is more efficient and productive. While freight and logistics companies provide transport services, logistics companies offer wider benefits (discussed above and below) than pure freight companies.
- It is more efficient and productive to transport import/export product over long distances on a curtain-sider truck or rail wagon than in a container. This is because approximately 34 tonnes of un-containerised product can be loaded onto a curtain-sider truck,[47] but approximately 25 tonnes of containerised product can be loaded onto a container skel truck (carrying 2 TEUs once the weight of the container is included).[48] Trucking 1,000 tonnes of product would therefore take around 30 curtain-sider truck movements, compared to around 40 truck movements on a container skel truck once the product is containerised. While some processors pack their product into containers at the processing plant (particularly when they have a rail siding), many

[46] It is also common for large exporters like Fonterra to contact warehouse space (which may translate to the whole warehouse) just as a contingency. In some seasons, it may not be used at all.
[47] The legal limit of a 9 axle curtain-sider on road is 36 metric tonnes.
[48] The legal limit of quad skel 8 axle truck is 32 metric tonnes (including container). Payloads have been supplied by Dynes Transport Group.

will use a 3PL service provider[49] to pack their product into containers closer to the Port (to minimise the less efficient transport stage).

- Shipping lines only release containers for export a certain number of days before ship arrival to allow for packing time. To reduce costs of importing and exporting, it is more efficient to hire and pack product into containers as close to the Port as practicable. Similarly, it is more efficient to de-van containers as close to the Port (or related empty container depots) as possible to reduce the length of container hire (shipping lines usually allow for 7 days for de-vanning before they start charging additional costs). This creates demand for logistics facilities and services in locations accessible to the Port and/or container depots rather than accessible to the point of manufacturing/processing.

- Exporting and importing requires biosecurity and customs services. These inspections are typically tied to the packing or de-vanning of shipping containers. It is more cost efficient to outsource these inspections to a third party (often because they need certified facilities in order to carry out the inspections). These services are provided more efficiently (by MPI or Customs) when demand is concentrated near the Port (rather than dispersed according to the location of manufacturing/production).

- When things go wrong in the supply chain, such as delayed ships or natural hazard events that close or limit rail or road transport, exporters in particular, need to be agile. Part of the service provided by 3PL operators is to manage supply chain risks. Using logistics services to export or import product provides a degree of 'insurance' against unexpected events, providing the logistics infrastructure is designed to manage such demand.[50]

It is the combination of these supply and demand factors that sustains a 3PL sector. For some exporters/importers, all of the above factors will be relevant to their supply chain and their decision to utilise a 3PL provider. For others, only a few of the above reasons will apply. By way of example in the Southern Region:

- Fonterra's Edendale factory is located on the rail line and has a rail siding. It is still more efficient and productive to rail dry-dairy product for export in curtain-sider rail wagons directly to Port Chalmers. However, they use Port Otago (in its role as a 3PL service provider) to warehouse that product and pack it into containers (with

[49] In the case of Fonterra, they operate their own warehousing and distribution centre in Mosgiel, providing the same function as a 3PL service provide, albeit one that is rail enabled.

[50] Currently, the consensus view of Port Otago and Icon Logistics is that there is not enough buffering capacity for dairy warehousing (in particular) or full container storage in Dunedin.

associated customs approval services). Some bulk product is also railed to the Taieri Distribution Centre who then pack it into containers and rail it to Port Chalmers.

- Danone Nutricia Dairy Plant is located 21km north west of Balclutha. It has no access to rail. It utilises the services of two 3PL providers (Icon and Port Otago) to move export product to Port Chalmers (via the Danone Warehouse 2km from the Port) and imported product down to Balclutha. Icon provides all the trucking services for palletised product, empty and full container transport. Port Otago provides the warehousing, packing/de-vanning and customs/biosecurity services at their Sawyers Bay warehouse [51]

- Cerebos Gregg's import coffee beans for their central Dunedin factory. They use Icon Logistics to collect their full containers from Port Chalmers, get biosecurity/customs clearance, de van and return the empty containers, store and deliver the coffee to their factory.

The 3PL service sector in Dunedin is a critical interface between inbound and outbound shipping at Port Chalmers, the empty container depots operated by Port Otago, and the Southern Region's export/import businesses. Approximately 35% of export product received at Port Chalmers[52] in the YE March 2024 was not already containerised and required the packing services of 3PL service providers.

Transporting products across the Southern Region outside of urban Dunedin will likely remain most efficient and productive on curtain sider trucks or rail wagons. That aside, the Dunedin logistics sector is highly truck dependent for services provided from within Dunedin's urban area (for reasons discussed further below). It is precisely this highly inefficient and unproductive road transport pattern (which creates a range of externality effects on the wider community) that the Inland Port seeks to address by reducing truck movements in favour of more efficient and productive rail transport of containers through the Dunedin urban area.

4.2 Key Container Logistics Operators and Facilities

Savvy has identified a small number of 3PL service providers that make up the container related logistics sector in Dunedin City.[53] These, and their key facilities, are summarised in Table 4.1 and mapped in Figure 4.1.

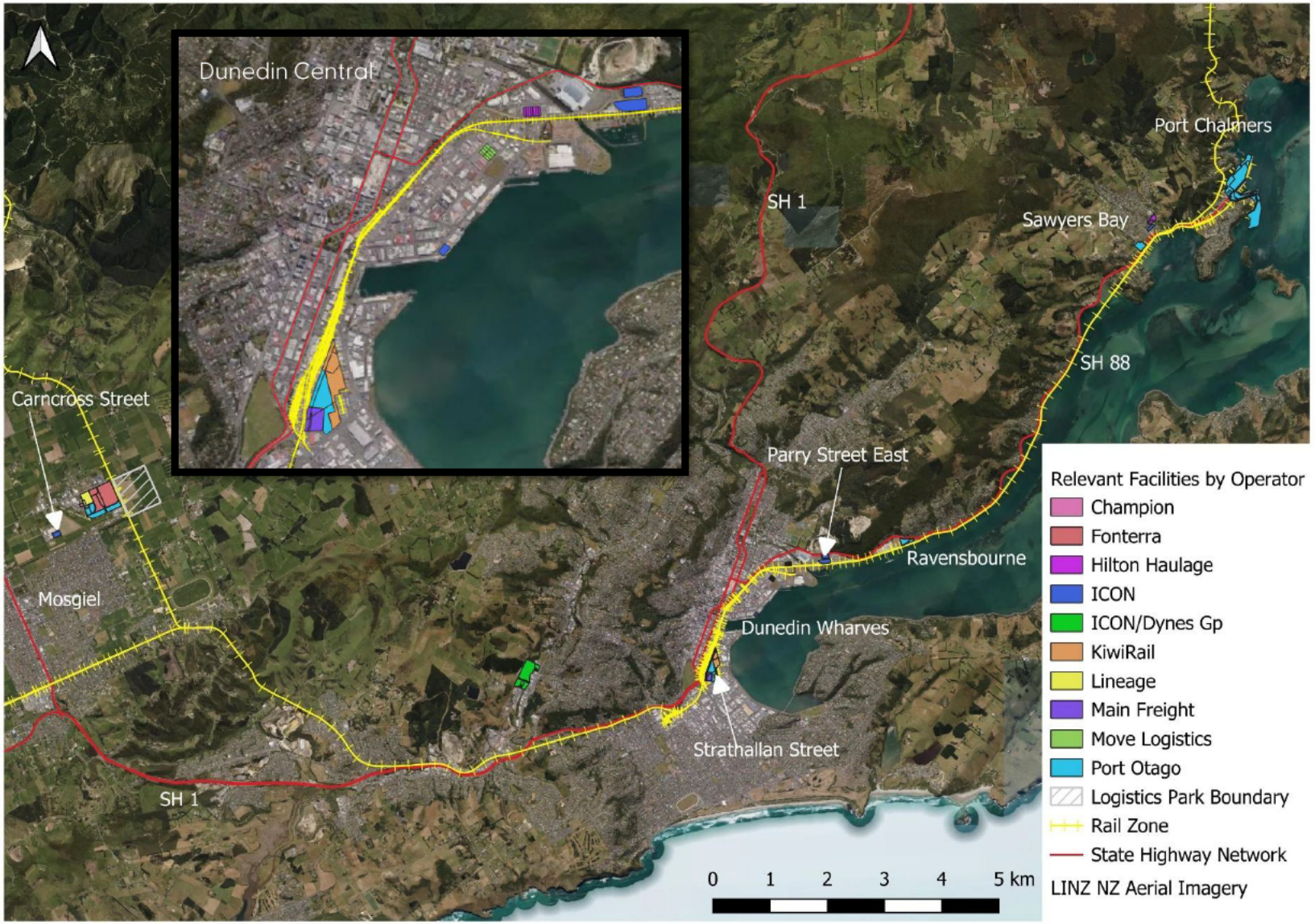
[51] Refer Section 7.3.1 for more detail on the Danone Nutricia export supply chain.
[52] Receipts at the gate (i.e., excluding trans-shipping).
[53] This list may not be comprehensive.

Table 4.1 – Key 3PL Operators (Container Related Trade) in Dunedin City

Company	Key Facilities (directly operated)	Facility Type	Location
Port Otago (in its 3PL role)	B Shed C Shed Danone	Warehouse Warehouse Warehouse	Port Chalmers Port Chalmers Sawyers Bay
Icon Logistics[54]	88 Parry Street East 95 Parry Street East Sawyers Bay T Shed Carncross Street Donald Street	Warehouse Warehouse & Container Yard Warehouse Warehouse Warehouse Truck Depot	Dunedin Central Dunedin Central Sawyers Bay Dunedin Central Mosgiel Kaikorai Valley
Hilton Haulage	Duke Street Dunedin Warehouse	Warehouse Warehouse	Sawyers Bay Dunedin Central
MainFreight	Dunedin Distribution	Warehouse & Truck Depot	Dunedin Central
MoveLogistics	Sturdee Street	Warehouse	Dunedin Central
Champion	Mosgiel Warehouse	Warehouse	Mosgiel
Lineage	Silverstream	Warehouse	Mosgiel
Fonterra	D Shed Taieri Distribution	Warehouse Warehouse & Rail Siding & Container Yard	Port Chalmers Mosgiel

[54] A recent change is that Icon Logistics is now also operating from the Dukes Road West Yard (the Joint Venture owned Mosgiel Site). Savvy understands that this may be an interim use of the site while the Inland Port proposal is being determined.

Figure 4.1 – Map of Key Logistics Facilities in Dunedin by Operator



Key observation of the Dunedin Logistics sector are:

- Warehousing (including cool storage) is spread across four locations (Port Chalmers, Sawyers Bay, Dunedin Central and Mosgiel). The dispersed nature of the sector has been driven by both incremental growth in demand for warehousing combined with an industrial land market that has lacked any material vacant land capacity in recent years, or vacancies that support healthy rates of churn and redevelopment. Icon Logistics have stated that "*you have to take whatever you can get*" and this has meant that opportunities to agglomerate warehousing are very limited and results in warehouse capacity being dispersed.
- Only the warehousing at Port Chalmers and one other warehouse (Fonterra's Taieri Distribution Centre) has a rail siding. This means that all other warehouses are dependent on truck transport for the movement of empty containers (sourced from container depots) and the movement of full containers to or from Port Chalmers, and through Dunedin's main urban area.

The following report sections focus specifically on the operations of Icon Logistics (joint proponents (via Dynes Trucking Group) of the Inland Port with Port Otago), who are the major supplier of 3PL services in Dunedin and the Southern Region after Port Otago (i.e. they have the second largest market share of services).

4.3 Icon Logistics

4.3.1 Services Provided

The following provides a brief overview only, as further details is available on Icon's website.[55] As a 3PL service provider, Icon offers a one stop shop logistics service Their primary service is handling and transporting containers, but they are now significantly involved in the provision of secure storage and warehousing. General cartage is Icon's third main service area. Icon operates throughout the South Island, but primarily within the Southern Region.

In terms of container logistics, Icon offers tracking via access to Port Otago's container tracking system. They can arrange Ministry for Primary Industries (MPI) clearance for imported goods, de vanning, wash and fumigation. Icon's fully covered, high risk MPI facility for washing and fumigation at 88 Parry Street is Dunedin's leading facility of this type. Icon can

[55] https://www.iconlogistics.co.nz/

also store a small number of full containers until imported goods are needed or Port Chalmers is ready to receive them for export.

Warehousing logistics services are based around Icon's 25,000sqm (approx.) fully managed warehousing. This includes food grade and general storage warehousing. All warehousing operated by Icon is secure, fully alarmed, monitored and with ex ensive pest control programmes. All but one of Icon's current warehouses are certified as transitional facilities. Icon is licensed to provide a Customs controlled area for the purpose of the temporary holding of imported goods for examination. That facility is designed to meet MPI biosecurity standards.

Key to Icon's one stop shop services is its fleet of curtain-sider trucks, which includes temperature controlled units. These curtain sider trucks improve supply chain productivity through faster loading and unloading of product. Icon regularly transports goods throughout the Southern Region (and regular trips to Auckland and everywhere in between). Key products transported by Icon include lairy products, packaged ingredients, food grade packaging, finished goods, timber, general freight, palletised goods, bulk bags, dry goods and agricultural dry goods.

4.3.2 Icon's Warehouse and Container Logistics

This section provides more detail on Icon's current warehousing and related container logistics in Dunedin (summarised in Table 4.2). The 25,000sqm of warehousing is spread over 5 sites, although the two on Parry Street are close together. Overall, 67% of current warehousing capacity (all of which is leased) is within Dunedin Central, 20% is in Sawyers Bay a short drive from Port Chalmers and the remaining 13% is in Mosgiel. All but the T Shed warehouse are transitional facilities.

The warehouse at 88 Parry Street, has a permanent workforce, while staffing of the other warehouses is on a floating basis (i.e. staff move between the warehouses as required) While all five warehouses provide de vanning services for imported containers (regularly or infrequently), just three of the warehouses handle products for export.

Table 4.2 – Summary of Icon's Logistics Warehouses in Dunedin 2024

Name	T-Shed	95 Parry Street East	88 Parry Street East	Sawyers Bay	Carncross Street
Location	Dunedin Central	Dunedin Central	Dunedin Central	Sawyers Bay	Mosgiel
Warehouse SQM (incl. Canopy)	2,000	2,600	11,977	5,000	3,272
Transitional Facility	No	Yes	Yes	Yes	Yes
RMP	Yes	Yes	No	Yes	Yes
Imports *(all movements by truck unless specified)*	Sort of (as T Shed is not a transitional facility full import containers are not brought to the warehouse but on occasion, imports unpacked at Port Chalmers are stored at T Shed). Local packaging.	Yes – coffee for Cerebos Greggs, bottles for Emersons, salt for Fonterra Stirling for example.	Yes – general freight, non food grade. E.g. fertiliser, high risk imported goods, one off projects like windows for new Dunedin Hospital.	Yes – infrequent. Bulk orders of lactose and salt for Fonterra Edendale. Un packed product trucked to Port Chalmers rail siding and then railed to Edendale plant or trucked directly.	Yes – food packaging for Edendale and fertiliser for Fonterra's Farm Source outlets (or for farmers direct).
Exports *(all movements by truck)*	Yes – over flow[56] storage [redacted]	Yes – previously contracte[redacted]	No	Yes – mainly contracte[redacted]	No

[56] I.e. when D-Shed (Port Chalmers) or Fonterra's Taieri Distribution Centre (Mosgiel) is too full.

	[redacted]s). Product trucked to Sawyers Bay Warehouse for packing into containers.	[redacted]			
Container Storage Capacity	None	Yes (260 TEUs if including a mix or full and empty, including up to 60 reefers, else 450 TEUs is all empty)	None	Immaterial (4 TEUs)	Limited (10 TEUs)
Distance to main customer (one way, max)	168km (Edendale, export)	215km (Open Country Dairy, export)	Varies.	181km (Edendale, export)	161km (Edendale, import)
Distance to Port Chalmers (one way)[57]	13.0 (return of empty containers or pick up imported containers)	11.0km (pick up or deliver full containers)	11.0km (pick up full containers)	1.8km	27.1km
Distance to Strathallan (one way)	1.7 (return of empty containers only)	3.6km	3.6km	N/A[58]	17.7km
Other Relevant Distance (one way)	11.6km (distance to Sawyers Bay Warehouse)	1.1km (distance to Cerebos Greggs Factory)	1.8km (distance to new Dunedin Hospital site)	N/A	Distances to Farm Source outlets varies.

[57] Relevant for hire/return of empty containers and pick up/delivery of full containers (imported or for export).

[58] Given proximity to Port Chalmers, no empty containers typically sourced from or returned to Strathallan depot.

Key attributes of warehouse	RMP main benefit.	On edge of central city, adjacent to State Highway, combined with container yard, RMP.	On edge of central city, adjacent to State Highway, RMP.	Proximity to Port Chalmers container terminal and depot. Certified for food grade (although well suited for general goods).	Modern warehouse, some limited storage for containers. On edge of Dunedin urban area.
Key limitations of warehouse	Not transitional (can't export pack from wharf location). Old. Only suitable for dry food products. No rail siding.	Adjacent to rail line but no rail siding. Bit small.	Adjacent to rail line but no rail siding. Old, no longer fit for purpose.	No rail siding. Old. Costly to maintain certification for food grade storage.	No rail siding. Distance from Port Chalmers and Strathallan by road. Bit small.
Future plans if Inland Port is established	Close. Relocate customer demand to Inland Port warehousing.	Retain. Town base for non-dairy food-grade imports and exports. Relocate dairy product storage to Inland Port warehousing. Ability to make yard a container depot (hire/return of empty	Close. Relocate import activity to Sawyers Bay. *Nb. Only retain temporarily if Icon secures more hospital build imports.*	Retain. Relocate dairy imports/exports to Inland Port. Adapt to general goods warehouse.	Close. Relocate customer demand to Inland Port warehousing.

		containers)[59] for 3PL's (including Icon) still operating in Dunedin Central.			

[59] On the basis that Strathallan will be closing when lease is terminated. Retains a small central depot where more accessible than Inland Port in Mosgiel or Port Chalmers.

Figure 4.2 – T-Shed – Indicative Export Bulk Product and Container Flows

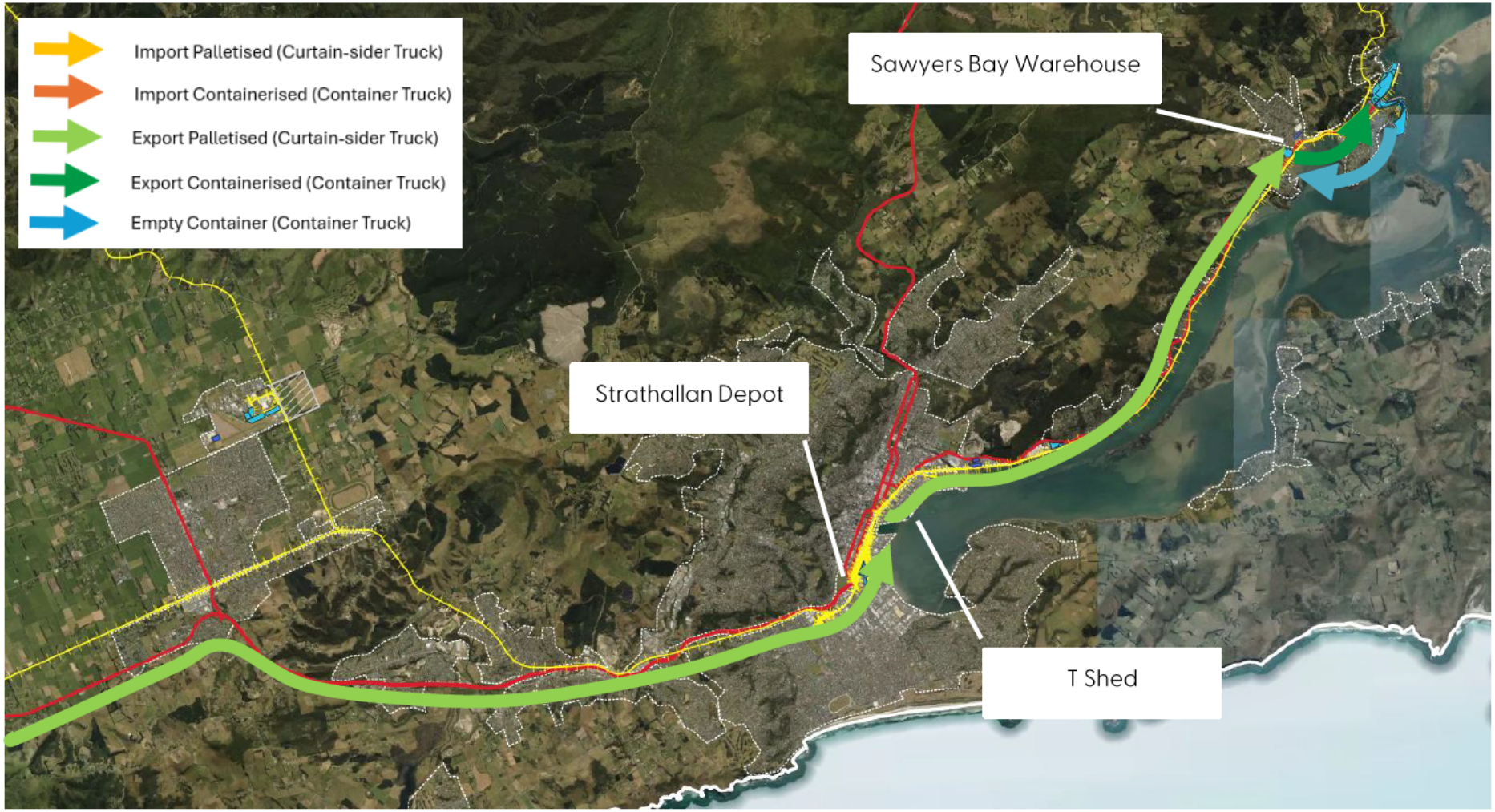


Figure 4.3 – 95 Parry Street East – Indicative Import and Export Bulk Product and Container Flows

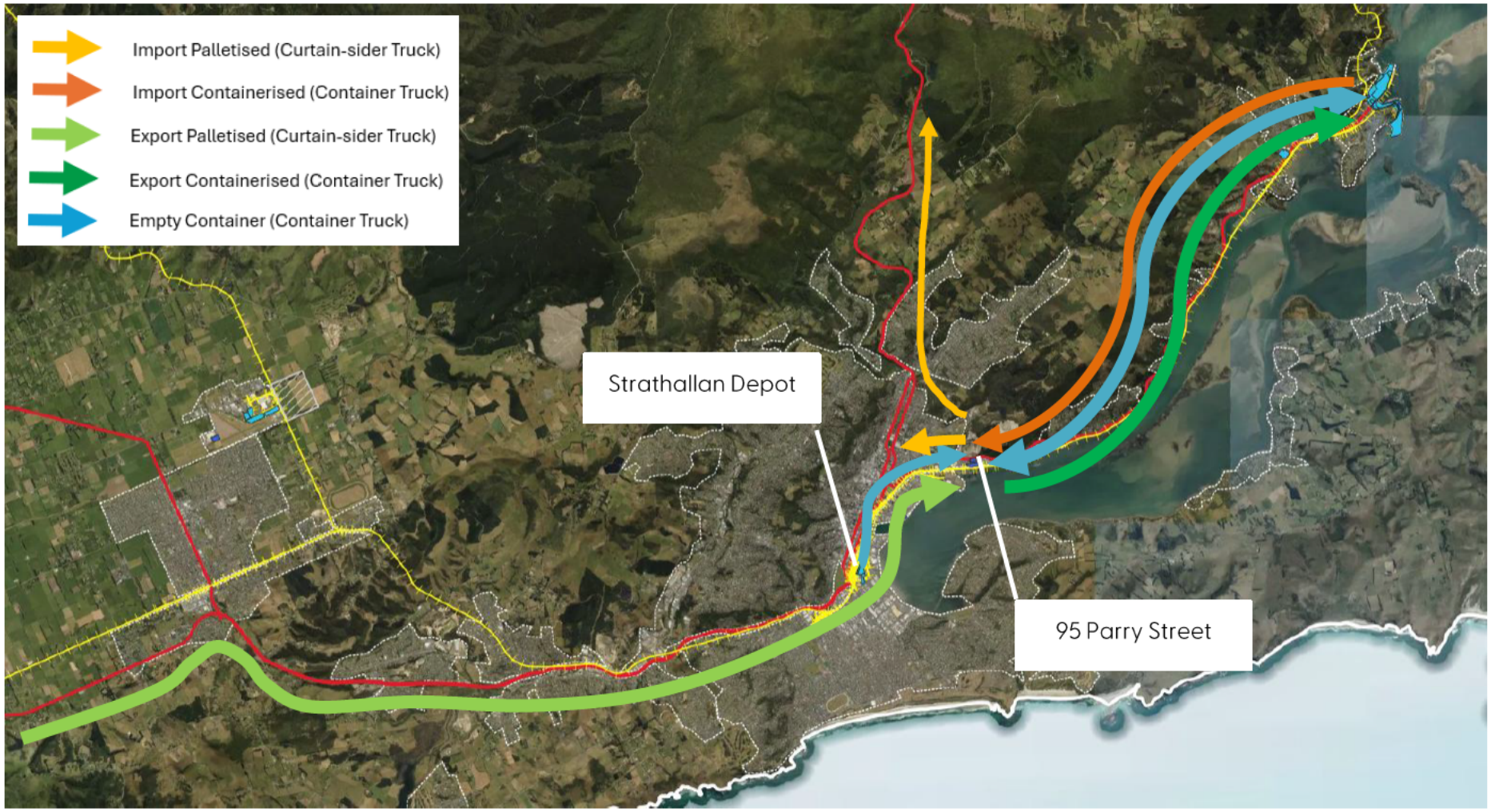


Figure 4.4 - 88 Parry Street East – Indicative Import Bulk Product and Container Flows

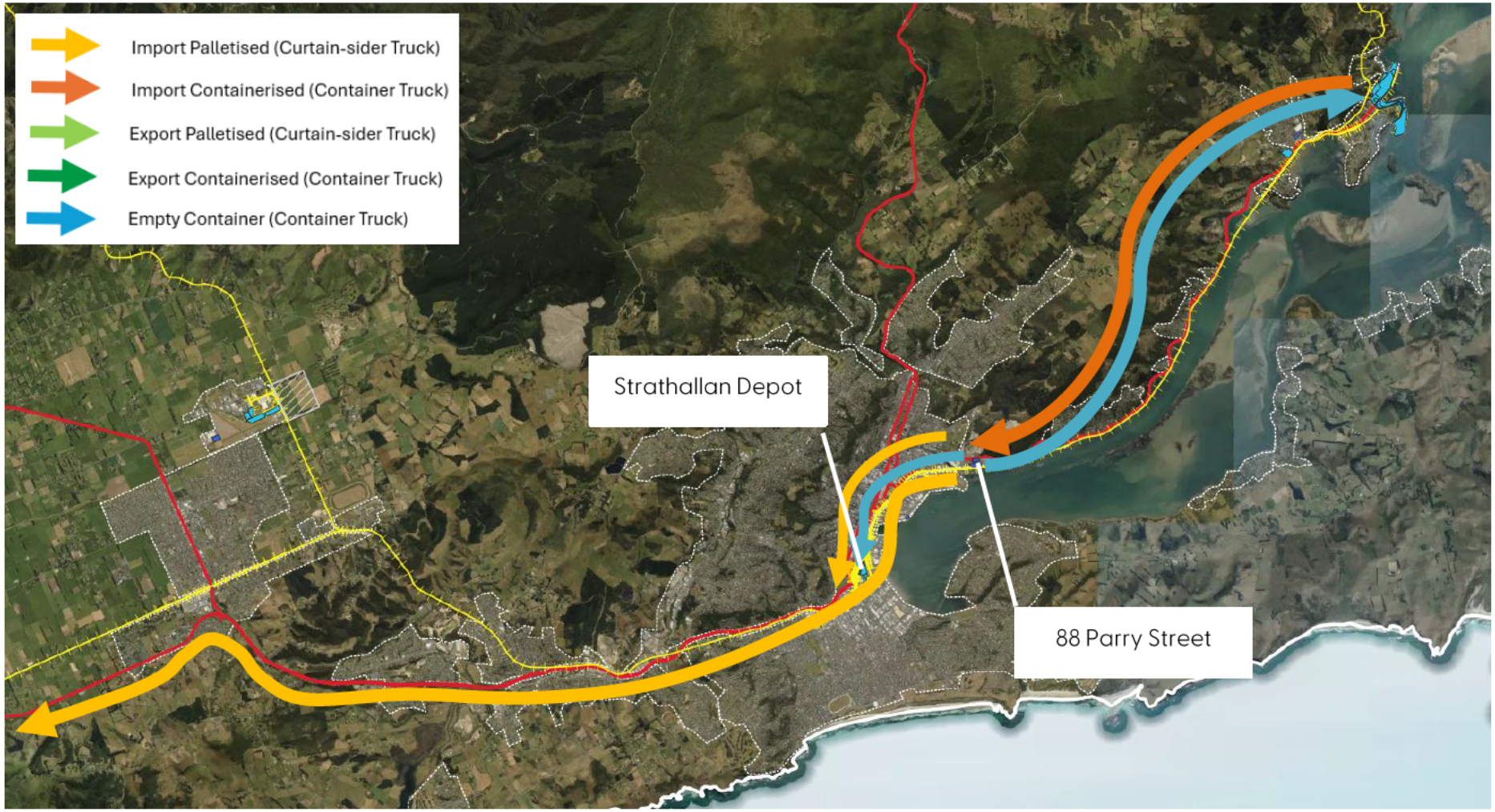


Figure 4.5 – Icon Sawyers Bay – Indicative Import and Export Bulk Product and Container Flows

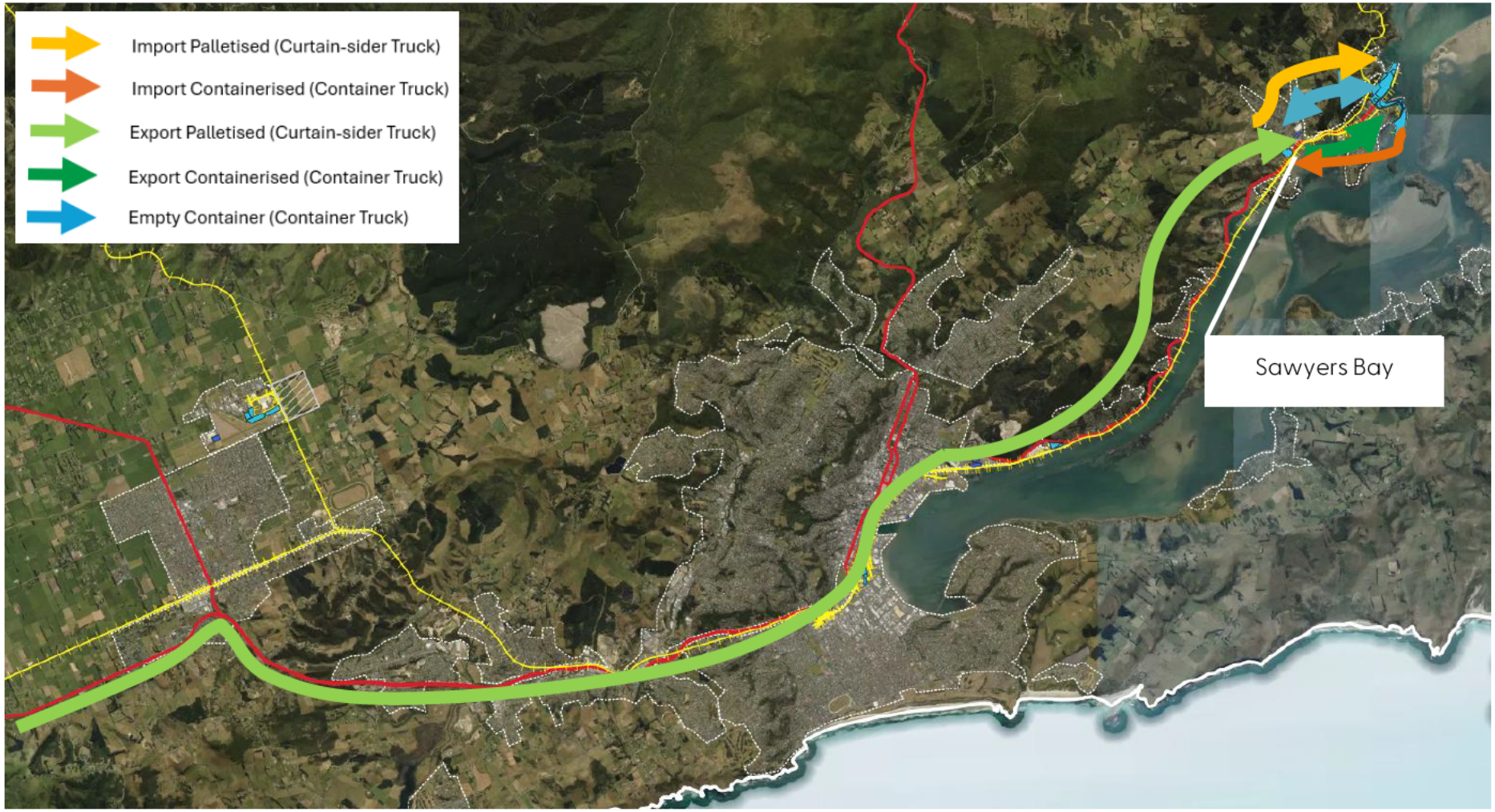
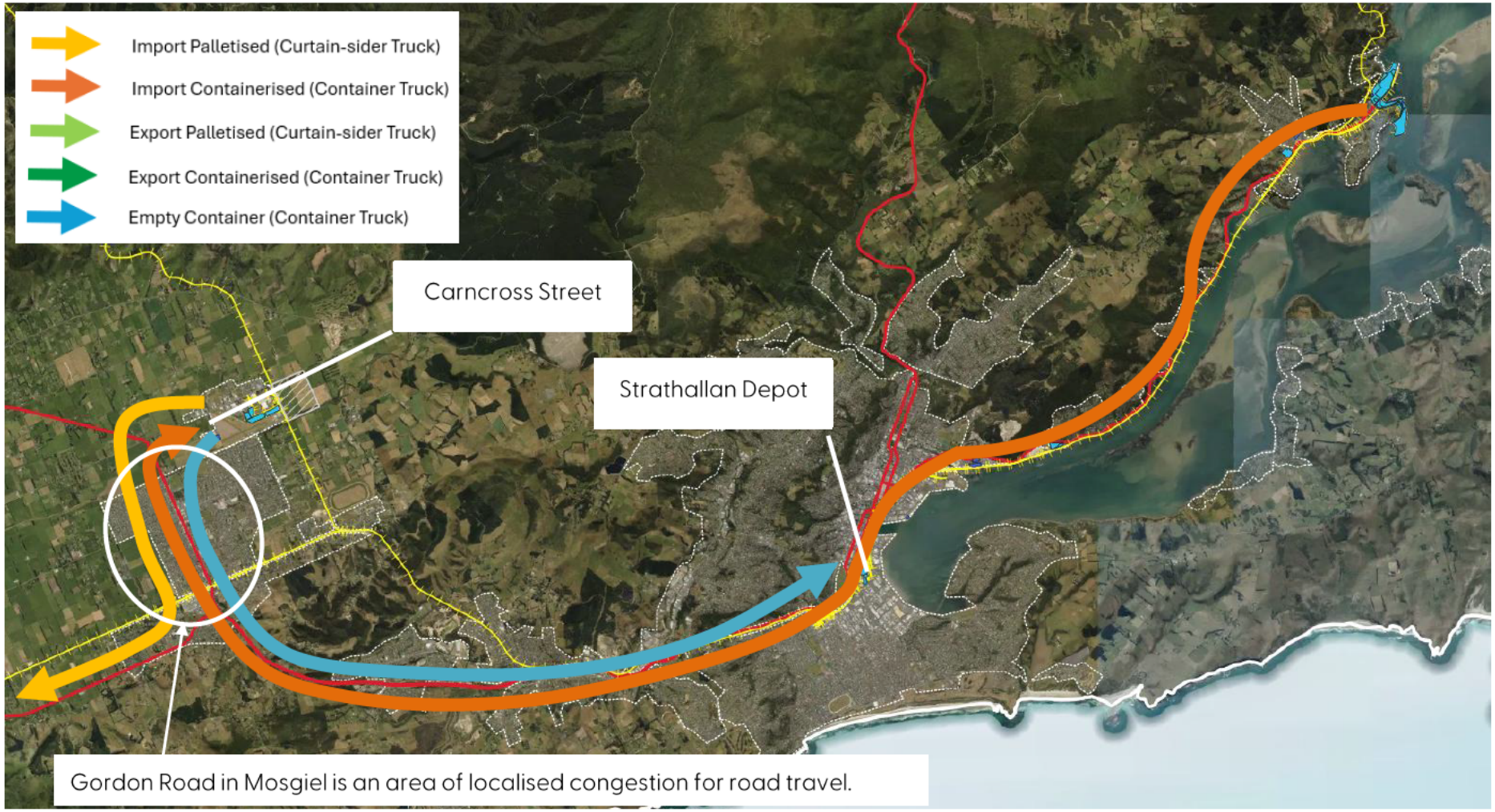


Figure 4.6 – Carncross Street – Indicative Import Bulk Product and Container Flows



The distances from Port Chalmers to Icon's warehouses range from 2km (Sawyers Bay) to just over 30km (for Carncross Street in Mosgiel). Distances to the Strathallan container depot (to return or collect empty containers) ranges from 1.7km to 18km. Distances to main customers ranges from 161km to 215km at present (all based South of Dunedin City). However, 95 Parry Street is only 1.1km away from the Cerebos Greggs Factory (an import customer) and illustrates the relevance of having some import warehouse capacity in central Dunedin to manage demand from urban business customers. All these distances are measured by road as none of Icon's current warehouses have rail access.

While having the two Parry Street warehouses on the edge of the central city (and close to SH88) avoids the worst of the central Dunedin traffic congestion, and the Mosgiel warehouse is in a location with no material local road congestion,[60] all inbound and outbound truck movements for all five warehouses inevitably requires travel within and through Dunedin's main urban area. These main truck travel routes are summarised in Figures 4.2-4.7. The weight of the lines in these stylised maps indicates the relative significance of those travel routes. The colour of the arrows (and direction) indicates the flow of palletised and containerised product which impacts the type of truck used.

Export truck movements for the T-Shed warehouse (Figure 4.2) include palletised product coming in from the south, temporarily being stored at T-Shed and then being trucked to Icon's Sawyers Bay warehouse where it is packed and the containers trucked to Port Chalmers. Empty containers required for that exporting are trucked from Port Chalmers to the Sawyers Bay warehouse. A lot of truck movements for T-Shed start or finish in central Dunedin (where congestion and speed limits reduce transport productivity). This warehouse adds to heavy truck movements along SH88 to/from Port Chalmers as well as adding to heavy truck movements in Sawyers Bay and Port Chalmers.

Export truck movements for the 95 Parry Street warehouse (Figure 4.3) include palletised product coming in from the south, through central Dunedin an l to the warehouse where it is packed and the containers trucked to Port Chalmers. Empty containers required for that exporting are trucked from Port Chalmers on return trips, or from the Strathallan Depot as required. Imported containers are trucked from Port Chalmers to 95 Parry Street where they are de-vanned and trucked to the Cerebos Greggs factory or Emersons brewery in central Dunedin.[61] The empty containers are then trucked predominantly back to Port Chalmers. A lot of truck movements for 95 Parry Street start or finish in central Dunedin (where congestion and

[60] Although trucks are required to travel down Gordon Road (through central Mosgiel) and this is an area of localised congestion, as indicated in Figure 4.6.

[61] Some imports are also trucked out of Dunedin to Fonterra Stirling and Crombie and Price in Oamaru for example.

speed limits reduce transport productivity). This warehouse adds to heavy truck movements along SH88 to/from Port Chalmers.

Import truck movements for the 88 Parry Street warehouse (Figure 4.4) include containerised product brought south from Port Chalmers where it is de vanned and then trucked to business customers in central Dunedin or out of Dunedin City (mainly south). Empty containers are trucked back to Port Chalmers (on the return trip) or taken to the Strathallan Depot as required. Truck journeys for this warehouse add to heavy vehicle traffic in (and through) urban Dunedin, as well as along SH88 to Port Chalmers.

Export truck movements for the Sawyers Bay warehouse (Figure 4.5) include palletised product coming in from the south, through central Dunedin and to the warehouse where it is packed, and the containers trucked the short additional distance to Port Chalmers. Empty containers required for that exporting are trucked from Port Chalmers on return trips. Imported containers are trucked from Port Chalmers to Sawyers Bay where they are devanned and the palletised product is trucked back to the rail siding at Port Chalmers where it is then railed to the customer. The empty containers are returned to Port Chalmers by truck. All inbound export product from the south must pass through urban Dunedin and along SH88 to Sawyers Bay. While the distance from the warehouse to Port Chalmers is only 2km, this warehouse contributes to traffic congestion in Sawyers Bay and Port Chalmers.

Import truck movements for the Carncross Street warehouse (Figure 4.5) include containerised product brought south from Port Chalmers along SH88 and right through urban Dunedin and out to Mosgiel where it is de vanned and then trucked to customers outside of Dunedin City (mainly south). Empty containers are trucked back to the Strathallan Depot. Truck journeys for this warehouse add to heavy vehicle traffic in (and through) urban Dunedin, as well as along SH88 to Port Chalmers. It also currently adds to heavy vehicle traffic in Mosgiel along the designated State Highway route on Gordon Road.

4.4 Icon's Operational Constraints

All of Icon's current warehouses are constrained in some way. The absence of rail sidings/rail access is the key constraint, which requires all services to be provided by truck. This limits the efficiency and productivity of transport services provided to import and export customers, particularly between the edge of the main Dunedin urban area and Port Chalmers.

T-Shed is old and constrained by an inability for export packing on account of its wharf location. 95 Parry Street is a bit small but otherwise functional and has the advantage of a small container storage area (providing some valuable buffering capacity for export customers). 88 Parry Street is an old warehouse no longer considered fit for purpose. The

Sawyers Bay warehouse is also old and costly to maintain for food-grade storage. While relatively new, the Carncross Street warehouse is a bit small for Icon and the road distances to Port Chalmers and the Strathallan depot increase the cost and time of logistics services offered to customers from this otherwise uncongested location.

The dispersed nature of Icon's current warehouses - all of which have different lease expiry dates also reduces the efficiency of moving staff between the various warehouses and results in poor economies of scale. While the container terminal at Port Chalmers has little or no buffering capacity remaining for export containers, nor does Icon have any meaningful container storage for their customers at most of its current warehouses (the exception being 95 Parry Street). Icon's operations are therefore vulnerable to supply chain disruptions (including shipping delays). Total reliance on SH88 also means that Icon's road-based services are exposed to natural hazard risk (particularly slips), traffic accidents and road maintenance projects that wholly or partially close SH88. Appendix C includes images that show the location of the rail line in relation to SH88, plus additional articles highlighting events that have impacted traffic flows.

The operational constraints faced by Icon are representative of the constraints faced by the wider Dunedin logistics sector, with the exception of Port Otago whose 3PL services are currently based (mainly) at Port Chalmers with rail siding access.

5 Business as Usual Issues

5.1 The Future Without the Inland Port

The current constraints (problem statement) facing Port Chalmers and the Dunedin container logistics sector are clear. Faced with those constraints, both Port Otago and Icon Logistics know exactly what key changes are required to achieve increased efficiency, productivity and resilience in import and export supply chains in the Southern Region Both companies know how they can most efficiently contribute to a low carbon economy. Both companies have strong aspirations for growth – for their own operations, and for Otago Region generally.

As demonstrated in previous sections, the optimal solution is to consolidate (to the extent practical) empty container storage; servicing; and import/export logistics warehousing into one large scale, strategically located site on a rail siding. This will create more efficien economies of scale, remove the significant heavy vehicle travel currently needed to collect and return empty containers in central Dunedin, and significantly reduce the heavy truck movements associated with bringing export product from outside of Dunedin through the main Dunedin urban area for packing and transport in containers to Port Chalmers (and vice versa for imported goods).

Secondly, a large inland container terminal needs to be included with that facility to free up capacity at Port Chalmers, provide for container trade growth and provide critical buffering capacity (full and empty container storage) to make export supply chains more resilient to unexpected events and potential shipping delays.

If this optimal outcome cannot be achieved, a business as usual future is assured

While most major seaports in New Zealand already operate with rail accessed inland ports/inland container terminals (including Lyttleton Port which has two – one in Woolston, Christchurch and one in Rolleston), Port Otago will continue to be an outlier despite facing the same sorts of operational and growth constraints that have been faced by other ports. If Port Otago (and the import and export supply chains that rely on it) is forced to continue under the current operational model, it is likely to find it increasingly difficult to compete with other South Island seaports for container trade.

A business as usual future means:

- Continued leakage of imported goods destined for Otago businesses/customers to more distant ports outside of Otago Region.
- Continued leakage of export activity to other ports during peak seasons when capacity at Port Chalmers is reached.
- Little or no opportunities for existing exporters using Port Chalmers (and Dunedin's 3PL service providers) to increase their output (without further leakage of those supply chains out of Otago Region).
- Continued under utilisation of existing rail infrastructure between Mosgiel and Port Chalmers (and KiwiRail rolling stock).
- Higher freight costs for exporters and importers reliant on truck movements that pass through Dunedin's main urban area (slower speeds and higher congestion increase time and costs). Efficiency and productivity will continue to decline as Dunedin's urban population grows.
- Continued externalities associated with significant heavy truck movements within and through urban Dunedin (congestion, road damage, GHG emissions, air pollution, road safety issues and increased fuel consumption).
- Increasing vulnerability of import and export supply chains that use Port Chalmers due to uncertainty once the Strathallan Depot lease expires in 2030 and due to natural hazard and other disruptive events (particularly associated with SH88 and potential shipping delays).
- It will be highly unlikely that Otago Region will attract new export product processors and manufacturers, or manufacturers/wholesalers/retailers that rely on imported goods (importers), because of export and import supply chain constraints. Opportunity costs for wider economic growth over the long-term.

Key road transport statistics of a business as usual future are (based on YE June 2024):

10,480	6,430	Unknown (significant)
• The number of export good heavy truck movements (one way) in Urban Dunedin per annum	• The number of import good heavy truck movements (one way) in Urban Dunedin per annum	• The number of empty container heavy truck movements within Urban Dunedin per annum

5.2 The Fonterra Mosgiel Case Study

Fonterra's Taieri Distribution Centre is used for dry and cool storage and container packing of products from its Edendale and Stirling factories. It is a significant facility in the context of Dunedin container logistics sector, operating for 11 months of the year. The site is located on its own rail siding (with the siding into the warehouse owned by Fonterra) in the Mosgiel industrial Zone (and opposite the Inland Port)

Product arrives at the distribution centre in bulk by rail (with train wagons marshalled (split) at the KiwiRail yard in Dunedin before being shuttled out to Mosgiel). Product is mainly packed into dry/ambient food grade containers (supplied twice a day by rail from the Port Chalmers Depot and topped-up by trucked empty containers from either the Strathallan or Port Chalmers depots depending on packing demand) and then full containers are shuttled directly to the rail siding at Port Chalmers. The export supply chain is represented in Figure 5.1.

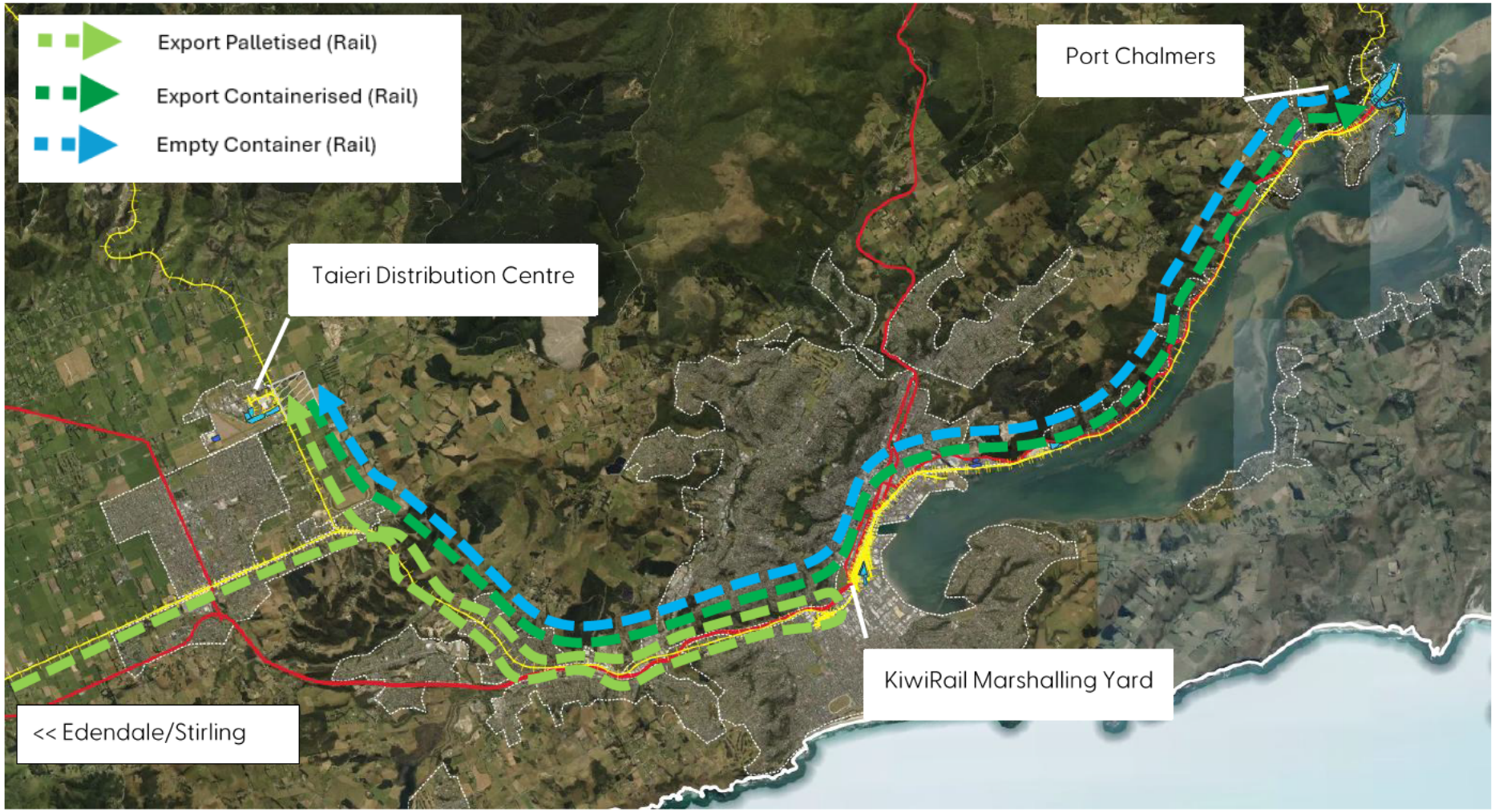
In the YE June 2024, the Taieri Distribution Centre sent an estimated 14,000 TEUs to Port Chalmers (indicatively estimated to equate to 175,000 tonnes of product). These containers accounted for 26% of all export TEUs railed to the port, and 28% of all containerised export receipts. While the Taieri Distribution Centre does not handle all of Fonterra's export product manufactured in the Southland/Otago (with other supply chains utilising their leased and operated D Shed or the 3PL services of Port Otago and Icon Logistics), it plays a crucial role in managing Fonterra's export product volume in the lower South Island

The ability to send around 14,000 TEUs of containerised export product by rail from Mosgiel substantially improves the productivity and efficiency of this Fonterra supply chain. Containers are sent to port faster, with less risk of disruption and with lower labour inputs If (hypothetically) the same volume of product was required to be trucked from the Distribution Centre to Port Chalmers, the following differences will apply:[62]

- Distance to port will increase by 4km (road distance would be 32km (with 15km of that within the main Dunedin urban area), compared to 28km on rail).
- Tonnes moved per annum (Tonne Kms) will increase by 14% from 4.9m tonne kms to 5.6m tonne kms.
- Vehicle kms travelled will increase by nearly 216,000 kms per annum.

[62] Refer Appendix E for the detailed calculations.

Figure 5.1 – Taieri Distribution Centre – Indicative Bulk Product and Export Container Flows



- One way vehicle movements will increase by 6,700. That is 292 shuttle train trips per annum versus 7,000 container skel truck trips.
- GHG emissions will increase by 623 tonnes of CO2 e per annum.

The above are only the direct benefits gained by Fonterra by having a rail siding at their Taieri Distribution Centre for one year. They do not include the benefits of being able to receive empty containers by rail or receive the bulk product by rail.

There are a range of indirect benefits that flow from these direct benefits including (but not limited to) avoided road degradation, congestion and air pollution in the main Dunedin urban area. The Distribution Centre also has substantial warehouse storage capacity, which makes the supply chain more resilient to disruptions, any shipping delays and capacity constraints at Port Chalmers.

The operational model of the Taieri Distribution Centre is a strong example of a more optimised logistics supply chain that makes use of a location outside of the main Dunedin urban area and a rail connection. It is this logistics model that the Inland Port is seeking to emulate (at a larger scale) and further enhance (not least by including a container terminal, container depot and providing for rail-enabled import supply chains). In doing so, the Inland Port will be able to pass on the same sorts of productivity, efficiency and resilience benefits that Fonterra has achieved to a wide range of export and import businesses across the Southern Region (and offer some operational benefits for the Fonterra Taieri Distribution Centre at the same time)

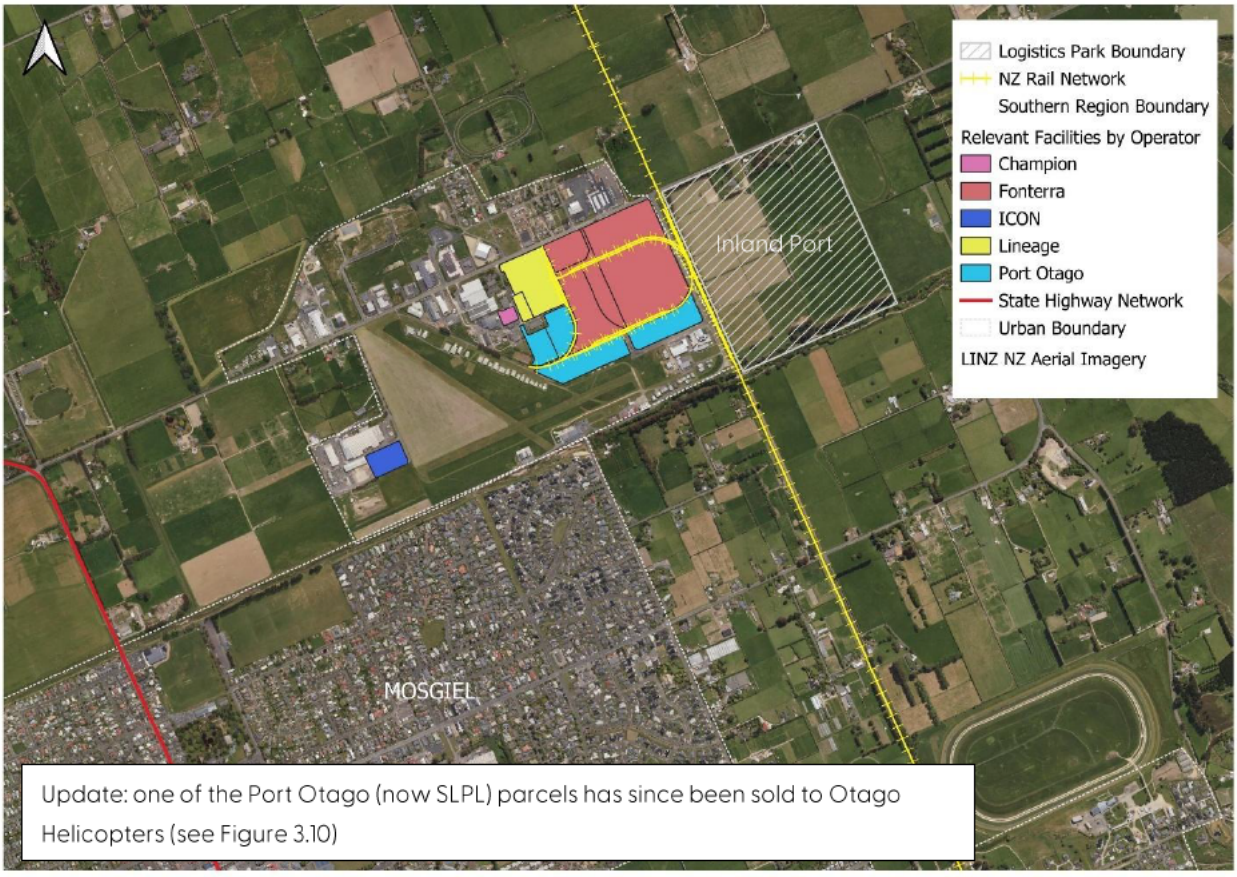
6 Proposed Inland Port

The proposed Southern Link Inland Port is a joint venture between Dynes Transport Group (owners of Icon Logistics) and Chalmers Properties Limited (a subsidiary of Port Otago) The proposal is a strategic response to the current operational constraints faced by both organisations (and the Dunedin container related 3PL sector generally) as well as anticipated future challenges and opportunities The aim of the Inland Port is to secure a sustainable growth future for the Dunedin container logistics sector, maximise the efficiency of existing port and rail infrastructure assets, help support a low carbon economy in Dunedin City, and facilitate economic growth in Otago Region.

6.1 The Site

The proposed site of the Inland Port is a 40ha rural property located at 270 292 Dukes Road North, adjoining Mosgiel's industrial zone, and opposite Fonterra's Taieri Distribution Centre (Figure 6.1) The scale of the site will provide a 50 year supply chain solution.

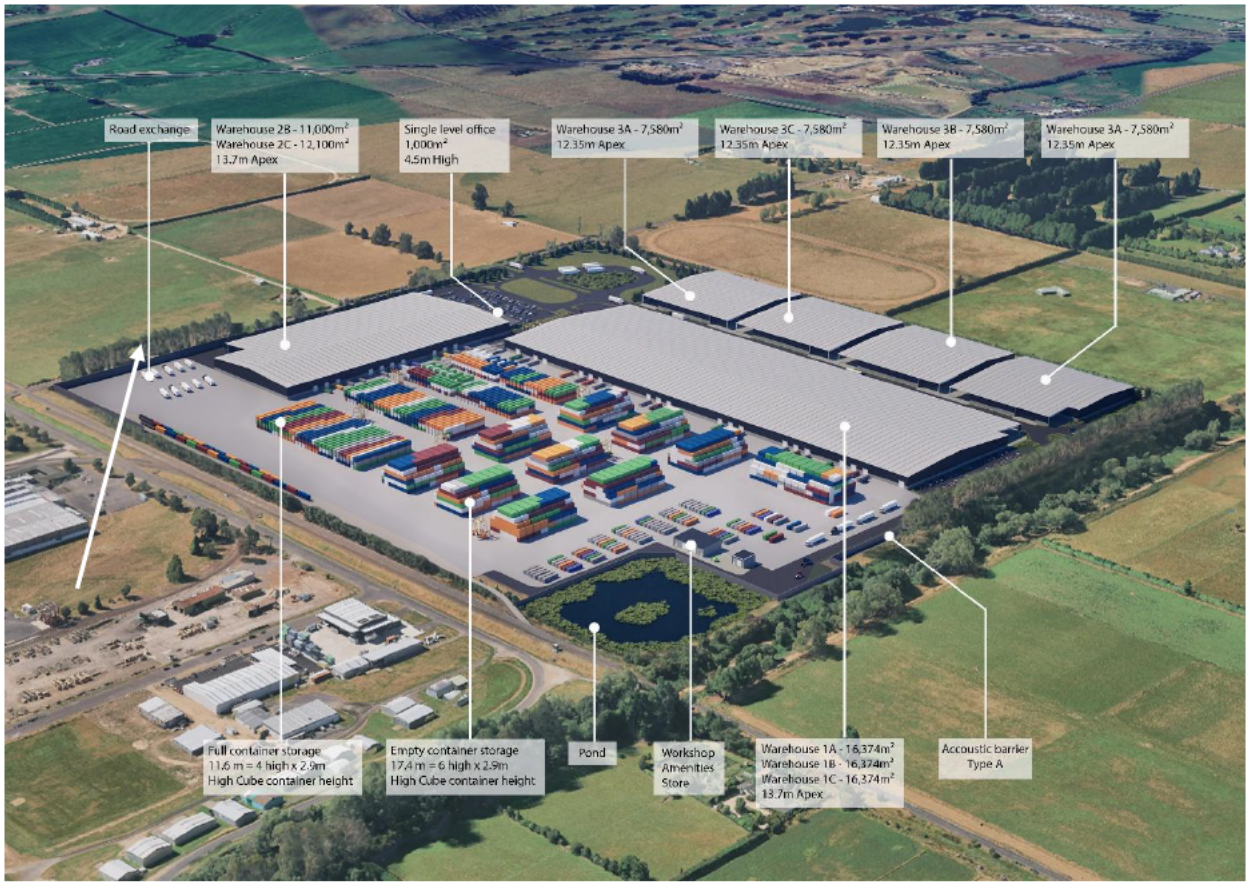
Figure 6.1 – Aerial Image of Proposed Southern Link Inland Port Site, Mosgiel



6.2 The Facility

The development will occur as described in the Project Description of the Substantive Application prepared by Mitchell Daysh which should be referred to for a complete description of the Inland Port development. As a short summary, the Inland Port will include, with reference to Figure 6.2:

Figure 6.2 – Proposed Development – Southern Link Inland Port (Stages 1-3)



- A new rail siding off the Taieri Branch Line to enable loading, unloading and operation of a rail freight shuttle service to Port Chalmers and the wider rail network;
- Approximately 100,000 m2 of high stud warehousing (chilled and ambient), and associated yard and canopy areas. Approximately 11,500sqm of this Stage 1 warehousing will be used to consolidate Icon's existing diary export customers;[63]
- Two road exchange areas for the loading and unloading of container trucks;

[63] It is noted that because these warehouses will be purpose built, they are optimised for their intended use, requiring less overall space than the current configurations to achieve the same throughput.

- A container depot facility enabling the inspection, cleaning, upgrading and repair of containers including for food grade repacking;
- Approximately 9 ha of container terminal for storage and movement of empty and full containers including refrigerated container charging ports;
- Approximately 1,000 m2 of onsite offices ancillary to the Inland Port;
- Road widening and construction of a new intersection onto Dukes Road North;
- 24/7 operation with flood lighting for nighttime operation;
- Ancillary activities to support the above including vehicle parking, truck waiting areas, onsite road network, three waters infrastructure, flood mitigation, landscaping, security measures, and acoustic barriers;
- The site will be MPI and customs-compliant for imports and exports, including the potential for a free trade zone to be developed.

6.3 Medium Term Construction Impacts

Estimated construction costs for the Inland Port have been supplied to Savvy. These cost estimates (assumed to represent prices in late 2025) are relatively detailed and cover costs for site establishment and surveying, erosion and sediment control, site earthworks, rail siding construction, yards and foundations, access road changes, buildings, lighting, security and fencing, electrical services, stormwater, water and wastewater services installation, planting and other site mitigation. Some costs are not included in the pricing such as construction insurance, office fitout and finance costs. Such costs are therefore excluded from the construction impact modelling below.

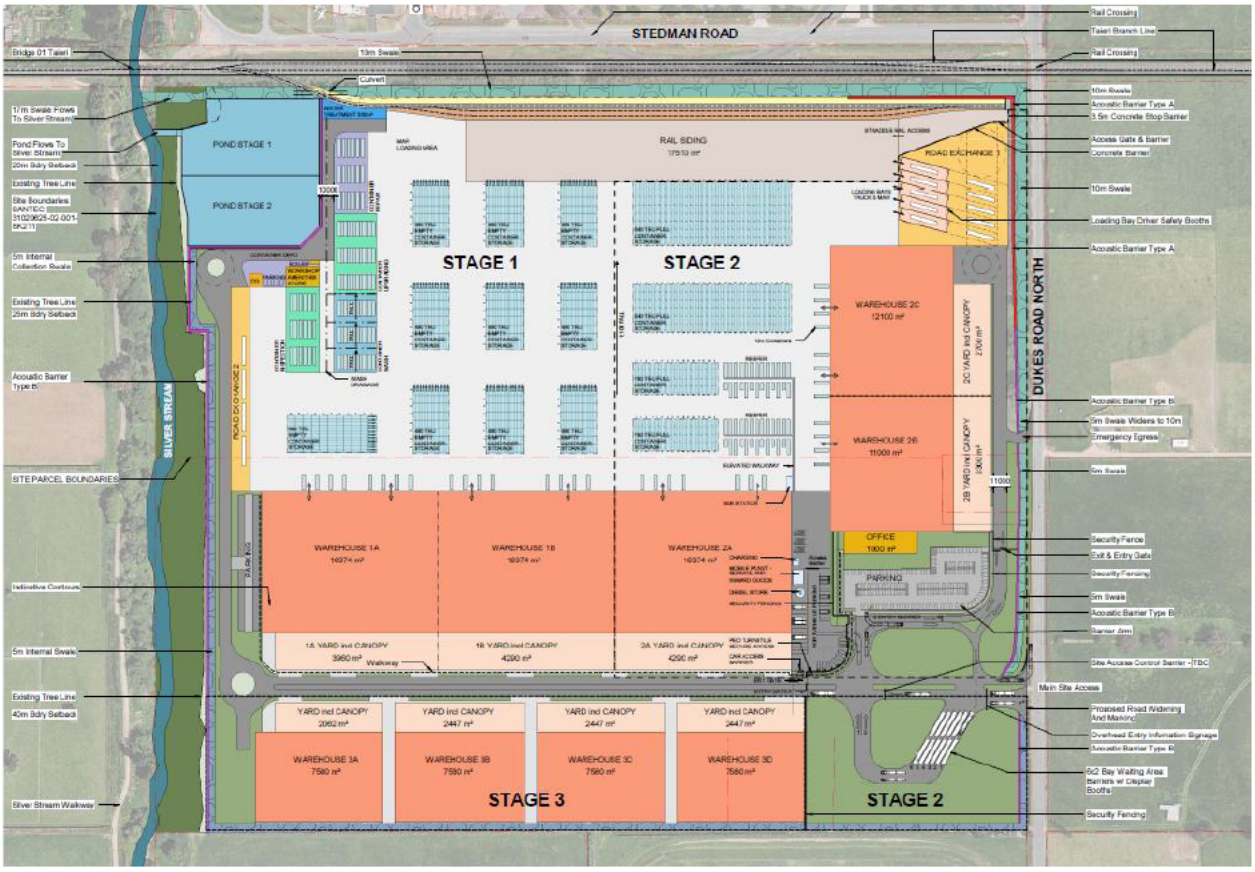
The construction costs are broken down by the three stages of construction. The stages are illustrated in Figure 6.3. Indicatively, these stages are described by SLPL as follows, alongside how they have been applied for the purposes of construction impact modelling (to avoid temporal overlap):[64]

- Stage 1 – years 1-3: Stage 1 costs have been spread evenly over 2027, 2028 and 2029.
- Stage 2 – years 3-5: Stage 2 costs have been spread evenly over 2030 and 2031.

[64] This is only a scenario of how costs may be distributed over time and across the three stages and potential ten year window.

— Stage 3 – years 5-10: Stage 3 costs have been spread evenly over 2032 to 2036 (inclusive).

Figure 6.3 – Construction Staging Plan for the Inland Port



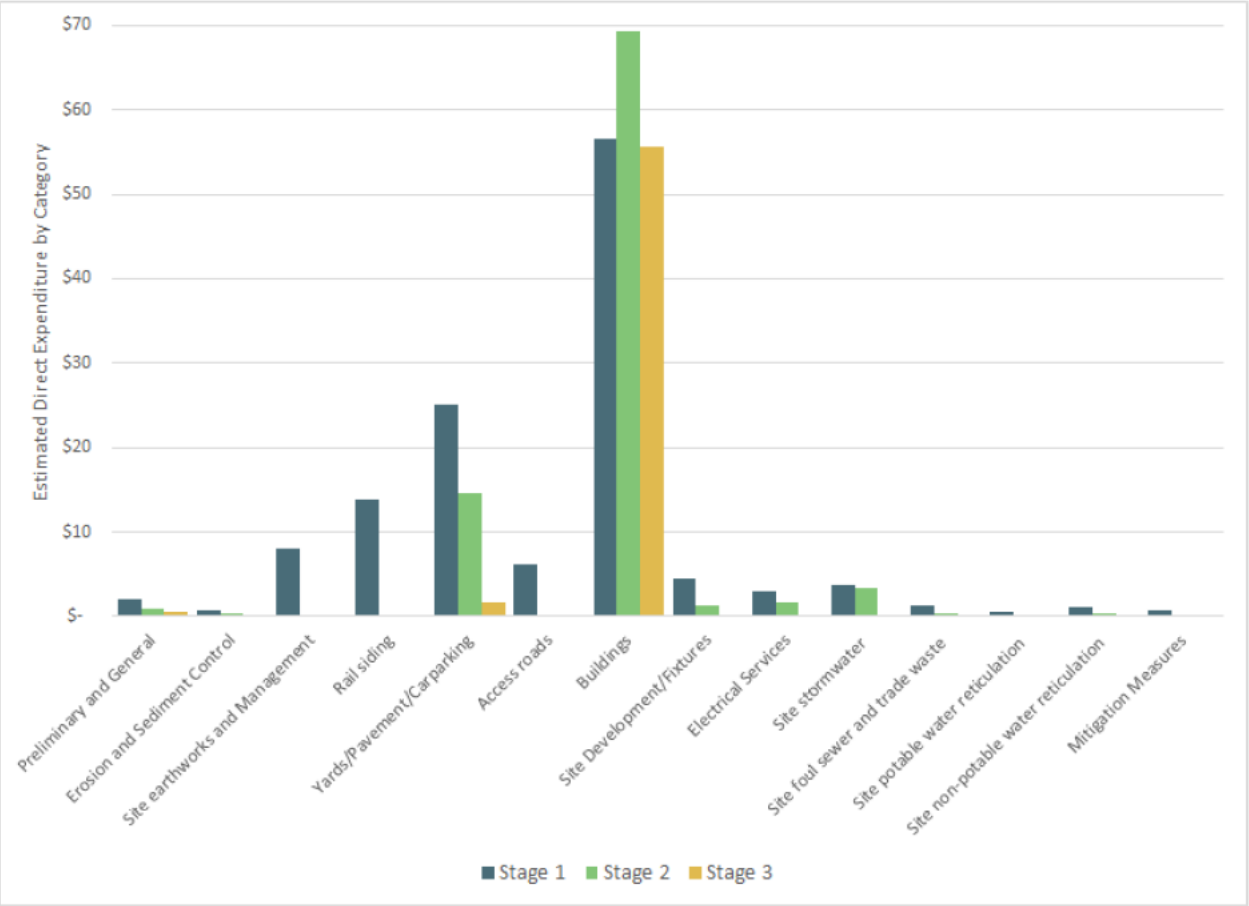
The total construction of the Inland Port will generate an estimated $278 million of direct expenditure in the economy, spread indicatively over a ten year period.[65] This expenditure will represent gross output (turnover) for a range of goods and services suppliers. For the purposes of this economic impact assessment, all expenditure is assumed to be with New Zealand-based businesses (i.e., no directly imported products are assumed).

Figure 6.3 provides a breakdown of total costs by category and stage. The proposed buildings on the site (warehouses, office/admin and reefer towers) account for 66% of the total development cost (at nearly $181.5 million) and dominate expenditure in each stage. The yard/pavement/carparking construction accounts for 15% of the total (just over 41 million), concentrated in stage 1, followed by stage 2. The construction of the rail siding (5% of total

[65] Excludes 20% contingency in costing. Excludes a small amount of revenue from the sale of topsoil from the site. Accounting for this, the net construction costs are approximately $275 million.

costs or $13.9 million) is the third largest cost, and forms part of stage 1 as it is the critical feature of the entire operation (Figure 6.4).

Figure 6.4 – Direct Construction Expenditure (2025 Pricing) by Category and Stage



The majority of the goods and services suppliers that will be relied on for the construction of the Inland Port will be based within Otago Region and largely concentrated in Dunedin City. SLPL has previously estimated that 69% of the rail siding direct expenditure is anticipated to be with Otago Region based suppliers (and most within Dunedin City). 100% of the yard/pavement/foundation construction will be supplied by Otago Region businesses (wholly in Dunedin City). 84% of the warehousing construction will be by Otago Region businesses (mainly outside of Dunedin City). Overall, an estimated 87% of direct expenditure associated with the construction of these three main development components will benefit Otago Region businesses. Once other local contractor roles are included, this is expected to rise to 95%, with 5% directed at businesses elsewhere in New Zealand. This equates to a direct injection of just over $264 million of expenditure in the regional economy during stages 1-3 of construction.

All of the direct expenditure that occurs within New Zealand flows through upstream supply chains, which results in additional economic activity (gross output) in supporting industries,[66] and additional employment and associated wage earnings. These are the indirect[67] and induced[68] impacts of constructing the Inland Port, which are additive to the direct[69] economic impact.

Savvy has developed a high-level Input-Output (IO) model to quantify and measure the economic activity and flows of money and goods within the New Zealand economy at a sector level. IO models are quantitative economic tools used to analyse the interdependencies between different sectors of an economy and are well suited to understanding the scale of impacts at a regional level. IO models provide a detailed framework of inter industry transactions that capture how the output of one industry serves as an input for another. Essentially, they map the flow of goods and services in an economy, illustrating how changes in one sector can ripple through to affect others. Appendix D outlines some of the key assumptions and limitations of the IO modelling approach, with further discussion on how these results should be interpreted.

The IO model has been developed using the Statistics New Zealand National IO table which captures the structure of the national economy across 109 sectors as of March 2020. The sector level multipliers are therefore national averages rather than specific to the Otago Region economy. That said, the key sectors associated with industrial scale construction (discussed below) are well established throughout New Zealand's biggest urban cities and therefore the productivities and input-output relationships of large scale Otago Region suppliers are expected to closely align with those national averages.

Based on the detailed costings supplied by SLPL, Savvy has estimated the sector that each cost item most likely applies to. Nine core sectors are estimated to be engaged in the construction of the Inland Port, as summarised in Figure 6.5. The non-residential building construction sector will be most impacted by the project, receiving between $50-$70 million for each of the three stages of development. The construction services sector and heavy and

[66] And the supporting industries of those industries etc.

[67] Indirect impacts arise as the firms that initially change their output as a result of an economic shock (i.e. the direct effects), purchase required inputs from their supply chain. These business-to-business transaction changes are known as the indirect impacts.

[68] Induced impacts flow from the direct and indirect impacts which generate wages, salaries, and profits for the households. The changed household incomes will generate more spending on goods and services. This household-to-business interaction is called induced activity.

[69] Direct impacts are the initial changes in the economy due to an economic shock (often new expenditure). The direct GDP effect is calculated based on the value of the shock and the direct employment effect is the number of jobs created by the shock itself.

civil engineering sector are estimated to capture the next highest shares of direct project expenditure, particularly during stage 1.

Figure 6.5 - Direct Construction Expenditure (2025 Pricing) by Indicative Sector and Stage

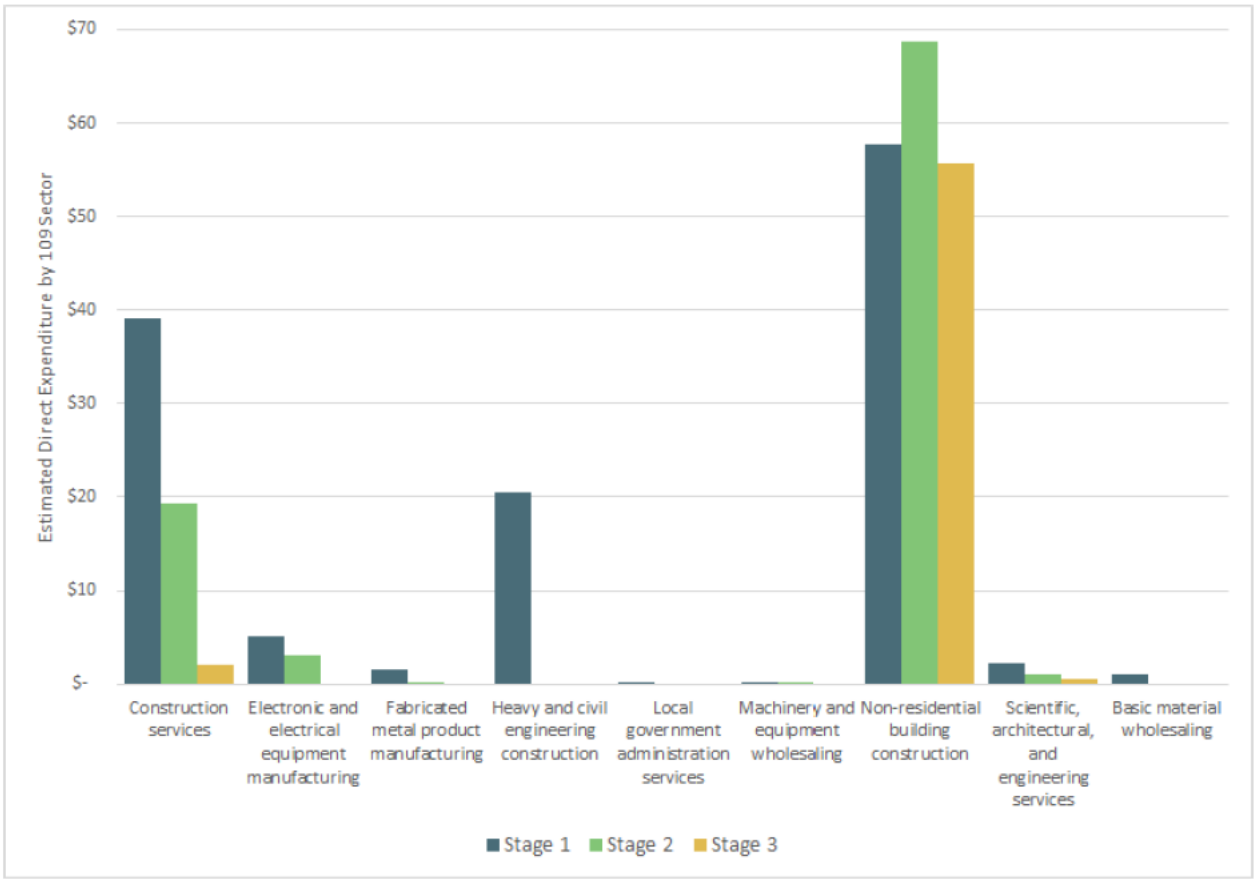
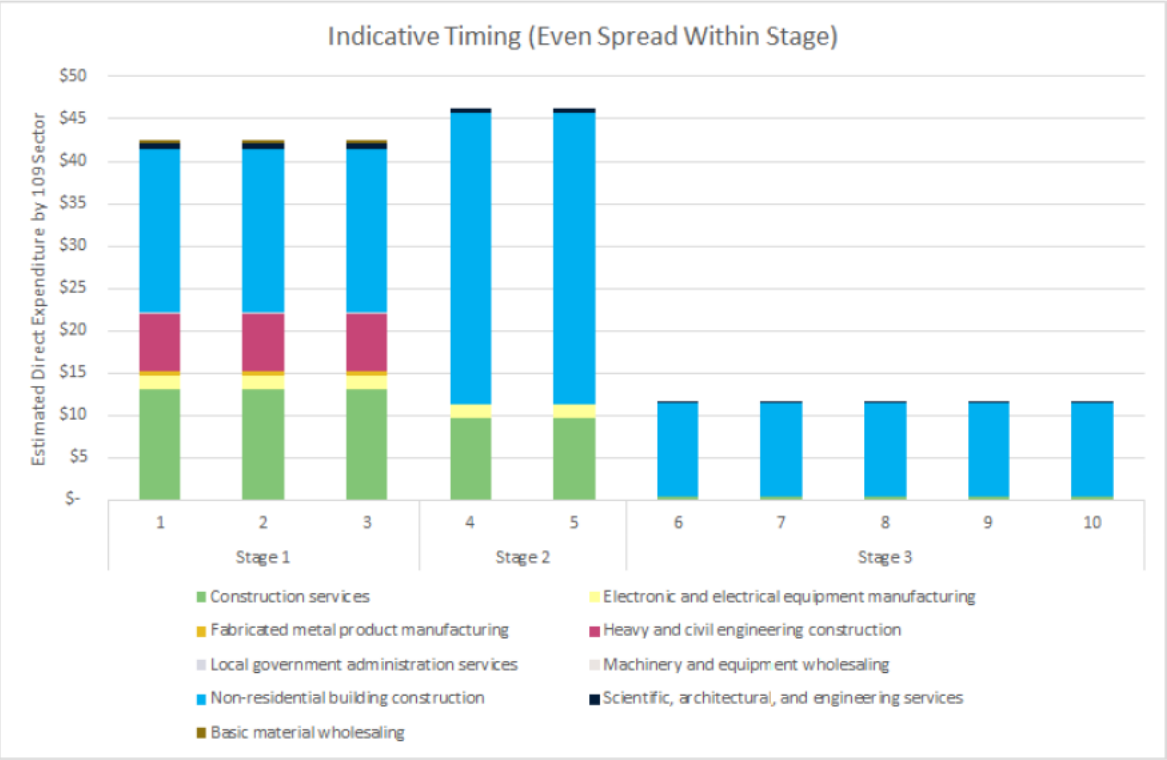


Figure 6.6 provides a scenario of direct expenditure by sector and year across stages 1 3 of the development. As noted above, Savvy has simply distributed stage costs evenly across the years (timing) of each stage as advised by SLPL, while also making each stage discrete. Under this scenario, direct expenditure could total a similar amount annually for the first five years of development (over stages 1 and 2), at around $42 to $46 million per annum. If stage 3 is sequenced evenly over five years, that ongoing development could inject a further $11.6 million per annum into the economy, with the full extent of the Inland Port complete at the end of year 10 (indicatively 2036).

The direct expenditure of constructing the Inland Port discussed above (and shown in Figure 6.6) must, in keeping with best practice, be deflated to match the base year of the national IO table, which is the year ending March 2020, before direct, indirect and induced multipliers can be applied in the model. This has been done using the Producers Price Index (PPI) for each

corresponding sector.[70] This brings the total expenditure on the Inland Port down to $213 million in 2020 dollar terms.

Figure 6.6 - Direct Construction Expenditure (2025 Pricing) by Indicative Sector and Year



Using the national level multipliers for each of the sectors expected to be engaged by the development project,[71] Table 6.1 summarises the total direct, indirect and induced value added (akin to GDP) impacts sustained throughout the New Zealand economy (but largely within Otago Region) by the construction of the Inland Port It shows the total impacts across all three stages, undiscounted. The resulting economic impacts are expressed in year ending March 2020 dollars equivalents and are not re-inflated to current dollars in accordance with best practice. While Table 6.1 shows the direct, indirect and induced impacts that flow from the direct expenditure in each of the listed sectors, the impacts (particularly the indirect and induced impacts) are not limited to those listed sectors, and will be widely dispersed across economic sectors, including as a result of how households spend their wages and salaries.

Table 6.1 shows that over the total development period, the construction of the Inland Port will generate an estimated $_{2020}$50.3 million in direct value added, increasing to $_{2020}$218.6 million in value added once indirect and induced impacts are included. These should be considered gross economic impacts as they assume that no displacement of economic activity occurred

[70] Savvy as calculated deflators using the PPI for each sector between Q3 2025 and Q1 2020, sourced from StatisticsNZ.

[71] The multipliers used in the model are set out in Appendix D

in order to meet the demands of the Inland Port construction project. They should also be considered an upper limit of value added impacts. That said, there is nothing especially complex about the construction project and with sufficient procurement time, the works are likely to be delivered by suppliers that can accommodate SLPL timing within their annual capacity (or with some increased resources and staffing). The construction sector relies on a steady stream of contracts to maintain and/or grow their output and employees. The Inland Port project will therefore play a role in sustaining, and potentially growing, the Otago construction sector.

Table 6.1 – Direct, Indirect and Induced Value Added Contribution of Inland Port Construction by Sector

Stage 1-3 Value Added by Indicative 109 Sector	Direct ($_{2020}$ million)	Indirect ($_{2020}$ million)	Induced ($_{2020}$ million)	Total ($_{2020}$ million)	Share of Total Impact
Construction services	$ 19.2	$ 17.6	$ 11.5	$ 48.3	22.1%
Electronic and electrical equipment manufacturing	$ 3.6	$ 1.7	$ 1.4	$ 6.7	3.1%
Fabricated metal product manufacturing	$ 0.4	$ 0.4	$ 0.3	$ 1.1	0.5%
Heavy and civil engineering construction	$ 5.3	$ 7.6	$ 4.6	$ 17.4	8.0%
Local government administration services	$ 0.1	$ 0.0	$ 0.0	$ 0.1	0.1%
Machinery and equipment wholesaling	$ 0.1	$ 0.0	$ 0.0	$ 0.1	0.1%
Non-residential building construction	$ 19.8	$ 85.1	$ 35.6	$ 140.5	64.3%
Scientific, architectural, and engineering services	$ 1.6	$ 0.9	$ 0.8	$ 3.3	1.5%
Basic material wholesaling	$ 0.3	$ 0.3	$ 0.2	$ 0.8	0.4%
Total	$ 50.3	$ 113.7	$ 54.5	$ 218.6	100%

Souce: Port Otago, Savvy, based on direct expenditure deflated to March 2020 dollars, applies March 2020 Value Added Mulitpliers (National).

Table 6.2 summarises the same value added impacts by year between 2027 and 2036. Total direct, indirect and induced value added is estimated at around $_{2020}$33.8 36.0 million over the first 5 years, before dropping to an annual value added contribution of $_{2020}$9.0 million from 2032 to 2036. Applying a discount rate of 8% to the value added contributions over time, the net present value of Inland Port value added impacts is just under $_{2020}$163 million – largely felt within the Otago Region economy Applying a smaller discount rate (2%) as a sensitivity test, the total value added impact is just under $_{2020}$202 million. These impacts should be considered an upper limit of value added for construction of the project.

Table 6.2 - Direct, Indirect and Induced Value Added Contribution of Inland Port Construction by Year and Net Present Value

	Stage 1			Stage 2		Stage 3					
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
Direct Value Added ($_{2020}$$ million)	$ 9.3	$ 9.3	$ 9.3	$ 7.7	$ 7.7	$ 1.4	$ 1.4	$ 1.4	$ 1.4	$ 1.4	$ 50.3
Indirect Value Added ($_{2020}$$ million)	$ 16.1	$ 16.1	$ 16.1	$ 19.3	$ 19.3	$ 5.3	$ 5.3	$ 5.3	$ 5.3	$ 5.3	$ 113.7
Induced Value Added ($_{2020}$$ million)	$ 8.4	$ 8.4	$ 8.4	$ 9.0	$ 9.0	$ 2.3	$ 2.3	$ 2.3	$ 2.3	$ 2.3	$ 54.5
Total Value Added ($_{2020}$$ million)	**$ 33.8**	**$ 33.8**	**$ 33.8**	**$ 36.0**	**$ 36.0**	**$ 9.0**	**$ 9.0**	**$ 9.0**	**$ 9.0**	**$ 9.0**	**$ 218.6**
Share of Total Value Added by Year	15%	15%	15%	16%	16%	4%	4%	4%	4%	4%	100%
NPV Total Value Added (2026 Base Year) - 8%											$ 162.6
NPV Total Value Added (2026 Base Year) - 2%											$ 201.9

Souce: Port Otago, Savvy, based on direct expenditure deflated to March 2020 dollars, applies March 2020 Value Added Mulitpliers (National).

Table 6.3 summarises the estimated direct, indirect and induced employment impacts of the Inland Port's construction. Like the value added results, these employment results are based on average employment productivities that applied in 2020, so can be considered as 2020 employment equivalents. They are measured in terms of full time equivalent jobs (FTEs) and reflect only the number of FTEs that would be required to support the lift in direct, indirect and induced economic activity in the economy assuming a linear (fixed) relationship between business output and employment.

Put simply, businesses do not necessarily employ additional staff if turnover increases. Businesses may be able to absorb some additional output using existing staff if, for example, they currently had low productivity (staff not being fully utilised), they could increase the hours of work across the week, or they could employ technology that would allow them to work more efficiently. Business responses to increased output varies by sector, with some sectors having more labour 'elasticity' than others. On this basis, Savvy considers that the employment impacts in Table 6.3 reflect a mix of sustained existing jobs and new jobs – mainly but not exclusively in the Otago Region attributable to project construction.[72]

In employment terms, the direct expenditure with mainly Otago Region based goods and service providers is estimated to sustain 76 FTE jobs for the duration of stage 1, reducing slightly to 65 FTEs for the duration of stage 2 and down to 12 FTEs for the duration of stage 3. Once indirect and induced employment impacts are included, total sustained and/or new employment increases to 262 FTEs for the duration of stage 1 (2027-2029), increasing slightly to 282 FTEs for the duration of stage 2, before dropping to an average of 71 FTEs for the duration of stage 3 (2032-2036). Over all ten (indicative) years of the Inland Port's development, the total cumulative employment impact is 1,705 FTE jobs. As with value added impacts, this

[72] Any new jobs to the region are contingent on being able to attract workers. Even if workers transfer from an existing job, there is likely to be a net increase in job 'opportunity'. Otago Region has below average unemployment in 2025 (3.0% compared to 5.0% nationally, although Dunedin City has 4.2% unemployment, source: Infometrics Regional Economic Profiles, 2025).

employment impact is spread over a broad range of sectors (not limited to the construction sectors) and should be considered as an upper limit of employment impacts.

Table 6.3 - Direct, Indirect and Induced Employment Contribution of Inland Port Construction by Year

	Stage 1			Stage 2		Stage 3					
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	Total
Direct Employment (FTEs)	76	76	76	65	65	12	12	12	12	12	**420**
Indirect Employment (FTEs)	126	126	126	154	154	43	43	43	43	43	**900**
Induced Employment (FTEs)	59	59	59	63	63	16	16	16	16	16	**385**
Total Employment (FTEs)	**262**	**262**	**262**	**282**	**282**	**71**	**71**	**71**	**71**	**71**	**1,705**
Share of Total Employment by Year	15%	15%	15%	17%	17%	4%	4%	4%	4%	4%	100%

Souce: Port Otago, Savvy, based on direct expenditure deflated to March 2020 dollars, applies March 2020 Employment Mulitpliers (National).

These medium term construction impacts will make a valuable contribution to the Dunedin and Otago Region economy including by sustaining construction employment and creating new job opportunities This is especially important given that the construction industry in Dunedin City accounted for the biggest loss of employment between 2024 and 2025 (with 205 less construction jobs filled over those 12 months).[73] The project's employment impacts are not limited to the construction sector once indirect and induced economic impacts are included. This too is important given that Otago Region s total employment reduced by 0.4% in the last year.[74]

The economic impact generated by the development of the Inland Port may not be considered significant in relative terms (i.e., relative to the size of Dunedin's or Otago Region's annual GDP in 2020 the net present value of the Inland Port's value added construction impact equates to 2% of Dunedin GDP and 1% of regional GDP, although will not all be felt in a single year).[75] However, in absolute terms, the development of the Inland Port is considered significant as it will be a large construction project in the context of the Dunedin and regional economy Dunedin City's economy contracted by 0.5% over the last year, and the regional economy had zero growth in the year ending March 2025. In that economic climate, large development projects are even more significant.

Savvy acknowledges that economic impacts quantified above cannot be wholly equated with enhancement of economic wellbeing However, it is considered that a substantial portion of those upstream impacts will: support local businesses that contribute to the vitality and vibrancy of local communities; provide meaningful, well paid employment; and provide incomes for households that support their standard of living.

[73] Source: Infometrics. Construction employment across total Otago region reduced by 283 jobs since 2024.
[74] Source: Infometrics. Nationally, employment in the YE March 2025 decreased by a higher 1.1%.
[75] Dunedin's GDP was $7.92 billion in 2020 and Otago Region's GDP was $17 49 billion in 2020 (source, Infometrics)

The construction of the Inland Port is just the start of the long-term economic impacts and benefits that the facility enables once operational. The ongoing economic impact of the operation of the Inland Port has not been modelled for this report. The core reason for that is because the Inland Port is intended to enable a restructure and consolidation of existing business activity (plus future growth) and as such, the initial operational economic impact of the Inland Port as a business entity is expected to be a transfer effect within the Dunedin (and Otago) economy (i.e., not net additional, at least in the short term).

This is not to say that the Inland Port will not contribute to growth in regional GDP once operational, particularly with the additional capacity enabled by stage 2 and 3 of construction Rather, the complexity of calculating those net additional operational (upstream) economic impacts robustly is considered beyond the scope of this report. Instead, other important economic benefits directly attributable to, or facilitated by, the Inland Port (once operational) are discussed (qualitatively and quantitatively) in the remainder of this report. This includes net direct employment growth (discussed below) and other downstream economic benefits that further cement the Inland Ports significant regional and national contribution.

6.4 Long Term Employment Impacts

Table 6.4 sets out informed estimates of staffing at the Inland Port once operational (direct employment). As signalled in previous sections, and discussed in more detail below, the Inland Port will allow for some consolidation of Port Otago's and Icon's current operations to the Mosgiel site. As such, permanent employment has been expressed in gross terms, and net terms once staff transferring from facilities that are closed and relocated are taken into account.

Table 6.4 – Gross and Net Additional Direct Operational Employment at the Inland Port (FTEs)

	Stage 1 FTEs	Stage 2 FTEs (additional)	Stage 3 FTEs (additional)	Total Permanent FTEs on Site	Transferred FTEs (Stage 1) *	Net Additional FTEs Created on Site
Container Terminal & Depot	6	2	2	10	6	4
Warehouse (Bulk)	13	16	12	41	12	29
Warehouse (FMCG) **	33	39	30	103	2	101
MPI/Customs Compliance Services	1	1	1	3	1	2
Total Logistics Park	53	58	45	157	21	136

Source: Port Otago, Icon Logistics/Dynes Group. Staging is indicative and reflects the incremental expansion of warehousing as well as the progressive transfer of container activity otherwise occuring in Port Otago facilities/Port Chalmers. Admin/office staff are captured as part of warehouse staffing.
** As the Logistics Park provides the opportunity to consolidate some of Icon Logistics' and Port Otago's operations in Mosgiel, some jobs/roles will be transferred from other sites within Dunedin City. ** Fast Moving Consumer Goods.*

The initial workforce on the site is expected to start with 53 permanent staff, with a further 58 to follow once stage 2 is operational, and a further 45 to follow once stage 3 is operational. In total, the number of jobs (workforce) sustained on the site is estimated to reach 157. Of that total, 21 jobs exist currently and will transfer to the Inland Port. In total, the Inland Port is expected to create 136 new jobs in Dunedin City in the short-medium term. To put that in context, there were 2,757 filled jobs in the Transport, Postal and Warehousing Industry in the year ending March 2025.[76] The net additional jobs created by the Inland Port will increase that by 5%. Overall, the Inland Port will be a significant employer in Otago Region.

[76] Source: Infometrics Economic Profile.

7 Direct Effects/Opportunities

This section discusses the direct positive economic impacts arising from the Inland Port – for Port Otago's container operations, the Dunedin container related logistics sector, exporters and importers in the Southern Region, and for the wider Dunedin City community.

7.1 Consolidation of Port Otago's Container Operations

If approved, the Inland Port will enable the following key changes in Port Otago's container operations. These are the direct impacts or opportunities provided by the Inland Port, which has been strategically planned to address the Port's current and future operational constraints[77] and achieve optimal container trade operations.[78]

- Closure and relocation of the Strathallan Depot to the site – noting that the lease expires in 2030
- Closure and relocation of the Ravensbourne Depot to the site.
- 30-40% of empty dry/ambient container processing at the Port Chalmers Depots will relocate to the site (transported by rail).[79]
- Non Fonterra warehousing (and associated logistics services) will relocate from Port Chalmers to the site (with surplus warehousing space removed). Export containers will be railed to Port Chalmers once packed.
- Port Otago will direct all full export containers (packed by other 3PL service providers) to arrive by rail, via the Inland Port (to the extent practical).
- With the exception of full imported containers able to be railed north directly from Port Chalmers (on return trips for exports arriving by rail from the north), and full import containers destined for customers in central Dunedin, Port Otago will rail all other full imported containers to the Inland Port and direct all full imported containers (destined for 3PL service providers for de vanning) to be collected from the Inland Port instead of Port Chalmers.

[77] As discussed in Section 3.3.
[78] As discussed in Section 3.4.
[79] Reefer container servicing and storage will remain at Port Chalmers.

— Port Otago will direct 3PL service providers in Dunedin to return all empty containers to the Inland Port (avoiding returns to Port Chalmers).[80]

The direct benefits of consolidating these Port Otago activities at the Inland Port, and the significant mode shift from truck to rail associated with those changes, include:

— Release of high value port land that will allow for increased full container storage capacity at the Port Chalmers container terminal. Land at Port Chalmers is indicatively valued at $1,500/sqm.[81] Industrial zoned land in Dunedin central is currently priced between $600-700/sqm. In Mosgiel, it is priced $300/sqm. Mosgiel is the more cost-effective location to consolidate (and expand) Port Otago's container business outside of Port Chalmers.

— Significant additional full container terminal capacity is created in Mosgiel (indicatively a 28% increase above the status quo).[82] This creates an overall increase in buffering capacity for container exports - improving 'just in time' delivery of export containers which in turn improves the efficiency of container handling at Port Chalmers, the resilience of export supply chains, and avoids potential disruptions to export dairy and meat production.

— Improved economies of scale for depot activities (improved efficiency and productivity).

— Increased utilisation of KiwiRail infrastructure.

— Significant reductions in heavy vehicle traffic within the main Dunedin urban area, including central Dunedin, along SH88, and in Port Chalmers. Quantification of the reductions in vehicle movements (where practicable) is discussed further below.

7.2 Consolidation of Icon's Container Operations

If approved, the Inland Port will enable the following key changes in Icon's container logistics operations. These are the direct impacts or opportunities provided by the Inland Port, which

[80] Alternatively, some 3PL service providers may be able to return empty containers to Icon's 95 Parry Street container yard (where they may be flipped for non-food exports, thus avoiding the need for servicing).
[81] While not likely to be 'sold' on the commercial property market, this is the indicative value that Port Otago works to recover from the land.
[82] Based on a 5ha container terminal proposed at the site, added to 17.7ha of container terminal and depot space at Port Chalmers currently. Relocation of warehousing and empty containers storage to the Park adds additional capacity.

has been strategically planned to address Icon's current and future operational constraints[83] and achieve a more optimised, solution focussed logistics service.

- Closure of the T-Shed warehouse in central Dunedin (i.e. no renewal of lease). Relocate dairy customer demand to new Inland Port warehousing.[84]
- Closure of the 88 Parry Street East warehouse[85] in central Dunedin (i.e. no renewal of lease).[86] Relocate general goods imports to Sawyers Bay warehouse instead
- Closure of the Carncross Street warehouse in Mosgiel (i.e. no renewal of lease).[87] Relocate customer demand to new Inland Port warehousing.
- Change role of the 95 Parry Street East warehouse (i.e. retain lease). Relocate dairy product storage to new Inland Port warehousing and limit function to non-dairy food-grade imports and exports. Utilise site for a small amount of container de-hires (returns) in the Dunedin Urban area for re use as domestic or low grade exports.
- Change role of the Sawyers Bay warehouse (i.e. retain lease). Relocate dairy exports (and imports for dairy export customers) to the Inland Port and limit function to general goods warehousing.

The direct benefits of consolidating Icon's dairy export (and dairy customer import) warehousing at the Inland Port, the significant mode shift from truck to rail associated with those changes, and the reduction in Icon's warehousing from 5 sites currently to 3 sites going forward include:

- On the assumption that warehouse lease costs are commensurate with industrial land values (discussed above), a reduction in operational costs per sqm by moving some warehouse space from central Dunedin to Mosgiel.
- Improved economies of scale for warehousing activities on the site (improved efficiency and productivity).
- Significant reductions in heavy vehicle truck movements (and therefore operational costs) within the main Dunedin urban area associated with bulk dairy exports not needing to travel into central Dunedin or Sawyers Bay warehouses for packing (and vice versa for imports). These reductions are in addition to the reductions described

[83] As discussed in Section 4.4.
[84] Refer Figure 4.2 for status quo vehicle movements from this warehouse.
[85] Refer Figure 4.4 for status quo vehicle movements from this warehouse.
[86] Only if Icon secures more import contracts for the Dunedin Hospital rebuild project will this warehouse be retained given its proximity to the construction site. This would be a temporary delay in closure.
[87] Refer Figure 4.6 for status quo vehicle movements from this warehouse.

above in relation to changes instigated by Port Otago that impact Icon's operations (including a reduction in vehicle movements needed to return and collect empty containers from the Strathallan Street depot and deliver and collect full containers to Port Chalmers by road). Having the empty container depot and container terminal co-located with Icon's warehousing at the Inland Port, will mean a fundamental shift away from Icon's current reliance on truck movements within the Dunedin urban area and will create significant improvements in the efficiency of Icon's logistic services. Quantification of the reductions in vehicle movements (where practicable) is discussed further below.

- Improved container transport productivity (time savings) by significantly reducing heavy truck movements (and vehicle kilometres) in the main Dunedin urban area where lower speed limits, traffic congestion and more stopping/starting, increases the time of shifting bulk and containerised product.

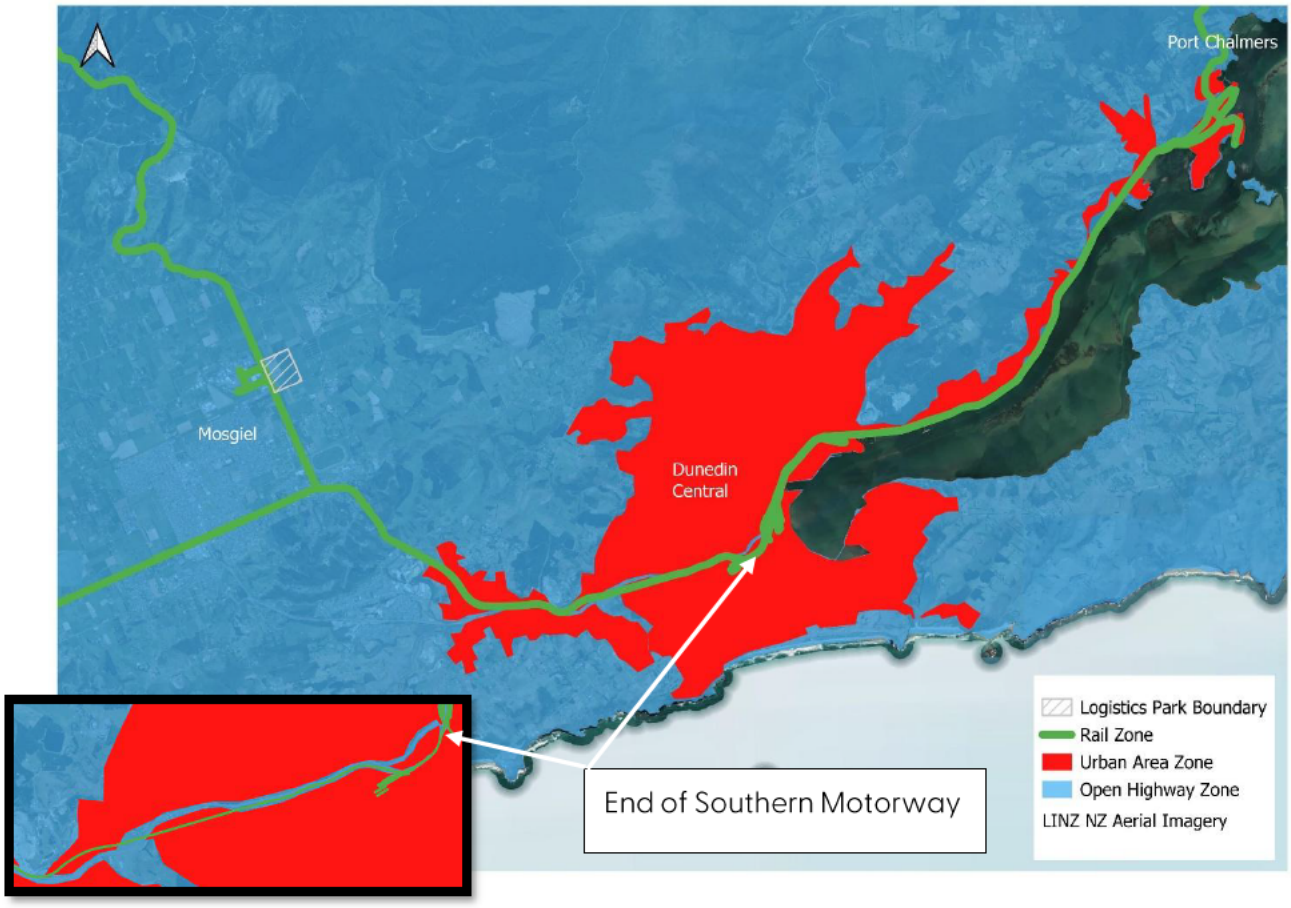
- Significant growth potential for warehouse capacity (including modern, fit-for purpose warehousing) at the Inland Port that would not have been achievable given the high demand for, and limited supply of, industrial land for lease or purchase in Dunedin. The Inland Port therefore allows for Icon's container logistics operations to expand efficiently and sustainably. The additional warehouse capacity also provides more buffering of warehouse capacity for export supply chains. In a similar way to the benefits of additional container terminal capacity, this also increases the resilience of export supply-chains and avoids potential disruptions to export dairy and meat production.

7.3 Import/Export Supply Chain Impacts

This section helps to illustrate how the Inland Port will significantly impact selected supply chains in the Southern Region that currently use Port Chalmers and Icon's 3PL services. Three case studies are presented using information provided by Icon. Each case study includes a brief qualitative description and quantitative assessment to help measure (as accurately as practicable) some of the direct effects associated with shifting logistics services to the Inland Port in Mosgiel with an associated mode shift to rail.

Figure 7.1 provides an indicative map of 'transport productivity zones' identified for the purposes of these case studies (and referred to in the qualitative analysis below). The boundaries of these zones (specifically the western boundary of the main Dunedin urban area) have been advised by Icon based on the known point where truck transport productivity rates change. The three zones in Figure 7.1 are:

Figure 7.1 – Indicative Transport Productivity Zones in and around Dunedin



- Open Highway Zone – this is the most productive zone from a truck transport perspective. It contains higher speed limits (i.e. 90km/hour), fewer stops/starts, and little or no congestion. The zone applies to everywhere outside of the Urban Area Zone and includes Mosgiel and through to the end of the Southern Motorway.[88] Icon has advised that average truck costs[89] when travelling in this zone are $3.50/km and the vehicle travel time rate averages 80km/hour.

- Urban Area Zone This zone starts where the Southern Motorway ends and carries through to Port Chalmers along SH88. It is characterised by lower speed limits including 50km/hour within urban streets, congestion in (but not limited to) peak periods, and more stopping/starting (including queuing at intersections/lights). Icon has advised

[88] While the travel route through central Mosgiel is urban (with associated urban speed limits and congestion etc), the relative impact of this short distance does not materially impact the overall travel cost/time per km.

[89] Based on a fully loaded truck. Applies to container skel truck or curtain-sider truck. Costs cover all costs except administration costs, interest and depreciation (i.e. covers driver wages, fuel costs, maintenance costs, road user charges etc).

that average truck costs[90] when travelling in this zone are [redacted] and the vehicle travel time rate averages just under 30km/hour.

- Rail Zone – This zone applies to the rail network. It is generally free of congestion, with minimal stopping/starting. KiwiRail has advised that average shuttle train costs[91] when travelling in this zone could be in the order of [redacted] and the vehicle travel time rate averages just under 40km/hour. For example, it takes approximately 45 minutes to travel the 28km from the Inland Port rail siding to Port Chalmers.

The following 3 case studies – all of which relate to export supply chains – account for an estimated 44% of the full export TEUs that arrive at Port Chalmers already containerised by truck (year ending June 2024).[93] This high sample size supports these 3 case studies being highly representative of the nature of economic benefits that will accrue to import and export supply chains in the Southern Region as a result of the Inland Port.

7.3.1 Customer Case Study 1 – [redacted]

[redacted] Their processing plant is located in [redacted] The processing plant operates for 11 months of each year, meaning that it generates demand almost year round for 3PL services and coastal and international shipping. Output from the processing plant is estimated at around [redacted] of specialised infant formula per annum.

Icon sends curtain sider trucks to the processing plan (from Dunedin) and brings the palletised product back to Dunedin to Port Otago's Sawyers Bay [redacted] warehouse. Empty food grade dry/ambient containers are brought by Icon's trucks from the container depot in Port Chalmers to the warehouse. The product is packed (by Port Otago) into those containers and then trucked to Port Chalmers by Icon. From there, around 70% of the containers are loaded onto coastal shipping where it is taken to [redacted] and transported to an [redacted] canning plant. The canned product is then repacked into containers and then exported from [redacted] The other 30% of containerised (un canned) product is exported directly from Port Chalmers.

On occasion, packed containers from the [redacted] warehouse are trucked to the KiwiRail CT (container) yard in central Dunedin instead of being taken to Port Chalmers.

[90] Ibid.

[91] With all 24 wagons loaded with full containers.

[92] This rate is subject to further commercial assessment and may be subject to change. It is commercially sensitive.

[93] Refer Section 3.1.2.

[redacted]

KiwiRail then rail those containers to [redacted] where they are loaded for coastal shipping at [redacted] for canning etc This alternative supply chain occurs when Port Chalmers does not have sufficient capacity in its container terminal

At the same time, [redacted] imports some ingredients and packaging from overseas and requires pallets and barrels to be brought back from the canning plant in [redacted] (via coastal shipping). These import/domestic containers are collected by Icon and de vanned in Sawyers Bay than taken back to the processing plant in [redacted] by curtain sider truck (on return trips).[95]

This supply chain is vulnerable to occasional floods/slips (as well as car crashes and road maintenance) that impact SH88 between Dunedin Central and Sawyers Bay/Port Chalmers. As an example, in October 2024, SH88 was closed for four days due to slips that blocked the road in multiple places (although notably not the parallel rail line which was unaffected). The slips prevented trucks reaching the [redacted] warehouse (and Port Chalmers). The detour was not available for heavy vehicles.[96]

The road closed on Friday and did not open again until 6am on the following Monday. If the road ha l opened any later than it did, the [redacted] processing plant would have had to cease production (and redirect all raw milk to other plants). This is because the processing only has enough storage on site for 2 days of production and an alternative food grade warehouse (with rail access) was not available A halt to production was avoided by optimising the site warehouse to its maximum capacity to cope with the backlog, as well as Icon preloading vehicles. Had [redacted] supply chain instead been able to use the Inland Port for warehousing and full container transport to Port Chalmers (by rail) at that time, this weather event would not have had any impact on product transport once it got to Dunedin.

In addition to improving the resilience of the [redacted] supply chain, another direct benefit of the Inland Port will be avoidance of any future leakage of export TEUs to [redacted] This is because Port Otago will gain a significant increase in full container storage capacity across its Port Chalmers and Inland Port terminals which will mean it is unlikely to need to 'close the port' in future for export receipts, such as when ships are delayed and the existing terminal reaches capacity.

[95] This is referred to as 'back loading' and makes the most of otherwise empty one-way truck movements.

[96] https://www.nzta.govt.nz/media-releases/state-highway-update-dunedin-otago-as-rain-continues-state-of-emergency-declared-dunedin/

Table 7.1 – Summary of Inland Port Impacts on a Section of the [redacted] Export Supply Chain (One-way Factory to Port Chalmers)

	Annual Change With Inland Port (n)	Annual Change With Inland Port (%)
Tonnes Lifted per Annum	*50,000*	
Kilometers (One Way Factory to Port Chalmers)	8	7%
Tonnes Moved per Annum (Tonne km) (One Way Factory to Port Chalmers)	400,000	7%
Vehicle Kilometers Travelled per Annum (One Way Factory to Port Chalmers)	-28,137	-17%
Indicative Transport Cost per Annum (s) (One Way Factory to Port Chalmers) **	$183,000	31%
Vehicle Movements per Annum (One Way Factory to Port Chalmers)	-2,000	-58%
Vehicle Travel Time - Hours per Annum (One Way Factory to Port Chalmers) (applies to transit time only) **	-903	-34%
Indicative Transport Emissions (CO2-e Tonnes per Annum) (One Way Factory to Port Chalmers) **	-115	-18%

Source: Savvy, Port Otago, Icon, Dynes Transport Group, MfE (for Emissions Factors).The change in vehicle type represents the warehouse packing stage of the supply chain.

*** Refer assumptions listed in Section 7.3 and/or Appendix E.*

Table 7.1 quantifies the expected impacts of the Inland Port on the [redacted] export supply chain. It models only the transportation of the product from the plant in [redacted] through to Port Chalmers (via the [redacted] Warehouse where it is containerised). That is, it is just a one way section of the export supply chain. Full details, including inputs and assumptions for this modelling, are contained in Appendix E. The colours in Table 7.1 match the detailed table in Appendix E for ease of cross reference.

Table 7.1 shows that if the same supply chain switched from a truck dominated 3PL service utilising a Sawyers Bay warehouse for packing to a truck and rail 3PL service utilising the Inland Port in Mosgiel that the total trip length from factory to Port Chalmers increases slightly by 8km (7%). For that trip, 13% of the distance occurs within the Urban Area Zone (Figure 7.1) under the status quo. Under the 'with Inland Port scenario' there is no travel by road within the Urban Area Zone (with the entire trip within the Open Highway Zone and Rail Zone).

The total tonne Kms (tonnes moved) per annum increases by 7% in accordance with the increase in distance. However, all other impacts of the Inland Port create moderate to significant reductions. This includes:

- 17% less vehicle Kms travelled per annum (i.e. a net reduction of 28,137 vehicle Kms, which includes a reduction of 23,118 vehicle Kms travelled within the Urban Area Zone per annum).
- 31% more transport costs per annum (i.e. a net increase of around $183,000 per annum). While the modelling shows that rail from the Inland Port may be more costly than using trucks under status quo warehousing arrangements, exporters such as [redacted] will not be looking at this metric in isolation of the other supply chain benefits for them (and the wider community).
- 58% less vehicle movements (i.e. a net reduction of 2,000 vehicle movements per annum. This reduction is all container skel truck movements. Under the status quo supply chain, 1,471 curtain sider truck trips are required per annum (to move the product in bulk form) plus 2,000 container skel truck trips (to move the product once containerised). With the Inland Port, this becomes 1,471 curtain-sider truck trips (ending at Mosgiel) and the equivalent of 83 full shuttle train trips from the Inland Port to Port Chalmers).
- 34% less hours per annum spent transporting [redacted] product to Port Chalmers (excluding the time at the warehouse). This is 903 less hours spent in transit and represents a significant increase in the productivity of the supply chain (same tonnes exported in less time).
- 18% less tonnes of CO2e emissions per annum (i.e. a net reduction of 115 tonnes of CO2e) on account of the emissions reductions associated with rail freight compared to road freight. This is made up of a 26 tonne reduction in CO2e emissions per annum in the Open Highway Zone (caused by the Inland Port being closer to the plant than the current Sawyers Bay warehouse), and a 127 tonne reduction in CO2e emissions per annum in the Urban Area Zone, although transport within the Rail Zone (which will generate an estimated 38 tonnes of CO2e emissions per annum) does pass through the urban environment of Dunedin, so the net reduction in emissions in the urban environment is 89 tonnes CO2e per annum (70%).
- This is relevant because while emissions that impact on air quality have not been modelled (e.g. particulates[97] from diesel combustion that have health impacts), they

[97] Nitrogen Oxide, particulate matter and sulphur dioxide.

would be expected to reduce broadly commensurate with the reductions in CO2e emissions. As such, there will be an estimated net 70% reduction in harmful pollutants per annum in the total urban environment from this one way section of the [redacted] supply chain between the factory and Port Chalmers under the 'with Inland Port' scenario.

The above reductions (benefits) for this case study are conservative in that they do not capture all of the transport components of [redacted] export and import supply chain that will be impacted by the Inland Port (including the movement of empty containers). However, the above partial analysis shows that it is not necessary to capture all of the transport detail in the [redacted] container supply chains to conclude that the Inland Port will have <u>significant positive effects</u> each year for:

- [redacted] (in terms of likely supply chain resilience and reduced carbon footprint),
- the 3PL service providers (in terms of improvements in productivity and efficiency),
- the Dunedin community (in terms of reduced urban traffic congestion and road damage and improved urban air quality linked to freight transport emissions), and
- NZTA (in terms of reduced road maintenance on state highways through the main Dunedin urban area to Port Chalmers).

7.3.2 Customer Case Study 2 – [redacted]

This case study relates to the [redacted] have two different supply chains to take export product from [redacted] to Port Chalmers. This case study is limited to the exporting of carcass and carton meat only.[98] An opportunity to further increase Icon's 3PL service role for [redacted] if the Inland Port is approved is discussed later in Section 8.

Currently, [redacted] sends Refrigerated Hardsider trucks (treated for this assessment as having the same transport costs and payload as a curtain sider truck) from [redacted] plant where it collects chilled boxed product (carcass meat) and then drives it to the [redacted], in Mosgiel's industrial zone. [redacted] pack the carcass/carton meat into (reefer) containers. [redacted] (Dunedin based) then collects the containers and

[98] This case study was applicable at the time it was carried out/drafted. Some aspects of this case study may be impacted by Icon only recently occupying the JV owned land adjoining the [redacted], and the interim logistics opportunities that site now provides. Such interim arrangements would not continue once the Inland Port was operational and those aspects of the case study are still applicable.

trucks them to Port Chalmers for export. They also collect empty reefer containers by truck from the Port Chalmers depot and drive these to the [redacted] (on return trips).

This supply chain avoids un-containerised product needing to be transported through the less productive and more costly Urban Area Zone, and the length of trip between the factory and the warehouse (coolstore) is reduced by having that warehouse in Mosgiel rather than in the main urban area of Dunedin. That section of the supply chain trip is 76km (one way). However, the less efficient transport of containerised product must then travel the relatively long distance from Mosgiel to Port Chalmers (32km in total by road), including 15km of that (approximately) within the Urban Area Zone.

Because this supply chain is dependent on using SH88 on route to Port Chalmers, it is subject to the same natural hazard risks (i.e. flooding/slips blocking SH88) and other unexpected traffic delays on SH88 (car crashes and maintenance) as faced by [redacted] export supply chain discussed above.

If the Inland Port is approved and operational, it is possible that the carcass/carton meat (estimated at [redacted] exported per annum) could be transported the [redacted] to the Inland Port, where it will be packed in those warehouses by [redacted] and stored (plugged in) and/or railed directly to Port Chalmers. Alternatively, it may be road-bridged from the [redacted] to the Inland Port (with no change in warehousing). Not only will the mode shift from truck to rail and the additional container terminal capacity improve the resilience of the supply chain to unexpected disruptions, but a range of other significant transport benefits are discussed below (Table 7.2) Again, the modelling considers only the one way section of the export supply chain from [redacted] to Port Chalmers under the status quo (no Inland Port) and with Inland Port scenarios. Full details, including inputs and assumptions for this modelling, are contained in Appendix E.

Table 7.2 shows that if the same supply chain switched from a truck dominated 3PL service utilising a [redacted] warehouse in Mosgiel for packing to a truck and rail 3PL service utilising the Inland Port (also in Mosgiel), that the total trip length from factory to Port Chalmers decreases slightly by 4km (4%). This is because the route utilising rail from Mosgiel to Port Chalmers is 28km compared to 32km by road. For that trip, 14% of the distance occurs within the Urban Area Zone (Figure 7.1) under the status quo. Under the 'with Inland Port scenario' there is no travel by road within the Urban Area Zone (with the entire trip within the Open Highway Zone (73% of the total distance) and Rail Zone (27% of the total distance).

The total tonne Kms (tonnes moved) per annum decreases by 4% in accordance with the decrease in distance. However, most other impacts of the Inland Port create more significant reductions. This includes:

— 35% less vehicles Kms travelled per annum (i.e. a net reduction of 47,139 vehicle Kms, which includes a reduction of 26,417 vehicle Kms in the Open Highway Zone (i.e. the stretch currently between the Coolstore and the end of the Southern Motorway) and a reduction of 22,496 vehicle Kms travelled within the Urban Area Zone per annum (being the rest of trip from the end of the Southern Motorway to Port Chalmers).

Table 7.2 – Summary of Inland Port Impacts on a Section of the [redacted] Export Supply Chain (One-way Factory to Port Chalmers)

	Annual Change With Inland Port (n)	Annual Change With Inland Port (%)
Tonnes Lifted per Annum	*38,000*	
Kilometers (One Way Factory to Port Chalmers)	-4	-4%
Tonnes Moved per Annum (Tonne km) (One Way Factory to Port Chalmers)	-155,800	-4%
Vehicle Kilometers Travelled per Annum (One Way Factory to Port Chalmers)	-47,139	-35%
Indicative Transport Cost per Annum (s) (One Way Factory to Port Chalmers) **	$45,000	9%
Vehicle Movements per Annum (One Way Factory to Port Chalmers)	-1,520	-58%
Vehicle Travel Time - Hours per Annum (One Way Factory to Port Chalmers) (applies to transit time only) **	-1,133	-50%
Indicative Transport Emissions (CO2-e Tonnes per Annum) (One Way Factory to Port Chalmers) **	-135	-29%

Source: Savvy, Port Otago, Icon, Dynes Transport Group, MfE (for Emissions Factors).The change in vehicle type represents the warehouse packing stage of the supply chain.

*** Refer assumptions listed in Section 7.3 and/or Appendix E.*

— 9% more transport costs per annum (i.e. a net increase around $45,000 per annum). This is a minor increase in potential transport costs compared to status quo warehousing and transport arrangements However, [redacted] would not be looking at this metric in isolation of the other supply chain benefits for them (and the wider community)

- 58% less vehicle movements (i.e. a net reduction of 1,520 vehicle movements per annum. This reduction is all container skel truck movements. Under the status quo supply chain, 1,118 Refrigerated Hardsider truck trips are required per annum (to move the product in bulk form) plus 1,520 container skel truck trips (to move the product once containerised). With the Inland Port, this becomes 1,118 Refrigerated Hardsider truck trips (still ending at Mosgiel) and the equivalent of 63 full shuttle train trips from the Inland Port to Port Chalmers).

- 50% less hours per annum spent transporting [redacted] carcass meat product to Port Chalmers (excluding the time at the coolstore). This is 1,133 less hours spent in transit per annum and represents a significant increase in the productivity of the supply chain (same tonnes exported in less time).

- 29% less tonnes of CO2e emissions per annum (i.e. a net reduction of 135 tonnes of CO2e) on account of the emissions reductions associated with rail freight compared to road freight. This is made up of a 69 tonne reduction in CO2e emissions per annum in the Open Highway Zone and a 95 tonne reduction in CO2e emissions per annum in the Urban Area Zone, although transport within the Rail Zone (which will generate an estimated 29 tonnes of CO2e emissions per annum) does pass through the urban environment of Dunedin, so the net reduction in emissions in the urban environment is 66 tonnes CO2e per annum (-70%).

- Again, while not modelled, there will be an estimated net 70% reduction in harmful pollutants per annum in the total urban environment from this one way section of the [redacted] carcass meat supply chain between the factory and Port Chalmers under the 'with Inland Port' scenario (with associated health benefits).

The above reductions (benefits) for this case study are conservative in that they do not capture all of the transport components of [redacted] carcass/carton meat export supply chain that will be impacted by the Inland Port (i.e., the movement of empty containers and empty trucks travelling back to [redacted]. However, the above partial analysis shows that it is not necessary to capture all of the transport detail in the [redacted] carcass meat container supply chain to conclude that the Inland Port will have <u>significant positive effects</u> each year for:

- [redacted] in terms of supply chain resilience and reduced carbon footprint),
- the freight/3PL service providers (in terms of improvements in productivity and efficiency), and

- the Dunedin community (in terms of reduced urban traffic congestion and road damage and improved urban air quality linked to freight transport emissions), and
- NZTA (in terms of reduced road maintenance on state highways through the main Dunedin urban area to Port Chalmers).

7.3.3 Customer Case Study 3 – [redacted]

[redacted] is an exporter of whole milk powder (base powders). Their processing plant is located [redacted] where is it close to its dairy farm suppliers (Figure 1.1). The processing plant operates for 11 months of each year, meaning that it generates almost year round demand for 3PL services and international shipping. Output from the processing plant is estimated at around 80,000 metric tonnes of whole milk powder per annum. This case study is focussed on the 3,000 tonnes per annum (4% of the total) that is exported from Port Chalmers.[99]

[redacted] sends curtain sider trucks to the processing plant (from Dunedin) and brings the 3,000 tonnes of palletised product back to their Carncross Street warehouse in Mosgiel. Empty food grade dry/ambient containers are brought by Icon's trucks from the depot in Strathallan Street (or Ravensbourne depending on where stock is available) to the warehouse. The product is packed (by Icon) into those containers and then trucked to Port Chalmers for export.

The othe[redacted] export milk powder is currently exported from [redacted] and they pack and ship the product (in their role as a 3PL service provider). The reason that a small portion is exported from Port Chalmers is driven by a combination of constraints with [redacted] warehouse capacity in the peak processing period, occasional ship scheduling issues and limited shipping lines calling at [redacted]

As the Port Chalmers supply chain is dependent on using SH88, it is subject to the same natural hazard risks (i.e. flooding/slips blocking SH88) and traffic delays (car accidents and road maintenance) as faced by [redacted] export supply chain discussed above. There are also risks associated with shipping from [redacted] as MSC Shipping are the only international shipping line calling at South Port and on occasion, they omi[redacted] from their route Icon and Port Otago consider that being able to export all of [redacted] product from Port Chalmers will reduce that particular risk (as Port

[99] This can increase up to 8,000 metric tonnes per annum handled by Icon. This case study takes a conservative approach.

Chalmers is serviced by a range of shipping lines, including Maersk Shipping for which Port Chalmers functions as a hub port in the South Island.

The Inland Port will unlock the opportunity to send 100% o[redacted]exports via Port Chalmers (as it could provide for the necessary warehouse space, including space that will allow[redacted] exports to grow in future). This and other opportunities to improve supply chain efficiencies are discussed in Section 8.

If the Inland Port is approved and operational, it is intended that the 3,000 tonnes of milk powder (currently handled by Icon (conservative)) will be transported the minor additional distance (i.e. 1km) [redacted] Inland Port, where it will be packed in those warehouses and stored and/or railed directly to Port Chalmers. Not only will the mode shift from truck to rail and the additional container terminal capacity improve the resilience of the Port Chalmers supply chain to unexpected disruptions, but there is also a range of other transport benefits, discussed below (Table 7.3). These changes are significant in relative terms, but still only small in absolute terms in the context of [redacted] total export supply chains. Again, the modelling considers only the one way section of the export supply chain from [redacted] to Port Chalmers under the status quo (no Inland Port) and with Inland Port scenarios (and assuming no change in tonnes being exported). Full details, including inputs and assumptions for this modelling, are contained in Appendix E.

Table 7.3 shows that if the same supply chain switched from a truck dominated 3PL service utilising the Carncross warehouse in Mosgiel for packing to a truck and rail 3PL service utilising the Inland Port (also in Mosgiel), that the total trip length from factory to Port Chalmers decreases slightly by 3km (1%). This is because the route by rail from Mosgiel to Port Chalmers is 28km compared to 32km by road (offset by the additional 1km to the Inland Port by road).

For that trip, 6% of the distance occurs within the Urban Area Zone (Figure 7.1) under the status quo. Under the 'with Inland Port scenario' there is no travel by road within the Urban Area Zone (with the entire trip within the Open Highway Zone (88% of the total distance) and Rail Zone (12% of the total distance)).

The total tonne Kms (tonnes moved) per annum decreases by 1% in accordance with the decrease in distance. However, all other impacts of the Inland Port create more material reductions. This includes:

- 17% less vehicles Kms travelled per annum (i.e. a net reduction of 3,660 vehicle Kms, which includes a reduction of 2,024 vehicle Kms in the Open Highway Zone (i.e. the stretch currently between the Carncross warehouse and the end of the Southern Motorway) and a reduction of 1,776 vehicle Kms travelled within the Urban Area Zone

per annum (being the rest of trip from the end of the Southern Motorway to Port Chalmers).

— 5% more transport costs per annum (i.e. a net increase of just $4,000 per annum). This is a minor increase in transport costs, but as discussed above, [redacted] would not look at this cost in isolation of the other benefits achieved for their supply chain (and relative to the externalities of their supply chain on the wider community).

Table 7.3 – Summary of Inland Port Impacts on a Section of the [redacted] Export Supply Chain (One-way Factory to Port Chalmers)

	Annual Change With Inland Port (n)	Annual Change With Inland Port (%)
Tonnes Lifted per Annum	*3,000*	
Kilometers (One Way Factory to Port Chalmers)	-3	-1%
Tonnes Moved per Annum (Tonne km) (One Way Factory to Port Chalmers)	-10,200	-1%
Vehicle Kilometers Travelled per Annum (One Way Factory to Port Chalmers)	-3,660	-17%
Indicative Transport Cost per Annum (s) (One Way Factory to Port Chalmers) **	$4,000	5%
Vehicle Movements per Annum (One Way Factory to Port Chalmers)	-120	-58%
Vehicle Travel Time - Hours per Annum (One Way Factory to Port Chalmers) (applies to transit time only) **	-89	-28%
Indicative Transport Emissions (CO2-e Tonnes per Annum) (One Way Factory to Port Chalmers) **	-10	-13%

Source: Savvy, Port Otago, Icon, Dynes Transport Group, MfE (for Emissions Factors).The change in vehicle type represents the warehouse packing stage of the supply chain.

*** Refer assumptions listed in Section 7.3 and/or Appendix E.*

— 58% less vehicle movements (i.e. a net reduction of 120 vehicle movements per annum. This reduction is all container skel truck movements. Under the status quo supply chain, 88 curtain sider truck trips are required per annum (to move the product in bulk form) plus 120 container skel truck trips (to move the product once containerised). With the Inland Port, this becomes 88 curtain-sider truck trips (still ending at Mosgiel) and the equivalent of 5 full shuttle train trips from the Inland Port to Port Chalmers).

- 28% less hours per annum spent transporting [redacted] whole milk powder to Port Chalmers (excluding the time at the warehouse). This is 89 less hours spent in transit per annum and represents a moderate increase in the productivity of the supply chain (same tonnes exported in less time).
- 13% less tonnes of CO2e emissions per annum (i.e. a net reduction of 10 tonnes of CO2e) on account of the emissions reductions associated with rail freight compared to road freight. This is made up of a 5 tonne reduction in CO2e emissions per annum in the Open Highway Zone and a 7 tonne reduction in CO2e emissions per annum in the Urban Area Zone, although transport within the Rail Zone (which will generate an estimated 2 tonnes of CO2e emissions per annum) does pass through the urban environment of Dunedin, so the net reduction in emissions in the urban environment is 5 tonnes CO2e per annum (70%).
- Again, while not modelled, there will be an estimated net 70% reduction in harmful pollutants per annum in the total urban environment from this one way section of the [redacted] whole milk powder supply chain between the factory and Port Chalmers under the 'with Inland Port scenario (with associated health benefits for the wider community).

The above reductions (benefits) for this case study are conservative in that they do not capture all of the transport components of [redacted] Port Chalmers export supply chain that will be impacted by the Inland Port (i.e., the movement of empty containers and empty trucks travelling to [redacted]. However, the above partial analysis shows that it is not necessary to capture all of the transport detail in the [redacted] whole milk powder container supply chain to conclude that the Inland Port will have moderate positive effects each year for:

- [redacted] (in terms of likely supply chain resilience and reduced carbon footprint) relative to the status quo),
- the 3PL service providers (in terms of improvements in productivity and efficiency), and
- the Dunedin community (in terms of reduced urban traffic congestion and road damage and improved urban air quality linked to freight transport emissions), and
- NZTA (in terms of reduced road maintenance on state highways through the main Dunedin urban area to Port Chalmers).

7.4 Total Initial Mode Shift Expected

This section provides an overview of the total anticipated initial mode shift (from truck to rail) for full container imports and exports enabled by the Inland Port.

On the assumption of business as usual export and import volumes at the time that stage 1 of the Inland Port could be operational, total TEU movements between Port Chalmers and the Inland Port estimated for stage 1 of the development is expected at around 30,000 TEUs per annum.[100] This equates to around 15,000 wagon movements (based on 2 TEUs per wagon) or the equivalent of 625 full shuttle train movements per annum.[101] This new rail activity[102] is indicatively made up of:

- around 13,000 full imported TEUs moving from Port Chalmers to the Inland Port. This is close to 100% of the estimated number of full import TEUs currently departing Port Chalmers by Road (refer Section 3.1.3). This includes the majority[103] of the estimated 12,500 TEU full containers currently collected by 3PL service providers and 500 TEUs currently de vanned by Port Otago at Port Chalmers warehouses that will instead be de vanned at the warehousing at the Inland Port.
- around 17,000 full export TEUs moving from the Inland Port to Port Chalmers. As discussed in Section 3.1.2, approximately 16,380 export TEUs currently arrive at Port Chalmers by truck that are already containerised (some containerised outside of Dunedin but most packed in Dunedin or Mosgiel by Icon and other 3PL service providers) and a further 6,230 TEUs currently arrive at Port Chalmers by truck in bulk and are packed into containers by Port Otago at Port Chalmers. This is a total of 22,610 export TEUs currently received at Port Chalmers by road.[104] The initial 17,000 TEUs mode shift will account for 100% of containerised exports currently arriving by truck and a portion of the export TEUs being packed at Port Chalmers (which will instead be packed at the warehouses at the Inland Port).

[100] Stage 1 relates to the initial amount of warehousing GFA that will be developed and associated terminal and depot capacity.
[101] Planned rail transfer of imported empty containers to the Inland Port would be expected to be back-loaded on rail shuttle trips.
[102] It is understood that KiwiRail have the capacity (including rolling stock and staff) to cater for the increased demand.
[103] Where more efficient, some imported containers destined for customers within central Dunedin may still be collected by truck from Port Chalmers rather than having to get them from the Inland Port in Mosgiel and bring them back into central Dunedin.
[104] This equates to 30% of all export TEUs in the year ending June 2024 arriving by road. The remaining 70% currently arrive by rail.

This initial export mode shift will increase export product (TEUs) arriving by rail to Port Chalmers from 70% (year ending June 2024) to **93%,** with room for this to grow in future stages to get closer to 100%. This represents a significant 75% initial decrease in export TEUs being trucked to Port Chalmers based on YE June 2024 volumes. It equates to taking an estimated 8,500 truck movements off urban Dunedin roads per annum.

The anticipated mode shift for full import TEUs will increase import product (TEUs) departing by rail from Port Chalmers from 10% (year ending June 2024) to close to **100%**. This represents a near 100% decrease in import TEUs being trucked from Port Chalmers. It equates to taking an estimated 6,430 truck movements off urban Dunedin roads per annum.

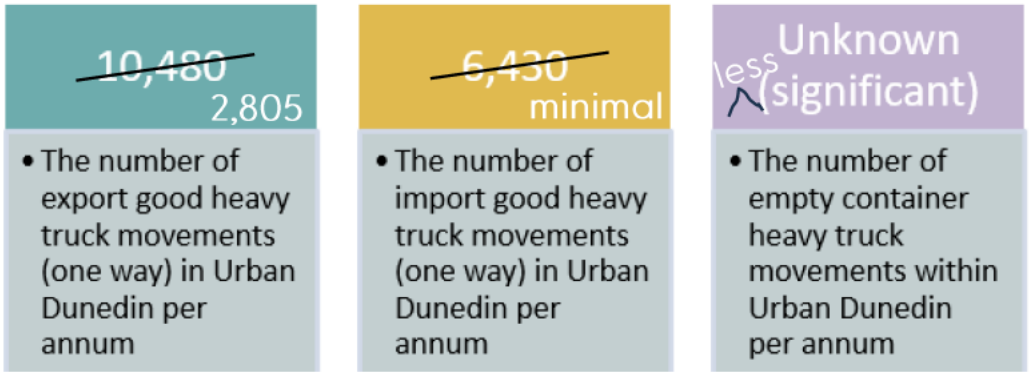
This is a combined total of nearly 15,000 heavy (one-way) truck movements removed from urban Dunedin Roads per annum (or 30,000 truck movements once return journeys are accounted for) just from the initial stage 1 of the Inland Port.

While it is not possible to quantify the GHG savings, as the vehicle tonne kilometres associated with these avoided truck movements is too complex to model for all supply chains, every tonne of freight carried by rail delivers a 70% CO2e emissions saving over road freight using diesel heavy goods vehicles.[105] See however the case studies above which quantity the CO2e reductions from an estimated 44% of containerised export receipts that will shift to rail with the Inland Port. If scaled up across the total import and export TEUs (30,000) expected to shift to rail in stage 1 of the Inland Port, the CO2e reduction could be in the order of 1,050-1,100 tonnes per annum across impacted supply chains (and occurring mostly within the main Dunedin urban environment).

Overall, the initial mode shift enabled by the Inland Port will see a range of immediate and significant benefits for Dunedin City (and Otago Region) compared with a business as usual future. These include reductions in road congestion (including the value of time), GHG emissions and road maintenance costs, and improvements in road safety, fuel consumption and air quality. This is in addition to the improved productivity and efficiency of the import and export supply chains – which in aggregate, will be significant for Port Otago, the 3PL sector in Dunedin and importers and exporters in the Southern Region (as shown by the case studies above).

Relative to a business as usual future (Section 5.1), key initial/stage 1 road transport statistics of a 'with Inland Port future will (based on Savvy's modelling) change as follows:

[105] KiwiRail.



The mode shift benefits directly enabled by the Inland Port are projected to increase above these initial benefits, including as further increments of warehousing space are added to the site in stages 2 and 3 of development. These, and other facilitated growth effects are discussed further below.

8 Facilitated Effects/Opportunities

In addition to direct economic (and environmental) benefits, the Inland Port is expected to facilitate a range of other economic effects and unlock opportunities for further economic growth in Otago Region and the Southern Region.

8.1 Enabling Churn in Central Dunedin Industrial Zone

Dunedin City has a very tight industrial land market with demand for prime locations exceeding supply. In the Council's 2022 Business Development Capacity Assessment (BDCA), it found that there was insufficient industrial land to meet expected growth in demand over the short term (inclusive of the required competitiveness margin). The shortfall over the 2024-2027 period was estimated at 17ha. The BDCA report adopted a medium growth outlook for the urban environment which is conservative when compared to the more recent 2023 Housing Development Capacity Assessment that switched to a high growth outlook.

Local authorities must respond to a short fall in short-term capacity in accordance with the National Policy Statement on Urban Development. Savvy is not clear what actions are being taken by Council, but the Future Development Strategy 2024 (FDS) identifies "three potential areas within the wider Burnside/Fairfield area that may be appropriate for new industrial zoning, subject to further detailed investigation".[106] The FDS then notes that all three areas are constrained by infrastructure that is unlikely to be resolved by the Council until the medium-long term (unless developers are able to progress the upgrades themselves sooner).

The Dunedin FDS, which relies on the BDCA 2022 report, states that "The Harbourside area is among the most desirable areas for industrial businesses" due to its proximity to arterial routes, deliveries and customer bases. It confirms that it is at or near capacity. The Inland Port will unlock valuable industrial land in the Harbourside area as follows:

- Port Otago's lease on the Strathallan Depot site (2.7ha) is due to expire in 2030, but if the Inland Port is approved and operational sooner, this rare vacant land[107] could be released in the short term.

[106] Dunedin FDS, page 90.

[107] The Strathallan Depot is a yard-based industrial activity with little or no permanent buildings. Hence, once the depot closes, the land will be effectively vacant.

- The consolidation of Icon's warehousing facilities (attributable to the Inland Port) will mean that T Shed (which is 2,000sqm GFA wharf side) and 88 Parry Street (11,977sqm GFA) will also be released as it will be surplus to requirements.

Elsewhere, Icon has indicated that they would release their Carncross warehouse in the Mosgiel industrial zone (3,272sqm GFA) if the Inland Port is operational. While collectively the two changes in the Harbourside area and the change in Mosgiel will not solve a short-term shortage of industrial capacity in the Dunedin urban environment, they will help minimise that shortfall. With little or no land or existing buildings available to buy or lease in the Harbourside area, the Inland Port may facilitate an ability for some (albeit limited) churn in the industrial market (which is important to help existing businesses move between premises to better meet their size requirements (larger or smaller) while staying in the same market location).

Alternatively, the availability of these three sites may provide an opportunity to cater for some latent business demand. That is, new businesses wanting to establish in Dunedin City but who have been constrained due to a lack of available industrial zoned land.

8.2 Reduced Leakage and Improved Service

As signalled in the [redacted] case study (Section 7.3.1), there are times when Port Chalmers cannot accept export containers from [redacted] In such situations, export product is transported t[redacted] where it is shipped from [redacted] This occasional export leakage (not limited to the [redacted] supply chain) is both inefficient for the exporter (adding freight costs and GHG emissions) and an opportunity cost for Port Otago (lost revenue). It reflects poorly on Port Otago's service reputation to have to 'close' Port Chalmers to export container receipts.

There is also leakage of imported goods destined for Otago businesses/consumers, particularly to Lyttleton Port in Canterbury Region. This includes imports destined for Queenstown/Central Otago. It would be more efficient if these imported goods arrived at Port Chalmers, were railed to the Inland Port and then trucked to the customers. The total road distance (one-way) between Lyttelton Port and Queenstown is 492km compared to a distance of 296km between Port Chalmers and Queenstown (a difference of 196km one way). Port Otago estimated that import demand from Queenstown/Central Otago currently handled by Lyttelton Port equates to around 7,000 containers per annum (10,000 15,000 TEUs). The trigger to securing this leakage out of Otago Region, according to importers spoken to by Port Otago, will be new and improved third party warehousing which the Inland Port can provide.

Improving the capacity and resilience of Port Otago to handle import and export containers will enhance its service levels and reputation. In achieving this, the Inland Port will avoid export leakage and start to facilitate the reduction in Otago's import container leakage – improving the efficiency and productivity of Southern Region supply chains.

8.3 Regional Export and Import Sector Growth

The Inland Port may facilitate economic growth (GDP and employment) in Dunedin City, Otago Region and the wider Southern Region in four ways:

1. The Inland Port improves the attractiveness of Otago Region and the wider Southern Region for new export and import manufacturers and processors (as a place to invest and do businesses) – potentially facilitating growth in GDP and employment.[108]

2. The Inland Port improves the ability of Port Otago to compete with other South Island seaports, facilitating an increase in market share of existing/established export and import trade [109] More container trade through Port Chalmers will have flow-on economic impacts (GDP and employment) across a range of sectors in Dunedin City and Otago Region. Port Otago and Icon have advised they are working on a range of proposals with exporters based north and south of Dunedin City who are currently exporting via Prime Port and South Port.[110] They estimate that these proposals could, contingent on the Inland Port being approved and the customers being willing to switch ports, equate to an estimated 44,000 49,000 additional containers per annum (72,000 79,000 TEUs) passing through the Inland Port and Port Chalmers. See Example 1 below.

3. The Inland Port creates an opportunity to consolidate export freight coming out of Southland onto rail (where feasible to do so) to the Inland Port which will magnify the mode shift benefits already discussed in this report (i.e. between the Inland Port and Port Chalmers). Like the Fonterra Taieri Distribution Centre, these are the opportunities created when logistics warehousing has a rail siding.[111]

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[108] It is acknowledged that primary production-based export processors, that the ability to sustain new processing plants may be constrained by the ability to increase primary production output in the Southern Region. These same constraints would not apply for import based manufacturers.

[109] This refers to import trade that is not already considered as leakage from Otago Region (and covered above).

[110] This includes potentially pitching for 100% of [redacted] export trade of whole milk powder.

[111] The proposal being discussed with [redacted] for example, would include [redacted]) building a rail siding at their plant, or conversely Icon road-bridging (trucking) the bulk product a

4. The Inland Port provides opportunities for value added manufacturing to support existing export customers. This becomes feasible because of the economies of scale created by the Inland Port. Where there is capacity to do so, these new manufacturing businesses/activities would be expected to agglomerate in Mosgiel, close to the Inland Port, or potentially within the Inland Port warehousing space itself. See Examples 2 and 3 below.

Example 1 – [redacted]

Separate to [redacted] export supply chain for carcass/carton meat discussed in [redacted] currently rail their non carcass meat processed in [redacted] plants (which they pack into containers at the [redacted] plant) from [redacted] ([redacted]) directly to Port Chalmers. However, KiwiRail has already had to invest $1 million recently to maintain the bridge on that rail spur, and there is a further $3 million required to upgrade the rail spur itself. This would be required in a years' time. Furthermore, the rail siding at the [redacted] plant is around 100 years' old and is at the end of its life. Estimates are that it will cost [redacted] around $8 million to upgrade it. These costs are not considered commercially viable. Without the upgrades, product is expected to be railed directly to Port Chalmers for one more year and then the rail spur will be closed.

While one alternative is to upgrade the [redacted] Rail Container Yard and road-bridge (truck) the product from the [redacted] plant to that yard where it can be railed direct to Port Chalmers, Icon has proposed that they road all of the product that was going on rail using low carbon Hydrogen vehicles[112] and High Productivity units › Inland Port. As well as avoiding significant capital costs (for KiwiRail and [redacted]) this approach further (and considerably) reduces [redacted] carbon footprint.

Example 2 – [redacted] Canning Plant

As explained in Section 7.3.1, [redacted] and before being exported, 70% of this needs to be freighted (by coastal shipping and road) to a canning plant in [redacted] There are significant inefficiencies in this supply chain (added cost, time and risk) as well as GHG emissions. These inefficiencies could be solved with a canning plant included at the Inland Port, bypassing the need for any

short distance to the nearest existing rail siding, and railing it to the Inland Port where it will be packed in a dedicated warehouse and railed to Port Chalmers.

[112] Icon estimates a full transfer to Hydrogen trucks could be possible within 2 years. Some use of diesel trucks may be needed during the first year.

product to go t[redacted] Icon have indicated that such a facility could be incorporated in the warehousing space proposed to be allocated to [redacted]. This valued added proposition would create additional jobs in the Inland Port (Dunedin City). The cost savings for [redacted] could be significant.

Example 3 – Wood Pallet Factory

Fonterra is committed to decarbonising its dairy product manufacturing operations, with an end to coal heating sources by 2037. They are set to convert two coal boilers to wood pellets at its Clandeboye site in South Canterbury.[113] This is a $64 million investment that will cut the Co operative s overall manufacturing emissions by 9% with reductions totalling 155,000 tonnes of CO2e per year. The transition of the Clandeboye factory from coal to wood pellets, and the supply chains that this would create, is quoted by Fonterra as providing further opportunities "for future decarbonisation investments at out other sites, primarily Darfield, Studholme, Tākaka and Edendale"

As far as Savvy is aware, a supplier for the wood pellets for Clandeboye has not been confirmed. If a wood pellet factory could be established in Mosgiel (and the SLPL's vacant land in the industrial zone may be a suitable location),[114] then this could offer a range of supply chain benefits for Fonterra, Icon and Port Otago. For example, wood pellets could be railed from the nearby Inland Port to the Clandeboye factory (Temuka) and the same train can bring the milk products back to the Inland Port (for transfer by rail to Port Chalmers).

Icon describes this an 'end to end' solution, which is the best way to maximise the efficiency, productivity and resilience of supply chains. This opportunity would not be possible without the Inland Port (not only because it provides the rail hub, but because it provides the additional warehousing and container terminal storage capacity that would be needed to transfer this export activity from Canterbury to the Otago Region.

All of these wider facilitated effects of the Inland Port will drive increased rail utilisation in the Southern Region. Figure 8.1 provides a summary graphic of rail freight tonnage density (2023) [115] Compared to the North Island, the rail network in the South Island carries significantly less freight. While this is a reflection of lower relative demand (North Island cities having a greater population and a greater share of economic activity is based in the North Island) and likely a

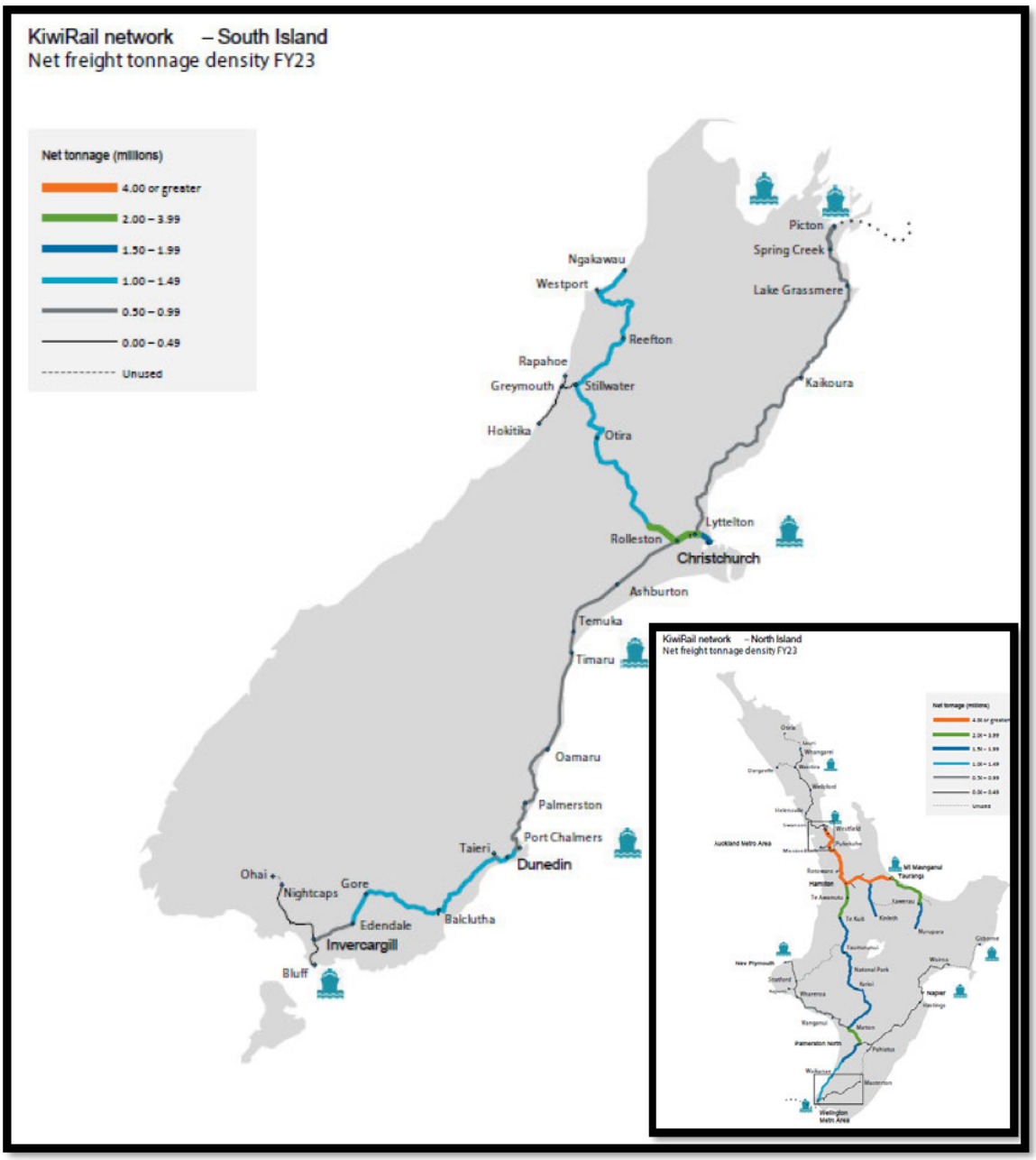
[113] Fonterra announces its largest decarbonisation project to date

[114] The Inland Port provides an opportunity for the JV partners to put this land to other uses.

[115] Source: New Zealand Ports and Freight Yearbook 2024. Deloitte Access Economics.

less congested state highway network, what this data shows is that there is considerable scope to increase the freight load on the South Island rail network. Of note, the highest freight density in the South Island rail network is between the Rolleston inland port and Lyttleton Port. The Inland Port in Mosgiel is expected to significantly increase the freight tonne density of the rail network in the Southern Region (increasing the return on investment for KiwiRail).

Figure 8.1 – KiwiRail Net Freight Tonnage Density (FY23) South Island vs North Island



9 Key Findings and Conclusions

9.1 Summary of Economic Benefits

Port Chalmers and the Dunedin City 3PL sector are facing a range of operational constraints that have direct impacts on import and export supply chains in the Southern Region. With the Strathallan Street container depot lease soon to expire, some existing warehousing in central Dunedin reaching the end of its building life (and no-longer commercially feasible to maintain for food grade imports and exports), and Dunedin's urban population continuing to increase[116] (putting additional pressure on urban area road congestion), a business as usual future is not expected to be a viable option.

The Inland Port is a strategically located development that could address all of those key constraints. Savvy considers that it will have a transformative impact on Port Otago's container operations and provide for growth over the long term. The need for the development is already recognised in the Dunedin City FDS 2024 2054, with the site in Mosgiel identified in the growth strategy.[117] The following provides a summary of key economic benefits of the Inland Port discussed throughout this report.

Short-Medium Term Construction Impacts[118]

- The direct expenditure on the construction of the Inland Port (rail siding, pavement/yard, just over 100,000sqm GFA of warehousing and ancillary activities) is estimated to stimulate $_{2020}$162.6 million in total (direct, indirect and induced) value added (GDP) in New Zealand (net present value, 8% discount rate), with the significant majority of that gross impact felt in Otago Region.
- In total employment terms, the direct expenditure over the three construction stages is estimated to support 1,705 FTE jobs nationally (in a mix of sustained existing jobs and

[116] StatisticsNZ 2025 released population projections by territorial authority (2023 base, 2053 outlook) rank Dunedin City 15th out of 67 territorial authorities for absolute growth between 2023-2053, with a projected increase under the medium growth series of 15,600 additional residents, bringing the total population to 146,900 by 2053. In percentage growth terms (medium series), Dunedin City ranks 37th (annual average growth of 0.4%), but this is relative to an already large population base. Under the high growth series, Dunedin City is projected to have an additional 33,500 residents by 2053.

[117] This is relevant for criterion 22(2)(a)(x) for accepting a referral application under the Fast Track Approvals Act 2024.

[118] Savvy acknowledges that not all economic impacts (GDO and employment) equate to an increase in economic wellbeing.

new job opportunities), again with a significant share of these FTE jobs in Otago Region.

- This employment and value added (GDP) impact is spread over a broad range of industries (not limited to the construction sector).

Employment Generation (Operational)

- In total, the Inland Port is expected to create 136 net additional new, high value jobs in Dunedin City in the short medium term. This is in addition to 21 existing jobs that will transfer from other Port Otago and Icon facilities to the Inland Port.

Supporting Existing Infrastructure

- The Inland Port will deliver new regionally significant infrastructure and enable the continued functioning of existing nationally significant infrastructure (Port Chalmers and the rail network) which will benefit businesses in the Southern Region.
- It will avoid pressure to expand Port Chalmers through coastal reclamation and provides for sustainable long term growth of Port Otago's container operations.
- It will improve the utilisation of KiwiRail's existing rolling stock and track assets (and staff). For the route between the Inland Port and Port Chalmers, the initial uplift is estimated at 15,000 containers per annum (30,000 TEUs), with foreseeable projected growth to 25,000, 35,000 and 40,000 containers.
- It is considered that the Inland Port could also facilitate greater mode shift of import and export trade from truck to rail north and south of Dunedin City.

Reducing Externalities of Road Freight

- The stage one of the Inland Port is estimated to remove a minimum of 15,000 heavy (one-way) truck movements from urban Dunedin roads per annum (or 30,000 truck movements once return journeys are accounted for) based on Savvy's modelling.
- This mode shift will Improve the wellbeing of communities in the main Dunedin urban area through reduced traffic congestion, improved road safety, improved air quality and reduced road damage.
- One Heavy truck and trailer is equivalent to 21 cars in terms of road degradation, providing significant cost savings in road maintenance, including for NZTA.

Improving Supply Chain Productivity and Efficiency

- The Inland Port will support primary industry import and export supply chains across the Southern Region.
- Assessment shows that it will significantly improve supply chain efficiency and productivity through greater economies of scale, the co location of container facilities on a single site outside the main Dunedin urban area, and mode shift to rail which lowers freight risk and reduces the time that import and export products are in transit.

Improving Resilience

- The Inland Port will significantly increase container terminal (full container storage) capacity. This is expected to provide critical buffering for export container supply chains when shipping is delayed.
- It will support greater connections and capacity between importers/exporters and logistics warehousing, rail infrastructure and ports in the South Island in the case of major disruptions.
- It will reduce the risk of natural hazard events and other unexpected traffic delays (accidents and road maintenance) impacting import and export supply chains, particularly risks to SH88 to Port Chalmers.

Support the Transition to a Low Carbon Economy

- GHG emissions from the Transport, Postal and Warehousing industry is a major environmental issue for Dunedin City. In 2023 it was the second highest contribution to GHG emissions.
- Between 2018 and 2023, the Transport, Postal and Warehousing industry had the highest increase of GHG emissions in Dunedin City (up 4.8 kilo tonnes).
- The Dunedin City Council has identified the need for an inland freight hub south of Dunedin in its Zero Carbon Plan.
- Every tonne of freight carried by rail delivers a 70% CO2e emissions saving over road freight using diesel heavy goods vehicles.
- 3 case studies on export supply chains (which account for an estimated 44% of containerised export receipts at Port Chalmers in 2024) show that the Inland Port could reduce CO2e emissions by a combined total of 261 tonnes per annum.

- If scaled up across the total import and export TEUs (30,000) expected to shift to rail in stage 1 of the Inland Port, the CO2e reduction could be in the order of 1,050 1,100 tonnes per annum across impacted supply chains.

Wider Economic Benefits

- The Inland Port will (by allowing some of Icon's operations to move as well as the relocation of the Strathallan Depot) free up some industrial land/floorspace in Dunedin's prime industrial location, enabling some much-needed churn in the market.
- It is expected to reduce existing leakage of export trade to other ports when Port Chalmers has, on occasion, reached capacity for full container storage
- The Inland Port is likely to provide the market conditions needed to attract Otago bound imports back to an Otago port.
- Savvy considers that it will facilitate growth in Port Otago's annual import and export container volumes (market share) by offering competitive advantages over other ports.
- It may facilitate growth of new import and export manufacturing businesses in Otago Region and the wider Southern Region due to the supply chain efficiency, productivity and resilience benefits able to be offered.
- All of these wider/facilitated economic benefits have the potential to generate additional GDP and employment in the Southern Region.

9.2 Economic Costs

Savvy does not consider that the Inland Port creates any significant economic costs. Those that have been identified are discussed below.

9.2.1 Loss of Land-based Primary Production

The site contains Land Use Capability (LUC) 1 land and therefore constitutes highly productive land according to the National Policy Statement for Highly Productive Land. Development of the site for an industrial activity precludes the opportunity for land based primary production over the long term, which would in turn supports direct, indirect and induced economic activity in the Otago Region.

A detailed assessment of the commercial (economic) viability of a range of different primary production land uses on the site has been assessed for the application by AbacusBio Limited.

Savvy has taken the estimated annual gross output (turnover) of two of those land uses and modelled them in the same IO model to estimate how those primary production activities would contribute (in gross terms) to value added and employment (once direct, indirect and induced economic impacts are included).

The two land uses modelled by Savvy are sheep farming on all 40ha of the site (with results summarised in Table 9.1) and blueberry farming on half (20ha) of the site (with results summarised in Table 9.2). Only the sheep farming is considered the most likely and viable primary production land use for the site by AbacusBio Limited, with the blueberry option (impacted in extent by flood susceptibility on some of the land) considered high risk and of low probability of being commercially attractive. It is therefore included as 'best case' scenario, and therefore the worst case opportunity cost if the Inland Port is approved.

Table 9.1 – Opportunity Cost of Long Term Sheep Farming on the Site (30yrs, 8% Discount Rate)

	Direct Impact	Indirect Impact	Induced Impact	Total Impact (Annual)	Total Impact 30 years (Undiscounted)	Total Impact 30 years (8% discount rate)
Sheep, beef cattle, and grain farming						
FTEs (annual average)	0.2	0.2	0.1	**0.47**	**14.0**	
Value Added ($\$_{2020}$m)	0.03	0.03	0.01	**$ 0.07**	**$ 2.2**	**$ 0.81**
Gross Household Income ($\$_{2020}$m)	0.00	0.01	0.00	**$ 0.02**	**$ 0.6**	**$ 0.24**

Source: StatisticsNZ PPI deflators, StatisticsNZ 2020 National Input-Output Table and mulitpliers. Savvy Consulting, Project team inputs. Results are in $2020 and employment terms.

Table 9.2 - Opportunity Cost of Long Term Blueberry Farming on the Site (30yrs, 8% Discount Rate)

	Direct Impact	Indirect Impact	Induced Impact	Total Impact (Annual)	Total Impact 30 years (Undiscounted)	Total Impact 30 years (8% discount rate)
Horticulture and fruit growing						
FTEs (annual average)	13.2	8.8	3.7	**26**	**769**	
Value Added ($\$_{2020}$m)	1.0	1.0	0.5	**$ 2.5**	**$ 76.0**	**$ 28.50**
Gross Household Income ($\$_{2020}$m)	0.4	0.5	0.2	**$ 1.0**	**$ 31.2**	**$ 11.71**

Source: StatisticsNZ PPI deflators, StatisticsNZ 2020 National Input-Output Table and mulitpliers. Savvy Consulting, Project team inputs. Results are in $2020 and employment terms.

Both Table 9.1 and 9.2 include the total (direct, indirect and induced) value added, household income and employment (FTE) impacts for a single year of output, as well as the cumulative impacts over 30 years (the long term), and finally the net present value of those long term impacts (using an 8% discount rate). The modelling shows that the net present value impacts on value added range from $\$_{2020}$0.81 million (sheep farming) to $\$_{2020}$28.5 million (blueberry farming). Total employment impacts (gross) range between 0.5 and 26 FTEs per annum, or 14 769 FTEs over a 30 year period.

Savvy considers that these primary production opportunity costs (most likely to be at the bottom of the range presented) are inconsequential relative to the quantified and significant upstream economic impacts of just the construction of the Inland Port over an indicative 10 year period, and once ongoing (but unquantified) upstream and downstream operational economic impacts and wider benefits of the Inland Port are taken into account.

9.2.2 Other Economic Costs and Disbenefits

The Inland Port will cause increased heavy (and some light) vehicle movements through the main street (SH87) of Mosgiel township (including increased congestion and road degradation, and reduced road safety and air quality). These localised changes (which initially reflect a transfer of truck movements from elsewhere in the Dunedin road network – and a net overall reduction at the total network level) are discussed in more detail in the Integrated Transport Assessment

Savvy acknowledges, but has not quantified (or monetised), the localised transport effects for the Mosgiel community (and associated road owners) but considers, based on conclusions in the Integrated Transport Assessment, that such economic costs would have only a minor offsetting effect on the transport related economic benefits for the total Dunedin urban area.

A key outcome of the Inland Port will be a reduction in truck movements as increasing shares of container trade using Port Chalmers shift from road to rail. A disbenefit of the project is therefore potential reduced demand for truck drivers, particularly those working for (or in relation to) Icon's logistics activity.[119]

The extent to which this may result in job losses, will be a matter for Icon (and Dynes Transport Group) to determine and has not been specifically discussed. It may, for example, be possible for those drivers to be utilised across other transport services provided by Dynes Transport Group (other than container logistics) which may be experiencing growth. What has been discussed however, are future opportunities to grow container trade across the Southern Region which the presence of the Inland Port will facilitate. Even with the mode shift to rail, any growth in container trade in Otago will generate demand for truck transport, particularly the long distance road transport of export and import products to and from the Inland Port (which will continue to be most efficient and economical using curtain-sider trucks for companies without rail sidings).

Therefore, even *if* there are a number of truck driving job losses in the short-term operation of the Inland Port (which is uncertain), these would be minor relative to estimated employment

[119] As discussed earlier, no reduction of Icon's warehouse based staff are anticipated, with many roles transferring to the Inland Port alongside further growth of warehouse staff.

growth at the Inland Port, and in the medium long term, those truck driving job losses are likely to be recouped and exceeded.

Last, the Inland Port provides a number of opportunities to increase Port Otago's market share of container trade in the Southern Region, including recapturing leakage of import and export container activity related to businesses located in Otago Region. While this generates opportunities for economic growth and employment in Otago Region, the reduction of container activity in other ports/regions creates opportunity costs in those economies. This disbenefit of the project – while neutral at the national level – is however akin to trade competition effect between regions and would be disregarded under the RMA. The Inland Port will also provide additional job opportunities in Dunedin commensurate with any increase in container trade using Port Chalmers, which could be filled by specialist workers moving from those impacted ports/inland ports.

9.3 Overall Conclusions

Based on the comprehensive assessment carried out for this report, Savvy concludes that the Inland Port in Mosgiel, Dunedin City, will deliver significant regional and national economic benefits in the short, medium and long-term Those direct and facilitated economic benefits are widespread and are expected to outweigh any actual or potential economic costs or disbenefits arising from the proposal. Table 9.3 summarises some of the gross quantified economic impacts/benefits (where this has been possible).

Table 9.3 – Summary of Quantified Economic Benefits of the Inland Port

Economic Benefit	Estimate
Construction Impacts	1,705 FTE jobs (gross) created or sustained over an indicative 10 year period Up to $\$_{2020}$162 6 million (gross) value added (GDP) in net present value terms (8% discount rate)
Permanent Jobs Created on Site	136 high value, new jobs (over and above staff transferring from consolidated facilities).
Annual CO2e Avoided (based on 2024 container trade)	1,050 1,100 tonnes/annum (net).

Increased utilisation of KiwiRail's existing rolling stock and track assets between Mosgiel and Port Chalmers.	Initial uplift of 15,000 containers per annum (30,000 TEUs), with foreseeable projected growth to 25,000, 35,000 and 40,000 containers per annum.
Reduction in heavy truck movements from urban Dunedin roads (based on 2024 container trade)	Minimum of 15,000 one way or 30,000 return journeys based on Savvy's modelling assumptions.

Appendix A – Author CV

I (Natalie Hampson) am the owner and director of Savvy Consulting, which was established in November 2023. Prior to establishing Savvy, I was a director at Market Economics Limited. I have worked in the field of economics for 25 years for commercial and public sector clients with a particular focus (although not exclusively) on economic assessment within the framework of the Resource Management Act (RMA). Since 2001, I have specialised in studies relating to land use analysis, assessment of demand and markets, the form and function of urban and rural economies and growth, policy analysis, and evaluation of economic outcomes and effects, including costs and benefits.

I have considerable experience assessing economic costs and benefits of proposed plan changes, district plan reviews, structure plans, resource consents, fast track applications and policy proposals throughout New Zealand. I have been heavily involved in the preparation of assessments under the National Policy Statement on Urban Development (including Housing and Business Development Capacity Assessments and Future Development Strategies, particularly in Rotorua and Queenstown. I was the co-author of the s 32 assessment and Cost Benefit Analysis (CBA) for the proposed National Policy Statement for Highly Productive Land. I was the author of the CBA for the proposed National Policy Statement for Indigenous Biodiversity and the amendments to the National Environmental Standards for Plantation Forestry.

My clients include some of New Zealand's largest residential, commercial and industrial developers (e.g. Carter Group, Ngai Tahu and Remarkables Parks). I provide services to Woolworth's New Zealand, Port Otago, and Christchurch International Airport. I have acted on behalf of numerous councils throughout New Zealand as well as the Mana Ahuriri Trust (a PSEG) in Hawke's Bay. Other recent projects have included economic assessments (or expert evidence) for: Winston Pulp and Paper in relation to the closure of their plant in Ruapehu District; peer review of a coal mine expansion in Gore District; the proposed Silverlight Studios film campus in Queenstown-Lakes District; Wellington Airport (submissions on the district plan); and Nelson Airport runway extension plan change and NOR (peer review). I am currently involved in a covenant amendment before the High Court and have provide evidence to the Land Valuation Tribunal.

I have been involved (or continue to be involved) in numerous fast-track applications around the country. I was a member of the Expert Panel for the Taranaki VTM FTAA project.