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ECONOMIC ASSESSMENT

LYTTELTON PORT COMPANY LIMITED

**ASSESSMENT OF ECONOMIC BENEFITS OF THE PROPOSED LYTTELTON HARBOUR
CHANNEL DEEPENING PROJECT**

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SUMMARY

- (i) Economic wellbeing and the efficient use and development of resources are relevant matters to consider under the Resource Management Act (RMA).
- (ii) The New Zealand economy is highly dependent upon international shipping and sea ports.
- (iii) Lyttelton Port is by far the most significant port in the South Island in terms of total tonnages of cargo and containers, the value of exports and the value of imports. Lyttelton Port has been growing in relative importance and is expected to continue to do so in the future. Over the past seven years containers (20 foot equivalent units (TEUs)) handled by the Port have grown by almost 50% to 372,019 TEUs in the year ending June 2015. Lyttelton Port Company Limited (LPC) forecasts ongoing growth for its container terminal to reach well over one million TEUs by 2041, or average annual growth of greater than 3.9% per annum. Non-containerised volumes of export and import trades are expected to continue growing but not as fast as containerised cargo.
- (iv) The agriculture, forestry and fishing and manufacturing industry groups alone generate an estimated 99,840 jobs or 35% percentage of the total employment in the Canterbury region and underpin much of the economic activity of metropolitan Christchurch and the wider Canterbury region. These two industry groups are highly dependent upon Lyttelton Port exporting their finished products and importing goods required as inputs to their production activities. The Port also continues to fulfil a significant role in the rebuild of Christchurch City after the earthquakes of 2010 and 2011.
- (v) The proposed CDP is required because New Zealand's international container trade shipping services are trending towards larger vessels and fewer port calls to reduce international shipping costs.
- (vi) If Lyttelton Port becomes big ship capable freight costs are estimated to decrease by greater than 10% for Canterbury and West Coast shippers of overseas containerised cargo. If Lyttelton Port does not become big ship capable, freight costs are estimated to increase by between 11 and 50% for Canterbury shippers of overseas cargo and between 50 and 100% for West Coast shippers of overseas cargo. These cost penalties will negatively impact on business profitability and competitiveness and increase costs for consumers.
- (vii) The CDP will enable local residents and businesses to provide for their economic wellbeing and is consistent with the efficient use of resources.

INTRODUCTION

Background

1. Lyttelton Port Company Limited (LPC) is proposing to deepen the navigation channel at Lyttelton Port (the Port) so that international ships of a 14.5 metre draught can access the Port during all tides. This would involve deepening, extending widening of the existing channel. The existing channel ends approximately 1 km inside the harbour entrance, whereas the deepened channel would extend approximately 4 km beyond the harbour entrance. There would also be an extension to the existing ship-turning basin and the deepening of the berth pockets at Cashin Quay and the future berth pockets in Te Awaparahi Bay ('the Proposal').¹
2. The dredged seabed material is proposed to be deposited at a 1,200 hectare off-shore spoil ground. Approximately 18 million cubic metres of material would need to be removed in order to complete the Proposal. The channel and ship-turning basin and berthage areas need to be regularly dredged after being deepened due to sediment in-fill. This is referred to as 'maintenance dredging' and its purpose is to maintain the design depth of the channel. It is anticipated that there will usually be a single maintenance dredging campaign each year after the CDP is completed.
3. Trade through the Port has grown considerably across both containerised and general cargo over the last 20 years and LPC expects this growth to continue into the foreseeable future, as a result of:
 - a. Growth in Canterbury and South Island export and imports;
 - b. Greater use of Lyttelton Port instead of other South Island ports as shipping companies have reduced services to some ports; and
 - c. In the short to medium term, the Port handling increased quantities of building materials and machinery for the greater Christchurch rebuild.
4. The deepening of the Port's channel is required because the international, and specifically the New Zealand, container trades are trending towards larger vessels and fewer port calls to reduce international shipping costs. At present the average sized container ship calling at New Zealand ports has a capacity of approximately 2,700 twenty-foot container equivalent units (TEUs). The largest sized ships currently calling at New Zealand ports regularly have a capacity of approximately 4,100 TEUs. It is expected in future more ships with capacities in the range of 5,000 to 8,000 TEUs will be used on New Zealand trade routes as even larger vessels are used on the more significant international trade routes. Deepening the channel will enable the Port to continue to be an international port servicing Canterbury and the South Island. Bigger ships are also more fuel efficient and therefore have a reduced carbon footprint. On a per TEU basis, a 6,500 TEU vessel gives a 31% reduction in CO₂ emissions compared to a 2,600 TEU vessel.²

¹ For a full description of the activities, location and methodologies proposed as part of the Channel Deepening Project refer to Section Two (Project Description) of the Assessment of Environmental Effects.

² See 'The Question of Bigger Ships; Securing New Zealand's International Supply Chain'; Update – April, 2012; New Zealand Shipper's Council.

5. The CDP requires resource consents from the Canterbury Regional Council (Environment Canterbury) and this requires an Assessment of the Environmental Effects (AEE) of the CDP.

Report Purpose

6. The purpose of this report is to examine the economic benefits of the CDP, focussing on:
 - a. The economic significance of the Port to Christchurch and the wider Canterbury region; and
 - b. The role of the CDP in the continuation and enhancement of the Port's contribution to the economic well-being of the city, and the region.

Report Format

7. The remainder of this report is in seven parts and covers:
 - a. The relevance of economic concepts under the Resource Management Act (RMA);
 - b. The economic significance of merchandise trade to the New Zealand economy;
 - c. The economic significance of Lyttelton Port;
 - d. The Canterbury regional economy;
 - e. The West Coast regional economy;
 - f. The implications of the introduction of bigger container ships on New Zealand's trade routes; and
 - g. The report's conclusions.

ECONOMICS AND THE RMA

Community Economic Wellbeing

8. Economic considerations are intertwined with the concept of the sustainable management of natural and physical resources, which is embodied in the RMA. In particular, Part II section 5(2) refers to enabling "*people and communities to provide for their social, economic and cultural well being*" as a part of the meaning of "*sustainable management*", the promotion of which is the purpose of the RMA.
9. The CDP is expected to contribute to the social and economic wellbeing of the people and communities of Christchurch City, the Canterbury region and the wider South Island.

Economic Efficiency

10. Part II section 7(b) of the RMA notes that in achieving the purpose of the Act, all persons "*shall have particular regard to ... the efficient use and development of*

natural and physical resources” which includes the economic concept of efficiency.³ Economic efficiency can be defined as:

“the effectiveness of resource allocation in the economy as a whole such that outputs of goods and services fully reflect consumer preferences for these goods and services as well as individual goods and services being produced at minimum cost through appropriate mixes of factor inputs”.⁴

11. More generally economic efficiency can be considered in terms of:
 - a. Maximising the value of outputs divided by the cost of inputs;
 - b. Maximising the value of outputs for a given cost of inputs;
 - c. Minimising the cost of inputs for a given value of outputs;
 - d. Improving the utilisation of existing assets; and
 - e. Minimising waste.
12. The CDP would provide lower cost shipping services for South Island exporters and importers and is therefore consistent with the efficient use and development of resources.

Viewpoint

13. An essential first step in assessing the economic significance of the infrastructure and associated activities of Lyttelton Port is to define the appropriate viewpoint that is to be adopted. This helps to define which economic effects are relevant to the analysis. In this case it is appropriate to consider both regional and national perspectives.
14. In adopting broad regional and national viewpoints the financial impacts for a company such as LPC are generally not relevant. Instead the focus is on the wider impacts for all Canterbury and New Zealand businesses and residents. However since LPC is 100% owned by Christchurch City Holdings Ltd, a 100% owned subsidiary of The Christchurch City Council, the equity returns from the LPC’s operations flow through to the city and therefore are of relevance from a regional perspective.

Intangible or Non-monetarised Effects

15. In economics, 'intangible' costs and benefits are defined as those which cannot be quantified in monetary terms. For any proposal such effects may include amenity effects, landscape effects, ecological effects, Māori cultural and relationship effects and recreational effects. Such effects may be positive or negative – i.e. a benefit or a cost for a particular community of interest.
16. Sometimes attempts can be made to estimate monetary values for so-called 'intangibles' using techniques such as willingness to pay surveys or inferring values on the basis of differences in property values. However these techniques are frequently subject to uncertainty and criticism.

³ See, for example, in *Marlborough Ridge Ltd v Marlborough District Council* [1998] NZRMA 73, the Court noted that all aspects of efficiency are “economic” by definition because economics is about the use of resources generally.

⁴ Pass, Christopher and Lowes, Bryan, 1993, *Collins Dictionary of Economics* (2nd edition), Harper Collins, page 148.

17. It is generally better not to attempt to estimate monetary values for these effects but to leave them to be part of the overall judgement under section 5 of the RMA. This also avoids the danger of 'double-counting' – i.e. including them within a quantified measure of efficiency and treating them as a separate consideration in the overall judgement under section 5.⁵ The 'intangible' effects of the CDP are considered in a number of the Technical Reports included as appendices to the AEE.

THE IMPORTANCE OF MERCHANDISE TRADE TO NEW ZEALAND⁶

18. Merchandise trade is extremely important to the economic wellbeing of New Zealanders because the relatively small size of our population, labour force and economy limits the range of commodities that can be efficiently produced in New Zealand. In addition we are reliant on imports of commodities which can be produced more efficiently overseas. Lower cost imports help maintain the competitiveness of New Zealand producers as well as providing cost savings to consumers.
19. Merchandise trade enables New Zealand to specialise in the production of certain products in which New Zealand has a comparative advantage enabling production surplus to domestic consumption to be exported. These exports in turn provide the foreign exchange to enable New Zealand to finance the purchase of competitively priced imported goods and services.
20. The alternative model of “fortress New Zealand” would see higher priced goods and services, reduced choice in the range of goods and services available in New Zealand and a less efficient use of our physical and natural resources. This would result in lower incomes and a lower standard of living for New Zealanders.
21. New Zealand's reliance on overseas trade and sea transport is highlighted by the total volume of containers handled across all New Zealand ports representing almost 1% of annual global container throughput.⁷ New Zealand's population of 4.7 million people is only 0.06% of the world's population.
22. Although the New Zealand economy has diversified with growth in non-agricultural industries, it remains heavily dependent upon the agricultural sector and the export of agricultural commodities. In the year ending 31 December 2015, dairy products, meat, fruit, wool and raw hides, skins and leather made up 39% of the value of New Zealand's commodity⁸ export trade. Mineral fuels, vehicles, parts and accessories, plastics and electrical machinery and equipment are the most important import commodities making up 36% of the value of New Zealand's commodity import trade in the year ending 31 December 2015.

⁵ This view appears to be consistent with that of the Board of Inquiry for the MacKays to Peka Peka Expressway Project. See paragraph 1,137 of Final Report and Decision of the Board of Inquiry; April 2013.

⁶ Data in my evidence is sourced from Statistics New Zealand unless stated otherwise.

⁷ Source: The Question of Bigger Ships. Securing New Zealand's International Supply Chain. New Zealand Shippers' Council; August 2010.

⁸ A distinction is made between “commodity trade” (or “merchandise trade”) and total trade. Commodity trade relates to the exporting and importing of goods only, whereas total trade includes the exporting and importing of both goods and services. In the year ending December Quarter 2015 New Zealand's export of services made up 29.3% of the total export of goods and services. Most of these relate to earnings from services related to tourism.

23. In 2012/13, 99.6%⁹ of New Zealand's exports and imports of goods by volume and 85.6% by value was transported by sea. This highlights the significant role played by New Zealand sea ports.

THE ECONOMIC SIGNIFICANCE OF LYTTTELTON PORT

Port Operations and Facilities

24. Lyttelton Port is recognised as a "lifeline utility"¹⁰ and "significant infrastructure" at the local and national level.¹¹ It plays a significant role in the current and future economic (and social) well-being of Greater Christchurch and the Canterbury region in that:
- a. It is a key contributor to the economic drivers of the Canterbury (and South Island) regional economy, which in turn underpins much of the economic activity within Greater Christchurch; and
 - b. It contributes to the Christchurch rebuild process.
25. As at 30 June 2015, LPC had \$327.9 million dollars worth of property, plant and equipment. During the year ended 30 June 2015, the company collected \$109.1 million in revenue, provided over 500 jobs and paid \$48.5 million in salaries and wages. It spent \$30.9 million on goods and services, much of this going to local Canterbury suppliers.¹²
26. In terms of total tonnage, Lyttelton Port is the largest port in the South Island and the fourth largest in New Zealand (behind Tauranga, Auckland and Whangarei). It is New Zealand's second largest export port (behind Tauranga). In the year ended 30 June 2015, a total of 5,775,498 tonnes of overseas cargo was loaded or unloaded through Lyttelton Port, accounting for 9.9% of all New Zealand seaports'¹³ trade – 9.9% of exports and 9.9% of imports. Lyttelton Port accounted for 43.1% of South Island seaports' overseas trade – 41.2% of exports and 46.8% of imports. Total overseas trade through Port Chalmers (Otago) was 2,029,564 tonnes, only 35% of the trade through Lyttelton Port, with 2,467,731 tonnes through Southport (Bluff), 1,090,814 tonnes through Port Nelson, 1,356,593 tonnes through PrimePort (Timaru) and 669,075 tonnes through Picton Port (Marlborough).¹⁴
27. By volume, containers make up the largest share of trade through the Port followed by coal, bulk fuels, dry bulk products, logs, and cars. For the year ending 30 June 2015, 372,019 twenty-foot container equivalent units (TEUs) were moved through the Port, and although slightly down on the 376,567 TEUs in the previous year, this still represents an increase of 48.4% over the last seven years.
28. By way of comparison containers moving through other South Island ports in 2014/15 were – Port Chalmers (172,800 TEUs), Port Nelson (90,422 TEUs),

⁹ Source: Ministry of transport website: www.transport.govt.nz/ourwork/tmif/freighttransportindustry/ft100

¹⁰ See Civil Defence Emergency Management Act 2002, s 60.

¹¹ See New Zealand Government's 2011 National Infrastructure Plan and Christchurch City Council's Christchurch Transport Plan 2012-42.

¹² Source: Data from Lyttelton Port Company 2015 Annual Report and 2015 Annual Review.

¹³ Because of the relatively small volumes of cargo passing through airports the percentages of total New Zealand trade volumes (i.e. including seaports and airports) are very similar – i.e. within one decimal point.

¹⁴ Source: Statistics New Zealand Overseas Cargo Statistics.

PrimePort (Timaru) (88,000 TEUs) and SouthPort (Bluff) (35,800 TEUs). In 2014/15 Lyttelton Port handled 49% of the South Island's container movements, up from 43% in 2010/11.¹⁵

29. In the containers moving through Lyttelton Port were manufactured goods, including processed agricultural commodities from the Canterbury region and other South Island regions. For the year ending June 2015, coal exports reduced by 20.9% to 1,637,482 tonnes, bulk fuel volumes were down 1.6% to 1,027,369 tonnes, dry bulk imports were up 5.0% on the previous year to 769,019 tonnes (largely driven by a continuing significant increase in cement imports), and log exports were down 9.6% to 543,814 tonnes. Motor vehicle imports were up 17.4% to 47,858 units. The dramatic rise in cement imports is symptomatic of the role the Port is playing, and will continue to play, in the Christchurch City rebuild programme.

Export Values

30. In calendar year 2015, exports through Lyttelton Port totalled \$4,568 million in value, or 9.0% of New Zealand's total merchandise exports.¹⁶ This is up from \$2,386 million in 2005 (which represented 7.6% of New Zealand's exports in 2005). By way of comparison exports in 2015 from Port Otago were valued at \$3,505 million (6.9% of New Zealand's total merchandise exports, down from 9.9% in 2005); exports through PrimePort (Timaru) were valued at \$1,498 million (2.9% of New Zealand's total merchandise exports, down from 3.5% in 2005); exports through SouthPort were valued at \$1,205 million (2.4% of New Zealand's total merchandise exports, down from 2.7% in 2005); exports through Port Nelson were valued at \$842 million (1.7% of New Zealand's total merchandise exports, down from 2.2% in 2005); exports through Port Marlborough were valued at \$83 million (0.2% of New Zealand's total merchandise exports, up from 0.1% in 2005); and exports through Christchurch airport were valued at \$1,644 million (3.2% of New Zealand's total merchandise exports, up from 3.1% in 2005).
31. In 2015 the value of exports through Lyttelton Port were 39% of the South Island's value of exports from sea ports, up from 29% in 2005. Due to the exclusion of coal export values, however, these percentages are understated.
32. The main export trades by value through Lyttelton Port in 2015 were dairy products (\$1,771 million and 15.0% of the total for New Zealand); meat (\$579 million and 11.0% of the total for New Zealand); wool (\$367 million and 43.0% of the total for New Zealand); wood and wood products (\$178 million and 5.1% of the total for New Zealand) and fish (\$143 million and 9.8% of the total for New Zealand).

Import Values

¹⁵ Based on data derived from port company annual reports.

¹⁶ This excludes coal export values, which are excluded from official statistics for confidentiality reasons. In 2010 Solid Energy's coal exports totalled 2 million tonnes and had an approximate value of \$516 million (source: Solid Energy Limited). Using the same average price per tonne for shipments in 2015 implies a value of around \$422 million. Also Statistics New Zealand data on export and import values by port is compromised by the problems that arise with trans-shipment – i.e. the shipment of goods or containers to an intermediate port and then to another port. To avoid double counting in national statistics, Statistics New Zealand compile port statistics on the basis of first port of unloading and last port of loading. This results in the first and last ports' data being higher than it should be and other ports' data being lower than it should be. Because of the calling patterns for vessels serving New Zealand ports import values for Auckland and export values for Tauranga are likely to be overstated and the export and import values for other ports, including Lyttelton Port are likely to be understated. This problem is most evident in relation to containerized cargo.

33. In calendar year 2015, imports through Lyttelton Port totalled \$4,001 million in value, or 7.8% of New Zealand's total merchandise imports. This is up from \$2,296 million in 2005 and which represented 6.3% of New Zealand's imports in 2005. By way of comparison in 2015 imports through Port Otago were valued at \$373 million (0.7% of New Zealand's total merchandise imports, down from 1.0% in 2005); imports through SouthPort were valued at \$681 million (1.3% of New Zealand's total merchandise imports, up from 1.1% in 2005); imports through Port Nelson were valued at \$263 million (0.5% of New Zealand's total merchandise imports, down from 0.6% in 2005); imports through PrimePort were valued at \$364 million (0.7% of New Zealand's total merchandise imports, down from 1.0% in 2005); and imports through Christchurch airport of \$693 million (1.3% of New Zealand's total merchandise imports, the same as in 2005).¹⁷
34. In 2015 the value of imports arriving at Lyttelton Port were 70% of the South Island's value of imports arriving via sea ports, up from 64% in 2005.
35. The main import trades by value through Lyttelton Port in 2015 were fuels (\$542 million and 10.4% of the total for New Zealand); vehicles (\$550 million and 7.8% of the total for New Zealand); plastics and plastic articles (\$235 million and 11.4% of the total for New Zealand); iron and steel and iron and steel articles (\$199 million and 13.9% of the total for New Zealand), fertilizers (\$125 million and 17.2% of the total for New Zealand); rubber and rubber products (\$98 million and 15.9% of the total for New Zealand); and electrical machinery (\$140 million and 3.2% of the total for New Zealand).

Coastal Trade

36. About 15% of New Zealand's inter-regional domestic trade is transported by sea by dedicated coastal vessels (85%) and international vessels (15%).¹⁸ The main coastal trades are cement, fuel and containerised cargo on the Pacifica service and international services.

Cruise Ship Visits

37. The cruise ship industry is a small but growing component of tourism in Canterbury. Only a number of smaller cruise ships currently visit Lyttelton Port, with most being diverted to Akaroa due to earthquake damage at Lyttelton Port. A recent report¹⁹ by Cruise New Zealand estimated that for the 2014/15 cruise ship season, the 75 voyage calls led to 127,400 passenger visits, a contribution of \$49.5 million to Canterbury regional GDP and supported 1044 jobs. For the 2016/17 season the report is forecasting 80 voyage calls, 154,400 passenger visits, a contribution of \$59.9 million to Canterbury regional GDP and 1,263 jobs supported in the region.

Summary

38. Lyttelton Port is by far and away the most significant port in the South Island in terms of total tonnages of cargo and containers handled, the value of exports and the value of imports. The Port has experienced a more than 10 fold increase in the number of containers handled in the past 30 years. Lyttelton Port has been growing in relative importance and is expected to continue to do so in the future.

¹⁷ No imports were recorded through Port Marlborough in 2005.

¹⁸ Source: Sea Change. Transforming Coastal Shipping in New Zealand. Ministry of Transport; November 2007.

¹⁹ Summary Report. Economic Impact of the 2014-15 Cruise Sector in New Zealand and Forecasts to 2017; Cruise New Zealand; 2015.

LPC forecast ongoing growth for its container terminal to reach well over 1 million TEUs by 2041, or average annual growth of over 3.9% per annum. Non-containerised volumes of export and import trades are expected to continue growing but not as fast as containerised cargo.

39. The Port is a significant piece of infrastructure underpinning two of the three economic drivers of the Canterbury regional economy – i.e. agriculture and manufacturing (including agricultural product processing). The Port also plays a role, albeit less significant, in relation to the third economic driver, tourism. The economic (and social) well-being of greater Christchurch is largely dependent on the economic activity generated by the wider Canterbury region. Therefore Greater Christchurch's earthquake recovery and future economic prosperity is also significantly influenced by the current and future performance of Lyttelton Port.
40. The trend towards Lyttelton Port being used as a hub for all regions in the South Island is likely to intensify in the future making the Port an integral part of economic activity throughout the South Island. The Port is already responsible for exporting 15% of New Zealand's dairy product exports (by value) and importing 17% of fertilizers used on New Zealand farms (by value), highlighting the Port's national economic significance.

THE CANTERBURY REGIONAL ECONOMY

41. Statistics New Zealand's June 2015 population estimate for the Canterbury region is 586,400 or 12.8% of New Zealand's total population. It is the second largest region in New Zealand in terms of population. The Canterbury region's population is estimated to have declined between June 2010 and June 2012 by 6,900 (1.2%) due to Christchurch City's population falling by 13,600 (3.6%) after the earthquakes and only some of the consequent out-migration relocating to neighbouring districts within the Canterbury region. The region's population over the period 2009 to 2015 has grown by 4.6%. Statistics New Zealand's 'medium' population projections have the region's population increasing at an average rate of 0.8% per annum to 729,200 over the period 2015-43 compared to a projected increase of 0.7% per annum for the whole of New Zealand.
42. Statistics New Zealand estimate total employment in the Canterbury region in February 2015 at 284,110, which represents 13.9% of the total persons employed in New Zealand. The agriculture, forestry and fishing industry group employed 15,070 persons, of which 14,252 were engaged in agriculture (including 97% of agriculture and fishing support industry employees based on the proportionate shares in agriculture and fishing). Other significant sectors are manufacturing employing 34,850 (of which the most significant subsectors are food products manufacturing (11,500)²⁰, machinery and equipment manufacturing (5,460), fabricated metal products manufacturing (3,490) and transport equipment manufacturing (2,430)), construction (31,710), health care and social assistance (30,590), retail trade (28,710), education and training (21,460), professional, scientific and technical services (20,530) and accommodation and food services (18,450). Besides the tourism-related aspects of sectors such as retail trade, education and training and accommodation and food services, the key drivers of the Canterbury economy remain largely agriculture and manufacturing.

²⁰ Including meat and meat products (4,730), seafood (880) and dairy products (1,930).

43. There are important linkages between the performance of the Canterbury regional economy (which is heavily dependent upon agriculture and agricultural product processing) and the Christchurch City economy. Apart from construction activities associated with the Christchurch rebuild, and tourism which accounts for some but not all²¹ of the jobs created in the retail trade and accommodation and food services sectors, the key economic drivers for Christchurch City are manufacturing and services provided to the agriculture and agricultural product processing activity within the wider Canterbury region.
44. Employment in tourism is difficult to identify from official statistics since the relevant sectors for which data is collected service domestic and international visitors, business travellers and local residents and businesses. However tourism is an important economic driver for the Canterbury regional economy as it is for the national economy.
45. Apart from the tourism related aspects of sectors such as retail trade, education and training and accommodation and food services, the key drivers of the Canterbury economy remain largely agriculture and manufacturing. Employment in other sectors is to a large extent driven by the demand for goods and services by these industries and their employees with the so called “multiplier” effects creating additional jobs for the region’s economy.
46. Multipliers for a region such as Canterbury are typically in excess of 2.0²² – in other words for each job created in an industry such as tourism, agriculture or manufacturing there is at least one additional job created in other industries providing goods and services required by that industry or the personal requirements of that industry’s employees and dependants. Conservatively assuming a Canterbury regional multiplier of only 2.0, the agriculture, forestry and fishing and manufacturing industry groups alone generate 99,840 jobs or 35% percentage of the total employment in the Canterbury region. These two industry groups are highly dependent upon Lyttelton Port for exporting their finished products and importing goods required as inputs to their production activities.
47. To a lesser extent tourism, the third key driver of the Canterbury regional economy is also dependent for some inputs upon the Lyttelton Port, whilst the cruise ship trade is a small but growing segment of the tourism industry in Canterbury.
48. Future employment growth and associated economic well being for the Canterbury region is also likely to be largely associated with the three key economic drivers of agriculture, manufacturing and tourism, although disruptions due to the 2010 and particularly 2011 earthquakes have impeded tourism activity and is likely to do so for a number of years to come.
49. By way of example of future growth in agriculture and associated agricultural product processing, Fonterra has constructed a new milk powder plant at Darfield. The initial development has a capacity to process 2.2 million litres of milk per day. Fonterra has sought and obtained consents to enable the expansion of the factory, including the construction of a second drier on the site

²¹ Employment in tourism is difficult to identify from official statistics since the relevant sectors such as retail trade and accommodation and food services for which data is collected meet the needs of domestic and international visitors, business travellers and local residents and businesses.

²² See for example, Appendix 8 of evidence in chief of Geoffrey Vernon Butcher for Christchurch City Council and Canterbury Regional Council in relation to the former Proposed Change 1 to the Canterbury Regional Policy Statement.

with an additional capacity of 5 million litres of milk per day, giving a total processing capacity on the site of 7.2 million litres of milk per day.

50. Part of Fonterra's rationale behind the selection of Darfield for its new milk powder plant (and its proposed expansion) was the site's proximity to Lyttelton Port (in terms of both distance and the availability of nearby direct rail access) for finished product exports and inputs to the production process.²³

THE WEST COAST REGIONAL ECONOMY

51. The West Coast region economy is relies on three key sectors - agriculture²⁴, mining and tourism. The mining sector depends upon the Midland railway line and the coal export facility at Lyttelton Port.²⁵ The West Coast is also reliant on Lyttelton Port and the complementary rail and road networks for imports including machinery, equipment, fuel and fertilizers.

THE IMPLICATIONS OF BIGGER CONTAINER SHIPS ON NEW ZEALAND'S TRADE ROUTES

52. At present the average sized container ship calling at New Zealand ports has a capacity of approximately 2,700 TEUs. The largest sized ship calling at New Zealand ports regularly has a capacity of approximately 4,100 TEUs. It is expected in future more ships with capacities in the range of 4,000 to 8,000 TEUs will be used on New Zealand trade routes as even larger vessels are used on the more significant international trade routes.
53. The New Zealand Shippers' Council²⁶ undertook a study²⁷ on the economic benefits of introducing bigger container ships (5,000 – 7,000 TEUs) on New Zealand trade routes and the economic costs of not introducing them. Among the conclusions of this study were:
- a. If New Zealand port's are not bigger ship capable within five years (of 2010), there is a risk only relatively small and old vessels with a higher operating cost per container will visit New Zealand ports;
 - b. New Zealand could realise up to \$144 million per annum net supply chain benefits from 2015/16, with bigger ships operating on the South East Asia route only and with infrastructure developments at two ports to become 7,000 TEUs capable;
 - c. In addition two New Zealand ports being bigger ship capable would protect New Zealand against the risk of shipping companies' hubbing through Australian ports such as Melbourne, Sydney and Brisbane, all of which are undertaking development to become bigger ship capable. This is estimated

²³ See evidence of Michael Campbell Copeland (dated November 2011) in the matter of applications by Fonterra Co-operative Group Limited to Selwyn District Council and Canterbury Regional Council for consents relating to the construction and operation of the Stage 2 Milk Powder Plant at Darfield.

²⁴ Including milk processing, which for the West Coast is all done at Westland Milk Products dairy factory at Hokitika in the Westland District.

²⁵ From time to time small shipments of coal have been shipped out of the port at Westport.

²⁶ The New Zealand Shippers' Council is an association of major New Zealand-based cargo owners – both importers and exporters. It includes companies and organisations with major interests in industries such as forest products, fruit, steel, dairy, meat, coal and cement. Collectively the Council accounts for more than 50% of New Zealand's total annual volume of exports.

²⁷ The Question of Bigger Ships. Securing New Zealand's International Supply Chain. New Zealand Shippers' Council; August 2010.

to cost New Zealand importers and exporters additional net supply chain costs of up to \$194 million per annum by 2015/16 if only South East Asia services were affected and increasing transit times to market;

- d. The total benefit to New Zealand of having two ports bigger ship capable are therefore estimated at \$338 million per annum from 2015/16 increasing up to \$381 million per annum by 2020. These estimates exclude multiplier effects for the broader economy;
 - e. Although all four major container ports in New Zealand (Auckland, Tauranga, Lyttelton and Otago) will be required over time to increase their capability to support cargo growth, not all four will need to make the investment initially, to become bigger ship capable;
 - f. A bigger ship service would be required to call at a North Island port, due to the large export and import volumes, and a South island port, for growing export volumes, including refrigerated export cargo. Based on the Council's research and analysis Tauranga and Lyttelton were the two New Zealand ports recommended to become bigger ships capable;
 - g. Lyttelton Port is the logical first South Island port to become bigger ship capable because (a) it is the largest container port in the South Island in terms of both import and export volumes; and (b) development cost estimates to accommodate 7,000 TEU ships at Lyttelton Port are lower than at Port Otago;
 - h. Tauranga and Lyttelton are also the largest bulk ports in New Zealand and there is an opportunity for bulk cargo owners to leverage off investment in bigger ship capable facilities at these ports.
54. However, the New Zealand Shippers' Council study did not include the capital costs required to make the hub ports big ship capable and nor the additional road and rail infrastructure costs associated with significantly increased on-land transporting of containers.
55. More recently, the Ministry of Transport commissioned a report by Deloitte entitled Future Freight Scenarios Study²⁸ (the Future Freight Scenarios Study). The study examined the impacts that larger ships would have on the New Zealand freight system across a range of scenarios assuming different ports and different numbers of ports in each of the North and South Islands became big ship capable. It concluded that combining together the benefits from cheaper international freight costs (assuming these are passed on to New Zealand shippers of cargo) with the additional costs associated with hubbing – i.e. the additional land transport and coastal shipping costs and capital costs for port, rail and road infrastructure improvements – the net effects overall would be substantially negative. The study concludes:

“The economic cost benefit analysis indicates that the projected BCR for all scenarios is less than 1 and eight of the scenarios have a projected BCR less than zero. This means that the increase in broader economic costs associated with port hubbing, as well as operating costs and capital investments, outweigh the economic benefits (incremental to the Status Quo – Scenario 1) under the port hubbing.”

²⁸ November, 2014.

56. However, in interpreting the results of the Future Freight Scenarios Study it is important to appreciate that:
- a. New Zealand will not get a choice as to whether larger ships will be used on New Zealand's overseas trade routes – i.e. in the future the status quo is not an option. It is necessary therefore to seek the cheapest option for New Zealand shippers of overseas cargo; and
 - b. From the perspective of Canterbury and West Coast shippers of overseas cargo, the Future Freight Scenarios Study shows that the least cost options involve Lyttelton Port becoming big ship capable. In addition, of the various scenarios considered in the study, those options which involve Lyttelton becoming big ship capable result in savings in total freight costs of greater than 10%.²⁹ For those scenarios not involving Lyttelton becoming big ship capable, freight costs are estimated to increase by between 11 and 50% for Canterbury shippers of overseas cargo and between 50 and 100% for West Coast shippers of overseas cargo. These cost penalties will negatively impact on business profitability and competitiveness and increase costs for consumers. The CDP enables Lyttelton Port to become big ship capable and will provide substantial benefits to the businesses and residents of Canterbury and West Coast.
57. Also If Wellington's CentrePort does not become big ship capable, the Tasman, Nelson and Marlborough regions will become increasingly dependent upon Lyttelton Port and its supporting rail and road networks. Similarly if Dunedin's Port Chalmers does not become big ship capable the Southland and Otago regions will need to rely on Lyttelton Port and its supporting rail and road networks for the exporting and importing of cargo.

CONCLUSIONS

58. LPC's proposed CDP:
- a. Enables the residents and businesses of Canterbury and other regions of the South Island *"to provide for their ... economic ... well being"*; and
 - b. Is consistent with *"the efficient use and development of natural and physical resources"*.

²⁹ Under a scenario of only limited consolidation of port visits (Scenario 2), the Future Freight Scenarios Study estimates no material change in freight costs because there is an insufficient reduction in port visits to generate sufficient cost savings to offset the additional infrastructure costs.