Ebenezer Regional Industrial Area

DELIVER CATALYTIC INFRASTRUCTURE TO UNLOCK SOUTH EAST QUEENSLAND'S INDUSTRIAL EMPLOYMENT HUB OF THE FUTURE

Ebenezer Regional Industrial Area (ERIA) is a future industrial area for South East Queensland. Catalyst infrastructure to enable an employment-generating industrial precinct at Ebenezer will support national supply chains, Inland Rail, and the proposed Ebenezer Intermodal Terminal. This investment will unlock 3,000 full time equivalent jobs across diversely skilled and high-value industries including manufacturing, transport, postal and warehousing, and provide critical trunk infrastructure to nearby residential expansion areas.

BENEFITS TO SOUTH EAST QUEENSLAND:

Catalytic infrastructure at the ERIA will:

- ✔ Activate employment-generating industrial land
- ✔ Unlock employment and business opportunities
- ✔ Support local access to national supply chains
- ✔ Support economic productivity
- ✔ Provide trunk infrastructure to nearby residential expansion areas

COMMITMENT REQUIRED

- Deliver catalytic trunk infrastructure to the Ebenezer Regional Industrial Area
- Deliver the Ebenezer Intermodal Terminal

PROJECT BENEFITS TO IPSWICH

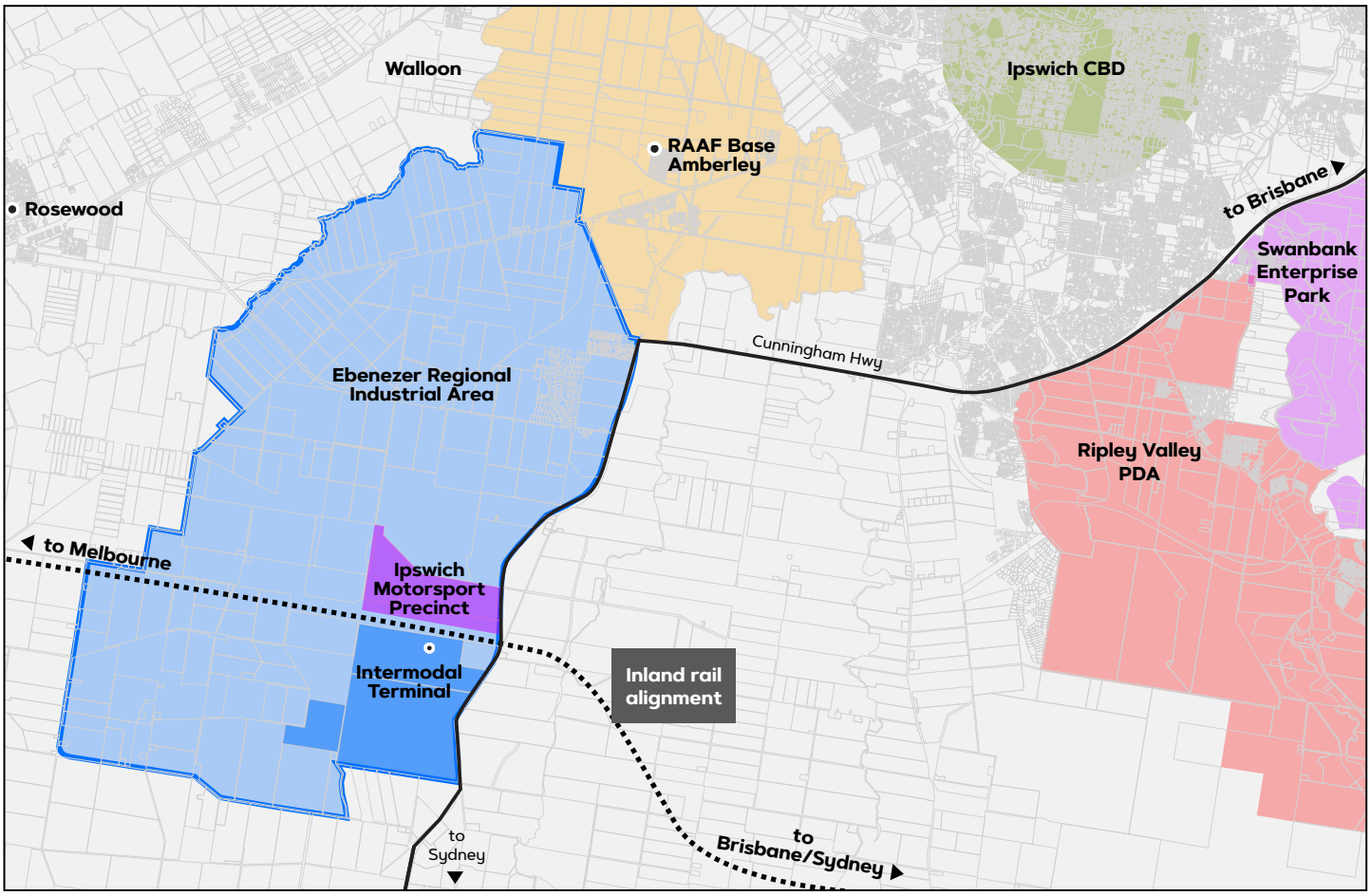
- OVER $1,428M P.A. IN INCREASED ECONOMIC OUTPUT (2041)
- OVER 3,500 ADDITIONAL FTE JOBS FOR IPSWICH IN 2041
- DIRECT ACCESS TO NATIONAL SUPPLY CHAINS AND MARKETS
- IMPROVED ACCESS TO EMPLOYMENT AND SKILLS DEVELOPMENT
- INCREASED PRIVATE SECTOR INVESTMENT

IF WE DO NOTHING

- EMPLOYMENT CONTAINMENT IN IPSWICH WILL DECLINE FROM 77% (2016) TO 44% (2041)
- NO LOCAL BENEFIT FROM INLAND RAIL
- LIVEABILITY IMPACTS DUE TO RESIDENTS EXITING THE LGA FOR WORK
- REDUCED ECONOMIC SELF-SUFFICIENCY

City of Ipswich

Ebenezer Regional Industrial Area Context Map



Project Details

Ebenezer Regional Industrial Area is a future industrial area for SEQ and includes the future Willowbank Industrial Park. It encompasses the alignment of Inland Rail and the proposed Ebenezer Intermodal Terminal.

Strategically located, it has direct access to major national road freight routes of Cunningham Highway and proximate access to Warrego Highway.

Council delivered a Social and Economic Benefits and Impacts Study which highlighted the importance of this project in providing local jobs for Ipswich residents.

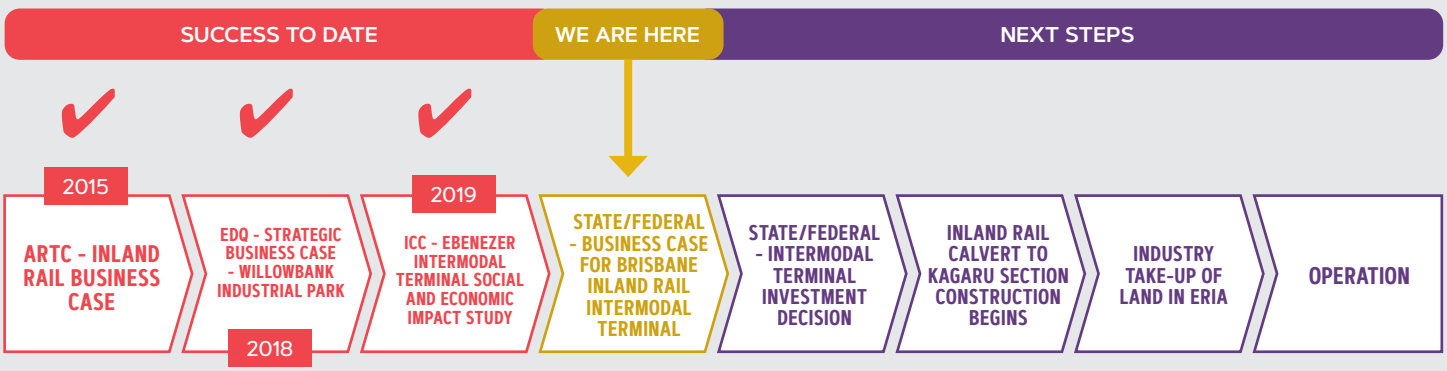
About Ipswich

Ipswich is Queensland's oldest provincial city and fastest growing region.

Ipswich is under provisioned in public transport, social infrastructure and economically stimulating investment.

By 2041, Ipswich's population will grow by 170% to 560,000 people (QGSO). Ipswich's projected annual population growth of over 4% p.a. dwarfs state (1.2%) and national trends (0.9%).

A city of half a million people requires efficient public transport, social infrastructure, and investment to support economic prosperity and self-sufficiency. Now is the time to invest to avoid a crisis in the future and to avoid entrenching social and economic inequality.



City of Ipswich

Willowbank Intermodal Social and Economic Impacts and Benefits Study

23 September 2020

CDM Smith

listen. think. deliver.

Executive Summary

Introduction

CDM Smith was engaged by Ipswich City Council to prepare a social and economic impact assessment of the proposed Willowbank Intermodal Terminal, located within the Ebenezer Major Enterprise and Industrial Area (MEIA).

This assessment includes a review of the relevant planning and economic reports and their application to assessing the proposed Willowbank Intermodal Terminal. A social and economic baseline was undertaken to obtain a comprehensive understanding of the existing state of play within the relevant study areas. The economic contribution assessment considered the potential economic impacts associated with the introduction of the Willowbank Intermodal Terminal, based on varying throughput scenarios. Consideration was also given to the potential heavy vehicle impacts attributable to the Willowbank Intermodal Terminal. The economic impacts of the proposed Willowbank Intermodal Terminal were summarised relative to the 'do nothing' scenario, and expressed in terms of impacts on employment, employment retention, gross regional product (GRP), cost of living, heavy vehicle movements, productivity benefits and industrial land demand.

The Social Impact Assessment provided a high level assessment of the potential social impacts of the project relative to the 'do nothing' scenario, in accordance with the Queensland Government Department of State Development, Manufacturing, Infrastructure and Planning's Social Impact Assessment Guideline (2018) and national and international best practice methodologies.

Social and Economic Baseline

The social and economic baseline considered the following areas:

- Neighbourhood study area, which comprised the state suburbs of Ebenezer, Willowbank, Mount Forbes, Mutdapilly, Jeebropilly and Purga;
- Rosewood SA2;
- City of Ipswich;
- SEQ; and
- Queensland.

Key findings from the social and economic baseline analysis of the areas analysed is detailed below:

- In 2016, the neighbourhood study area had a population of 2,791 people. Unlike Queensland, the neighbourhood study area had slightly more males than females (50.7% and 49.2% respectively);
- Residents of the neighbourhood study area are more likely to travel longer distances to work compared to Queensland. Employed residents of the neighbourhood study area were more likely to drive a private vehicle to work compared to residents of City of Ipswich and Queensland;
- In the 2016 Census, the average age of residents in Rosewood SA2 was higher compared to the City of Ipswich and Queensland. All three areas analysed recorded an increase in the average age between 2011 and 2016 Censuses;
- The population of Rosewood SA2 is anticipated to grow faster (on per annum basis) through to 2041 than City of Ipswich, SEQ and Queensland;
- Rosewood SA2 consistently recorded a lower unemployment rate than the City of Ipswich in the June Quarter 2011 to June Quarter 2019 period. The labour force participation rate in Rosewood SA2 was consistently lower than the City of Ipswich in this period;
- As of the 2016 Census, the key industry of employment within the Rosewood SA2 was public administration and safety, accounting for 48.2% of all employment in the SA2, whereas, health care and social assistance was the

key employer in the broader City of Ipswich. Approximately 75.0% of persons who worked in the City of Ipswich also resided in the City of Ipswich;

- Employment in the City of Ipswich is expected to increase at a rate of 2.7% per annum between 2020-21 and 2040-41, with the health care and social assistance, administrative and support services and education and training sectors anticipated to record relatively high rates of growth;;
- According to Queensland Government employment projections by industry, employment retention within the City of Ipswich is anticipated to decline significantly between 2015-16 and 2040-41;
- Real gross regional product (GRP) in the City of Ipswich has grown from $7.36 billion in 2009 to $9.77 billion in 2019, representing a growth rate of 2.9% per annum;
- The Socio-Economic Index (SEIFA) of disadvantage highlights that the neighbourhood study area, Rosewood SA2 and the City of Ipswich are considered to have a marginally higher level of disadvantage relative to SEQ;
- Median house sale prices in Rosewood SA2 are increasing at a greater average annual growth rate relative to the wage price index of Queensland, indicating worsening housing affordability for buyers over the last four years, whereas, housing affordability for renters has improved in this time.

Economic Contribution

The economic impact of the Willowbank Intermodal Terminal during the construction and operation phases has been estimated in terms of:

- **Output:** Increase in gross sales throughout the economy attributable to the Willowbank Intermodal Terminal;
- **Household income:** Additional wages, salaries and supplements paid to households benefiting from Willowbank Intermodal Terminal**;**
- **Employment:** Number of full time equivalent (FTE) positions created directly and indirectly by the Willowbank Intermodal Terminal; and
- **Value added (GRP):** Net activity at each stage of production resulting from the Willowbank Intermodal Terminal;

In estimating the economic contribution of the Willowbank intermodal Terminal; the analysis considered the following:

- Intermodal facilities and rail terminals, namely:
  - Indicative capital costs associated with the construction of the intermodal terminal;
  - Indicative operating output costs associated with the ongoing operation of the intermodal terminal;
- Industry activity directly adjacent to the intermodal terminal; and
- Industry activity within close proximity but not immediately adjacent to the intermodal terminal.

Capital and ongoing operations costing options were obtained from WSP Parsons Brinckerhoff assessment of proposed intermodal terminal titled *Ebenezer Intermodal Terminal High-Level Assessment (June 2017).* WSP Parsons Brinckerhoff considered four options but established two options (**Option A2** and **Option A4**) as the preferred terminal configuration design. The report provided capital costs for development of the terminal and ongoing operation costs for the two options, which have been utilised in our assessment. The costs were expressed for throughput volumes of 350,000, 750,000 and 1,000,000 TEUs per annum. However, demand for an intermodal facility at Willowbank is considered unlikely to reach 1,000,000 TEUS per annum. It is understood that estimates relating to the demand for an intermodal terminal at Willowbank are under assessment and may ultimately differ from those assessed in this report.

The three potential terminal sizes considered in our assessment of an intermodal facility at Willowbank were:

- 350,000 TEUs per annum;

- 500,000 TEUs per annum; and
- 750,000 TEUs per annum.

Cost estimates for the construction of the three potential terminal sizes have been derived from the WSP Parsons Brinckerhoff report (with costs interpolated for the 500,000 TEU facility) under the two preferred options. The construction phase is anticipated to occur over three years.

Ongoing operating costs were also assessed under Option A2 and Option A4 for the TEU levels listed above. The assessment assumed five year ramp up period to full capacity at the intermodal terminal, with the facility anticipated to be fully operational by 2036. Operating costs were higher under Option A2 compared to estimates for Option A4, with wages for equipment operators as the largest contributing expense under both options.

The assessment made the following assumptions about the footprint immediately adjacent to the Willowbank intermodal terminal and within proximity to the intermodal terminal, varying based on terminal size:

- Freight Forwarders: 14-30 hectares; and
- Nearby industrial businesses; 28 – 600 hectares

Industrial sectors likely to locate within proximity to the proposed Willowbank Intermodal Terminal were considered based on the national input-output tables, with large proportion falling into the transport support services and storage sector.

Assumptions relating to the take-up of land for freight forwarders and co-locating industries were as follows:

- Freight Forwarders: Industrial activity located immediately to the intermodal rail terminal will establish their building footprint in Year 1, with employment density increasing as throughput increases. The assessment has assumed the freight forwarders will be operating at maximum capacity in Year 5, consistent with the five-year ramp up of throughput at the intermodal terminal; and
- Proximate Industry: Industrial land take up is anticipated to occur over a fifteen-year horizon under all throughput scenarios analysed, with the rate of take-up in the first year ranging between 1.1 hectares and 2.3 hectares per annum.

Anticipated land take-up was converted into employment and operating output estimates, through utilisation of assumptions relating to employment density, employment per FTE and output per FTE by relevant industry sector.

Economic Contribution Assessment Results

The construction phase (assumed to occur over three years) of the Willowbank Intermodal Terminal will provide short term positives to the Ipswich regional economy. The total economic impacts over the construction phase for the intermodal terminal vary depending on the TEU capacity of the proposed terminal and are detailed in Table E-1 below.

- Output:
  - Option A2: Total output impacts of $519.34 million to $655.06 million, and
  - Option A4: Total output impacts of $430.29 million to $619.02 million.
- Household income:
  - Option A2: Total household income impacts of $99.91 million to $127.93 million, and
  - Option A4: Total household income impacts of $82.38 million to $119.45 million.
- Employment:
  - Option A2: Total employment impacts of 1,138.3 FTEs to 1,496.6 FTEs, and
  - Option A4: Total employment impacts of 989.4 FTEs to 1,462.5 FTEs.
- Value added

- Option A2: Total value-added impacts of $180.89 million to $229.12 million, and
- Option A4: Total value-added impacts of $148.78 million to $214.35 million.

Table E-1 Total Economic Impacts of Construction Phase, Willowbank Intermodal Terminal, Option A2 and Option A4

	Option A2			Option A4		
	350,000 TEU	500,000 TEU	750,000 TEU	350,000 TEU	500,000 TEU	750,000 TEU
Total Output ($m)	$519.34	$587.20	$655.06	$430.29	$524.66	$619.02
Total Household Income ($m)	$99.91	$113.92	$127.93	$82.38	$100.94	$119.49
Total Employment (FTEs)	1,138.3	1,317.4	1,496.6	989.4	1,225.9	1,462.5
Total Value Added ($m)	$180.89	$205.01	$229.12	$148.78	$181.57	$214.35

Source: CDM Smith estimates

Ongoing economic impacts in Year 5 were estimated to be:

- Total output impacts of $338.21 million to $666.60 million;
- Total household income impacts of $75.21 million to $147.65 million;
- Total employment impacts of 841.8 FTEs to 1,661.1 FTEs; and
- Total value added impacts of $155.52 million to $308.44 million.

By Year 15 (2046+), total economic impacts of the proposed Willowbank Intermodal Terminal are anticipated to be as follows:

- Total output impacts of $676.95 million to $1,428.17 million;
- Total household income impacts of $153.73 million to $324.18 million;
- Total employment impacts of 1,679.1 FTEs to 3,543.4 FTEs; and
- Total value added impacts of $299.24 million to $631.55 million.

Table E-2 below details the total ongoing economic impacts associated with the proposed Willowbank Intermodal Terminal based on varying capacities.

Table E-2 Ongoing Economic Impacts of Willowbank Intermodal Terminal, Year 5 and Year 15

	Intermodal Terminal Operation	Freight Forwarders	Proximate Industry	Total
Year 5 (2036)				
Total Output ($m)	$21.21-$42.04	$211.49-$453.20	$105.51-$171.35	$338.21-$666.60
Total Household Income ($m)	$5.42-$10.79	$45.33-$97.1	$24.46-$39.72	$75.21-$147.65
Total Employment (FTEs)	66.1-134.0	515.0-1,103.6	260.8-423.5	841.8-1,661.1
Total Value Added ($m)	$9.06-$17.38	$101.69-$217.91	$44.76-$72.70	$155.52-$308.44
Year 15 (2046)				
Total Output ($m)	$21.21-$42.04	$211.49-$453.20	$444.25-$932.93	$676.95-$1,428.17
Total Household Income ($m)	$5.42-$10.79	$45.33-$97.14	$102.98-$216.26	$153.73-$324.18
Total Employment (FTEs)	66.1-134.0	515.0-1,103.6	1,098.0-2,305.8	1,679.1-3,543.4
Total Value Added ($m)	$9.06-$17.83	$101.69-$217.91	$188.48-$395.81	$299.24-$631.55

Source: CDM Smith estimates

Heavy Vehicle Impacts of Willowbank Intermodal Terminal

The assessment considered heavy vehicle impacts associated with the Willowbank Intermodal Terminal relative to the do nothing scenario. The assessment focused on heavy vehicle impacts reflecting the freight movements associated with intermodal terminals. Light vehicle movements are likely to remain the same under both scenarios (under the intermodal terminal uses or other industrial uses).

Table E-3 details the net impacts (without and with the Willowbank Intermodal Terminal) on AADT heavy vehicle traffic volumes for varying terminal sizes. Overall, heavy vehicle volumes are anticipated to decrease along the Warrego Highway, but typically increase along the Cunningham Highway, except for the link to the west of the proposed intermodal site.

Table E-3 AADT Heavy Vehicle Traffic Volumes by Link, Net Change, With and Without Intermodal Terminal, by Terminal Size, 2036

Location	350,000 TEUs	500,000 TEUs	750,000 TEUs
Warrego Highway			
10021 – East of Seminary Road	-234	-335	-502
135964 – 1km West of Brisbane Valley Highway	-349	-498	-747
135715 – West of Kholo Road Overpass	-349	-498	-747
135546 - WiM Site Bremer River	-349	-498	-747
Cunningham Highway			
131819 – West of Champions Way	-49	-70	-105
135773 – At Warrill Creek	523	747	1,121
135782 – 0.8km West of Ripley Road	523	747	1,121
135718 – 100m North of Swanbank Road at Creek	523	747	1,121
140001 – 17B – South of Barclay St Overpass PTC	523	747	1,121

Summary of Economic Impacts

Economic impacts of the proposed Willowbank Intermodal Terminal relative to the status quo / do nothing scenario were presented in terms of:

- Workforce and labour market impacts, including employment, employment retention and gross regional product impacts;
- Impacts on cost of living pressures;
- Impacts on heavy vehicle movements;
- Productivity benefits; and
- Impacts on industrial land demand.

Table E-4 below details the economic impacts of the Willowbank Intermodal Terminal.

Table E-4 Economic Impact Under Status Quo / Do Nothing Scenario

Indicator	Economic Impact
Workforce and Labour Market	The assessment considered future employment in terms of status quo / do nothing scenario (Regional Employment Projections for the City of Ipswich) and employment directly attributable to the Willowbank Intermodal Terminal. By the time the terminal and freight forwarders are fully operational (2036), with proximate industry activity also occurring (but still ramping up, as this is anticipated to occur over a fifteen year horizon). The employment impact directly attributable to the Willowbank Intermodal Terminal is anticipated to be: • 2035-36: Additional 890 – 1,897 employed persons in the City of Ipswich (or a 0.8% to 1.7% uplift relative to the status quo / do nothing scenario); and • 2040-41: Additional 1,306 to 2,792 employed persons in the City of Ipswich (or a 1.0% to 2.2% uplift relative to the status quo / do nothing scenario). The most significant variances in employment opportunities at a sectoral level are within the transport, postal and warehousing, wholesale trade and manufacturing sectors, as detailed below: • Transport, postal and warehousing: Additional 576 – 1,222 jobs relative to do nothing / status quo by 2040-41; • Wholesale trade: Additional 198-423 jobs relative to do nothing / status quo by 2040-41; and • Manufacturing: Additional 104-228 jobs relative to do nothing / status quo by 2040-41. The provision of additional jobs indicates that employment retention within City of Ipswich will increase as follows: • 2035-36: Employment retention to increase from 48.9% to between 49.3% and 49.8%, or by 0.4 to 0.9 percentage points; and • 2040-41: Employment retention to increase from 44.7% to between 45.2% and 45.7%, or by 0.5 to 1.0 percentage points. The most significant impacts on gross regional product in the City of Ipswich due to the Willowbank Intermodal Terminal, Freight Forwarders and proximate industry are anticipated to be within the following sectors. • Transport, postal and warehousing: Additional GRP of $115-$224 million per annum relative to do nothing / status quo by 2040-41; • Wholesale trade: Additional GRP of $29-$62 million per annum relative to do nothing / status quo by 2040-41; and • Manufacturing: Additional GRP of $17-$36 million per annum relative to do nothing / status quo by 2040-41.
Cost of Living Pressures	Provision of additional job opportunities, whilst significant, not anticipated to increase cost of living pressures relative to the do nothing scenario.
Heavy Vehicle Movements	Maintenance costs associated to heavy vehicle movements likely to be incurred along Cunningham Highway whereas maintenance costs along Warrego Highway are likely to fall relative to the do nothing scenario.
Productivity Benefits	Productivity benefit through cost saving accrued by consumers of freight across various geographical locations (Queensland and interstate).
Industrial Land Demand	Intermodal terminal is anticipated to increase demand for industrial land within the Ebenezer MEIA by an additional 20.7 hectares to 44.3 hectares in 2036, increasing to 42 hectares to 90 hectares by 2046 relative to the status quo / do nothing scenario.

Social Impact Assessment

The results of the preliminary social impact analysis identified 25 potential benefits and impacts associated with the project, comprising six benefits and 19 potential negative impacts. Four of the six benefits were assessed has having high significance under the 500,000 and 750,000 TEUs scenarios, with three of the six benefits as having high significance at the 350,000 TEUs scenario. All potential benefits are considered likely to be of considerable duration, with maximum benefit during operation thereby delivering sustained benefits, and new employment delivering major benefit during the construction phase.

There were 19 potential negative impacts identified, however generally of lesser significance than benefits. Several of the negative impacts identified are likely to impact a relatively small number of neighbouring landholders and this has been factored into the assessment. The majority of the negative impacts identified have potential for mitigation via the development of appropriate management measures. Furthermore, several of the impacts are likely to arise with the development of the Ebenezer Regional Industrial Area and Inland Rail regardless of whether the intermodal terminal ultimately progresses, albeit the impact may be slower to occur and in some cases of lesser magnitude.

Given that the area has been identified for industrial purposes for many years, that the City of Ipswich's planning scheme designates this future use, and community engagement has been undertaken in preparation of the planning

scheme and during planning for the Ebenezer Regional Industrial Area, it's reasonable to assume the community is expecting this change to the area.

Based on the analysis undertaken, it is our view that significant benefit would be derived from the proposal, primarily from the creation of employment opportunities and the potential positive social benefits this would have for relative advantage, health and wellbeing in Ipswich LGA. Of the potential negative social impacts, change to sense of place for the most immediate landholders/ residents is a significant potential impact, however, this will affect a relatively small number of residents, and the character of the existing area has already been substantially altered from that of a quiet rural area. Furthermore, the impacts associated with increased traffic are likely to be most widely felt, however, various mitigation measures could be instituted to reduce impacts which are likely to affect areas wider than the immediate neighbouring properties (largely associated with increased heavy vehicle traffic). In addition, planning and development of housing and community infrastructure appears to be taking into consideration the population growth expected for the Ipswich LGA, suggesting that the region is preparing for proposals such as this, therefore lessening potential impacts in this regard.

When a more detailed Social Impact Assessment is undertaken as a part of an Environmental Impact Statement, a Social Impact Management Plan should be developed subsequent to that analysis to further enhance benefits and mitigate negative impacts. A management plan could also include the possibility of an intermodal facility bond for social investment to mitigate or offset social impacts.

Table of Contents

Figures

Tables

Document history & status

Revision	Date issued	Reviewed by	Approved by	Date approved	Revision type
Rev D	1 July 2020	S McCormack	M Brown	1 July 2020	Draft
Rev 0	3 September 2020	S McCormack	M Brown	3 September 2020	Revised Draft
Rev 1	23 September 2020	S McCormack	S McCormack	23 September 2020	Final

Distribution of copies

Version	Date issued	Quantity	Electronic	Issued to
Rev D	1 July 2020	1	x	D Heenan
Rev 0	3 September 2020	1	x	D Heenan, C Coburn
Rev 1	23 September 2020	1	x	D Heenan, C Coburn

Last Saved:	29 October 2020
File Name:	CDM Smith-1000695-RPT Willowbank Intermodal and Economic Impacts and Benefits Study-Economic Report REV1 230920
Author:	N Bess, D Mebrahtu, A Liu, J Nicholls, A Wilkinson, S McCormack, S Briggs
Project Manager:	M Brown
Client:	City of Ipswich
Document Title:	**Willowbank Intermodal Social and Economic Impacts and Benefits Study**
Document Version:	Rev 1
Project Number:	1000695

Section 1 Introduction

1.1 Report Purpose

CDM Smith was engaged by Ipswich City Council to prepare a social and economic impact assessment of the proposed Willowbank Intermodal Terminal, located within the Ebenezer Major Enterprise and Industrial Area (MEIA).

1.2 Report Structure

This report is structured as follows:

- **Section 1 - Introduction:** this section provides an overview of the report and the geographies analysed;
- **Section 2 – Literature review:** review of the relevant planning and economic reports and their application to assessing the proposed Willowbank Intermodal Terminal;
- **Section 3 – Social and Economic Baseline:** Provides an overview of the social and economic baseline for the local economy (defined as the Rosewood SA2) and City of Ipswich, benchmarked to South East Queensland and Queensland;
- **Section 4 – Economic Contribution Assessment:** provides an assessment of the economic impacts attributable to the Willowbank Intermodal Terminal;
- **Section 5 – Heavy Vehicle Impacts of the Willowbank Intermodal Terminal:** assess the heavy vehicle impacts associated with the Willowbank Intermodal Terminal relative to the 'do-nothing' scenario;
- **Section 6 – Summary of Economic Impacts:** summarises the economic impacts estimated in the preceding sections;
- **Section 7 – Social Impact Assessment:** provides a preliminary analysis of the social impacts and benefits which may arise from the Willowbank Intermodal Terminal; and
- **Section 8 – References:** outlines the range of information and data sources used throughout this assessment.

Section 2 Literature Review

This section provides a review of the relevant planning and economic reports and their application to assessing the proposed Willowbank Intermodal Terminal.

2.1 Literature Review

2.1.1 ShapingSEQ – South East Queensland Regional Plan 2017

ShapingSEQ is the Queensland Government's plan for the future of the South East Queensland region, comprising 12 local government areas, including Ipswich. It provides a long-term vision for the region, supported by strategies and actions to achieve the vision.

A proposed Intermodal terminal primarily fits within two of the plan's themes. Firstly, the 'connect' theme is about moving people, products and information efficiently, and specifically highlights that key freight corridors and intermodal terminals will connect industries to export opportunities, support investment and underpin competitiveness and productivity. Secondly, the 'connect' theme seeks an SEQ that is a global economic powerhouse, highlighting competitive advantages to be built upon including Regional Economic Clusters, export-oriented industries, and positioned as an eastern global gateway facilitated by ports, airports and freight networks.

However, investigations must also consider the 'sustain' theme to support the safety and health of communities.

The plan identifies the subregional 'prosper' outcome to protect and grow a series of identified Regional Economic Clusters (REC), including the Ipswich REC, noting that such clusters will need long-term, committed measures to prioritise investment that attract businesses and skilled workers. In the west of the Ipswich REC cluster, the emerging industrial corridor comprising transport and logistics and manufacturing is identified. Ebenezer is identified as a major enterprise and industrial area and nominated economic enabling infrastructure includes the heavy rail network, Cunningham Highway and RAAF Base Amberley. It is within this area that the proposed Intermodal Terminal would be positioned.

It is noted in the plan that:

- Economic enabling infrastructure, such as key freight routes and ports, will be a significant driver of growth of identified REC's;
- A keystone for securing prosperity for the region is developing relationships between key transport infrastructure and REC's;
- Proximity to major transport infrastructure presents long-term opportunities for a transport and logistics hub associated with the Melbourne to Brisbane Inland rail line; and
- A new road connection will be investigated to support freight movement between the Logan Motorway and Ebenezer.

A key regional infrastructure outcome of the plan is to work with the Australian Government to deliver the Melbourne to Brisbane Inland Rail project to support freight movement. This includes improving national rail freight network connections with Melbourne via Toowoomba, Lockyer Valley, Ebenezer and the Bromelton SDA to link to the Port of Brisbane. ShapingSEQ recognises the opportunity for an intermodal terminal to be established at Ebenezer, within the Ipswich Regional Economic Cluster (REC), with a future intermodal terminal marked in Map 3: Propser – Economic Areas. Shaping SEQ provides the following statement around intermodal opportunities for the Ipswich REC:

Close proximity to major transport infrastructure provides long-term opportunities for a transport and logistics hub associated with the future Melbourne to Brisbane Inland Rail line. However, this REC will need to overcome challenges relating to geotechnical stability in parts of Ebenezer associated with former mining activities to reach its full potential.

ShapingSEQ also recognises the role that intermodal terminals can play in supporting economic growth, export opportunities and continued improvements in competitiveness and productivity.

2.1.2 Ipswich City Council Corporate Plan 2017-2022

Ipswich City Council's Corporate Plan identifies a strategic direction for the City's activities over a five-year horizon, informing Council's other strategic and operational documents and activities. The plan's vision is that people are emotionally connected with a strong sense of belonging and pride in the city.

Themes and associated goals and actions of the plan with most relevance to an intermodal terminal include:

- 'Strengthening our local economy' which seeks to use the competitive advantages of Ipswich to provide jobs and prosperity. Underneath this goal is a strategy to diversify the local economy, and an action to support transport, logistics, and manufacturing industries, particularly where local SEQ Western Corridor products and agriculture are used; and
- 'Managing growth and delivery key infrastructure" which seeks to plan and develop a city that accommodates population and economic needs. This goal is supported by a strategy to provide a transport system that supports the safe, reliable and sustainable movement of people and goods for all travel modes. A subsequent action is to develop and implement an integrated transport plan which provides for the city being well connected for business, freight and visitors, to be delivered through the Ipswich City Council Transport Plan (iGO).

2.1.3 iGO Ipswich City Council Transport Action Plan 2016

This plan guides investment and decision making for the region's transport systems, including public transport, active transport, roads, freight and parking. One of the opportunities for freight outlined in the plan is an Inland Port within the Ebenezer Regional Industrial Area (ERIA), envisioned as a large intermodal (rail/road) freight transfer facility, to be located south of the existing Ipswich Motorsport Precinct at Willowbank. A subsequent action is identified in the plan to continue with the planning and development of the freight network, including the Inland Rail Project/ Southern Rail Freight Corridor, including the development of the Ebenezer intermodal freight hub – "Inland Port", with timing identified as ongoing.

2.1.4 Ipswich City Council iGO Freight Action Plan Stakeholder Engagement Report

This Report outlines the findings of stakeholder engagement undertaken for the development of a Freight Action Plan (FAP) as a part of the Ipswich City Council Transport Plan (iGO). Stakeholder engagement undertaken included stakeholder meetings (divided into economics and industry development, road freight, and rail freight meetings), one-on-one meetings and an industry workshop. A Project Advisory Group and a Project Working Group were also established with representatives from Council and the Queensland Government. Over 70 stakeholders were invited to participate across Council, State and Federal Government, and industry.

Key findings with potential relevance to an intermodal terminal include the following:

Rail

- Rail will be important to the future freight offering of the City of Ipswich; however, increased passenger rail services will have an impact on freight movement utilising the existing Queensland Rail (QR) network:
  - Comment from ICC: QR's technical requirement (CIVIL-SR-005) strongly discourages the presence of buildings over heavy haul railway lines on safety grounds. If rail freight were not to use the existing city rail network, there could be potential for air-right development on the Ipswich Line;
- Integration of the Inland Rail network and existing QR network needs to be considered, including tonnage weight limits and the impacts of this arrangement moving freight to the port;

- The current planning of Inland Rail includes $1.5 million in Federal and State Government funding for a business case study looking at options for improving connections to the Port of Brisbane;
- Rail network is standard gauge to Acacia Ridge and then narrow gauge to the Port of Brisbane which is a barrier for efficient and seamless rail freight movement;
- An intermodal terminal at Ebenezer would not be activated without market drive by the private sector. If constructed, it would open up opportunities for industrial development including heavy industry enabling greater bulk on rail; and
- Rail network limits (height, load weight) can be a barrier to freight.

Road

- There are a variety of local issues across the city including the need for more efficient access to industrial estates, amenity and safety issues with heavy freight vehicles using local streets, the need for safety improvements to on and off ramps to the Warrego and Cunningham highways:
  - For Ebenezer - two options exist for access, the one option is via Coopers Road off Cunningham Highway, some residential complaints about B doubles along this route. The other option involves Champions Way, which has predominantly a tourism function (Queensland Raceway which also hosts CMC Rock music festival) and also involves amenity issues;
- Consider whether Cunningham Highway / Ipswich Motorway remains to be the primary freight route and Centenary Highway the secondary freight route:
  - Comment from ICC: Population growth is forecast along the Centenary Highway including at Ripley Valley, Redback Plains and Springfield;
- First and last mile access is an issue for road freight including depots without adequate turning space, distribution centre operating hours and signal phasing at industrial estates;
- TMR roads upgrade projects (the available information will be investigated by the project team):
  - Centenary Highway Duplication Master Plan;
  - Cunningham Highway Realignment;
  - Amberley Interchange – funding is an issue, but the stakeholder engagement report did not provide further clarification on the specifics of the funding issue. This upgrade will enhance road safety and connections to the state-controlled road network; and
  - Western Ipswich Bypass (Cunningham Highway to Warrego Highway).

General

- Rail shuttles to the Port of Brisbane could be an opportunity in the future but will need good truck access;
- There are opportunities to increase rail freight if the volume makes it viable for operators;
- More clarity/information is needed around the impact/opportunities of Inland Rail in the ICC area;
- Inland Rail will reduce the transit time from Melbourne to Brisbane from 36 hours to 24 hours. The possibility exists to transport a sizeable quantity of coal – which would improve amenity issues on the current network;
- An intermodal terminal at Ebenezer on the Inland Rail could open up opportunities for logistics and warehousing industries;
- Road freight continues to be more flexible and accessible than rail freight. Rail is more cost effective over long distances;

- Drones may present an opportunity to deliver small freight in the future:
- Future industrial development areas include defence industry development around Amberley RAAF Base which includes engineering and logistics.

2.1.5 Ipswich City Council Economic and Workforce Development Plan

Ipswich City Council's Economic and Workforce Development Plan (2018) summarises the current priorities of Council's Office of Economic Development, Tourism, Branch and Smart City Program. It captures 45 actions which relevant staff and resources were committed to delivering throughout 2018 and 2019.

Key actions throughout this plan, as they relate to the Willowbank Intermodal Terminal are:

- Local Business Growth – Council has committed to supporting local businesses as they strive to success and prosper. Council's intends to achieve this through (including but not limited to) the following initiatives:
  - Deliver an Innovation program to increase digital technology and skills capability;
  - Provide proactive and reactive contact to local businesses for general enquiries;
- Industry Development - Council provides leadership in advancing the key industries of the region, those with the greatest economic and workforce impact or opportunity. Major initiatives within this theme include:
  - Provide strong representation of key industries to government, trade and investment agencies, bilateral chambers and industry allies;
  - Support the establishment of key industry centres of excellence;
- Tourism and Events - Council is actively engaged in destination marketing, industry development and major events with the purpose of increasing the region's visitor economy. Ipswich aims to be recognised as an accessible daytrip and short break destination within the South East Queensland market;
- Smart City - Council is leading an innovation and digital technology agenda which puts the city at the forefront in enabling new ways of working and living through the adoption of the following initiatives:
  - Deliver an expanded program of innovation, entrepreneurship, start-up and scale-up services;
  - Deliver a large-scale high capacity sensor network to facilitate IoT testing and deployment;
  - Deliver targeted interstate and international campaigns to attract IoT testing and development;
  - Support community groups or companies progressing innovation initiatives in the city;
- Advocacy and Promotion - Council actively represents the economic and workforce priorities of Ipswich to generate support and outcomes from all levels of government, the private sector and the community:
  - Deliver an advocacy and engagement plan focused on economic and workforce priorities;
- International Relations - Council is committed to increasing the city's export base and inward investment from priority international markets in key industries. Council intends to do this by:
  - Deliver an audit of key industries and businesses aligned to current and potential export markets;
  - Support inbound delegations which meet key industry and target market criteria;
  - Support businesses who are actively exporting or representing the city in target markets;
- Transport Connectivity - Council is committed to the ongoing positioning of the region as an intermodal transport hub that benefits the community and economy by the continued delivery of efficient freight and passenger services via an integrated regional transport system (as detailed in ShapingSEQ, 2017); and

- Economic and Community Hubs – development of priority regional places as detailed in ShapingSEQ, which will support Ipswich's liveability, prosperity, sense of identity and community.

Of relevance to the Willowbank Intermodal Terminal, as detailed in this plan, is the commitment of Ipswich City Council to the goal detailed in ShapingSEQ about positioning the City at the forefront of the regions intermodal transport capabilities.

2.1.6 Ipswich Central to Springfield Central Public Transport Corridor

In response to population growth in the Ipswich Central to Springfield Central corridor (the corridor) representing the highest in Queensland at the time of the report, projections expecting a doubling of population in the next two decades, and 25% annual growth projected in Ripley Valley to 2026, combined with an already strained road network, a mode shift from private vehicle to public transport is identified as necessary in the corridor.

The Ipswich Central to Springfield Central Public Transport Corridor is anticipated to provide an essential connection between Ipswich City Centre and Springfield Town Centre via Ripley Town Centre as well as delivering a regional link to Brisbane. The preserved corridor is 25 kilometres in length.

A benefit identified for the project include the improvement of freight efficiency by reducing the number of private vehicles on key roads.

Planning for the project has commenced, the Options Analysis is the next step.

2.1.7 Queensland Freight Strategy 2019

This strategy sets out a direction for the state's freight system to guide policy, planning and decision making over a ten-year horizon. The strategy commits to building effective partnerships, unlocking economic opportunity, smarter connectivity and access, resilience in the freight system, and safer freight movements.

Of particular interest to a business case for Willowbank Intermodal Terminal are the following commitments, objectives and actions:

- Unlock economic opportunity - transport facilitates the efficient movement of people and freight to grow Queensland's economy, ultimately seeking efficiency and productivity;
- Smarter connectivity and access - Plan a freight system that provides Queensland businesses with smarter access to local, national and overseas markets:
  - Encourage the use of rail freight on key strategic corridors;
  - Provide certainty to industry around future rail freight planning that encourages investment and attracts new entrants into the rail freight service market, boosting competition;
  - Improve urban and regional supply chains;
- Work collaboratively to improve the co-ordination of logistics and supply chain functions, particularly those connecting regional areas of Queensland; and
- The Department of Transport to work with industry to improve port connections and intermodal efficiency, providing benefits for export freight.

2.1.8 Transforming SEQ City Deal Proposition, February 2019

The TransformingSEQ City Deal Proposition is a pitch by the Queensland Government and the Council of Mayors to the Commonwealth Government for an SEQ City Deal. The SEQ City Deal comprises a shared ambition to realise the region's economic potential. Transforming SEQ identifies six transformative opportunities, with the following key for an intermodal terminal:

- Trade and Enterprise Spine: Supercharge an SEQ Trade and Enterprise Spine between the Toowoomba Trade Gateway and the Australia TradeCoast by connecting Inland Rail to the Port of Brisbane and unlocking new jobs in the south-west and western growth areas.

Furthermore, six domains are identified, those of particular relevance include:

- Connecting Infrastructure - leveraging existing region-shaping investments to deliver additional investment and network reform that moves SEQ towards a 45-minute region with 30-minute cities, including Inland Rail; and
- Jobs and Skills.

2.1.9 Melbourne to Brisbane Inland Rail Implementation Group Report to the Australian Government – Attachment A: Business Case 2015

This document presents a business case for the Melbourne to Brisbane Inland Rail (Inland Rail) as a nationally significant transport project proposed to link Melbourne to Brisbane. The proposed alignment of Inland Rail through Queensland in shown in Figure 2-1.

Figure 2-1 Proposed Inland Rail Alignment – Queensland sections

Key findings

Key findings of interest to an intermodal terminal include:

- The national vision for the east coast freight network is for high productivity and effective interstate rail and road networks with low cost and efficient regional connections to port and urban freight destinations;
- The east coast of Australia comprises 79% of Australia's population, 78% of Australia's national employment and contributes 75% of the nation's GDP. The freight task on the east coast is significant, with the interstate freight task alone projected to increase by 70% by 2030 to 140 billion tonne kilometres. With Australia's east coast population forecast to increase by 60% over the next 40 years, accompanied by comparable growth in employment, there will be significant pressure on freight infrastructure and services:
  - Existing infrastructure between Melbourne and Brisbane has insufficient capacity to meet future freight demand;
  - Current north–south freight infrastructure (road and rail) is already constrained and this will increasingly impact negatively on freight productivity;
  - Continued reliance on road for freight transport will result in increasing safety, environmental and community impacts with associated costs;
  - Existing north–south freight infrastructure is impacting accessibility to supply chain networks for regional producers and industries and inhibiting the productivity and economic growth potential of regional communities;

  - Lack of resilience on existing north–south freight infrastructure exposes supply chains to disruptions and sub-optimal reliability;
- The key benefits of Inland Rail to the freight industry and the broader community are:
  - Improved linkages within the national freight network: Enhances the National Land Transport Network by creating a rail linkage between Parkes in New South Wales and Brisbane, providing a connection between Queensland and the southern and western States;
  - Improved access to and from regional markets: Two million tonnes of agricultural freight attracted from road, with a total of 8.9 million tonnes of agricultural freight more efficiently diverted to Inland Rail;
  - Reduced costs for the market: reduce rail costs for inter-capital freight travelling between Melbourne and Brisbane by $10 per tonne;
  - Improved reliability and certainty of transit time: Less than 24 hour rail transit time between terminals in Melbourne and Brisbane and reliability matching current road levels;
  - Increased capacity of the transport network: Additional rail paths for freight (160 round trip paths per week) a 105% increase on current freight paths on the coastal route alone, along with releasing capacity for passenger services in Sydney and Brisbane, and removing 200 000 truck movements (5.4 billion net tonne kilometres of freight) from roads each year;
  - Reduced distances travelled: 200 kilometre reduction in rail distance between Melbourne and Brisbane, and 500 kilometre reduction between both Brisbane and Perth and Brisbane and Adelaide;
  - Improved road safety: 15 fewer serious crashes each year avoiding fatalities and serious injuries;
  - Improved sustainability and amenity for the community: More than 750 000 fewer tonnes of carbon and reduced truck volumes in over 20 regional towns;
  - It provides an alternative north-south freight path to counter weather, climactic or other disaster disruption to the transport network;
- The Inland Rail Programme will be a catalyst for complementary supply chain investments that exploit the enhanced logistics capability of Inland Rail, including fleet upgrades, new metropolitan and regional terminals and integrated freight precincts;
- The Inland Rail Programme Business Case demand assessment has found there would be strong market appetite to leverage the enhanced capabilities of Inland Rail with a significant uplift in rail market share. Rail's share of the Melbourne to Brisbane market is projected to increase by 36 percentage points by 2049–50 which translates into an additional 3.1 million tonnes (64% increase) of freight on rail between Melbourne and Brisbane compared to a future without Inland Rail. Significant increases in rail market shares are also expected between Brisbane to Adelaide (28 percentage points) and Brisbane to Perth (7 percentage points) over the same period;
- Significant volumes of existing grain movements (approximately 5.8 million tonnes in 2049–50) to east coast ports would utilise Inland Rail for part of their journey;
- The Inland Rail Programme Business Case finds that an investment in Inland Rail has positive net economic benefits, using a cost benefit methodology that is conventionally applied to major transport infrastructure projects in the context of a very long-term horizon for program delivery and inter-generational benefits realisation given the 100 year asset life;
- An economic benefit cost ratio of 2.62 at a four percent discount rate (1.02 at a seven percent discount rate) has been estimated for the Programme;
- Economy-wide modelling indicates the Inland Rail Programme will increase gross domestic product (GDP) by $16 billion over the 10 year construction period and 50 years of operation. The Programme is also expected to deliver

16 000 additional jobs at the peak of construction, and an average of 700 additional jobs per annum over the entire period;

- Financial analysis indicates that Inland Rail would not generate sufficient access revenues to cover the full costs of the Programme, including capital, operations and maintenance costs. Excluding capital charges, however, Inland Rail would be cash flow positive from commencement of operations with access revenues sufficient to cover ongoing operations and maintenance costs plus a margin;
- Supplementary analysis of a dedicated freight line extension from the existing interstate line in Brisbane to the Port of Brisbane identified two potential options, with the lowest cost option estimated to cost around $2.5 billion (P50, $2015, excluding escalation). Further planning is required before a preferred option (and associated corridor) can be selected;
- The analysis indicated the economic case for the new line to the port (possible extension of Inland Rail to the Port of Brisbane) was marginal and up until around 2040-41 projected demand could be met with smaller incremental capacity investments (depending on government policy decisions). Action to preserve the preferred corridor would be prudent as the line would eventually be required; and
- As the Inland Rail Programme would act as a catalyst for complementary private sector investment, it requires a firm early commitment to proceed and deliver the project in its entirety so as to create an environment where the private sector can invest with sufficient certainty that the anticipated service outcomes will be realised in the committed timeframes. Without such a commitment, the risk is that companies will not be incentivised to invest in rail supply chains and Australia's east coast may be locked into road-based logistics options which undermine future efforts to attract freight to rail.

Economic Impacts

Economic impacts detailed in the document include the following Cost Benefit Analysis results;

- Almost $24.0 million per annum in cumulative revenue by 2074;
- The net present value of the costs and benefits represents benefit cost ratios of 2.62 and 1.02 at the 4.0% and the 7.0% discount rates respectively. Therefore, indicating this analysis found a positive economic impact to the regional economy;
- Economic viability is reduced without complementary QR network investment to enable coal train lengths to increase to take advantage of the Inland Rail and Port of Brisbane Extension improved train capacity offering; and
- The Programme Business Case finds that an investment in Inland Rail has positive net economic benefits in the context of a very long-term horizon for benefit realisation given the 100-year asset life.

Social impacts

Social impacts identified in the document are framed largely around problem identification that the project will address, and benefits of the project. Relevant problems and benefits are summarised below.

Problems:

- Continued reliance on road for freight transport will lead to increasing safety, environmental and community impacts:
  - Road accidents result in direct and indirect societal costs;
  - Road accidents causing death or serious injury are nearly three times more likely compared to rail;
  - Private car and heavy vehicle interactions cause stop-start conditions which increases congestion, subsequently increasing travel times, vehicle emissions and operating costs; and

– Environmental impacts of heavy vehicles are far greater than rail.

Benefits:

Key benefits discussed in the report are summarised below. Figure 2-2 shows an infographic taken from the report which visually demonstrates overall benefits of the proposed Inland Rail.

- Improved road safety by removing heavy vehicles from the road network, reducing the distance travelled for rail freight and separating freight and passenger rail:
  - KPI: reduction in frequency and severity of crashes involving heavy vehicles/ level crossings;
- Improved sustainability and amenity for the community resulting from removing heavy vehicles from the road network and reducing rail freight travel distances, resulting in improved road congestion, fewer emissions and less noise. May also include potential to position rail lines away from housing or bypass downs, improving accessibility and amenity in regional areas:
  - KPI: Carbon emissions per unit of freight; and
  - KPI: reduction in trucks carrying freight.

Figure 2-2 Benefits of Inland Rail[1]

[1] ARTC 2015, Melbourne to Brisbane Inland Rail Implementation Group Report to the Australian Government Business Case

Community and Stakeholder Engagement

The Business Case reports that Community and Stakeholder Engagement undertaken revealed strong stakeholder support for Inland Rail, acknowledging it as a vital piece of infrastructure to reduce freight transit times and congestion, and creating competition in the logistics supply chain.

2.1.10 Willowbank Industrial Estate Traffic Engineering Report 2019

This report assesses traffic engineering changes proposed for site access to the planned Willowbank Industrial Precinct (WIP) and is intended to assist the Planning and Environment Court.

Key points from the report which are of interest to an intermodal terminal include:

- The need for upgrade of the Cunningham Highway will eventually be triggered even with only a small development such as only 10 hectares;
- It is not the passage of time, nor the level of development that directly cause the need for the subject access intersection to be upgraded, but the traffic that is associated with these metrics;

The following conclusions are drawn:

- Background traffic growth on the Cunningham Highway in the last decade or so has been virtually non–existent;
- It is recommended that the two non–roundabout forms for the access intersection (priority–controlled intersection initially, and finally a grade–separated interchange) be adopted in the changed approval; and
- It is recommended that the intersection upgrade trigger relating to site yield and background traffic growth on the Cunningham Highway be maintained, incorporating direct measurement of traffic volumes. When traffic reaches high levels, the developer will be required to initiate intersection upgrades, although it is likely these would be partially funded by the Federal and State governments.

2.1.11 Ipswich Planning Scheme Implementation Guideline No. 32 - Ebenezer Regional Industrial Area Implementation Guideline

The Guideline assists interpretation of 'Part 6, Division 5 – Regional Business and Industry Investigation Zone' of the Ipswich Planning Scheme. It applies to the Ebenezer Regional Industrial Area, bounded by the Bremer River to the north, Cunningham Highway to the east, Goebels Road to the south and Mt Forbes Road and Ebenezer Road to the west.

The Guideline discusses the Southern Freight Rail Corridor (SFRC), including allowance in the eastern extent of the corridor for an Intermodal Freight Terminal (IFT) which may be located immediately south of the Ipswich Motorsport Precinct. The Guideline indicates that:

- the IFT will provide central distribution, loading and unloading for the SFRC;
- new uses and works, particularly freight dependent businesses and industries should be located in close proximity to the IFT;
- future road layouts should maximise accessibility to the IFT; and
- future development should not compromise the operation of the SFRC and the IFT.

2.1.12 Future of Intermodal Terminals May 2017

This report commissioned by the Department of Infrastructure and Regional Development examined the future of intermodal terminals in Australia. The study focused on intermodal terminals serving the interstate and import/ export (IMEX) markets, including those within the proposed Inland Rail corridor.

The report provides the following insights about freight and logistics and intermodal terminals:

- Freight and logistics sector are key drivers and enablers of economic activity, estimated to be valued at $131.6 billion or 8.6% of Gross Domestic Product;
- Freight is projected to increase by 80% between 2010 and 2030 and a tripling of freight by 2050;
- The proportion of freight via rail-based supply chain is growing as a result of increasing bulk exports;
- Intermodal terminals are critical in the rail-based supply chain, with effective operations and sufficient capacity essential for rail based supply chain competitiveness;
- Terminal viability is driven by throughput. Maximising volume for terminal configuration optimises efficiency and reduces cost per container handled, which is essential to price competitiveness with alternative supply chain options; and
- Throughput is driven by the competitiveness of the rail based supply chain.

Intermodal terminals occupy a critical position in the rail-based supply chain. Terminals provide the connecting interface point between the rail network and the customer facing operations. Effective terminal operations and enough capacity are essential building blocks for the overall competitiveness of the rail-based supply chains. The competitiveness of the rail-based supply chain and the associated freight traffic is optimised by efficient interaction and interface between all positions within the rail-based supply chain.

Potential gaps in intermodal terminal capacity may arise within the next 20 years. The report identifies capacity gaps by region, and the Brisbane region is highlighted:

- Interstate Market:
  - Timing: 2025 with Inland Rail; 2035 without Inland Rail; and
  - Context: Industry stakeholders have already identified a potential short term capacity constraint at Acacia Ridge, arising from customer preferences for 'premium train paths' and commercial and contractual issues associated with multi user terminals which can inhibit demand transfer and adjustment from one terminal to another.
- IMEX Market:
  - Timing: 2023 with Inland Rail; and
  - Context: Brisbane could face short term IMEX capacity issues under a project case scenario (with Inland Rail) by 2023 arising from the current lack of IMEX feeder terminals. This is likely to be addressed by the market. This assumes there is no demand constraint on the corridor (although it is likely to be partially constrained in reality) due to passenger network issues.

The document details that short term capacity uplift is scalable but long-term uplift requires significant investment (which can be subject to other capacity constraints). However, the private sector is active in terminal investment, particularly where the terminal network is commercially prudent. At the time of this report private sector investors were leaning towards brownfield investments over greenfield sites.

Another significant trend identified in this report is the co-location of freight precincts with consumers and with supporting industries. A key challenge to co-location with customers (particularly in metro areas) is the ability to assemble significant tranches of appropriately zoned and buffered land, ensuring the prerequisite road and rail connectivity of the site and financing the investment.

This report has developed a typology of intermodal terminals which is detailed in Table 2-1.

Table 2-1 Typology of Intermodal Terminal Types

Location	Terminal Type	Characteristics
Regional	Intrastate IMEX – Regional Terminal	• moving from the inland terminal stationed near an agricultural area or manufacturing/processing facility to the nearest port for export; • Minimum of 10,000 TEUs, however preferable to operate at 15,000 TEUs per annum; • Low volume terminals are characterised by 1 or 2 short length sidings, limited hardstand and storage area with 1 or 2 x 30 to 40 tonne container forklifts/reach stackers for loading/unloading; and • Typically operate 2 + return services per week.
Regional	Inland Rail – Regional Terminal	• Inland Rail will link metropolitan intermodal terminals in Melbourne and Brisbane as well as regional terminals along the corridor; • 10,000 TEUs per annum; • Ability to accommodate 1800 m trains initially and up to 3600 m trains in future; and • Service frequency will depend on the demand and size of train configuration for different products and tasks.
Metro	Small IMEX – Metro Terminal	• Small metro terminals are categorised by their location and size; they are typically located within 0-35km of the capital city centre with low throughput volumes; • 30,000 to 100,000 TEU per annum; and • 1 to 2 return services per day.
Metro	Major Interstate – Metro Terminal	• Major metro terminals can provide significant land for co-located logistics and general freight activities; • 100,000 to 400,000 TEUs per annum; • Rail infrastructure is capable to meeting requirements to handle interstate superfreighter services of 1500 metres to 1800 metres; and • Frequency of services is driven by the demand.
Port	Port Terminal	• Import movements from the port to an intermodal terminal can occur by road, by dedicated port shuttle arrangements, or as backhaul on export related rail movements; • Vary from 50,000 to 600,000 TEUs per annum; and • IMEX services in Australia are predominantly short haul i.e. bound for a destination within 50km of the port. Given the ratio of load to transport time, the key factor prized by operators is cycle frequency rather than upscaling the train load.

The high-level preliminary decision making framework suggested in this report has been established to provide a framework to assess whether there is need for an intermodal terminal. These pre-conditions for rail based supply chains and intermodal terminals are summarised below:

1. What is the freight commodity and is it contestable for rail transport?
2. Does the commodity throughout meet the minimum rail volume thresholds (trans load volumes of freight)?
3. Does the rail supply chain solution meet minimum services criteria?
4. Does the seasonality of throughput support a rail solution?

5. What is the proposed origin and destination for the rail task and is there the necessary rail infrastructure and facilities on the proposed route?
6. Is the rail operating model effective (optimal rail logistics configuration for the product and route) and can it meet rail demand requirements?
7. What are the commercial arrangements for the task?

The report also suggests a throughput per annum for each terminal type.

2.1.13 Consultation Report - Draft Ipswich Planning Scheme 2019 Statement of Proposals (Including Draft Strategic Framework)

This document summarises the issues raised during public consultation of the 'Statement of Proposals' including the Draft Strategic Framework. The following issues relating to an intermodal terminal at Ebenezer/ Willowbank were listed:

- Express concern that planning policy permits the use of mining voids for waste management operations particularly within the Ebenezer and Jeebropilly areas;
- Expresses support for the Ebenezer Regional Industrial Area in the Ebenezer / Willowbank local framework area; and
- Expresses concern that waste management operations with the Ebenezer area may be compromised, and requests that specified land be amended from the SFM3 Waste Activity and Buffer Areas and included in the Waste Activity Area.

Section 3 Social and Economic Baseline

3.1 Description of Local and Regional Communities

The suburb of Ebenezer is recognised to be a major enterprise and industrial area. According to the *2006 Consolidated Ipswich Planning Scheme,* the proposed Intermodal Terminal (subject site) is located within a Regional Business and Industry Investigation zoned area. RAAF Base Amberley is zoned to the north of the subject site and is home of the Royal Australian Air Force (RAAF)[2]. The RAAF Base Amberley is the Royal Australian Air Force's largest airbase and employs over 5,000 people[3]. Ipswich Motorsport Precinct at Willowbank is also located within the proximity of the proposed intermodal terminal, and is a regionally, state and nationally significant outdoor recreation facility which hosts both national and international events[4]. The subject site is bounded by the Cunningham Highway to the east, Goebels Road to the south and Ebenezer Road towards the west.

Due to the proximity of the Bremer River in the north, the area surrounding the proposed Intermodal Terminal is constrained by an OV5 Adopted Flood Regulation Overlay towards the east and west. Land to the north of Willowbank, and to the left of the RAAF Base Amberley, is located within the OV5 1 in 20 Development Line. The adopted flood regulation line is based on the 1974 flood level, the historic 2011 flood and the modelled 1 in 100 Flood level[5]. The planning scheme requires development activity for commercial, industrial and other non-residential uses occurring between the 1 in 20 Development Line and the Adopted Flood Regulation Line to ensure the design (including building materials), layout and location of buildings are able to provide the greatest level of flood immunity.

Residential zoned land is located to the west of the subject site in Rosewood and includes a range of character housing, low and medium density options. In addition, towards the north-eastern part of the subject site in Willowbank, is a small pocket of low density and large lot residential development, though this is protected by a Regional Business and Industry Buffer zoned area. Despite the generally high population growth Ipswich has been experiencing, especially in the Springfield and Ripley Valley areas, due to the zoning intent and development constraints such as flooding, it is unlikely future residential development would be supported.

The proposed development, however, could have a role to play in helping to alleviate potential imbalances that may result between the high rates of population growth experienced in Ipswich and the need to supplement this with increasing employment opportunities for residents. The City of Ipswich has expressed its commitment to strengthen the local economy and use the competitive advantages of the city to help provide jobs and enhance economic prosperity[6]. The City of Ipswich aims to position Ebenezer as an intermodal transport hub, which seeks to provide benefits to both the community and economy, through continuing to deliver an efficient freight and passenger services, in a way which balances the region's rural hinterland identity and maintains a strong sense of belonging and pride in the city[7].

3.2 Study Areas Assessed

The social and economic baseline considers the following communities of interest:

---

[2] City of Ipswich Planning and Development. (n.d.). *Ipswich Planning Scheme* . Retrieved from City of Ipswich Planning and Development: https://www.ipswichplanning.com.au/planning-documents/planning-scheme

[3] Royal Australian Air Force. (n.d.). *RAAF Base Amberley*. Retrieved from Air Force: https://www.airforce.gov.au/about-us/bases/qld/amberley

[4] Queensland Government. (2017). Shaping SEQ South East Queensland Regional Plan 2017. Department of Infrastructure, Local Government and Planning.

[5] Ipswich City Council. (2013, July). *Ipswich Planning Scheme - Part 11 Overlays.* Retrieved from Ipswich City Council: https://www.ipswichplanning.com.au/__data/assets/pdf_file/0009/1998/ips_part_11_overlays.pdf

[6] Ipswich City Council's Corporate Plan 2017-2022

[7] Ipswich City Council Economic Workforce Development Plan

- Neighbourhood study area, which comprises the state suburbs of Ebenezer, Willowbank, Mount Forbes, Mutdapilly, Jeebropilly and Purga (to inform the social impact assessment);
- Rosewood SA2;
- City of Ipswich;
- SEQ; and
- Queensland.

The neighbourhood study area assessment provides an overview of targeted demographic factors to inform the social impact assessment, with a detailed assessment of a broader range of factors undertaken for Rosewood SA2, City of Ipswich and Queensland.

3.3 Social and Economic Baseline - Neighbourhood study area

A 'neighbourhood study area' has been identified, which considers the following state suburbs of interest, located most immediate to the proposed intermodal terminal:

- Ebenezer;
- Willowbank;
- Mount Forbes;
- Mutdapilly;
- Jeebropilly; and
- Purga.

To inform the social impact assessment, a range of ABS statistics indicators were analysed for the neighbourhood study area. These consider the population characteristics, in addition to broader themes such as connection to place and the location of where residents work.

3.3.1 Population characteristics

3.3.1.1 Population

The population for the neighbourhood study area (which comprises the state suburbs of Ebenezer, Willowbank, Mount Forbes, Mutdapilly, Jeebropilly and Purga) is shown for 2016, as seen in Table 3-1. In 2016, the neighbourhood study area had a population of 2,791 people. Unlike Queensland, the neighbourhood study area had slightly more males than females (50.7% and 49.2% respectively).

Table 3-1 Population by Sex, Study areas, 2016

Area	2016		
	Males	Females	Total
Neighbourhood study area	1,414 (50.7%)	1,373 (49.2%)	2,791 (100.0%)
Queensland	2,321,885 (49.4%)	2,381,302 (50.6%)	4,703,192 (100.0%)

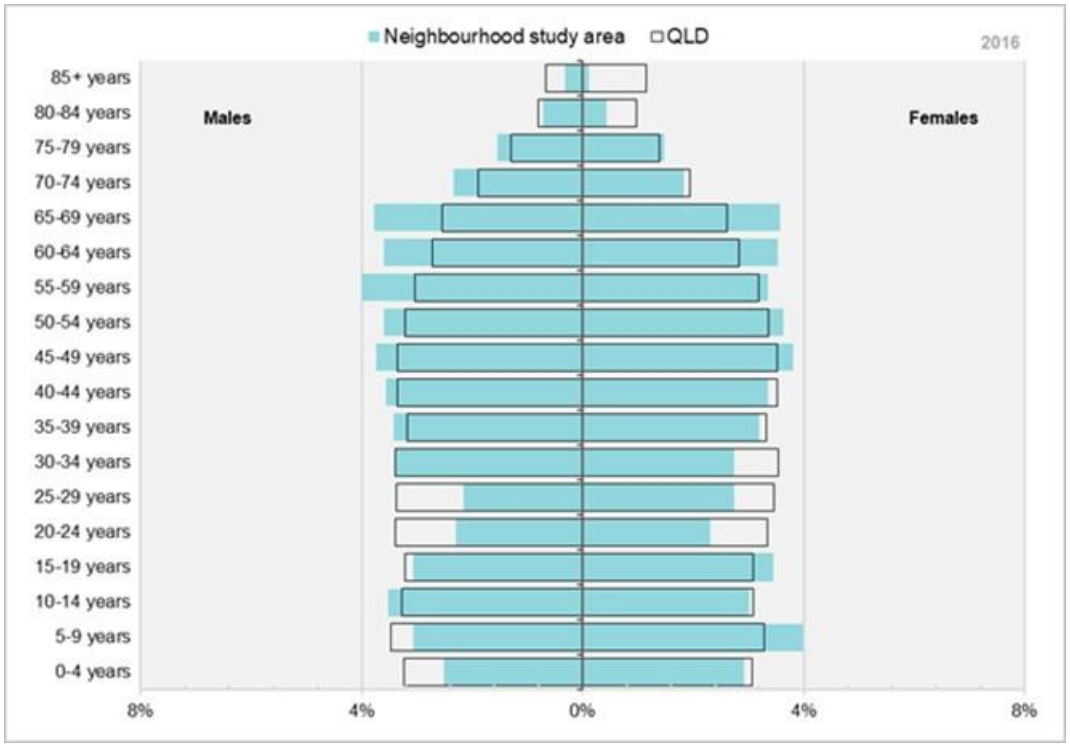
Source: ABS (2017a)

3.3.1.2 Age structure

The age structure for the neighbourhood study area is shown for 2016 in Figure 3-1. The neighbourhood study area had a higher proportion of middle-age to older age groups (45-69 years), and a slightly higher proportion of males

between 70-79 years compared Queensland. The neighbourhood study area, however, had a lower proportion of elderly people aged 85 years and older compared to Queensland. The neighbourhood study area also had a lower proportion of young-adults (20-29 years) and females between 30-34 years of age. This suggests that young adults may be forced to move away from the study area in search of job opportunities or to own property given that the Rosewood SA2 is currently predominately rural.

Figure 3-1 Age Structure, Study Areas, 2016



Source: ABS (2017a)

3.3.1.3 Household type

There was a total of 959 households identified within the neighbourhood study area in 2016 (Table 3-2). The neighbourhood study area had a very similar household structure to Queensland, with similar proportions of couples with no children, one-parent families, other family types, lone-person and group households. The neighbourhood study area, however, had a slightly higher proportion of couple families with children, though this increase was only marginal (2.8%).

Table 3-2 Household type, Study areas, 2016

Area	Couple family with no children	Couple family with children	One-parent family	Other family type	Lone-person	Group	Total
Neighbourhood study areas	279 (29.1%)	324 (33.8%)	96 (10.0%)	15 (1.6%)	217 (22.6%)	28 (2.9%)	959 (100.0%)
Queensland	463,905 (28.0%)	513,727 (31.0%)	192,335 (11.6%)	19,895 (1.2%)	389,078 (23.5%)	77,899 (4.7%)	1,656,839 (100.0%)

Source: ABS (2017a)

3.3.2 Connection to place

3.3.2.1 Length of time living in locality

Table 3-3 shows the proportion of residents in the neighbourhood study area whose usual address five years prior to the 2016 Census was the same as reported in 2016, elsewhere in Australia or overseas. The neighbourhood study area had a higher proportion of residents who had been living in the same address for the five years prior to the 2016 Census, compared to Queensland (55.6% and 45.0% respectively). The neighbourhood study area had a lower proportion of residents who had been living elsewhere in Australia (29.4% and 36.5 respectively). Residents in the neighbourhood study area were also less likely to live overseas in 2011, than Queensland (0.9% and 4.8% respectively).

Table 3-3 Length of time living in Study area, 2016

Area	Same in 2016	Elsewhere in Australia	Overseas in 2011	Total
Neighbourhood study area	1,428 (56.6%)	742 (29.4%)	22 (0.9%)	2,525 (100.0%)
Queensland	2,118,156 (45.0%)	1,714,839 (36.5%)	228,089 (4.8%)	4,703,192 (100.0%)

Source: ABS (2017a)

3.3.2.2 Dwelling tenure

A higher proportion of households in the neighbourhood study area own a house with a mortgage (38.8%), compared to Queensland (33.7%) (Table 3-4). Residents in the neighbourhood study area are also more likely to own their house outright (34.3% for the neighbourhood study area, compared to 28.5% for Queensland), than they are to rent (19.6% for the neighbourhood study area, compared to 33.3% for Queensland).

Table 3-4 Tenure type, Study areas, 2016

Area	Owned Outright	Owned with Mortgage	Rented	Total
Neighbourhood study area	333 (34.3%)	376 (38.8%)	190 (19.6%)	970 (100%)
Queensland	471,408 (28.5%)	558,439 (33.7%)	551,111 (33.3%)	1,656,835 (100%)

Source: ABS (2017a)

3.3.2.3 Country of birth

The neighbourhood study area had a higher proportion of residents born in Australia, compared to Queensland (82.1% and 71.1% respectively), as detailed in Table 3-5. As such, less residents in the neighbourhood study area were born overseas, compared to Queensland (8.7% compared to 21.6% respectively).

Table 3-5 Country of birth, Study areas, 2016

Area	Australia	Born Overseas	Not Stated	Total
Neighbourhood study area	2,292 (82.1%)	243 (8.7%)	245 (8.8%)	2,791 (100.0%)
Queensland	3,343,820 (71.1%)	1,015,871 (21.6%)	343,499 (7.3%)	4,703,192 (100.0%)

Source: ABS (2017a)

3.3.2.4 Aboriginal and Torres Strait Islander population

Table 3-6 shows the Aboriginal and Torres Strait Islander population for the study areas. Within the neighbourhood study area, no persons identified as both Aboriginal and Torres Strait Islander, compared to Queensland (0.4%).

Table 3-6 Aboriginal and Torres Strait Islander population, Study areas, 2016

Area	Aboriginal	Torres Strait Islander	Both Aboriginal and Torres Strait Islander	Total Indigenous Population
Neighbourhood study area	71 (2.5%)	0 (0.0%)	0 (0.0%)	71 (2.5%)
Queensland	148,940 (3.2%)	21,053 (0.4%)	16,489 (0.4%)	186,482 (4.0%)

Source: ABS (2017a)

3.3.3 Where residents work

3.3.3.1 Distance travelled to work

The distance travelled to work for the neighbourhood study area is shown for 2016 (Table 3-7). Residents living in the neighbourhood study area are more likely to travel a longer distance (between 10-50km) to go to work compared to Queensland (approximately 60% and 42% of all residents respectively). This suggests self-containment of employment could be improved in the study area, to avoid residents having to travel longer distances to work. This may also be reflective of lifestyle choice, with residents choosing to live in the neighbourhood study area on a larger allotment.

Table 3-7 Distance travelled to work, Study areas, 2016

Area	Nil distance	Over 0km to less	2.5km to less	10km to less	30km to less	50km to less	250 km and over	Total
Neighbourhood study area	127 (10.6%)	32 (2.7%)	163 (13.6%)	473 (39.4%)	247 (20.5%)	140 (11.6%)	32 (2.7%)	1,202 (100.0%)
Queensland	156,374 (7.7%)	206,444 (10.1%)	650,493 (32.0%)	693,825 (34.1%)	158,766 (7.8%)	112,891 (5.5%)	56,150 (2.8%)	2,034,949 (100.0%)

Source: ABS (2017a)

3.3.3.2 Method of travel to work

Table 3-8 shows most employed residents drove a private vehicle to get to work and this was higher in the neighbourhood study area and Ipswich LGA, compared to Queensland (42.3%, 44.1% and 40.5% respectively). A very low proportion of employed residents used public transport. However, in the neighbourhood study area, the proportion of employed residents who worked at home was higher than Ipswich LGA and Queensland (10.6%, 7.2% and 8.4% respectively).

Table 3-8 Method of travel to work, Study areas, 2016

Area	Vehicle	Public Transport	Active Transport: Walking/Cycling	Worked at Home	Total
Neighbourhood study area	955 (42.3%)	39 (1.7%)	25 (1.1%)	240 (10.6%)	2,257 (100%)
Ipswich LGA	65,116 (44.1%)	5,918 (4.0%)	1,423 (1.0%)	10,660 (7.2%)	147,812 (100%)
Queensland	1,533,625 (40.5%)	156,769 (4.1%)	92,196 (2.4%)	319,214 (8.4%)	3,790,497 (100%)

Source: ABS (2017a)

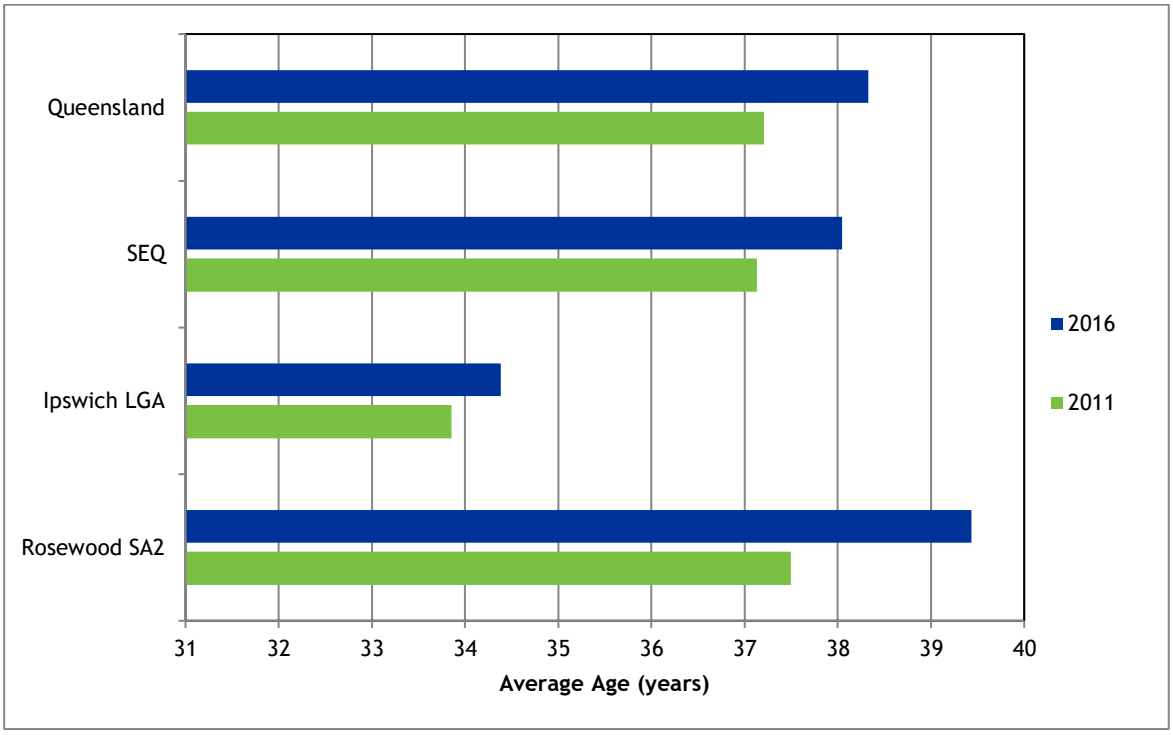
3.4 Social and Economic Baseline – Rosewood SA2, Ipswich LGA and Queensland

3.4.1 Average Age of Residents

All regions analysed recorded an increase in the average age between the 2011 and 2016 Censuses. In 2016, Rosewood SA2 recorded the highest average age (39.4 years). Additionally, Rosewood SA2 recorded the largest increase in average age between the 2011 and 2016 Censuses. Rosewood SA2 residents were significantly older than other areas in the region, with Ipswich LGA recording the lowest average age across all areas analysed in 2016.

Figure 3-2 reports the average age of the resident population of Rosewood SA2, Ipswich LGA, SEQ and Queensland as of the 2011 and 2016 Censuses.

Figure 3-2 Average Age Resident Population - Rosewood SA2, Ipswich LGA, SEQ and Queensland, 2011 and 2016



Source: ABS (2017b)

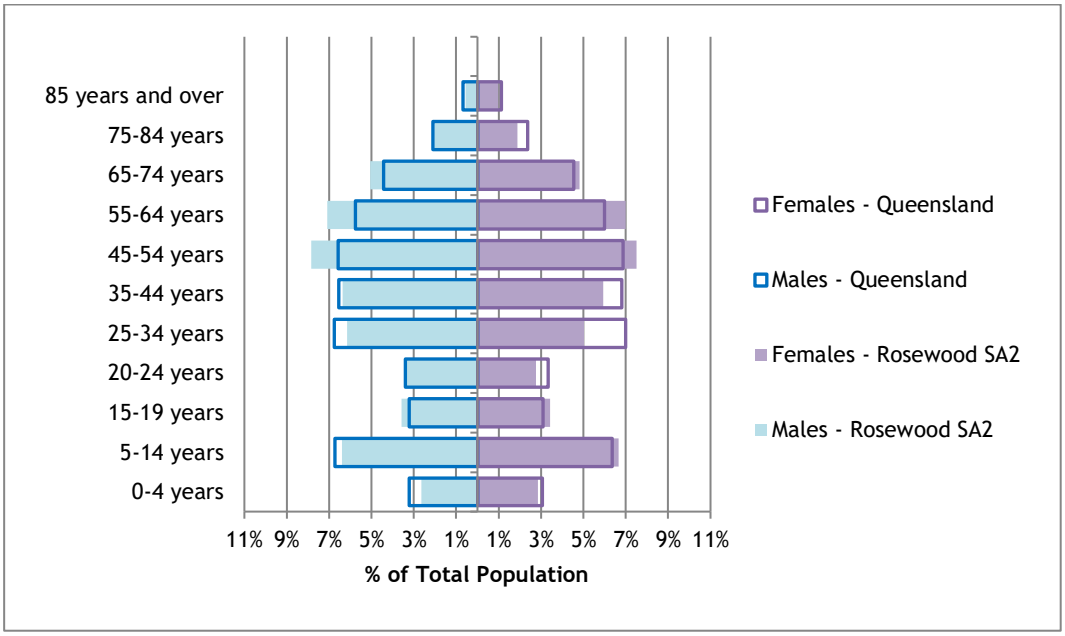
3.4.2 Age Profile

As previously outlined, the average age of residents in the Rosewood SA2 was higher than Queensland as of the 2016 Census. The key variances in the 2016 age profile of Rosewood SA2 compared to Queensland are:

- Higher incidence of persons aged 15 to 19 years;
- Lower incidence of women aged 20 to 44 years; and
- Higher incidence of persons aged 45 to 64 years.

Figure 3-3 illustrates the distribution of the population by age in Rosewood SA2 compared to Queensland as of the 2016 Census.

Figure 3-3 Age Profile – Rosewood SA2 and Queensland, 2016



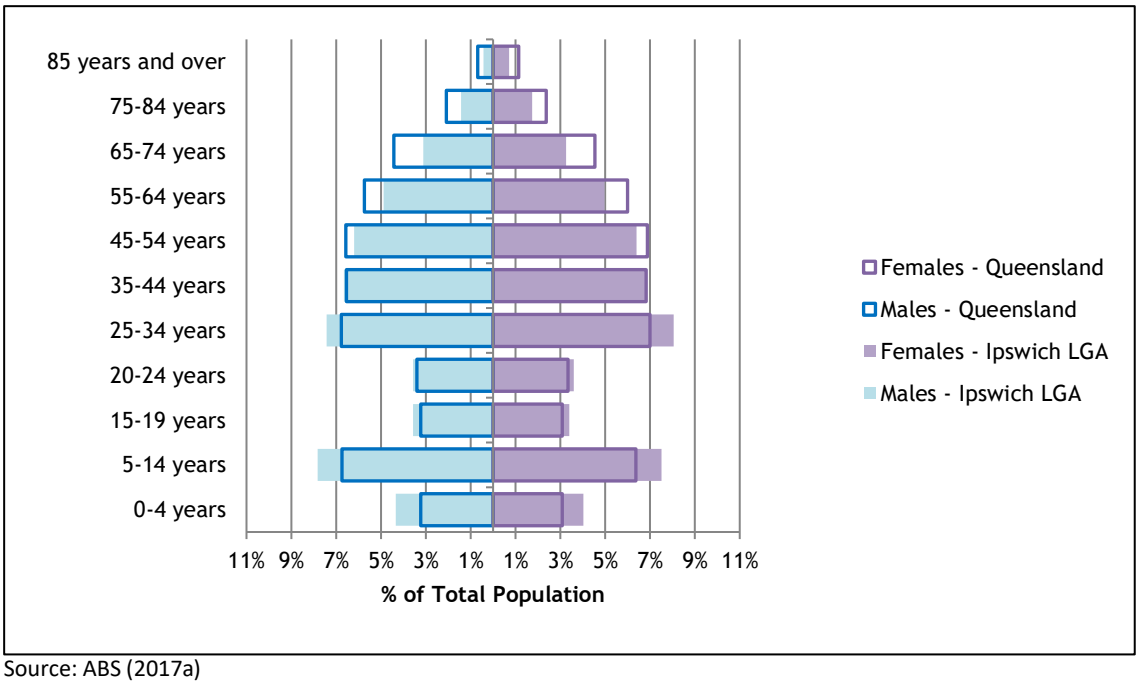
Source: ABS (2017a)

As of the 2016 Census, Ipswich LGA, relative to Queensland, had the following variances in the distribution of population by age in 2016;

- Higher proportion of persons aged 0 to 34 years; and
- Lower proportion of persons aged 55 years and over.

Figure 3-4 illustrates the distribution of the population by age in Ipswich LGA and Queensland in 2016.

Figure 3-4 Age Profile – Ipswich LGA and Queensland, 2016

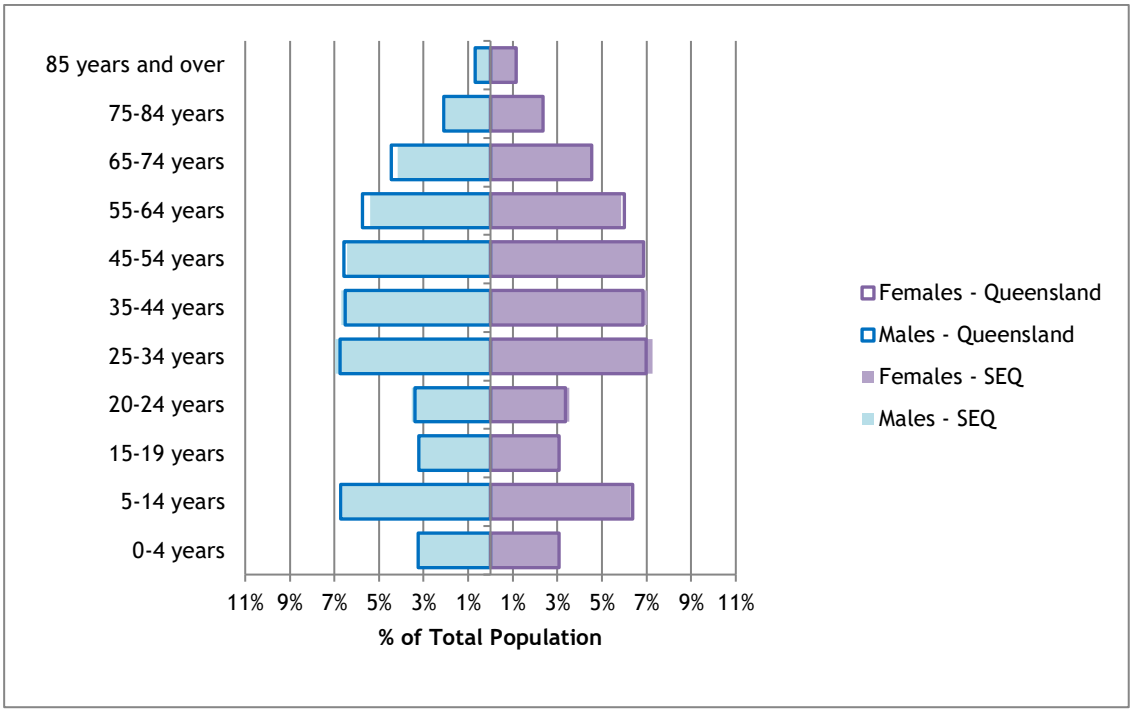


Source: ABS (2017a)

The age profile of residents in SEQ, compared to Queensland as of the 2016 Census is very similar, with the most significant incidence in the proportion of males aged 55 to 64 years (lower in SEQ relative to Queensland).

Figure 3-5 illustrates the distribution of the population by age in SEQ and Queensland in 2016.

Figure 3-5 Age Profile – SEQ and Queensland, 2016



Source: ABS (2017a)

3.5 Historic Population

The estimated population of Rosewood SA2 increased from 12,039 persons in 2011 to 13,076 persons in 2019, an increase of some 1,040 persons or representing an average growth rate (AAGR) of 1.0% per annum. The AGGR experienced in Rosewood SA2 over the last eight years is significantly lower than that for Ipswich LGA (3.2% per annum), SEQ (2.0% per annum) and Queensland (1.6% per annum).

Table 3-9 reports the estimated residential population of Rosewood SA2, Ipswich LGA, SEQ and Queensland between 2011 and 2019, in addition to the average annual growth rate (AAGR).

Table 3-9 Historical Estimated Residential Population – Rosewood SA2, Ipswich LGA, SEQ and Queensland

Population	2011	2012	2013	2014	2015	2016	2017	2018	2019	AAGR, 2011-19
Population										
Rosewood SA2	12,039	12,035	11,666	11,619	11,745	12,081	12,200	12,548	13,079	1.0%
Ipswich (C)	172,200	178,215	183,688	189,195	194,274	200,103	206,500	213,568	222,307	3.2%
SEQ	3,167,786	3,240,900	3,309,209	3,368,631	3,425,221	3,492,744	3,569,888	3,646,065	3,723,827	2.0%
Queensland	4,476,778	4,568,687	4,652,824	4,719,653	4,777,692	4,845,152	4,927,629	5,009,424	5,094,510	1.6%

Source: ABS (2020a)

3.6 Population and Household Projections

The population of the Rosewood SA2 is anticipated to increase from 12,109 persons in 2016 to 27,675 persons in 2041, representing an average annual growth rate (AAGR) of 7.1% per annum. The is the highest AAGR across the areas analysed. The Ipswich LGA is predicted to have a relatively higher AAGR (4.2% per annum) compared to SEQ and the State's projected growth rates. Based on the population projections and the average number of persons per household as at the 2016 Census, a projected number of total households can be calculated from 2016 to 2041. The average number of households by each area analysed are as follows;

- Rosewood SA2: 2.7 persons;
- Ipswich LGA: 2.8 persons;
- SEQ: 2.6 persons; and
- Queensland: 2.6 persons.

These averages have been applied to the population projections for each region to obtain the projected number of households.

Table 3-10 reports the projected total population and households of Rosewood SA2, Ipswich LGA, SEQ and Queensland between 2016 and 2041, in addition to the average annual growth rate (AAGR).

Table 3-10 Population Projections – Rosewood SA2, Ipswich LGA, SEQ and Queensland

Population	2016	2021	2026	2031	2036	2041	AAGR, 2016-41
Population							
Rosewood SA2	12,109	15,711	28,069	43,068	54,629	67,975	7.1%
Ipswich (C)	200,123	246,090	325,092	410,631	480,339	557,649	4.2%
SEQ	3,462,434	3,824,550	4,211,856	4,612,837	5,011,851	5,408,205	1.8%
Queensland	4,848,877	5,261,567	5,722,780	6,206,566	6,686,604	7,161,661	1.6%
Households							
Rosewood SA2	4,485	5,819	10,396	15,951	20,233	25,176	7.1%
Ipswich (C)	71,473	87,889	116,104	146,654	171,550	199,160	4.2%
SEQ	1,318,057	1,455,905	1,603,342	1,755,985	1,907,879	2,058,760	1.8%
Queensland	1,864,953	2,023,680	2,201,069	2,387,141	2,571,771	2,754,485	1.6%

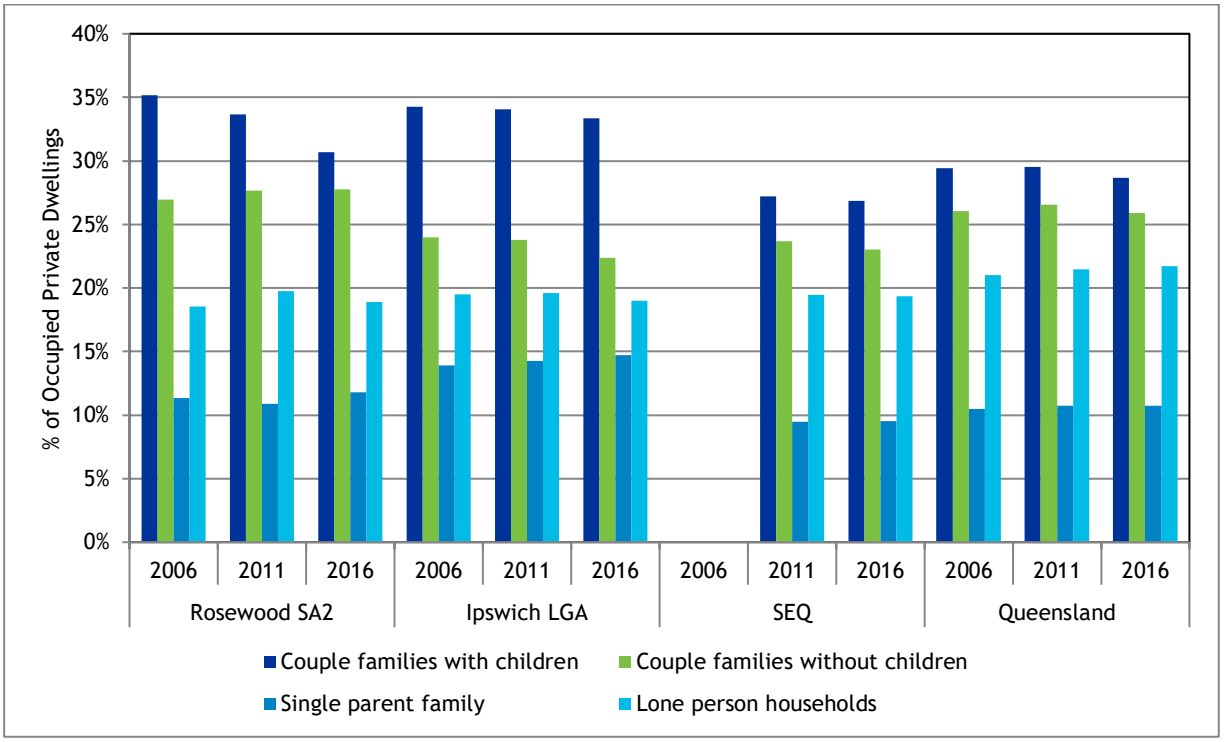
Source: QGSO (2018) and ABS (2017a)

3.7 Family Composition

Across all areas analysed, couple families with children have remained the dominant family type, with Ipswich LGA recording the highest incidence of this family type in both 2011 and 2016. Rosewood SA2 is characterised by a higher incidence of couple families without children relative to Ipswich LGA, SEQ and Queensland.

These trends are illustrated in Figure 3-6 reporting family compositions for Rosewood SA2, Ipswich LGA, SEQ and Queensland for 2011 and 2016.

Figure 3-6 Family Composition – Rosewood SA2, Ipswich LGA, SEQ and Queensland, 2011 and 2016



Source: ABS (2017b)

3.8 Average Household Income

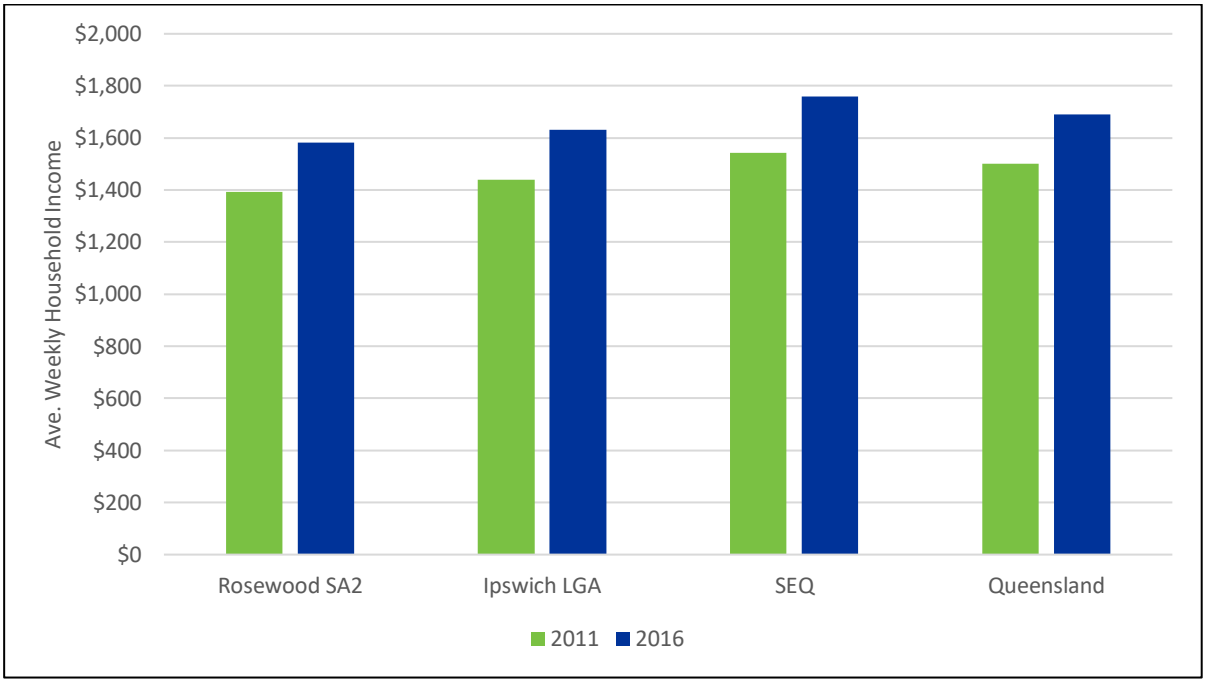
In 2016, the average household income in Rosewood SA2 was $1,583 per week. Ipswich LGA, SEQ and Queensland recorded higher average household incomes in 2016 ($1,630, $1,759 and $1,691 respectively). Average household incomes within Rosewood SA2 were also lower than the other areas analysed as of the 2011 Censuses. However, all areas analysed recorded a similar percentage growth in average household incomes between 2011 and 2016.

The average annual change in average household incomes in the subject areas between 2011 and 2016 are as follows:

- Rosewood SA2: 2.6% per annum;
- Ipswich LGA: 2.5% per annum;
- SEQ: 2.7% per annum; and
- Queensland: 2.4% per annum.

Trends in average weekly household incomes of Rosewood SA2, Ipswich LGA, SEQ and Queensland between 2011 and 2016 are illustrated in Figure 3-7.

Figure 3-7 Average Household Income – Rosewood SA2, Ipswich LGA, SEQ and Queensland, 2011 and 2016



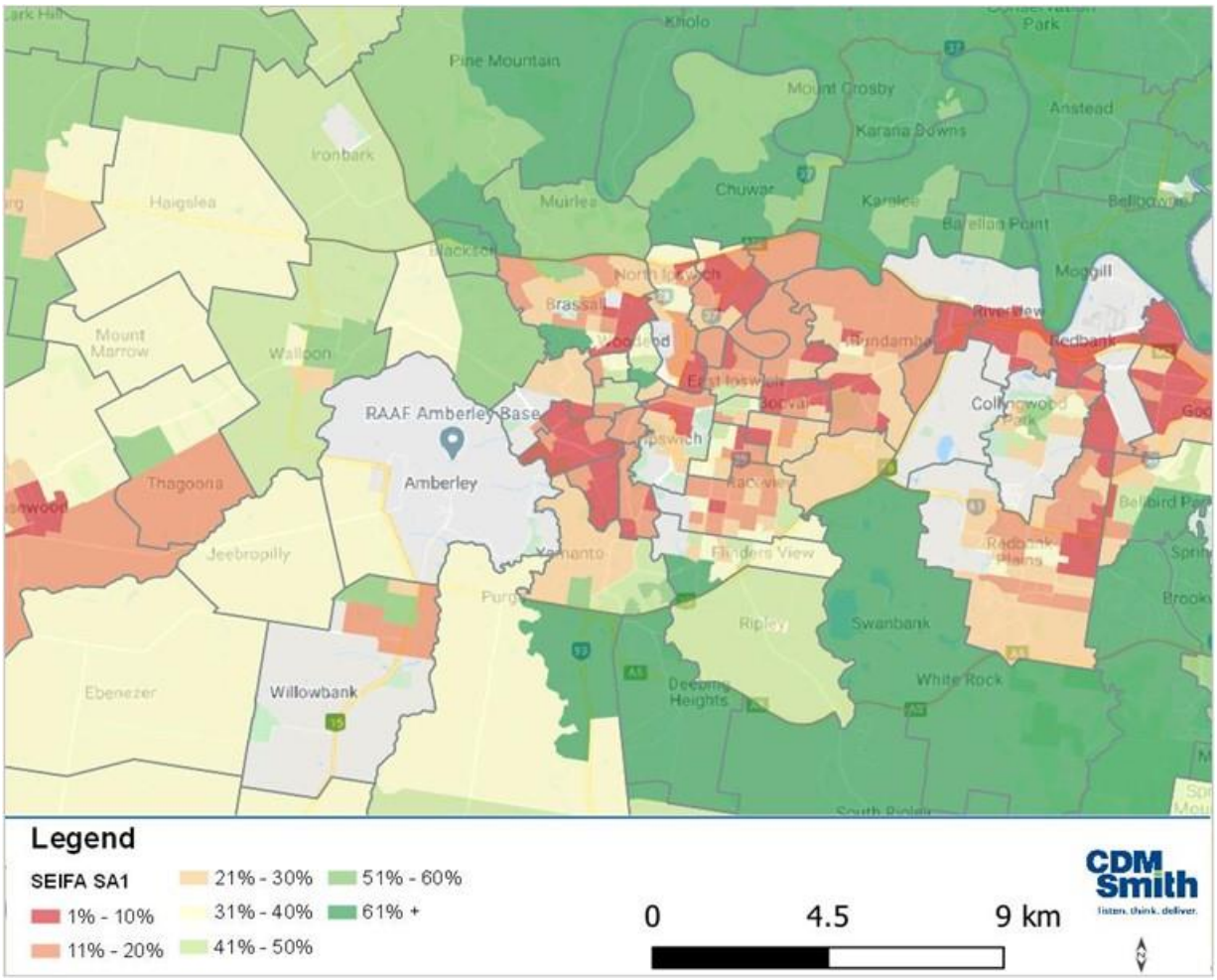
Source: ABS (2017b)

3.9 SEIFA Index of Disadvantage

The Socio-Economic Indexes for Areas (SEIFA Indexes) are measures developed by the ABS that seek to rank areas in Australia according to relative socio-economic advantage and disadvantage by using various census-based statistics (for example, income, skills, unemployment, educational attainment, etc.). For this measure, each neighbourhood in Australia is ranked from most disadvantaged to least disadvantaged. The index of relative socio-economic disadvantage is most concerned with disadvantage, rather than for distinguishing groups that are the least disadvantaged. This analysis therefore concentrates on the proportion of the population in the most disadvantaged deciles.

Figure 3-8 shows the level of disadvantage for neighbourhoods in the local study area (including the neighbourhood study area and parts of Ipswich LGA). There were a significant number of disadvantaged neighbourhoods within close proximity of the proposed intermodal terminal. These were clustered to the east of the Amberley, and included the suburbs of Churchill, One Mile and Leichhardt. Towards the southern end of Raceview, near Flinders View, was another pocket of high socio-economic disadvantage. The suburb of Thagoona, north of Ebenezer, was also disadvantaged and within the bottom 11-20% of all neighbourhoods. Rosewood, which bordered Thagoona, had high socio-economic disadvantage.

Figure 3-8 SEIFA disadvantage, Australia Decile, SA1



Source: CDM Smith Analysis (2020)

Table 3-11 shows the SEIFA score for the study areas, including South-East Queensland (SEQ) in 2016. A higher SEIFA score indicates a lower level of disadvantage. Conversely, a lower score denotes a higher level of disadvantage. The percentile indicates the approximate position of the area in a ranked list of Australia's suburbs and localities. It is meant to provide an indication of where the area sits in relation to the whole nation. Thus, a higher percentile indicates a higher socio-economic status.

The neighbourhood study area has a SEIFA score of 980, which is lower than South-East Queensland (1,011), and therefore indicates the neighbourhood study area has a higher level of disadvantage. The neighbourhood study area, however, has a lower level of disadvantage compared to Rosewood SA2 and Ipswich LGA (952 and 948 respectively). The neighbourhood study area has the same AUS Rank (percentile) as Ipswich LGA (43), though again this is less than SEQ (62), thereby demonstrating lower socio-economic status.

Table 3-11 SEIFA, Study areas and SEQ, 2016

Measure	Score	AUS Rank	AUS Rank (Decile)	AUS Rank (Percentile)	QLD Rank	QLD Rank (Decile)	QLD Rank (Percentile)	Min Score for SA1s in area	Max score for SAs in area	Usual resident population
Neighbourhood Study Area*	980	3498	5	43	862	5	49	967	996	2856
Rosewood SA2	952	650	3	30	173	4	34	804	1019	11806
Ipswich LGA	948	234	5	43	49	7	63	650	1207	193733
South-East Queensland	1,011			62						

Note: An average of the results for all suburbs in the neighbourhood study area excluding Jeebropilly as not data was provided.
Source: ABS (2017a) and IdCommunity (2017)

3.10 Health and Wellbeing

Ipswich LGA is considered to have poorer health outcomes compared to Queensland. The West Moreton Health District, which includes parts of Ipswich, Somerset, Scenic Rim and Lockyer Valley LGAs, is described as having an ageing population, socio-economic disadvantage and rising rates of chronic disease (Department of Health 2019).

Public Health Information Development Unit (PHIDU) data indicates that Ipswich LGA has a high health risk factor profile, characterised by higher rates of people who are current smokers and people who are obese at 17.1 and 41.1 persons per 100 population, compared to both Queensland and Australia (refer to Table 3-12). While the rate of persons who reported to be overweight was only marginally lower in Ipswich LGA, it is still a high proportion, at a rate of 33.5 per 100 population compared to Queensland and Australia.

Table 3-12 High health risk factor profile, study areas

Area	Persons		
	Number	ASR per 100[1]	SR[2]
Estimated number of people aged 18 years and over who were current smokers			
Ipswich LGA	27,078	17.7	117
Queensland	590,049	16.0	106
Australia	2,824,800	15.1	100
Estimated number of people aged 18 years and over who were overweight			
Ipswich LGA	49,234	33.5	94
Queensland	1,276,271	34.6	97
Australia	6,643,900	35.6	100
Estimated number of people aged 18 years and over who were obese			
Ipswich LGA	29,339	41.1	127
Queensland	617,033	33.8	104

Australia	2,974,400	32.4	100
Estimated number of people aged 18 years and over who consumed more than two standard alcoholic drinks per day on average			
Ipswich LGA	21,709	14.8	92
Queensland	671,390	18.2	113
Australia	3,001,000	16.1	100

Notes: 1. ASR = Age standardised rate: Adjusts for different population age structures.
2. SR = Standardised Ratio: Comparison of ASR to Australian rate which is assigned a value of 100.
Source: (Torrens University Australia, 2020) [PHIDU];

Table 3-13 shows the prevalence of selected chronic diseases and conditions in Ipswich LGA, compared to Queensland and Australia. Ipswich LGA generally demonstrates a higher proportion of people with chronic illnesses than both Queensland and Australia as whole. Specifically, this included the rates of diabetes mellitus, mental and behavioural problems, heart, stroke and vascular disease, asthma, chronic obstructive pulmonary disease and arthritis (per 100 of the population). The only exception to this was osteoporosis, though this difference was marginal.

Table 3-13 Prevalence of selected chronic diseases and conditions, study areas

Area	**Persons**		
	Number	**ASR per 100[1]**	**SR[2]**
Estimated number of people with diabetes mellitus			
Ipswich LGA	9,520	5.8	119
Queensland	227,958	4.7	97
Australia	1,182,600	4.9	100
Estimated number of people with mental and behavioural problems			
Ipswich LGA	52,139	26.0	129
Queensland	1,089,817	22.7	113
Australia	4,842,100	20.1	100
Estimated number of people with heart, stroke and vascular disease			
Ipswich LGA	8,532	5.4	113
Queensland	224,130	4.7	98
Australia	1,156,500	4.8	100
Estimated number of people with asthma			
Ipswich LGA	27,809	13.7	122
Queensland	570,319	11.8	105
Australia	2,705,100	11.2	100
Estimated number of people with chronic obstructive pulmonary disease			
Ipswich LGA	7,028	4.0	161
Queensland	168,721	3.5	142
Australia	598,800	2.5	100
Estimated number of people with arthritis			

Ipswich LGA	24,715	15.1	100
Queensland	668,371	13.9	93
Australia	3,625,200	15.0	100
Estimated number of people with osteoporosis			
Ipswich LGA	5,592	3.6	93
Queensland	184,248	3.8	100
Australia	924,000	3.8	**100**

Notes: 1. ASR = Age standardised rate: Adjusts for different population age structures.
2. SR = Standardised Ratio: Comparison of ASR to Australian rate which is assigned a value of 100.
Source: (Torrens University Australia, 2020) [PHIDU];

A higher proportion of Ipswich LGA residents self-reported fair or poor health (20.1 persons per 100 population) compared to Queensland and Australia (see Table 3-14).

Table 3-14 Proportion of self-assessed fair or poor health, study areas

Area	Persons		
	Number	ASR per 100[1]	SR[2]
Estimated number of people aged 15 years and over with fair or poor self-assessed health			
Ipswich LGA	29,074	20.1	136
Queensland	653,599	16.9	115
Australia	2,875,700	14.7	100

Notes: 1. ASR = Age standardised rate: Adjusts for different population age structures.
2. SR = Standardised Ratio: Comparison of ASR to Australian rate which is assigned a value of 100.
Source: (Torrens University Australia, 2020) [PHIDU];

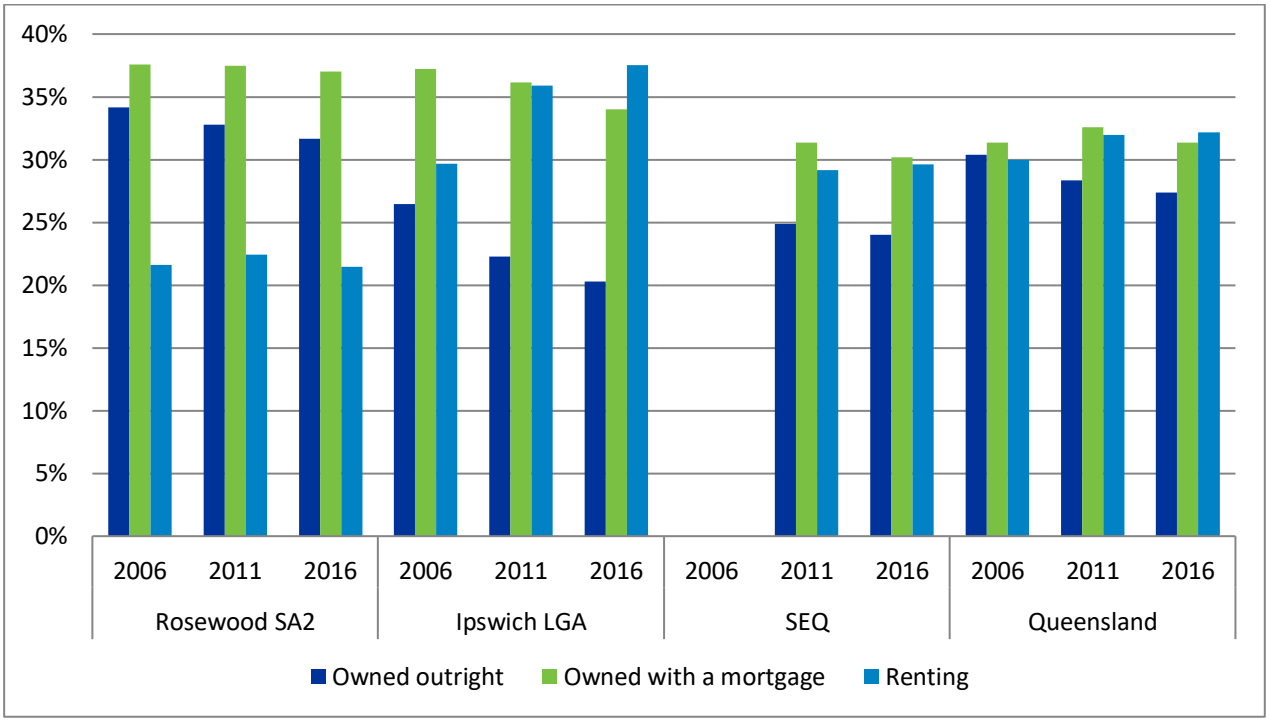
3.11 Housing Characteristics

3.11.1 Housing Tenure

In both 2011 and 2016, the Rosewood SA2 was characterised by a higher incidence of households with a mortgage than any other area analysed. Whilst the incidence of rental households decreased in each area between the two Censuses, it remained the dominant tenure type in Rosewood SA2 and SEQ in both 2011 and 2016.

Figure 3-9 below illustrates the trends in home ownership within the subject areas between 2011 and 2016.

Figure 3-9 Home Ownership Proportions – Rosewood SA2, Ipswich LGA, SEQ and Queensland, 2011 to 2016



Source: ABS (2017b)

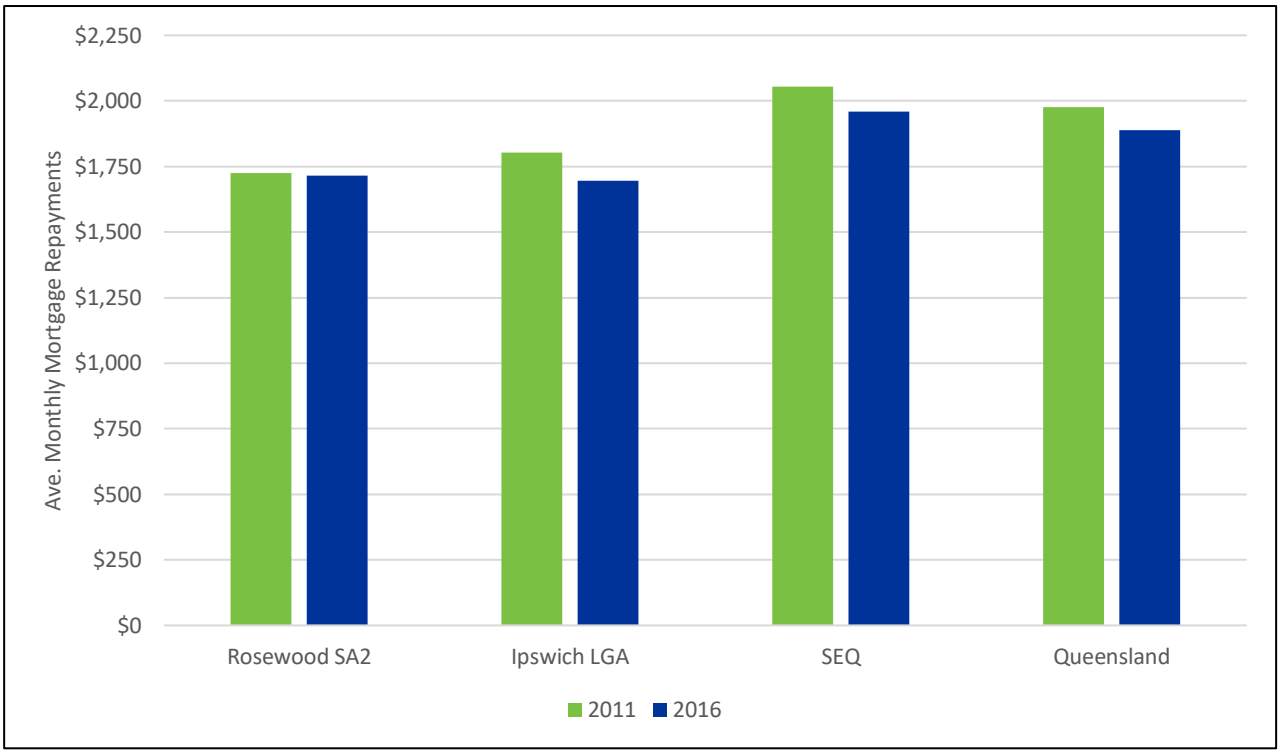
3.11.2 Mortgage Repayments

In 2016, the average monthly mortgage repayment in Rosewood SA2 was $1,716. This figure was higher than in Ipswich LGA ($1,695) but lower than SEQ and Queensland ($1,960 and $1,889 respectively). Between 2011 and 2016, average monthly mortgage repayments decreased across all areas analysed. This trend is likely due to the steady decline of Australian interest rates since 2011. The decrease in monthly mortgage repayments between 2011 and 2016 were as follows:

- Rosewood SA2: 0.5% decrease;
- Ipswich LGA: 6.4% decrease;
- SEQ: 4.8% decrease; and
- Queensland: 4.6% decrease.

Figure 3-10 demonstrates the trend in average monthly mortgage repayments in the subject areas between 2011 and 2016.

Figure 3-10 Average Monthly Mortgage Repayment - Rosewood SA2, Ipswich LGA, SEQ and Queensland, 2011 and 2016



Source: ABS (2017b)

3.11.3 Rent

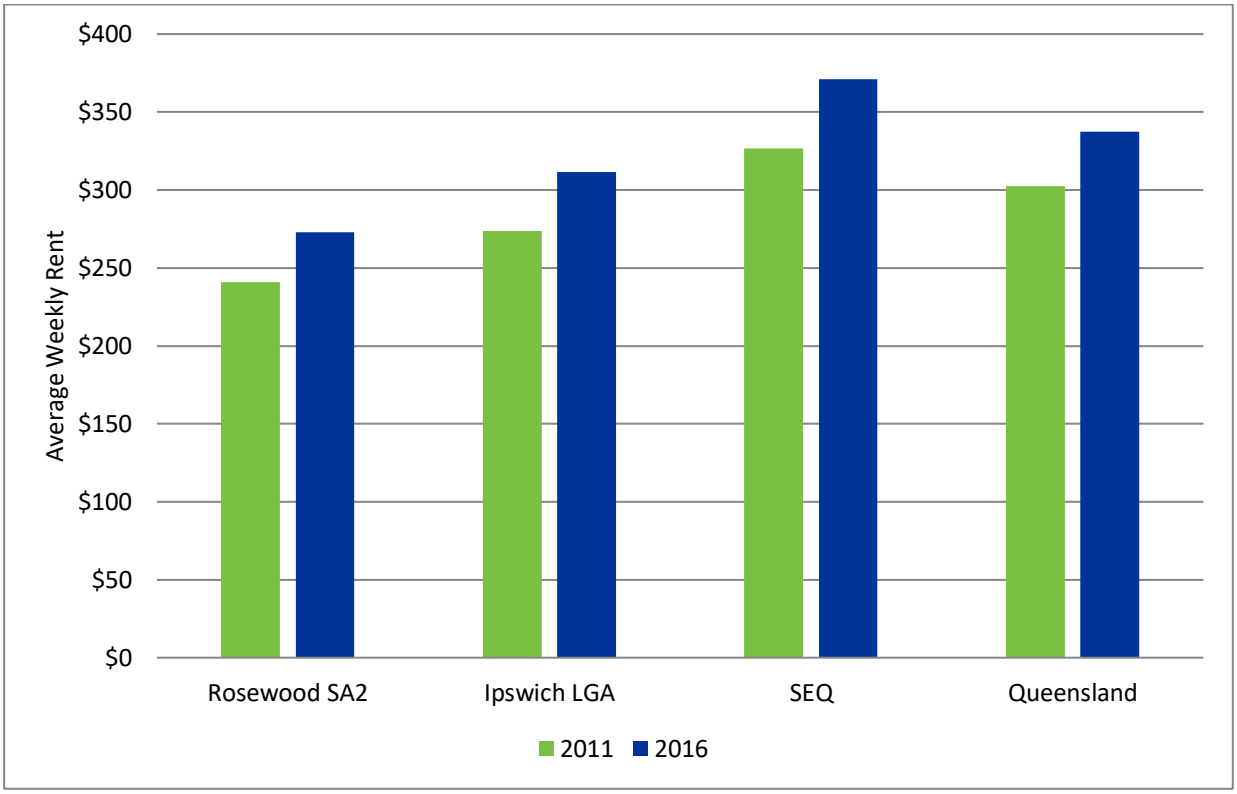
Median weekly rent in the Rosewood SA2 increased from $241 per week in 2011 to $273 per week by 2016. Consistent with average monthly mortgage repayments, Rosewood SA2 has substantially lower average weekly rents relative to Ipswich LGA ($311 per week), SEQ ($371 per week) and Queensland ($337 per week).

The increase in median weekly rents between 2011 and 2016 were as follows:

- Rosewood SA2: 11.7% increase;
- Ipswich LGA: 12.0% increase;
- SEQ: 11.9% increase; and
- Queensland: 10.3% increase.

Figure 3-11 illustrates the trend in average weekly rents in Rosewood SA2, Ipswich LGA, SEQ and Queensland between 2011 and 2016.

Figure 3-11 Average weekly rent - Rosewood SA2, Ipswich LGA, SEQ and Queensland, 2011 and 2016



Source: ABS (2017b)

3.11.4 Housing Costs

Table 3-15 summarises the housing characteristics of the areas analysed in 2011 and 2016.

Table 3-15 Housing Affordability Indicators by Place of Usual Residence, 2011 and 2016

Household Finances	Rosewood SA2	Ipswich LGA	SEQ	Queensland
2011 Census				
% of households fully owning home	32.8%	22.3%	24.9%	28.4%
% of households purchasing home	37.5%	36.2%	31.4%	32.6%
% of households renting	22.4%	35.9%	29.1%	32.0%
Average weekly household income	$1,392	$1,440	$1,542	$1,501
Average monthly housing loan repayment	$1,724	$1,804	$2,054	$1,977
Average weekly rent payment	$241	$274	$327	$303
Average housing costs as a% of income	14.6%	17.3%	15.8%	16.3%
2016 Census				
% of households fully owning home	31.6%	20.3%	24.0%	27.4%
% of households purchasing home	37.0%	34.0%	30.2%	31.4%
% of households renting	21.5%	37.5%	29.6%	32.2%
Average weekly household income	$1,583	$1,630	$1,759	$1,691

Household Finances	Rosewood SA2	Ipswich LGA	SEQ	Queensland
Average monthly housing loan repayment	$1,716	$1,695	$1,960	$1,889
Average weekly rent payment	$273	$311	$371	$337
Average housing costs as a% of income	13.0%	15.3%	14.0%	14.5%

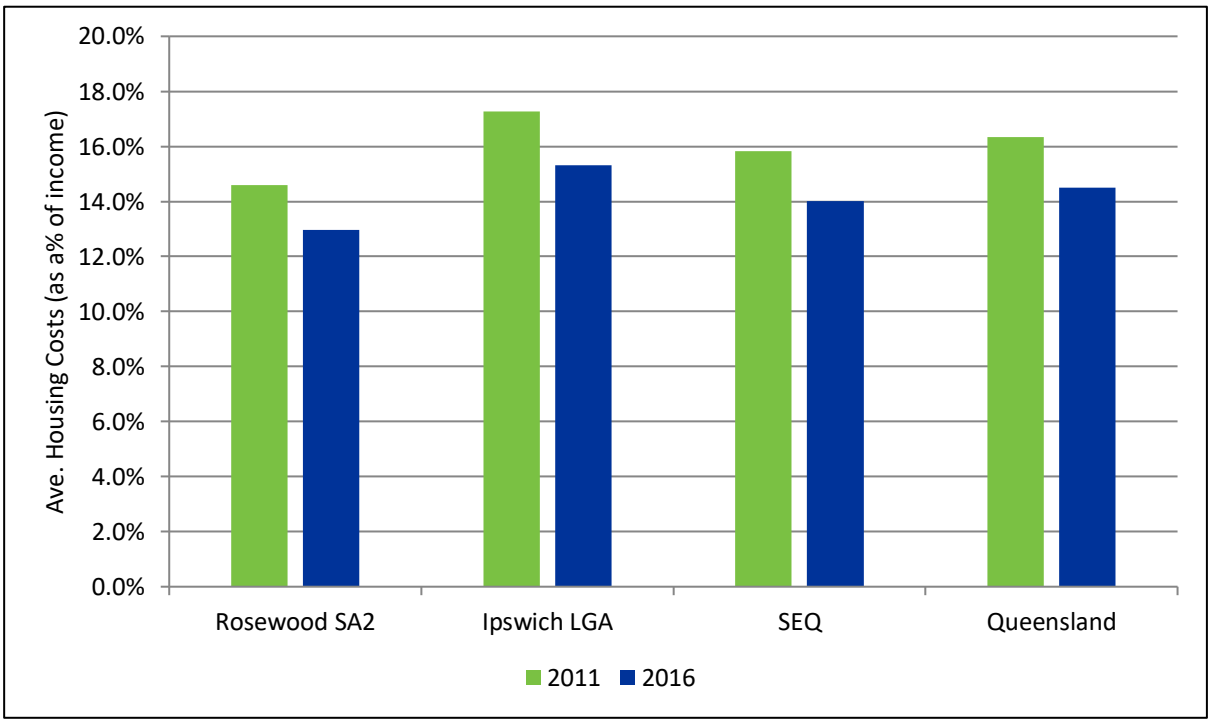
Source: ABS (2012), ABS (2017a) and ABS (2017b)

Compared to the benchmark areas, housing is more affordable in Rosewood SA2 (where approximately 13.0% of household income was spent on housing) as of the 2016 Census. Average housing costs as a percentage of average household income were highest in Ipswich LGA (where approximately 15.3% of household income was spent on housing), followed by Queensland (14.5% of household income) and SEQ (14.0% of household income) in 2016.

Relative to 2011, housing costs have decreased across all areas analysed. As of the 2011 Census, housing was most affordable in Rosewood SA2 (where approximately 14.6% of household income was spent on housing), followed by SEQ (15.8% of household income), Queensland (16.3% of household income) and Ipswich LGA (17.3% of household income).

Figure 3-12 illustrates the average housing costs as a proportion of income across all four areas analysed in 2011 and 2016.

Figure 3-12 Average Housing Costs, 2011 and 2016



Source: ABS (2012), ABS (2017a) and ABS (2017b)

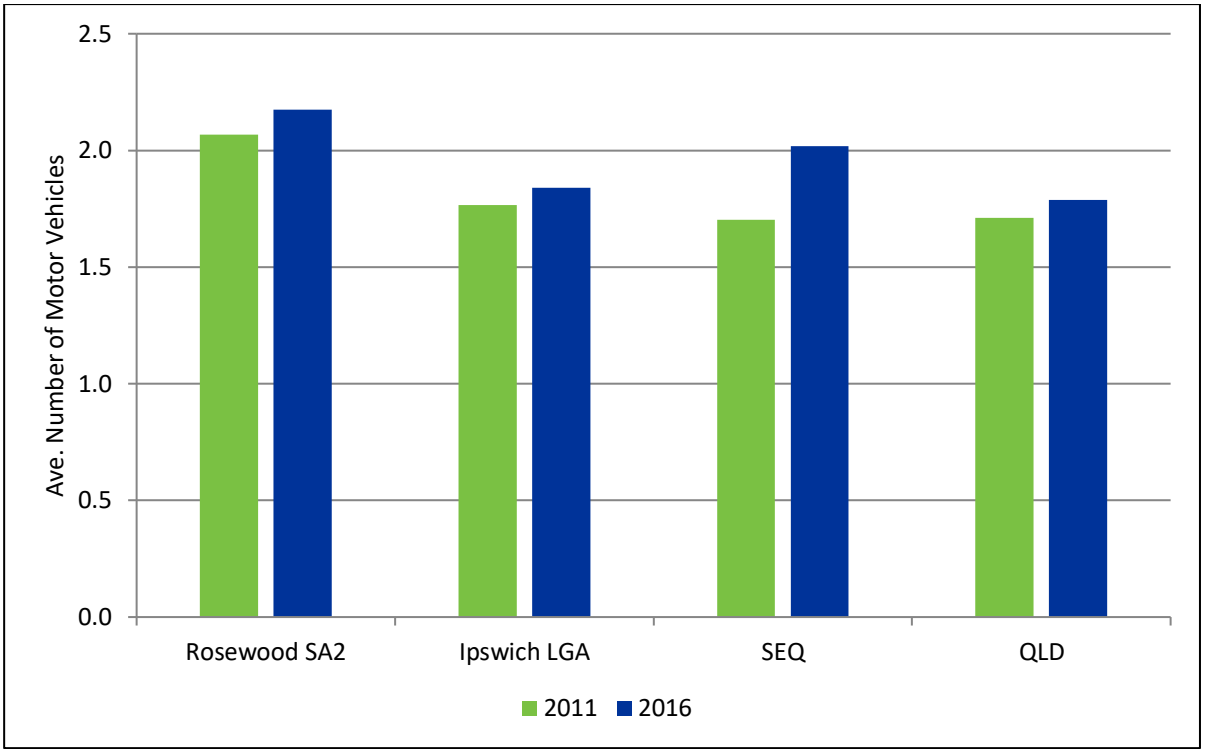
3.12 Motor Vehicle Ownership

In 2016, Rosewood SA2 had the highest number of motor vehicles (2.2) per household. This is likely due to transport accessibility and provisions being lower in Rosewood SA2 and a slightly higher number of persons per household (relative to SEQ and Queensland).

The benchmark areas of Ipswich LGA, SEQ and Queensland had fewer motor vehicles per household at 1.8, 2.0 and 1.8 motor vehicles per household, respectively, in 2016.

Figure 3-13 illustrates average motor vehicle ownership per household across Rosewood SA2, Ipswich LGA, SEQ and Queensland in 2011 and 2016.

Figure 3-13 Motor Vehicles Per Household by Place of Enumeration, 2011 and 2016



Source: ABS (2017b)

3.13 Employment Trends

3.13.1 Labour Market Overview – 2011 and 2016 Census

Across all areas assessed, in both 2011 and 2016 Rosewood SA2 had the highest proportion of full-time workers. Although the unemployment rate was lowest in Rosewood SA2 relative to the other areas assessed, this could be attributable to the lower labour force participation rate recorded in the area.

Table 3-16 denotes workers employed on a full-time and part-time basis, unemployment rates and labour force participation rates of Rosewood SA2 and benchmark areas.

Table 3-16 Labour Force Market by Place of Usual Residence, 2011 and 2016

Indicator	Rosewood SA2	Ipswich LGA	SEQ	Queensland
2011 Census				
Full-time employment (% labour force)	61.9%	61.9%	59.3%	60.0%
Part-time employment (% labour force)	26.1%	24.9%	29.0%	28.2%
Total employment (% labour force)	94.4%	92.8%	93.8%	93.9%
Unemployment rate (% labour force)	5.6%	7.2%	6.2%	6.1%
Participation rate (% of population > 15 years)	59.2%	63.4%	63.7%	62.8%
2016 Census				
Full-time employment (% labour force)	60.6%	59.2%	57.6%	57.7%
Part-time employment (% labour force)	27.8%	26.9%	30.6%	29.9%
Total employment (% labour force)	93.5%	91.0%	92.7%	92.4%
Unemployment rate (% labour force)	6.5%	9.0%	7.3%	7.6%
Participation rate (% of population > 15 years)	58.4%	62.7%	62.3%	61.0%

Source: ABS (2017b)

3.13.2 Small Area Labour Force Data

3.13.2.1 Labour Force Size

Between June Quarter 2011 and June Quarter 2019, the labour force in Rosewood SA2 has recorded low growth, increasing by 324 people (or 5.2%) over an eight-year period. Despite this, the labour force within Rosewood SA2 has been following an overall upward trend in growth since June Quarter 2015. Moreover, the size of the labour force has remained above 6,000 people throughout this assessment period, with a historical high of 6,500 people recorded in June Quarter 2019.

Meanwhile, the labour force in Ipswich LGA has recorded strong and consistent growth between June Quarter 2011 and June Quarter 2019, increasing by 23,404 people (or 26.7%) over an eight-year period. A historical high of 111,043 people in the labour force was recorded in June Quarter 2019.

At the State-level, Queensland's labour force increased by 279,915 people (or 11.7%) between June Quarter 2011 and June Quarter 2019. Relative to the State, labour force growth was slower in Rosewood SA2 and higher in Ipswich LGA.

Table 3-17 reports the size of the labour force in Rosewood SA2, Ipswich LGA and Queensland.

Table 3-17 Smoothed Labour Force, 2011-2019

Quarter Ending June	Rosewood SA2	Ipswich LGA	Queensland
2011	6,176	87,639	2,383,933
2012	6,191	90,305	2,416,656
2013	6,063	92,332	2,432,426
2014	6,149	97,513	2,467,346
2015	6,001	97,325	2,485,544
2016	6,142	101,130	2,517,588
2017	6,243	104,476	2,522,676
2018	6,413	108,950	2,622,794
2019	6,500	111,043	2,663,848
Ave. annual change 2011 to 2019	0.6%	3.0%	1.4%
Ave. annual change 2017 to 2019	1.4%	1.9%	1.6%

Source: Department of Education, Skills and Employment (various years)

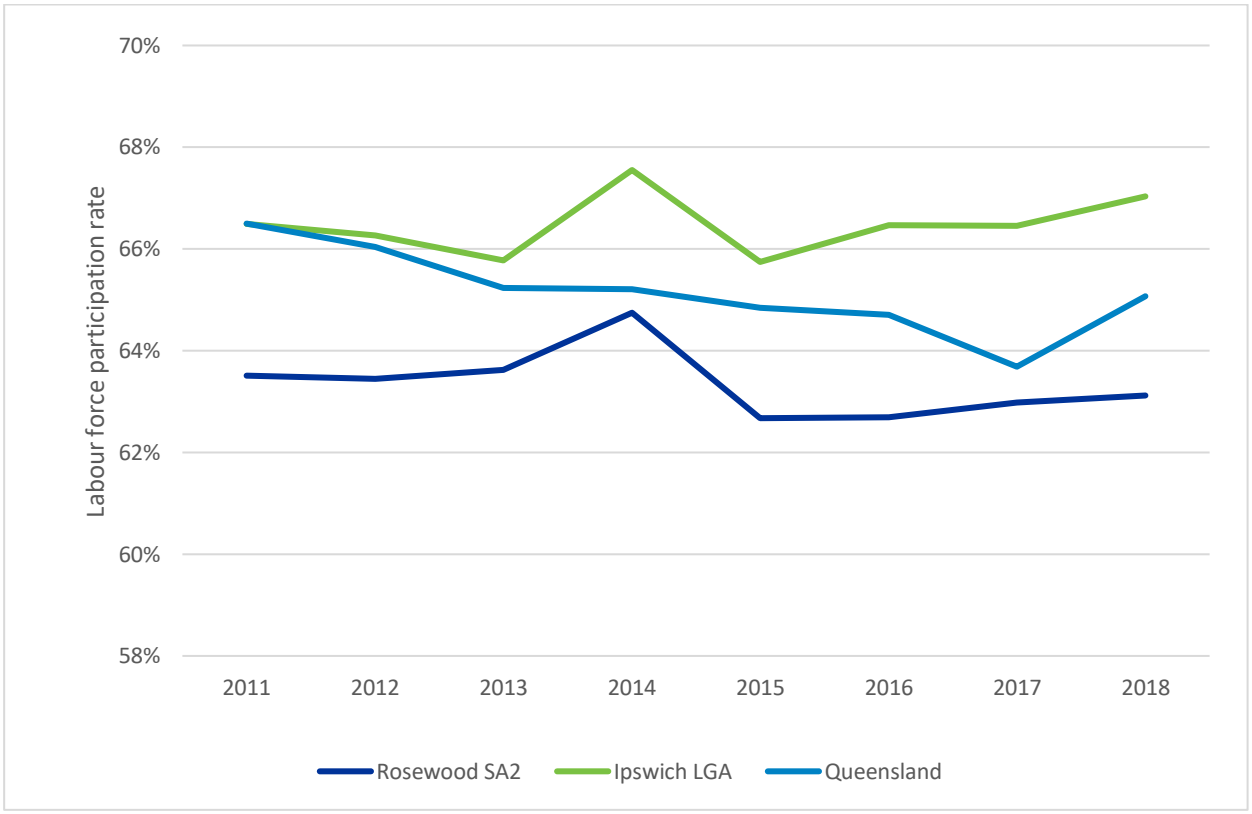
3.13.2.2 Labour Force Participation Rate

The labour force participation rate has historically been higher in Ipswich LGA and Queensland relative to Rosewood SA2. The labour force participation rate in Rosewood SA2 peaked at 64.7% in 2014 before subsequently decreasing to 62.7% in 2015 and 2016. The labour force participation rate in Queensland has experienced a decrease from 66.5% in 2011 to 65.1% in 2018.

The labour force participation rate in Rosewood SA2 and the Ipswich LGA has followed a similar trend over the seven years analysed, with the labour force participation rate averaging 3.1% points lower in Rosewood SA2 than Ipswich LGA.

Figure 3-14 illustrates the labour force participation rate for Rosewood SA2, Ipswich LGA and Queensland between 2011 and 2018.

Figure 3-14 Smoothed Labour Force Participation Rate, June Quarter 2011 to June Quarter 2018



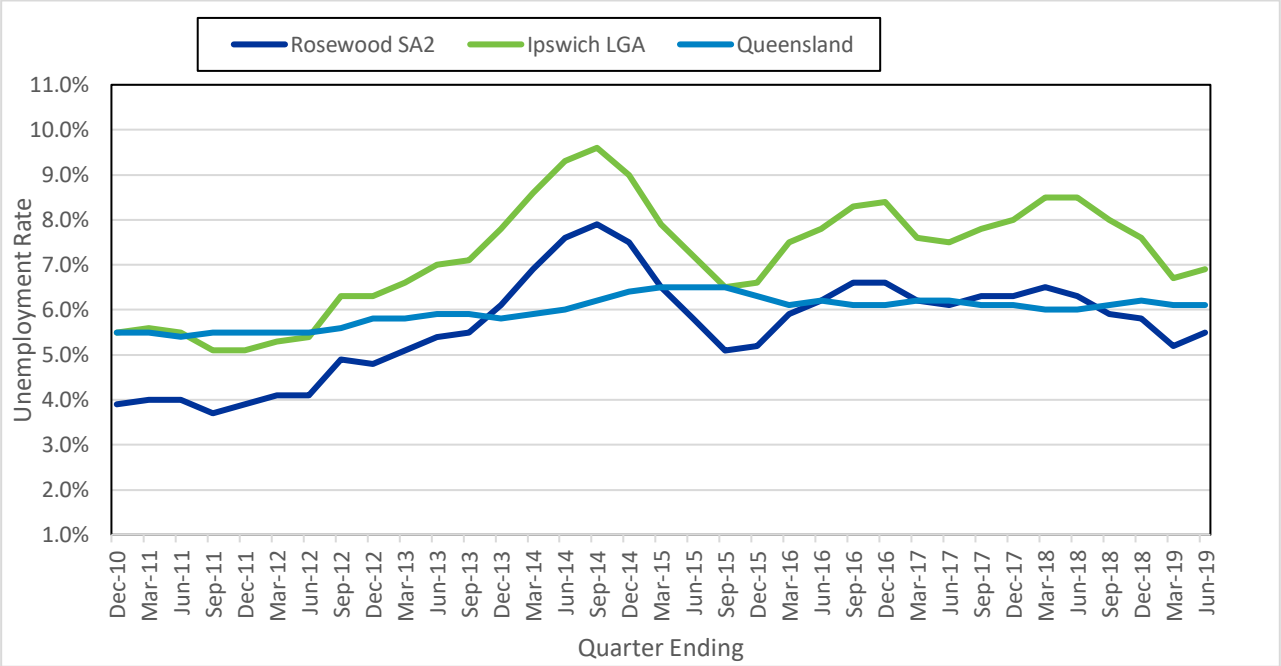
Source: Department of Education, Skills and Employment (various years), ABS (2018)

3.13.2.3 Unemployment Rate

In terms of smoothed unemployment rates, trends recorded at the SA2 level largely reflect the trends recorded at the broader LGA level. Despite greater fluctuations in labour force size in Rosewood SA2, smoothed unemployment rates recorded across between 2011 and 2019 have remained well below those recorded for Ipswich LGA. As at June Quarter 2019, Rosewood SA2 had a smoothed unemployment rate of 5.5%, whilst Ipswich LGA and Queensland had higher smoothed unemployment rates of 6.9% and 6.1% respectively.

Figure 3-15 illustrates the historical trends in unemployment rates for Rosewood SA2, Ipswich LGA and Queensland.

Figure 3-15 Smoothed Unemployment Rate, June Quarter 2011 to June Quarter 2019



Source: Department of Education, Skills and Employment (various years)

Overall, the labour force market is particularly favourable in Rosewood SA2, with a labour force which has recorded positive growth in the last four years (a trend that is also reflected in the wider LGA), below average smoothed unemployment rates (relative to Ipswich LGA and Queensland) and a labour force participation rate that is less than 4.0% points below the Ipswich LGA average.

Furthermore, when compared to baseline indicators from the 2016 Census, the labour force market has improved in both in Rosewood SA2 and Ipswich LGA (lower unemployment rates and higher participation rates) and is steadily recovering to levels recorded in the 2011 Census.

3.13.3 Employment by Industry – Place of Work

As of the 2016 Census, there was a total of 6,964 persons employed within Rosewood SA2. Within the SA2, there is one key industry of employment which accounts for almost half of all employment in the area. As of the 2016 Census, there were 3,357 persons employed in public administration and safety within the Rosewood SA2. Other industries of marginal significance are the construction industry which employed 433 persons (6.2% of employment) and the professional, scientific and technology industry which employed 364 persons (5.2% of employment).

As for the Ipswich LGA, there were approximately 62,312 persons employed within the LGA in 2016. The most significant industries of employment were:

- Health care and social assistance: accounts for 14.4% of total employment in the LGA;
- Retail Trade: accounts for 11.3% of total employment in the LGA; and
- Education and training: accounts for a total of 11.0% of all employment in the LGA.

Table 3-18 details the 2016 total employment by industry in Rosewood SA2 and in the Ipswich LGA.

Table 3-18 Employment by Industry by Place of Work– Rosewood SA2 and Ipswich LGA, 2016

Industry of Employment	Rosewood SA2		Ipswich LGA	
	Number	% of Employment	Number	% of Employment
Agriculture, Forestry and Fishing	187	2.7%	571	0.9%
Mining	132	1.9%	368	0.6%
Manufacturing	318	4.6%	7,469	12.0%
Electricity, Gas, Water and Waste Services	31	0.4%	1,032	1.7%
Construction	433	6.2%	3,985	6.4%
Wholesale Trade	38	0.5%	1,407	2.3%
Retail Trade	271	3.9%	7,039	11.3%
Accommodation and Food Services	206	3.0%	4,090	6.6%
Transport, Postal and Warehousing	263	3.8%	2,841	4.6%
Information Media and Telecommunications	21	0.3%	425	0.7%
Financial and Insurance Services	38	0.5%	1,276	2.0%
Rental, Hiring and Real Estate Services	56	0.8%	980	1.6%
Professional, Scientific and Technical Services	364	5.2%	2,301	3.7%
Administrative and Support Services	173	2.5%	1,572	2.5%
Public Administration and Safety	3,357	48.2%	6,203	10.0%
Education and Training	295	4.2%	6,835	11.0%
Health Care and Social Assistance	343	4.9%	8,957	14.4%
Arts and Recreation Services	56	0.8%	488	0.8%
Other Services	149	2.1%	1,865	3.0%
Inadequately described	150	2.2%	1,826	2.9%
Not stated	83	1.2%	783	1.3%
Total	**6,964**	**100.0%**	**62,312**	**100.0%**

Source: ABS (2017b)

3.13.3.1 Worker Origin

The origin of persons employed in Ipswich LGA who live elsewhere is also important in understanding the employment trends of the region. The data shows that 75.4% of persons who worked within the Ipswich LGA as of the 2016 Census also resided in Ipswich. Within the Ipswich SA4, the suburbs that contribute most significantly to total employment in the Ipswich LGA are Raceview and Ipswich – East SA2's which accounted for 6.5% and 6.3% of total employment in 2016.

Table 3-19 below details the origin of persons employed in Ipswich LGA.

Table 3-19 Worker Origin – Ipswich LGA, 2016

	Area	Number	% of Employment
SA2	Raceview	4,027	6.5%
	Ipswich - East	3,890	6.3%
	Rosewood	3,233	5.2%
	Brassall	2,724	4.4%
	Redbank Plains	2,723	4.4%
	Bellbird Park - Brookwater	2,577	4.2%
	Springfield Lakes	2,567	4.1%
	Churchill - Yamanto	2,070	3.3%
	Bundamba	1,771	2.9%
	Leichhardt - One Mile	1,558	2.5%
	Ipswich - Central	1,527	2.5%
	Lowood	1,501	2.4%
	Ripley	1,461	2.4%
	Karalee - Barellan Point	1,415	2.3%
SA4	Reminder of Ipswich	13,743	22.2%
	Total of Ipswich	46,787	75.4%
	Logan - Beaudesert	3,622	5.8%
	Brisbane - South	3,337	5.4%
	Brisbane - West	3,035	4.9%
	Brisbane Inner City	1,296	2.1%
	Gold Coast	1,068	1.7%
	Brisbane - East	799	1.3%
	Brisbane - North	476	0.8%
	Moreton Bay - South	392	0.6%
	Toowoomba	329	0.5%
	Moreton Bay - North	236	0.4%
	Sunshine Coast	148	0.2%
	Central Queensland	106	0.2%
	Darling Downs - Maranoa	93	0.1%
	Wide Bay	91	0.1%
	No Usual Address (Qld)	52	0.1%
	Cairns	51	0.1%
	Mackay - Isaac - Whitsunday	48	0.1%
	Townsville	41	0.1%
	Queensland - Outback	18	0.0%
n.a	No Usual Address (Qld)	52	0.1%
	Total	**62,030**	**100.0%**

Source: ABS (2017c)

3.13.4 Employment by Industry – Resident Population

The total resident employed population of Rosewood SA2 was 5,258 persons as of the 2016 Census. There are three key industries of employment which account for approximately one-third (33.1%) of the resident population in Rosewood SA2. The key industries of employment within the broader Ipswich LGA in 2016 were as follows:

- Health care and social assistance: accounts for 13.2% of resident employment;
- Retail Trade: accounts for 10.5% of resident employment; and
- Manufacturing: accounts for a total of 10.0% of resident employment.

Table 3-20 details the resident employment by industry in Rosewood SA2 and in the Ipswich LGA in 2016.

Table 3-20 Resident Industry of Employment, 2016

Industry of Employment	Rosewood SA2		Ipswich LGA	
	Number	% of Employment	Number	% of Employment
Agriculture, Forestry and Fishing	182	3.5%	702	0.8%
Mining	83	1.6%	749	0.9%
Manufacturing	480	9.1%	8,425	10.0%
Electricity, Gas, Water and Waste Services	89	1.7%	1,060	1.3%
Construction	433	8.2%	7,049	8.4%
Wholesale Trade	137	2.6%	2,712	3.2%
Retail Trade	508	9.7%	8,843	10.5%
Accommodation and Food Services	228	4.3%	4,656	5.5%
Transport, Postal and Warehousing	367	7.0%	5,464	6.5%
Information Media and Telecommunications	30	0.6%	882	1.0%
Financial and Insurance Services	88	1.7%	2,102	2.5%
Rental, Hiring and Real Estate Services	68	1.3%	1,381	1.6%
Professional, Scientific and Technical Services	195	3.7%	3,695	4.4%
Administrative and Support Services	163	3.1%	2,860	3.4%
Public Administration and Safety	635	12.1%	7,651	9.1%
Education and Training	446	8.5%	6,846	8.1%
Health Care and Social Assistance	595	11.3%	11,093	13.2%
Arts and Recreation Services	52	1.0%	824	1.0%
Other Services	237	4.5%	3,317	3.9%
Inadequately described	179	3.4%	2,873	3.4%
Not stated	63	1.2%	1,095	1.3%
Total	**5,253**	**100.0%**	**84,282**	**100.0%**

Source: ABS (2017b)

3.13.4.1 Resident Employment Location

Of the resident working population in Ipswich LGA, 58.4% work within the Ipswich SA4, this is primarily driven by the Rosewood SA2 and the Ipswich - Central SA2. The other significant areas where residents of the LGA worked are Brisbane City SA2 (4,066 persons), Wacol SA2 (3,341 persons), Rocklea – Acacia Ridge (3,020 persons) and Ipswich – East (2,955 persons).

Table 3-21 outlines the areas in which residents of the Ipswich LGA are employed.

Table 3-21 Resident Employment by SA2 and SA4, 2016

	Area	Number	% of Employment
SA2	Ipswich - Central	7,774	9.3%
	Rosewood	4,179	5.0%
	Brisbane City	4,066	4.9%
	POW No Fixed Address (Qld)	3,697	4.4%
	Wacol	3,341	4.0%
	Rocklea - Acacia Ridge	3,020	3.6%
	Ipswich - East	2,955	3.5%
	Springfield Lakes	2,596	3.1%
	North Ipswich - Tivoli	2,152	2.6%
	Bundamba	2,122	2.5%
	Darra - Sumner	2,077	2.5%
	Churchill - Yamanto	1,937	2.3%
	Carole Park	1,784	2.1%
	Raceview	1,733	2.1%
SA4	Remainder of Ipswich	16,160	19.3%
	Total of Ipswich	48,810	58.4%
	Brisbane Inner City	9,858	11.8%
	Brisbane - South	9,022	10.8%
	Brisbane - West	3,857	4.6%
	Logan - Beaudesert	2,810	3.4%
	Brisbane - North	1,581	1.9%
	Brisbane - East	1,202	1.4%
	Gold Coast	978	1.2%
	Toowoomba	444	0.5%
	Central Queensland	287	0.3%
	Moreton Bay - South	212	0.3%
	Darling Downs - Maranoa	197	0.2%
	Moreton Bay - North	155	0.2%
	Mackay - Isaac - Whitsunday	126	0.2%
	Sunshine Coast	95	0.1%

	Queensland - Outback	68	0.1%
	Wide Bay	58	0.1%
	Townsville	49	0.1%
	Cairns	42	0.1%
n.a	POW No Fixed Address (Qld)	3,697	4.4%
	Total	83,544	100.0%

Source: ABS (2017b)

3.13.5 Employment Projections – Ipswich LGA

Employment projections for Ipswich LGA were derived from data published by the QGSO. These projections detail the number of workers anticipated in each industry sector in Ipswich LGA from 2010-11 to 2040-41.

Based on these projections, the industries of Health Care and Social Assistance; Administrative and Support Services; and Education and Training are anticipated to record the most significant AAGR changes (at 4.4%, 4.2% and 3.4% respectively). Note, the high AAGR change in Administrative and Support Services is largely attributable to a small base of workers (1,834 workers in 2020-21 to 4,151 workers in 2040-41).

By 2040-41, the Health Care and Social Assistance (28,357 workers); Manufacturing (18,008 workers); Education and Training (15,507 workers); and Retail Trade (12,404) industries are expected to be the largest employing industries in Ipswich LGA. These industries are also expected to record consistent growth in the number of persons employed over a 20-year period.

Other industries that are expected to experience strong growth in employed persons between 2020-21 and 2040-41 include Hiring and Real Estate Services (AAGR of 3.2%) and Other Services (AAGR of 3.0%).

Table 3-22 details employment projections for Ipswich LGA between 2020-21 to 2040-41. In terms of industrial worker growth, the Manufacturing (up 6,581 workers) and Transport, Postal and Warehousing (up 1,052 workers) sectors are expected to record substantial increases in persons employed between 2020-21 and 2040-41.

Table 3-22 Employment Projections by Place of Work, Ipswich LGA, 2020-21 to 2040-41

Industry	2020-21	2025-26	2030-31	2035-36	2040-41	Ave. Ann. Growth, 2020-21 to 2040-41
Agriculture, Forestry and Fishing	284	273	262	251	241	-0.8%
Mining	519	600	694	790	889	2.7%
Manufacturing	11,427	12,341	13,798	15,733	18,008	2.3%
Electricity, Gas, Water and Waste Services	861	938	1,037	1,119	1,178	1.6%
Construction	6,498	7,656	8,611	9,468	10,355	2.4%
Wholesale Trade	1,780	1,837	1,901	1,966	2,036	0.7%
Retail Trade	8,355	9,318	10,341	11,343	12,404	2.0%
Accommodation and Food Services	4,900	5,313	5,704	6,035	6,318	1.3%
Transport, Postal and Warehousing	3,468	3,687	3,960	4,224	4,520	1.3%
Information Media and Telecommunications	300	316	336	352	370	1.1%
Financial and Insurance Services	1,392	1,318	1,302	1,386	1,516	0.4%
Rental, Hiring and Real Estate Services	1,017	1,216	1,435	1,659	1,918	3.2%

Industry	2020-21	2025-26	2030-31	2035-36	2040-41	Ave. Ann. Growth, 2020-21 to 2040-41
Professional, Scientific and Technical Services	2,930	3,401	3,915	4,441	5,079	2.8%
Administrative and Support Services	1,834	2,286	2,825	3,421	4,151	4.2%
Public Administration and Safety	7,388	8,115	8,908	9,757	10,655	1.8%
Education and Training	7,905	9,501	11,332	13,314	15,507	3.4%
Health Care and Social Assistance	12,058	15,272	19,111	23,423	28,357	4.4%
Arts and Recreation Services	529	576	631	690	756	1.8%
Other Services	2,518	2,937	3,424	3,946	4,541	3.0%
Total persons employed	**75,962**	**86,900**	**99,527**	**113,315**	**128,800**	**2.7%**

Source: Queensland Treasury (2016)

3.13.5.1 Employment Retention Rates

Employment retention rates for Ipswich LGA were derived from the Queensland Government Statistician's Office (QGSO) data. Despite significant employment growth anticipated for Ipswich LGA, overall employment retention within Ipswich LGA is anticipated to decrease from 77.3% in 2015-16 to 44.7% in 2040-41. This equates to an average annual growth rate of -1.3% per annum over a 25-year timeframe.

Table 3-23 details the retention rates for Ipswich LGA from 2015-16 to 2041-42.

Table 3-23 Employment Retention, Ipswich LGA, 2015-16 to 2041-42

Year	Employed Residents in Ipswich LGA	Employed Workers in Ipswich LGA	Employment Retention	AAGR (%)
2015-16	87,848	67,927	77.3%	-1.4%
2020-21	110,507	75,962	68.7%	-1.7%
2025-26	143,992	86,900	60.4%	-1.7%
2030-31	184,841	99,527	53.8%	-1.3%
2035-36	231,566	113,315	48.9%	-1.0%
2040-41	288,006	128,800	44.7%	-0.8%

Source: Queensland Treasury (2016)

3.14 Gross Regional Product

Historically, Ipswich LGA has recorded strong growth in Gross Regional Product (GRP). As at 30 June 2019, Ipswich LGA had a GRP of $9.77 billion (up $2.41 billion or 32.8%, relative to GRP of $7.36 billion in 2009). GRP reached a historical high of $9.97 billion in 2018, with positive year-on-year growth recorded from 2009 to 2018. Between 2009 and 2019, GRP grew at an AAGR of 2.9%.

Table 3-24 denotes GRP and GRP growth between 2009 and 2019.

Table 3-24 Gross Regional Product, Ipswich LGA, 2009 to 2019

Year (ending June 30)	Gross Regional Product ($b)	% change from previous year
2009	7.36	2.0

Year (ending June 30)	Gross Regional Product ($b)	% change from previous year
2010	7.59	3.1
2011	7.84	3.3
2012	8.34	6.4
2013	8.46	1.5
2014	8.68	2.6
2015	8.87	2.2
2016	9.20	3.8
2017	9.54	3.6
2018	9.97	4.5
2019	9.77	-2.0

Source: economy.id (2020)

3.15 Hotel and Short-Stay Accommodation Market

Only one hotel accommodation provider was identified within the Rosewood SA2. Built in 2019, Spicers Hidden Vale is located within the suburb of Grandchester and has the provision of 29 rooms. It is classed as a 4-star hotel, with an indicative nightly rate of $379. After suffering fire damage to the premises in April 2018, the hotel was rebuilt and reopened in 2019. The hotel and short-short accommodation market assessment did not consider AirBNB and other forms of short-stay accommodation.

Table 3-25 Hotel Accommodation, Rosewood SA2, March 2020

Name	Address	No. of Rooms	Year Built	Hotel Class	Indicative Nightly Rate
Spicers Hidden Vale	617 Grandchester Mount Mort Rd, Granchester, 4340	29	Opened (re-built) in 2019	4-star	$379

Note: No short-stay accommodation providers were identified within Rosewood SA2.
Source: CDM Smith Research (2020)

3.16 Residential Property Market

This section assesses the residential property market, with focus given to volume of sales; value of sales; median sales price; median weekly rents; and housing affordability in Rosewood SA2. As property data is not available at the SA2 level, data has been analysed at the suburb level for the past ten years, based on data extracted from the Pricefinder database. Table 3-26 list the suburbs that partially or wholly fall within the Rosewood SA2.

Table 3-26 Suburbs within Rosewood SA2

Suburbs

- Ashwell;
- Calvert;
- Coleyville;
- Ebenezer;
- Goolman;
- Grandchester;
- Haigslea;
- Harrisville;
- Ironbark;
- Lanefield;
- Lower Mount Walker;
- Marburg;
- Merryvale;
- Milora;
- Minden;
- Moorang;
- Moreton Rop;
- Mount Forbes;
- Mount Marrow;
- Mount Mort;
- Mount Walker;
- Mount Walker West;
- Mutdapilly;
- Purga;
- Radford;
- Rosevale;
- Rosewood;
- Silverdale;
- Tallegalla;
- Thagoona;
- The Bluff;
- Walloon;
- Warrill View;
- Willowbank; and
- Wilsons Plains.

From the 35 suburbs identified, only six (6) suburbs had significant volume (and value) of house sales within the past ten years, with these suburbs being Harrisville; Marburg; Rosewood; Thagoona; Walloon and Willowbank. The remaining 29 suburbs are referred to as Balance of Rosewood SA2in the analysis.

3.16.1 House Sales

3.16.1.1 Volume of sales

As at 2018-19, there were a total of 195 house sales across the suburbs that fall within the Rosewood SA2. This figure is up from a total of 183 house sales in 2009-10 (up 12 house sales or 6.6% relative to 2018-19). A historical high of 212 house sales was recorded in 2017-18.

The suburbs of Rosewood, Harrisville, Walloon and Willowbank recorded positive growth over a 10-year timeframe, whilst Thagoona, Marburg and the Balance of Rosewood SA2 had falls in the volume of house sales.

Table 3-27 denotes the volume of house sales by suburb within the Rosewood SA2.

Table 3-27 Volume of House Sales by Suburb, 2009-10 to 2018-19

Financial Year	Rosewood	Thagoona	Harrisville	Marburg	Walloon	Willowbank	Balance of Rosewood SA2	Rosewood SA2
2009-10	47	17	4	16	21	9	69	183
2010-11	32	8	4	9	13	10	40	116
2011-12	27	16	4	10	14	11	31	113
2012-13	35	11	7	18	25	15	39	150
2013-14	45	9	7	11	23	13	46	154
2014-15	51	16	5	15	26	13	52	178
2015-16	64	9	12	25	16	19	63	208
2016-17	50	12	6	15	21	20	61	185
2017-18	54	11	14	25	32	11	65	212
2018-19	58	11	14	9	28	14	61	195
Growth (No.)	11	-6	10	-7	7	5	-8	12
Growth (%)	23.4%	-35.3%	250.0%	-43.8%	33.3%	55.6%	-11.6%	6.6%
AAGR (%)	2.4%	-4.7%	14.9%	-6.2%	3.2%	5.0%	-1.4%	0.7%

Source: Pricefinder (2020)

3.16.1.2 Value of sales

As at 2018-19, the value of house sales for suburbs that fall within the Rosewood SA2 was $84.2 million. This is up from $79.1 million in 2009-10 (an increase of $5.1 million or 6.4%). The value of house sales has remained above $80.0 million in the last four years, with 2016-17 recording a historical high of $88.6 million.

The suburbs of Rosewood and Walloon recorded the highest value of sales in 2018-19 ($17.9 million and $11.1 million respectively). Meanwhile, the value of house sales for the suburbs of Thagoona and Marburg in 2018-19 were well below 2009-10 levels.

Table 3-28 denotes the value of house sales by suburb within the Rosewood SA2.

Table 3-28 Value of House Sales ($m) by Suburb, 2009-10 to 2018-19

Financial Year	Rosewood	Thagoona	Harrisville	Marburg	Walloon	Willowbank	Balance of Rosewood SA2	Rosewood SA2
2009-10	$14.2	$7.5	$1.8	$6.1	$8.2	$3.5	$37.7	$79.1
2010-11	$8.7	$3.5	$1.1	$2.7	$4.8	$4.6	$23.8	$49.2
2011-12	$6.6	$7.0	$1.3	$2.6	$5.0	$3.9	$21.2	$47.6
2012-13	$9.3	$4.2	$2.2	$5.5	$9.0	$4.8	$17.8	$52.8
2013-14	$12.6	$3.8	$2.6	$4.4	$9.1	$5.2	$25.1	$62.8
2014-15	$14.3	$6.7	$3.5	$3.8	$10.8	$4.5	$30.5	$74.2
2015-16	$18.1	$3.5	$12.4	$9.4	$7.2	$6.1	$30.4	$87.1
2016-17	$14.3	$5.0	$8.5	$5.4	$8.1	$8.2	$39.2	$88.6
2017-18	$16.3	$4.4	$4.6	$9.8	$11.4	$4.8	$35.0	$86.5
2018-19	$17.9	$5.7	$4.7	$3.5	$11.1	$5.1	$36.0	$84.2
Growth (No.)	$3.8	-$1.8	$3.0	-$2.6	$2.9	$1.5	-$1.7	$5.1
Growth (%)	26.7%	-23.7%	170.8%	-42.7%	35.1%	43.5%	-4.6%	6.4%
AAGR (%)	2.7%	-3.0%	11.7%	-6.0%	3.4%	4.1%	-0.5%	0.7%

Source: Pricefinder (2020)

3.16.1.3 Median sales price

As at 2018-19, Rosewood SA2 had a median house sales price of $375,000. Relative to 2009-10, median house sales prices have grown by $28,000 (or 8.1%). This equates to an average annual growth rate of 0.9% over a 10-year timeframe. A historical high of $379,900 was recorded in 2016-17, compared to a historical low of $317,500 in 2012-13. Median house sales price in Rosewood SA2 has remained well above $300,000 and well below $400,000 across the assessment timeframe.

On a suburb level, Thagoona and Walloon recorded the highest median house sales price in 2018-19 ($555,000 and $405,000 respectively). Only two suburbs recorded a decline in median house sales price over a 10-year period, with these being Harrisville (down $49,000 or 15.1%) and Marburg (down $20,500 or 7.0%).

Table 3-9 denotes median house sales prices by suburb within the Rosewood SA2.

Table 3-29 Median House Price by Suburb, Rosewood SA2, 2009-10 to 2018-19

Financial Year	Rosewood	Thagoona	Harrisville	Marburg	Walloon	Willowbank	Balance of Rosewood SA2	Rosewood SA2
2009-10	$265,000	$430,000	$324,000	$293,500	$375,000	$305,000	$455,000	$347,000
2010-11	$276,500	$402,500	$281,250	$265,000	$360,000	$430,000	$536,500	$350,000
2011-12	$240,000	$389,000	$319,000	$237,500	$323,500	$325,000	$565,000	$325,000
2012-13	$252,000	$380,000	$290,000	$271,500	$345,000	$287,500	$405,000	$317,500
2013-14	$260,000	$425,000	$380,000	$372,000	$380,000	$430,000	$465,000	$370,000
2014-15	$276,000	$432,500	$530,000	$270,000	$416,000	$325,000	$465,000	$337,500

2015-16	$267,500	$380,000	$425,000	$355,000	$393,500	$275,000	$470,000	$320,000
2016-17	$276,000	$405,000	$325,000	$330,000	$396,000	$362,000	$505,000	$379,900
2017-18	$302,500	$370,000	$277,500	$325,000	$385,000	$340,000	$450,000	$355,500
2018-19	$310,000	$555,000	$275,000	$273,000	$405,000	$316,750	$485,000	$375,000
Growth (No.)	$45,000	$125,000	-$49,000	-$20,500	$30,000	$11,750	$30,000	$28,000
Growth (%)	17.0%	29.1%	-15.1%	-7.0%	8.0%	3.9%	6.6%	8.1%
AAGR (%)	1.8%	2.9%	-1.8%	-0.8%	0.9%	0.4%	0.7%	0.9%

Source: Pricefinder (2020)

3.16.2 Attached Dwelling Sales

Between 2009-10 and 2018-19, attached dwelling sales within Rosewood SA2 were recorded only for the suburb of Rosewood. was only available for the suburb of Rosewood. Over the past ten years the following trends were identified:

- The volume of attached dwelling sales in Rosewood ranged between zero and three sales per annum, peaking in 2015-16 at three sales;
- The median attached dwelling sales price in Rosewood was $210,000 in 2018-19. This figure is down relative to 2009-10, when the median attached dwelling sales price was $222,250. IN the past ten years, the median attached dwelling sales price peaked in 2013-14 at $489,990 and was lowest in 2016-17 at $185,000. However, these results must be interpreted with caution given low sales volumes; and
- The total value of attached dwelling sales was $210,000 in 2018-19 and peaked in 2015-16 at $760,000.

Table 3-30 denotes the volume of units sold, value of units sold and the median unit sales price over a 10-year period.

Table 3-30 Attached Dwelling Sales Data, Rosewood, 2009-10 to 2018-19

Financial Year	Volume of Sales	Value of Sales	Median Unit Sales Price
2009-10	2	$444,500	$222,250
2010-11	1	$285,000	$285,000
2011-12	1	$292,000	$292,000
2012-13	1	$283,000	$283,000
2013-14	1	$489,990	$489,990
2014-15	-	-	-
2015-16	3	$760,000	$205,000
2016-17	1	$185,000	$185,000
2017-18	-	-	-
2018-19	1	$210,000	$210,000

Source: Pricefinder (2020)

3.16.3 Median weekly rents

Median weekly rent data is published by the Residential Tenancies Authority (RTA) and is available at the postcode level. The Rosewood SA2 falls within the postcodes of 4306 and 4340.

Given that data is not available at the SA2 or suburb level for median weekly rents, analysis has been undertaken at the postcode level. Table 3-31 details the SA2s that correspond to the postcodes selected for this assessment.

Table 3-31 Postcodes and Corresponding SA2s

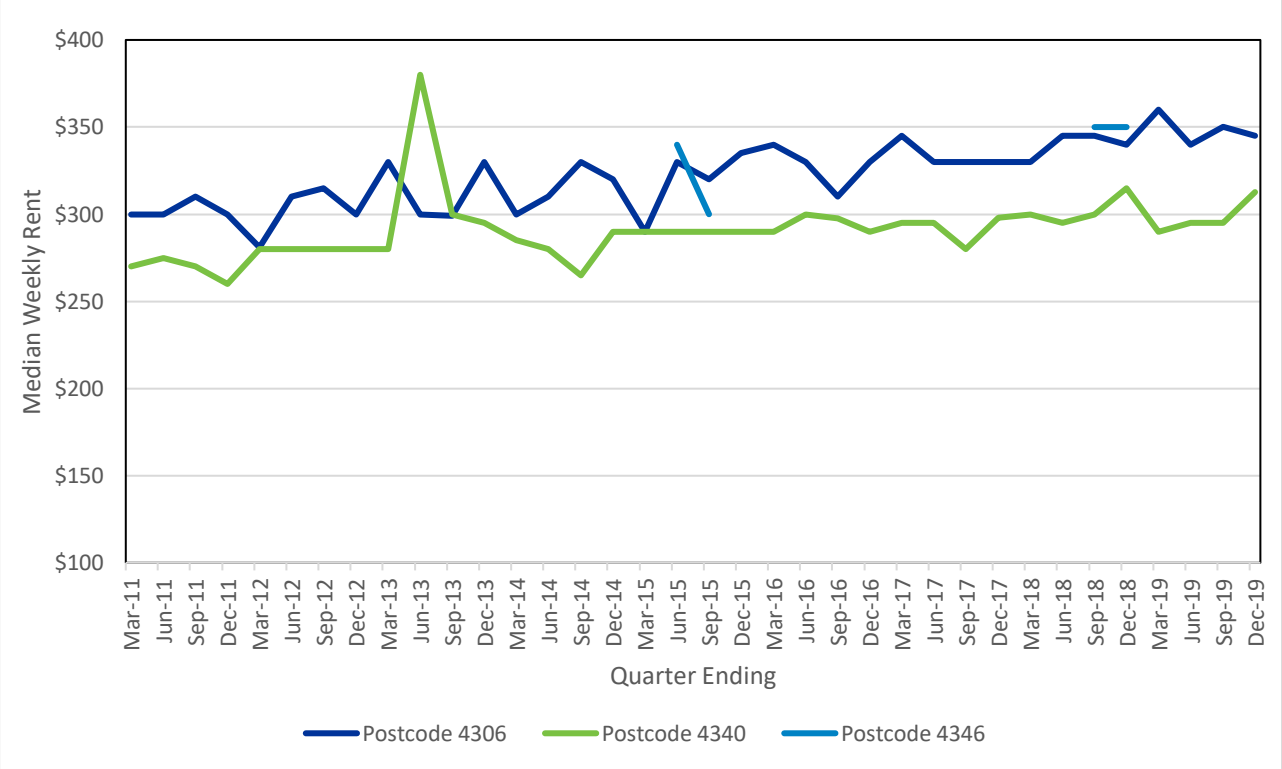
Postcode	SA2s
4306	Boonah, Crows Nest - Rosalie, Esk, Ipswich - North, Karalee - Barellan Point, Karana Downs, Kilcoy, Leichhardt - One Mile, Lowood, Nanango, Ripley and Rosewood.
4307	Boonah and Rosewood.
4340	Boonah, Lockyer Valley - East and Rosewood.
4346	Lowood and Rosewood.

3.16.3.1 3 Bedroom House

As at December Quarter 2019, median weekly rent for a three bedroom house was $345 in postcode 4306 and $313 in postcode 4340. Relative to March Quarter 2011, median weekly rent has grown by $45 (or 15.0%) in postcode 4306 and $43 (or 15.7%). As at December Quarter 2018, median weekly rent for a three bedroom house was $350 in postcode 4346.

Across all three postcodes, median weekly rent for a three bedroom house has remained well above $250 per week and well below $400 per week across the assessment timeframe. No data was available for postcode 4307.

Figure 3-16 Median Weekly Rent by Postcode, 3 Bedroom House, March Quarter 2011 to December Quarter 2019

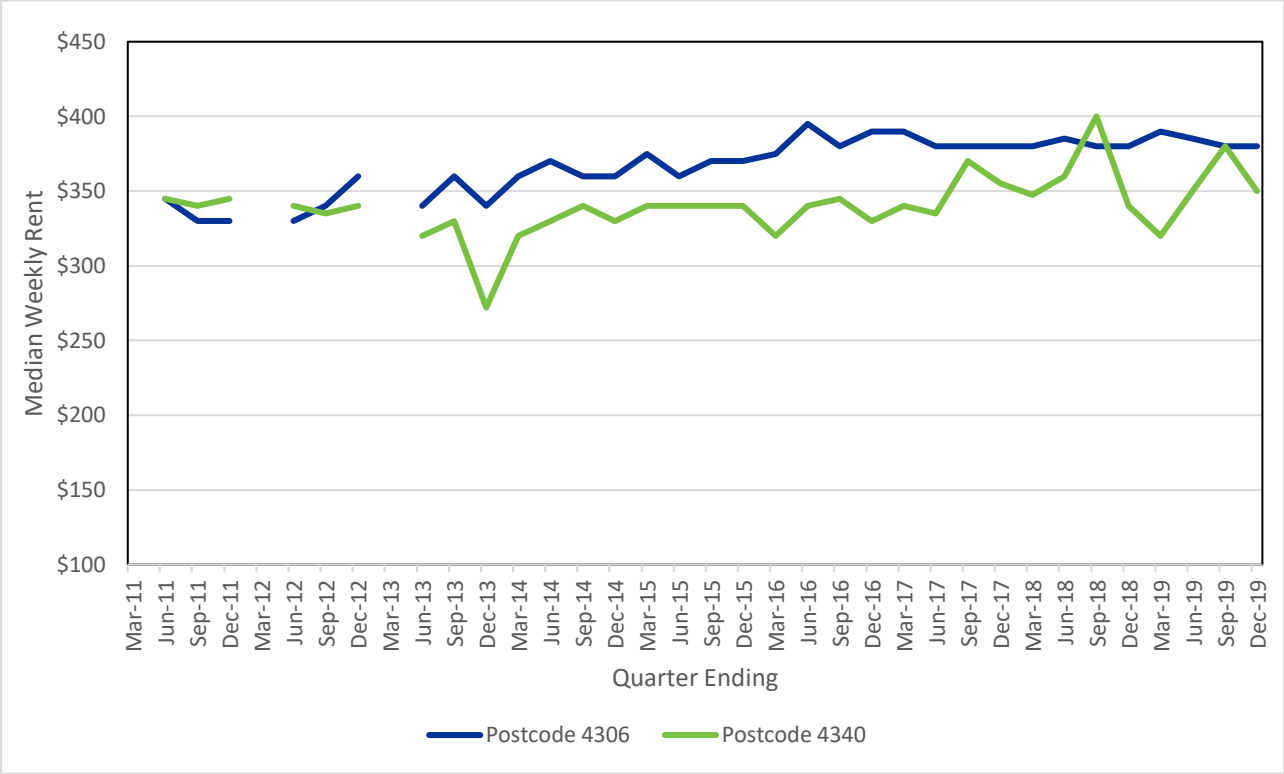


Source: RTA (2020)

3.16.3.2 4 Bedroom House

As at December Quarter 2019, median weekly rent for a four bedroom house was $380 in postcode 4306 and $350 in postcode 4340. Relative to June Quarter 2011, median weekly rent has grown by $35 (or 10.1%) in postcode 4306 and $5 (or 1.4%) in postcode 4340. Similarly, median weekly rent for a four bedroom house has remained well above $250 per week, with rent not exceeding $400 per week throughout the assessment timeframe. No data was available for postcode 4307 and postcode 4346.

Figure 3-17 Median Weekly Rent by Postcode, 4 Bedroom House, March Quarter 2011 to December Quarter 2019



Source: RTA (2020)

3.17 Housing Affordability

In order to assess potential changes in housing affordability in Rosewood SA2 post Census, consideration has been given to the following indicators:

- Changes in the wage price index (as an indicative measure of household income growth);
- Changes in median weekly rents for three and four bedroom houses; and
- Changes in the median sales price for houses.

Since June Quarter 2016, the wage price index (total hourly rates of pay excluding bonuses) in Queensland has steadily grown year-on-year (albeit, at a lower rate relative to June Quarter 2011 to June Quarter 2015). These wage price indices suggest that housing affordability has improved slightly in recent years and is consistent with the historical trend observed in 2016, whereby average monthly mortgage repayments were lower in Queensland relative to 2011 (as discussed in section 2.6.2).

Table 3-32 denotes the wage price index in Queensland for both public and private industries.

Table 3-32 Wage Price Index, Queensland, June Quarter 2016 to June Quarter 2019[8]

Year Ending	Index	Year-on-Year Change (%)
Jun-2011	107.3	3.9%
Jun-2012	111.3	3.7%
Jun-2013	114.7	3.1%
Jun-2014	117.7	2.6%
Jun-2015	120.5	2.4%
Jun-2016	122.8	1.9%
Jun-2017	125.1	1.9%
Jun-2018	127.9	2.2%
Jun-2019	130.8	2.3%

Source: ABS (2020b)

As summarised in Table 3-33, median house sale prices in Rosewood SA2 are increasing at a greater AAGR overall (5.4%), relative to the wage price index for Queensland (2.1%). These indicators suggest worsening housing affordability for buyers between 2015-16 and 2018-19.

Conversely, the rental market for 3-bedroom houses and 4-bedroom houses in postcodes 4306 and 4340 are increasing at much slower rates, and in several instances, negative rates (between -0.9% to 1.0%) relative to the wage price index for Queensland. These indicators suggest improving housing affordability for renters between 2015-16 and 2018-19.

Table 3-33 Housing Affordability Indicator Summary, 2015-16 to 2018-19

Indicator	2015-16	2016-17	2017-18	2018-19	AAGR, 2015-16 to 2018-19 (%)
Wage Price Index (Queensland)	122.8	125.1	127.9	130.8	2.1%
Year-on-Year Change (%)	1.9%	1.9%	2.2%	2.3%	
Median House Sales Price (Rosewood SA2)	$320,000	$379,900	$355,500	$375,000	5.4%
Year-on-Year Change (%)	-5.2%	18.7%	-6.4%	5.5%	
Median Weekly Rent: 3-bedroom house (Postcode 4306)	$330	$330	$345	$340	1.0%
Year-on-Year Change (%)	0.0%	0.0%	4.5%	-1.4%	
Median Weekly Rent: 3-bedroom house (Postcode 4340)	$300	$295	$295	$295	-0.6%
Year-on-Year Change (%)	3.4%	-1.7%	0.0%	0.0%	
Median Weekly Rent: 4-bedroom house (Postcode 4306)	$395	$380	$385	$385	-0.9%
Year-on-Year Change (%)	9.7%	-3.8%	1.3%	0.0%	
Median Weekly Rent: 4-bedroom house (Postcode 4340)	$340	$335	$360	$350	1.0%

[8] ABS (2020), Wage Price Index, Australia, Dec 2019, Cat. No. 6345.0 Australian Bureau of Statistics, Canberra

Year-on-Year Change (%)	0.0%	-1.5%	7.5%	-2.8%	

Derived from Table3-29, Table 3-32, Figure 3-16 and Figure 3-17

3.18 Audit of community facilities and social infrastructure

An audit of nearby community facilities and sensitive uses has been compiled based on data provided by Council[9], and desktop searches. The facilities in the audit were identified according the following parameters:

- All community facilities and sensitive uses (including accommodation) within 5km of the proposed site and 5km of Cunningham Highway to Dinmore.
- Additional community facilities within 5km of Cunningham Highway to Dinmore (excluding accommodation businesses).
- Higher order education, health and emergency facilities across the LGA wide.

Infrastructure is described within the following headings in this section:

- Education;
- Health;
- Emergency;
- Community Facilities and Sensitive Uses

3.19 Education

3.19.1 Early education

A total of 13 early learning facilities were identified in the audit:

- Nine childcare facilities located in:
  - Silkstone: one facility providing 76 approved places;
  - Flinders View: one facility providing 117 approved places;
  - Yamanto: one facility providing 75 approved places;
  - Churchill: one facility providing 99 approved places;
  - Blackstone: one facility providing 80 approved places;
  - Booval: one facility providing 44 approved places;
  - Raceview: three facilities providing 279 approved places;
- Four preschool facilities located in:
  - Raceview: One facility;
  - Silkstone: One facility;
  - Bundamba: One facility; and
  - Yamanto: One facility.

[9] Ipswich City Council's Capacity Analysis of a Sample of Local Community Facilities: A Methodology Paper (2018)

The full audit of nearby community facilities and sensitive uses is included in Appendix A.

3.19.2 Schools and enrolments

A total of 11 primary schools and three secondary schools were identified in the audit. Of the 11 primary schools and three secondary schools identified, two schools were identified to be 'fully booked out', or at capacity, and included: Riverview State School (270 enrolments) and St Peter Claver College (920 enrolments). Many of the schools identified in the audit, however, had high enrolment numbers, including:

- Primary school facilities:
  - Amberley High District High School: 852 enrolments (2019);
  - Raceview State School: 960 enrolments (2019);
  - Silkstone State School: 831 enrolments (2019);
- Secondary school facilities:
  - Bundamba State Secondary College: 967 enrolments (2019); and
  - St Peter Claver College: 920 enrolments (2019) – *entirely booked out.*

The full audit of nearby community facilities and sensitive uses is included in Appendix A.

Managing future demand – Ipswich region

The Queensland Government has recently opened two new primary schools and one new secondary school within Ipswich LGA, and to the east of the proposed intermodal terminal. The planned enrolment capacity of the new schools is outlined in **Error! Reference source not found.**Table 3-34. These facilities will initially assist in meeting future p opulation growth within Ipswich LGA, where it is anticipated population will increase from 200,100 in 2016 to 520,000 in 2041 in the LGA, and subsequent demand for an additional 111,700 dwellings[10]. The three new school facilities have also been captured in the audit.

Table 3-34 New schools planned for Ipswich LGA

Type	Location of School Facility	School Catchment Area*	Description of School Facility
New schools recently delivered			
Primary Schools	Spring Mountain State School	Spring Mountain/Springfield Lakes	Opened in January 2019 Planned enrolment capacity of 760 students
	Ripley Valley State School	South Ripley	Opened in January 2020 Approximately 300 students form Prep to Year 6 Planned enrolment capacity of 1000 students
Secondary Schools	Ripley Valley State Secondary College	South Ripley	Opened in January 2020, with approximately 130 Year 7-8 students The school plans to grow each year to offer 7-12. Planned enrolment capacity of 1500 students
Planning for new schools			
N/A	N/A	N/A	N/A

Source: The Queensland Times (2017)

[10] Figures based on ShapingSEQ policy for 2041

3.19.3 Tertiary facilities

Four tertiary facilities were identified in Ipswich LGA: including:

- TAFE Queensland Ipswich Campus
  - Offers 122 different courses, in the fields of aged care, agriculture and horticulture, automotive, beauty and hairdressing, building and construction, business, engineering and health care.
- University of Southern Queensland Ipswich Campus
  - Home to 1,682 students
  - Degrees offered in the following areas: Business and Commerce, Creative Arts and Media, Education, Engineering and Built Environment, Health and Community, Humanities and Communication, Information Technology, Law and Justice, Sciences and Pathways program
- Inala TAFE Campus
  - Courses available include: Diploma in Nursing, Certificate ll in Retail Cosmetics, Certificate l in Skills for Education and Training Pathways
  - The campus has recently doubled in size with a $3.4 million expansion of its teaching spaces[i]
- Springfield TAFE Campus
  - Offers 39 different courses in the areas of business, child care, justice studies, leadership and management

3.20 Health

3.20.1 Hospital

Four hospitals were identified in the audit:

- Ipswich Hospital (13.94km from the proposed location of the intermodal terminal):
  - Public hospital with 429 beds, and the largest hospital in the West Moreton Hospital and Health services;
  - Provides impatient specialist services in ear, nose and throat surgery, eye surgery, gynaecology, orthopaedics, plastic surgery, urology, obstetrics, oncology, paediatrics, and psychiatry;
  - A level 5 CSCF service for mental health – adult and older persons (ambulatory and acute inpatient), Mental Health – Child (ambulatory), mental health – state-wide and other targeted services (evolve therapeutic, in addition to palliative care and acute pain health problems)[11];
  - A level 6 CSCF service for Cardiac Rehabilitation (inpatient and outpatient)[12]; and
  - Number of staff (for the end of September 2019) includes: 405 doctors, 1,503 nurses and 259 health practitioners/professional/technical staff.

[11] Level 5 Clinical Services Capability Framework (CSCF) service manages all but the most highly complex patients and procedures. Acts as referral service for all but the most complex service needs which may mean highly complex, high-risk patients require transfer or referral to a level 6 service.

[12] Level 6 Clinical Services Capability Framework (CSCF) service is the ultimate high-level service delivering complex care and acting as a referral service for all lower-level services. Can also be a statewide super specialty service accepting referrals from across the state and interstate where applicable.

The Queensland Government has committed $146 million in funding for the first stage of the Ipswich Hospital expansion and refurbishment. In March 2020, it was announced residents will soon be able to benefit from a $25 million, new 26 bed ward at Ipswich Hospital, including a patient transit lounge. Other plans include a 50-bed Mental Health Unit, which has already been confirmed. The redevelopment of Ipswich Hospital will help ensure patients can be treated locally.

- St Andrews Ipswich (14.23km from the proposed location of the intermodal terminal):
  - 175-bed private hospital, which services the West Moreton region;
  - Includes a 24-hour emergency department, operating theatres, critical care unit and specialist services for oncology, maternity and renal dialysis;
  - The hospital underwent an expansion in 2018 of $64 million in value, which saw the opening of the first private Emergency Centre within the Ipswich and West Moreton Region, meaning patients would no longer have to travel to Brisbane to access private emergency care[ii]
- Ipswich Day Hospital (13.89km from the proposed location of the intermodal terminal)
  - Is a purpose built, day surgery facility located at the Medicross Centre in Ipswich
  - Ipswich Day Hospital offers a broad range of surgical services, including: Dental, Ophthalmology and Plastic and Reconstructive Surgery
  - The Day Hospital is open from 6:00am-6:00pm Monday to Friday
- Mater Private Hospital, Springfield (25.56km from the proposed location of the intermodal terminal)
  - Opened in 2015, the Mater Private Hospital in Springfield includes 80 private beds, and a day surgery unit
  - The facilities offers a range of medical and surgical services for overnight and day patients

3.20.2 Other health care facilities

A total of eight other health facilities were identified in the audit, including one multicultural health care facility, one health centre, two medical centres and four pharmacies.

Blue Care Ipswich Multicultural Services is located in Eastern Heights (14.22km from the proposed location of the intermodal terminal) and is part of Queensland Health. The centre offers health services by assisting culturally and linguistically diverse (CALD) communities to access appropriate Home and Community Care (HACC) services.

Amberley Health Centre (AMBHC) is located on the RAAF Base in Amberley (8.33km from the proposed location of the intermodal terminal). AMBHA offers a range of health services including medical, dental, a health promotion and ADF rehabilitation program, mental health and psychology section, physiotherapy, pharmacy and pathology. It is assumed the health centre is only available for defence force personnel, as this was not made clear in the research.

The full audit of nearby community facilities and sensitive uses is included in Appendix A.

3.21 Emergency

Two emergency facilities were identified in the audit: Ipswich Emergency Department and St Andrew's Ipswich Emergency Department.

3.21.1 Ipswich Emergency Department

Ipswich Hospital is a level 4 CSCF service for emergency (including children's emergency). A level 4 CSCF facility offers the following services:

- Provides moderate-risk inpatient and ambulatory care clinical services delivered by a variety of health professionals (medical, nursing, midwifery and allied health) including resident and visiting specialists.
- Medical staff on-site 24 hours a day, 7 days a week and an intensive care unit (may be combined with a cardiac care unit) with related support services also available on-site.
- If higher level or more complicated care required, patients may need to be transferred to a level 5 service.
- Some specialist diagnostic services also available.

The other surrounding health services in the West Moreton HHS district include Boonah, Esk, Gatton and Laidley. These facilities only offer a 3 CSCF service, which means they can provide low-risk inpatient and ambulatory services; however, their role is to manage emergency health care until transfer is available for a higher level service facility.

The median wait time (mins) for Ipswich Hospital emergency department in February 2020 was 22 mins, and 36 minutes for elective surgery. The hospital's performance is recognised to be better than or within range of the latest national performance.

3.21.2 St Andrews's Ipswich Emergency Department

St Andrew's Ipswich Emergency Department (ED) provides 24 hour quality care to patients living in the Ipswich and West Moreton Region. The Emergency Department offers the following services:

- 2 undercover ambulance parking bays
- 6 monitored emergency bays
- Resuscitation bay
- Triage room
- Fast track/consult room DDDD
- CT scanner
- X-ray room and;
- Onsite retail pharmacy.

Presentation to St Andrew's Ipswich Private Emergency Departments requires a doctor gap fee.

3.21.3 Other emergency facilities

A total of 10 emergency facilities were identified in the audit of social infrastructure including:

- Two ambulance stations located in:
  - Rosewood: Rosewood Ambulance Station;
  - Ipswich: Ipswich Ambulance Station;
- Five police stations located in:
  - Booval: Booval Police Beat Shopfront and Booval Police Station;
  - Leichhardt: Leichhardt Neighbourhood Police Beat;
  - Ipswich: Ipswich Police Station;
  - Yamanto: Yamanto Police Station;
- Three fire stations located in:

- Amberley: Amberley RAAF Base Fire Station;
- Bundamba: Bundamba Fire Station; and
- Ripley: Ripley Fire Station and West Moreton Area Office.

Three new fire stations, however, have been built within the broader Ipswich LGA in recent years (Bundamba in 2018, Ripley in 2013, and Brassall in 2013[iii]) and a new fire station is planned for completion at Rosewood in 2021[iv]. Furthermore, a new Ipswich headquarters has been suggested for Ripley, although limited information was available to confirm this.

3.21.4 Community Facilities and Sensitive Uses

A total of 16 community facilities were identified in the audit, including five community halls, one community centre, six churches, one toy library and three aquatic centres. However across the LGA, Ipswich City Council indicates a total of 143 Council and non-Council community facilities have been identified in the Ipswich LGA, which includes community centres, halls, churches and meeting spaces, service clubs, small halls, performing arts and function centres, sports clubhouses, multipurpose sports centres, aquatic centres, community gardens, education and training facilities, showground facilities, and multipurpose/ nature facilities[13]. Council's 10 year Community Facilities Plan (mentioned as part of this methodology paper) recommends the delivery of 27 new multipurpose community facilities for the LGA to respond to population growth. Planned multi-purpose centre facilities included as part of the paper, and located in the suburbs of Riverview, Booval, Yamanto and Bundamba, have been captured in the audit.

Three accommodation facilities were identified in the audit: Willowbank Drive Bed and Breakfast, Willowbank Motel and Ipswich Country Motel. Willowbank Drive Bed and Breakfast is located 4.64km from the proposed location of the intermodal terminal and 4.56km of Cunningham Highway and provides three B&B rooms. Willowbank Motel is located within 4.75km of the proposed location of the intermodal terminal, 0.17km of Cunningham Highway and provides 21 motel rooms. Ipswich Country Motel is located 15.22km of the proposed location of the intermodal terminal, and 1.12km of Cunningham Highway and provides 45 rooms and three function rooms to cater for up to 200+ guests.

The full audit of nearby community facilities and sensitive uses is included in Appendix A.

Major Infrastructure Projects

This section identifies major infrastructure projects within Rosewood SA2 and Ipswich LGA, with a focus on those projects likely to require similar skillset to the proposed Ebenezer Intermodal Terminal. Consideration is also given to Inland Rail and its impact on the proposed intermodal terminal at Ebenezer.

3.21.5 Local Projects

Seven major infrastructure projects currently planned, under development or recently completed within Ipswich LGA, as listed within the Major Projects section of the City of Ipswich website have been identified. Additionally, details have been provided relating to the Nicholas Street redevelopment in the Ipswich CBD as summarised in Table 3-35.

[13] Ipswich City Council's Capacity Analysis of a Sample of Local Community Facilities: A Methodology Paper (2018)

Table 3-35 Major Projects, City of Ipswich

Major Project Name	Description	Timeframe
Ipswich CBD Redevelopment	• $250 million redevelopment on 143, 143A and 163 Brisbane Street, 23 and 24 Ipswich City Mall and 2 Bell Street, Ipswich. Known as the Nicholas Street redevelopment • Nicholas Street redevelopment includes new retail spaces, a dining precinct, water features, two libraries, a civic plaza and multi storey Council administration building.	Anticipated to be completed in mid-2021
Brassall Bikeway – Stage 5	• Construct a 2.5 metre wide shared pathway in Brassall (Stage 5 out of 7). • Forms part of Council's broader iGO Active Transport Action Plan, which seeks to increase safety and connectivity for pedestrians and cyclists across the city.	Construction to begin in early 2020.
Limestone Park Netball Facility	• New amenities block construction next to the existing netball courts in Limestone Park, Ipswich. • Additional site works include: a terraced seating area; retaining wall; two compliant disabled carparking bays; new accessible pathway connection from the carpark; site earthworks for improvement of stormwater flow around the new building; and some vegetation (trees) will be removed). • Project cost of $847,000, including a grant of $436,569 provided by the State Government.	Completed August 2020.
Marsden Parade	• Road realignment – the upgrade will include: demolition and rehabilitation of the former service station site; alterations to the existing carpark configuration; service relocations; creation of a four-way intersection; installation of new traffic signals; construction of a new section of Gordon Street; and adjustment of Marsden Parade. • Marsden Parade is an integral link to cater for road capacity and connectivity as part of the iGO City of Ipswich Transport Plan.	Expected completion in January to late 2020.
Redbank Plains Road – Stage 3	• Road upgrade in Redbank Plains to address safety issues.	Roadworks to commence in FY 2020/21 and FY 2021/22.
Ripley Road Timber Bridge	• Bridge replacement due to the 4 tonne load limit not being adhered to.	Opened in May 2020.
Rosewood Library	• Brand new, $7.5 million[14] two story library in Rosewood.	Opened in July 2020.
Major Road Duplication	• Divided into three stages for the following roads: Springfield Parkway and Springfield Greenbank Arterial Road. • These roads have been identified as a principal cycle route within Council's iGO Active Transport Action Plan and the Department of Transport and Main Road's SEQ Principal Cycle Network Plan 2016.	Road construction planned for approximately 12 months (with confirmation of timing expected in mid-2021).

Source: Ipswich City Council (2020)

[14] Department of the Premier and Cabinet (2020), New Rosewood Library set to be a page turner, accessed at http://statements.qld.gov.au/Statement/2019/5/31/new-rosewood-library-set-to-be-a-page-turner, on 13 March 2020

Only one major infrastructure project is located within the Rosewood SA2 (Rosewood Library). In terms of local worker skillsets, these projects are likely to be reliant on workers from the Construction; Manufacturing; and Transport, Postal and Warehousing sectors.

3.22 Inland Rail

3.22.1 Background

Australia's freight demand is growing significantly and has therefore led to questions about the competency of the existing transport network in coping with the increasing freight volumes. The existing rail line connecting the eastern coast of Australia is constrained having to pass through the heavily congested Sydney network.

Inland Rail is the largest freight rail infrastructure project in Australia that will benefit Australians living in cities and regions[15]. Building Inland Rail will reduce costs, create jobs, take trucks off roads and make businesses and producers more competitive. Inland Rail is a 1,700km freight line between Melbourne and Brisbane, making it the largest freight rail infrastructure project in Australia[16]. Early works commenced in 2017 and, based on the 10-year delivery schedule developed in 2015, the first train is expected to operate in 2025.

The development of Inland Rail has the potential to result in a significant shift in the national freight logistics market by:

- Facilitating a mode shift from road to rail for containerised freight along the Melbourne to Brisbane interstate freight corridor;
- Facilitating a redirection of containerised freight destined to Australia away from Port of Melbourne (currently Australia's largest container port) to Port of Brisbane; and
- Stimulating freight demand from sectors that are major consumers of freight because of a reduction in freight costs.

Figure 3-18 illustrates the alignment of the rail track across the states of Queensland, New South Wales and Victoria.

[15] Australian Rail Track Corporation (2020), Frequently Asked Questions, accessed at https://inlandrail.artc.com.au/faqs, on 24 March 2020

[16] Australian Rail Track Corporation (2020), FAQs, accessed at https://inlandrail.artc.com.au/faqs/widgets/169777/faqs#question25974, on 24 March 2020

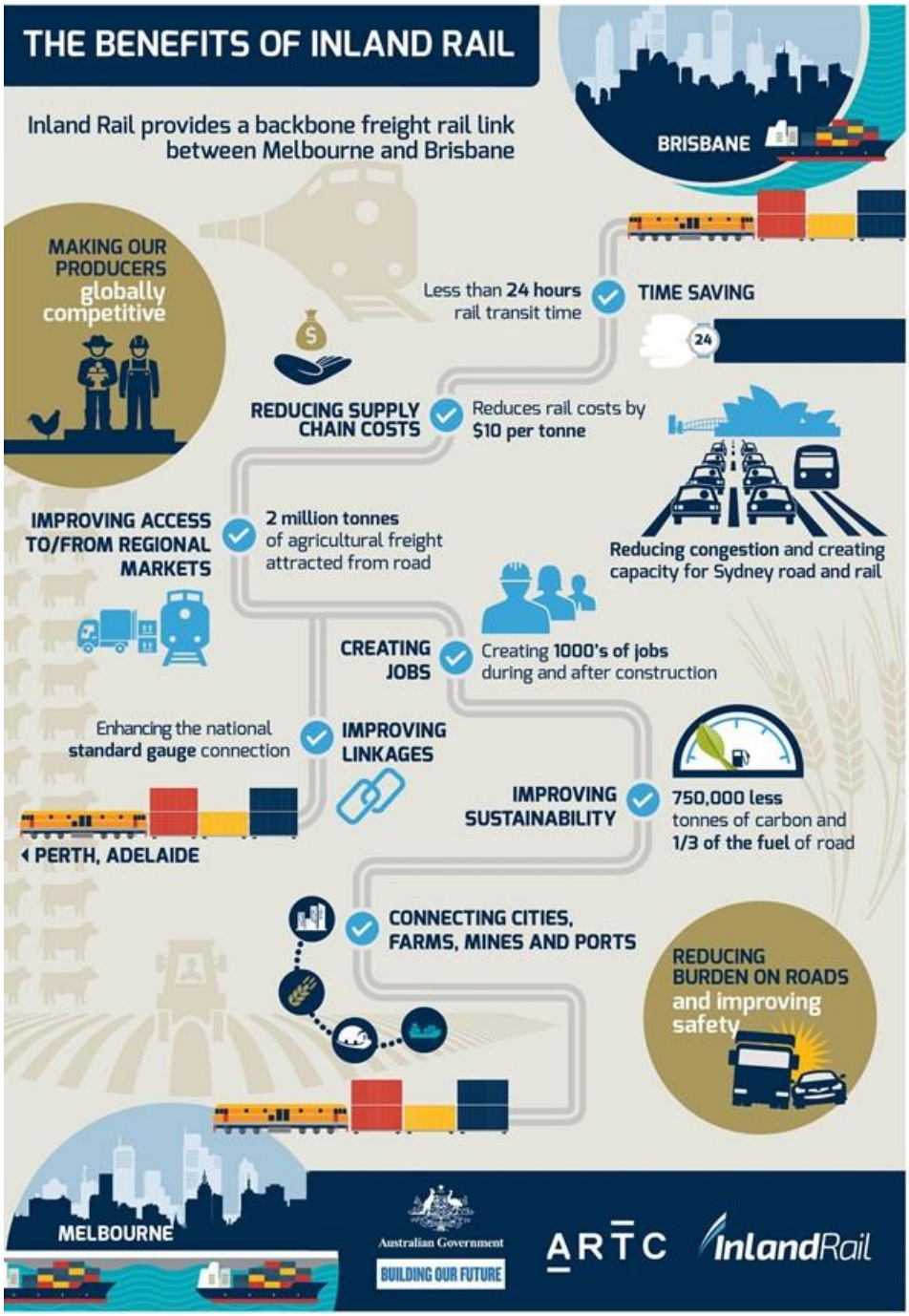
Figure 3-18 Inland Rail Alignment Map, 2020

Source: ARTC (2020)

The Australian Government through the Australian Rail Track Corporation (ARTC) is delivering the multibillion-dollar infrastructure in partnership with the private sector. The dedicated freight network will transform the way goods are moved between Brisbane and Melbourne, and between the eastern states, Adelaide and Perth; support Australia's four richest farming regions; and provide supply chain benefits and substantial cost savings for producers.

Inland Rail will bring lower costs and greater efficiencies to freight customers and will help bring more produce and goods to consumers along the eastern seaboard. It will create long-term jobs, boost regional economies, and help businesses grow. An infographic summary of the benefits of Inland Rail is detailed in Figure 3-19.

Figure 3-19 Summary of Inland Rail Benefits



Source: ARTC (2020)

3.22.2 Relevance to Ebenezer

Ebenezer is located in close proximity to the Calvert to Kagaru section of the Inland Rail track. Its strategic positioning north of Inland Rail highlights the synergies available to the proposed Ebenezer Intermodal Terminal, with these being:

- Similar skillsets from industrial workers within Rosewood SA2 (this could in turn increase employment retention within the broader Ipswich LGA); and
- Increased distribution, network capacity and competitiveness in the mid-west areas of SEQ.

Figure 3-20 details the Calvert to Kagaru track portion of Inland Rail, including its location relative to Ebenezer.

Figure 3-20 Inland Rail – Calvert to Kagaru Map

Source: ARTC (2019)

3.22.3 Future of Freight Transport

As Australia's freight transport industry continues to diversify and grow, there is growing expectation for items to be delivered to homes and business efficiently. In Australia, freight demand has primarily been driven by increasing global demand for Australian export goods and increasing demand for foreign imports. Australia's agricultural sector continues to produce a wide range of products, requiring unique supply chains. However, growing congestion on key routes, poor local infrastructure management and regulatory constraints have resulted in diminishing access to key export markets and increasing costs to consumers. As outlined, efficient domestic and international freight network are essential in enabling the Australian economy to further grow which depends on the following:

3.22.3.1 Ports

Sea ports are the main source of international trade, but with continued rapidly changing shipping and logistics industry, ports are required to adapt quickly. Although the major ports are becoming increasing efficient, they continue to lag other key global economies. Some of the changes required to enhance the efficiency of Ports include:

- Increased reliance of technology on port and freight handling activities to improve productivity and reliability, reduce costs and improve convenience for freight customers;
- There is a trend towards larger ships, this is impacting on quayside infrastructure, requiring port managers to augment waterside facilities, expanding turning areas and removing height restrictions; and
- Significant investment and expansion of major container ports, helping to accommodate growth and increase port productivity.

3.22.3.2 Airports

Air freight represents a small portion of the overall freight task across Australia, but it represents a significant proportion of the trade value. Air freight transport often includes goods that are of high-value, perishable and urgent. The development of the new Toowoomba -Wellcamp Airport and Western Sydney Airport is set to improve efficiency of the networks across Australian by elevating pressure on the major national freight airports, Sydney, Melbourne. And Brisbane. There is also need for greater balance between the needs of freight services and passenger demands across the major airports in Australia. Additionally, there is a need to relax regulatory controls and operational limitations on flight arrivals and departures at major airports including Gold Coast and Sydney which have been significantly reducing freight volume

3.22.3.3 Road and Rail Freight Transport

The growing congestions on roads and rail networks across major cities and with freight task set to double over the next few decades, congestion is anticipated to get worse. Some of the changes required to improve the efficiency of road and rail freight transport, include the following:

- Issues surrounding land use, especially in major/fast growing cities has to be addressed considering the impact on urban supply chains it is having, particularly warehousing;
- Light commercial vehicles being utilized for freight transport needs to be addressed considering the significant contribution light commercial vehicles are having on congestion;
- Ensure the use of high productivity vehicles to reduce freight transport costs, although this might be limited by community sentiment;
- Introduction of new technology to help improve road safety and efficiency; and
- Developing environmentally friendly infrastructure to facilitate the efficient transportation of waste away from urban areas.

In the longer term, it is recognised that the Willowbank Intermodal Terminal could be utilised at least in part by autonomous freight vehicles. At present, newer freight vehicles in Australia have automated features such as lane keep assist and autonomous emergency braking, but still require a licensed human driver to control the vehicle.

The Department of Infrastructure and Regional Development (2020) recognises that highly automated vehicles have significant potential benefits for Australia, including:

- Reduced road deaths;
- Reduced traffic congestion by making better use of our roads;
- Reduced greenhouse gas emissions; and
- Improved freight industry efficiency and productivity.

Several trials are planned or underway throughout Australia to inform approaches to policy, regulation, investment and operations within the autonomous vehicle sector. The City of Ipswich should monitor developments in the autonomous freight vehicle space so appropriate investment can be made to support autonomous freight vehicle movements within Ipswich. In order to address safety concerns relating to autonomous freight vehicles without a driver, it is suggested that a dedicated lane for autonomous freight vehicles could be considered to avoid interaction between autonomous and driver vehicles. However, given the nature of an intermodal terminal, human interaction with autonomous freight vehicles would still be required through the loading and unloading of goods, although it is unclear whether this would be through additional staffing at the intermodal terminal itself or persons travelling in the autonomous vehicle would conduct this task.

Electric freight vehicles may also utilise the Willowbank Intermodal Terminal in the longer term. To date, commercial electrical vehicle take-up has been low, with the Renault Kangoo the only light commercial van available. Additionally, SEA Electric, a Victorian manufacturer that convers existing drive trains, is the only Australian supplier and has sold just over 100 vehicles to date[17]. The Willowbank Intermodal Terminal could support and attract electric freight vehicles, through the provision of a freight electric charging hub at the facility.

Additionally, the distribution of very light loads from the Willowbank Intermodal Terminal could occur using drones, as opposed to light commercial vehicles. Trials are underway across Australia to assist regulators set operational boundaries for this sector. Whilst very light loads are anticipated to represent only a small proportion of break bulk from the Willowbank Intermodal Terminal, the usage of drones would likely lead to a small reduction in light commercial vehicle traffic volumes to and from the facility.

[17] https://electricvehiclecouncil.com.au/wp-content/uploads/2020/08/EVC-State-of-EVs-2020.pdf

Section 4 Economic Contribution Assessment

This chapter of the report provides an assessment of the economic impacts attributable to the Willowbank Intermodal Terminal on the Ipswich and SEQ regional economy.

4.1 Methodology

Total economic impacts from the establishment and operation of the Willowbank Intermodal Terminal have been estimated using a regional economic contribution model (input-output approach).

The analysis of economic contribution is based on input-output tables which describe inter-industry transactions for a given region. National input-output tables for 2012-13[18] are prepared by the ABS based on the Australian National Accounts. Queensland and regional tables are then imputed using Queensland State Accounts, Census data and taxation data.

The total economic contribution of a stimulus or activity comprises the following effects:

- Direct or initial effects: being the stimulus for the economic contribution, typically described as the change in sales or contribution to final demand by the stimulus or activity;
- Flow on effects, comprising production-induced effects and consumption-induced effects, these being:
  - First-round production effects: being those purchases of inputs required from other industry sectors in the economy to produce the additional output generated by the stimulus or activity;
  - Industrial support production effects: being those second, third and subsequent-round industrial flow on effects stimulated by the purchases made in the first round; and
  - Consumption induced effects: being those purchases made by households upon receiving additional income from labour payments stemming from the production of additional output generated by the stimulus or activity under assessment.

The extent of contribution can be represented by multipliers calculated in aggregate for various regional, state or national economies. There are commonly four multipliers used to measure contribution: output, income, employment and value added. Multiplier effects are typically largest in secondary industries (e.g. manufacturing, construction, etc) which require significant intermediate inputs to facilitate production. Service sectors typically have smaller multiplier effects.

Two sets of the above multipliers can be generated, namely:

- Type 1 Multipliers[19] , which estimate the direct and production induced impacts of a stimulus or activity; and
- Type 2 Multipliers, which estimate the direct, production induced and consumption induced impacts of a stimulus or activity.

It is also important to note that value added is the measure of economic impact resulting from a stimulus that is preferred by economists.

The various impact measures used in economic impact assessment are described in Table 4-1.

---

[18] ABS (2015) Australian National Accounts: Input-Output Tables Catalogue No. 5209.0.55.001. This is the most recently available complete input-output dataset. The complexity of generating this dataset means that this data is typically released three to five years behind the mainstream national accounts data.

[19] Type 1 Multipliers are used in this analysis. The preference of state and commonwealth treasury is for use of only Type 1 Multipliers, given that Type 2 Multipliers typically overstate the extent of consumption-induced impacts of any given stimulus or activity.

Table 4-1 Measures of Economic Contribution

Impact Measure	Description
Output	The output impact measures the increase in gross sales throughout the entire economy by aggregating all individual transactions (direct and indirect) resulting from the economic stimulus. The output impact provides an indication of the degree of structural dependence between sectors of the economy. However, output impacts are regarded as overstating the impact on the economy as they count all goods and services used in one stage of production as an input to later stages of production, hence counting their contribution more than once.
Household income	The household income impact measures the additional wages, salaries and supplements paid to households associated with the industry under consideration and with other industries benefiting from the stimulus to the economy. It is important to note that the input-output tables on which this analysis is based relate to 2012-13. The input-output tables represent the structural dependence of industry sectors within the regional economy. Since 2012-13, there may have been changes in the composition of real wages. While the input-output tables have been augmented to reflect changes in relative incomes between industries, they have not been augmented such that they reflect relative differences between regions on an inter-industry basis.
Employment	The employment impact measures the number of full time equivalent (FTE) positions for one year created directly and indirectly by the stimulus. However, the short-term response to increased demand may be that existing employees work overtime. Consequently, actual levels of employment generated (in terms of persons employed) will tend to be lower than those estimated by the input-output analysis. This short-term employment response (of working additional overtime) will be more prevalent where the demand stimulus is likely to be temporary and short lived, or where there is limited spare capacity in the economy (that is, when the economy is at or near full employment).
Value added	The value added or Gross Regional Product (GRP) impact measures only the net activity at each stage of production resulting from a stimulus. GRP is defined as the addition of consumption, investment and government expenditure, plus net exports (exports minus imports) from a region. The value added (or GRP) impact is the preferred measure for the assessment of contribution to the economy from a stimulus or impact, and as such should be used to describe the net impact of the event.

Source: Jensen, R. and West, G. (2001) Community Economic Analysis, Department of Primary Industries: Brisbane, Qld

The input-output approach has several limitations, which may result in overestimation of impacts.

- The absence of capacity constraints such that the supply of each good is perfectly elastic, implying that each industry can supply whatever quantity is demanded of it and there are no budget constraints;
- The assumed linearity and homogeneity of the input function, which implies constant returns to scale and no substitution between inputs. This occurs because the approach assumes inputs purchased by each industry are a function only of the level of output of that industry;
- Each commodity, or type of commodity, is supplied by a single industry sector, implying there is only one method used to produce each commodity and each sector has only a single primary output;
- Multipliers are derived from the 2012-13 Input-Output tables and reflect the structural dependence of the economy at that time. These tables have been augmented to reflect broad level structural change across the national economy by industry sector. The Queensland and regional tables prepared for this analysis reflect regional variation from the national tables as at 2012-13. As such, the tables do not reflect any intensification or deterioration in regional competitive advantage in a specific industry sector that may have occurred since this time;
- The assumption that the economy is in equilibrium at given prices and that the economy is not subject to other external influences; and
- The additivity assumption suggests the total effect of carrying on several types of production is the sum of the separate effects, which is not a true reflection of economic systems.

These limitations are generally only relevant in situations whereby the stimulus being assessed is immature (or new) or when the stimulus is likely to result in a major structural change in the host economy. However, industrial development is considered mature in the SEQ context, hence the limitations outlined above are unlikely to materially affect the robustness of the analysis.

4.2 Assumptions

In the case of estimating the economic contribution of the Willowbank Intermodal Terminal, the analysis has considered:

- Intermodal facilities and rail terminals, namely:
  - Indicative capital costs associated with the construction of the intermodal terminal;
  - Indicative operating output costs associated with the ongoing operation of the intermodal terminal;
- Industry activity directly adjacent to the intermodal terminal; and
- Industry activity within close proximity but not immediately adjacent to the intermodal terminal.

4.2.1 Intermodal Facilities and Rail Terminals

4.2.1.1 Capital Costs

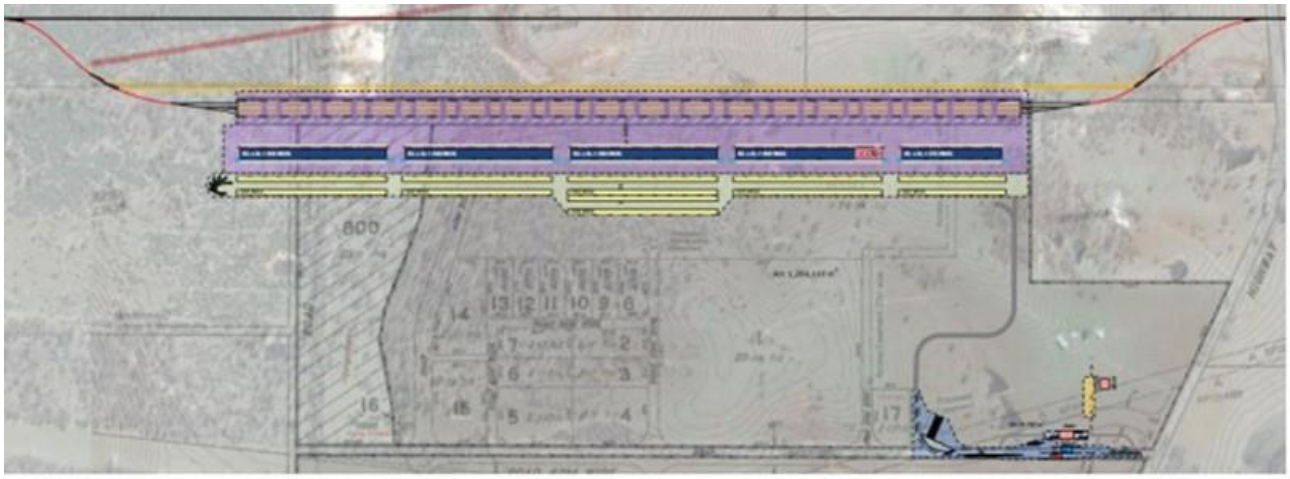
WSP Parsons Brinckerhoff assessed four capital and ongoing operational costing options for the proposed intermodal terminal at Willowbank in the report titled *Ebenezer Intermodal Terminal High-Level Assessment*, from June 2017. The variance between the options was predominantly due to the changes in the layout of the facility and the orientation of the terminal on the property. The four options assessed by WSP Parsons Brinckerhoff were:

- **Option A1:** running from the eastern property boundary through to the edge of the drainage easement;
- **Option A2:** running across the western property boundary and drainage easement;
- **Option A3:** running from the northern end of the property to the south; and
- **Option A4:** running from the north to south, with less RTG hardstand area and an increased wheeled hardstand area.

From this assessment, WSP Parsons Brinkerhoff established that Option A2 and Option A4 were the preferred options due to the configuration of the designs. Their report estimated the capital costs required to develop the facility and the ongoing costs of operating the facility, under both Option A2 and Option A4. The total cost of each option was expressed for throughput levels of 350,000, 750,000 and 1,000,000 TEUs per annum.

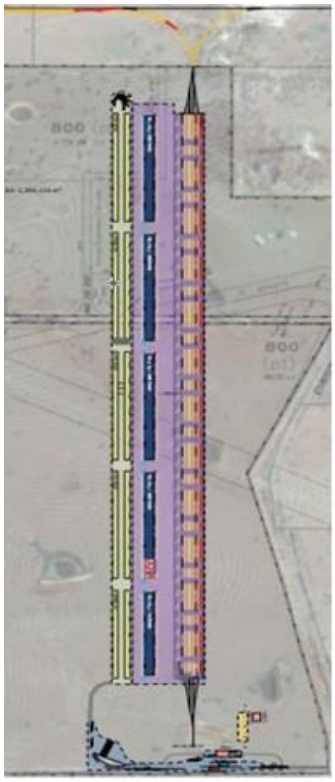
Figure 4-1 and Figure 4-2 below provide illustrates of Option A2 and Option A4.

Figure 4-1 Preliminary Option A2



Source: WSP Parsons Brinckerhoff
Note: Hardstand (purple and yellow shading)

Figure 4-2 Preliminary Option A4



Source: WSP Parsons Brinckerhoff
Note: Hardstand (purple and yellow shading)

The WSP Parsons Brinckerhoff assessment did not consider the potential demand for an intermodal facility at Willowbank, rather just undertook the assessment for three potential throughput levels. Demand for an intermodal facility at Willowbank is considered unlikely to reach 1,000,000 TEUs per annum.

For the purposes of this assessment, consideration has been given to three potential facility sizes at Willowbank, namely:

- 350,000 TEUs per annum;
- 500,000 TEUs per annum; and
- 750,000 TEUs per annum.

Cost estimates for facilities of these sizes have been derived from the WSP Parsons Brinckerhoff report (with costs interpolated for the 500,000 TEU facility) under the preferred options identified in the report (i.e. Option A2 and Option A4).

This analysis estimates economic impact of the proposed facility based on the costing for 350,000 TEUs, 500,000 TEUs and 750,000 TEUs under both costing Option A2 and Option A4. The indicative costs associated with constructing this facility are as follows:

- 350,000 TEU/annum: $231.9 million to $238.9 million;
- 500,000 TEU/annum: $278.6 million to $287.3 million; and
- 750,000 TEU/annum: $318.2 million to $342.7 million.

Table 4-2 details the costs estimated provided by WSP Parsons Brinckerhoff for 350,000, 500,000 and 750,000 TEUs for costings under Option A2 and Option A4.

Table 4-2 Estimated capital costs - Option A2 and Option A4 ($m)

	Option A2			Option A4		
	350,000 TEUs	500,000 TEUs	750,000 TEUs	350,000 TEUs	500,000 TEUs	750,000 TEUs
Reach Stacker	$1.2	$1.8	$2.4	$1.2	$1.8	$2.4
Shuttle carrier	$5.4	$7.7	$9.9	$5.4	$7.7	$9.9
Utility tractor rig	$0.4	$0.5	$0.6	$0.4	$0.5	$0.6
Hardstand A	$110.8	$110.8	$110.8	$100.2	$125.4	$150.6
Hardstand B	$3.9	$15.6	$27.3	$12.8	$12.7	$12.6
Yard rail	$8.5	$9.7	$11.0	$7.1	$8.3	$9.5
Yard Turnout	$4.5	$5.1	$5.7	$5.1	$5.4	$5.7
Administration Building	$3.6	$3.6	$3.6	$3.6	$3.6	$3.6
Gated Area	$5.9	$5.9	$5.9	$5.9	$5.9	$5.9
Weighbridges	$2.4	$2.4	$2.4	$2.4	$2.4	$2.4
Maintenance Building	$1.8	$2.0	$2.3	$1.8	$2.0	$2.3
Maintenance area	$0.8	$1.8	$2.7	$0.8	$1.8	$2.7
Lighting (IMT area only)	$0.5	$0.6	$0.7	$0.5	$0.6	$0.7
Roadways	$1.7	$1.7	$1.6	$2.3	$2.3	$2.4
Cabling	$1.1	$1.2	$1.3	$1.5	$1.6	$1.7
trenching / pits comms (excludes cabling)	$0.5	$0.5	$0.5	$0.6	$0.7	$0.8
Fire Mains and hydrants (lump sum)	$0.5	$0.5	$0.5	$0.5	$0.5	$0.5
Trenching and pits sewage (lump sum)	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4
Rail Mounted Gantry	$31.5	$45.0	$58.5	$27.0	$40.5	$54.0
WS Crane Rail	$10.8	$10.8	$10.8	$10.8	$10.8	$10.8
Reefer Racks	$3.4	$5.2	$6.9	$3.4	$5.2	$6.9
Sub-total direct costs	$199.5	$232.6	$265.7	$193.7	$239.9	$286.1

	Option A2			Option A4		
	350,000 TEUs	500,000 TEUs	750,000 TEUs	350,000 TEUs	500,000 TEUs	750,000 TEUs
Bulk Earthworks (Section 5)	$64.0	$64.0	$64.0	$21.3	$21.3	$21.3
Preliminaries (2%)	$4.0	$4.7	$5.3	$3.9	$4.8	$5.7
Project Management (1.75%)	$3.5	$4.1	$4.6	$3.4	$4.2	$5.0
Design (excluding earthworks 6%)	$12.0	$14.0	$15.9	$11.6	$14.4	$17.2
TOTAL CAPEX	**$283.0**	**$319.3**	**$355.6**	**$233.9**	**$284.6**	**$335.4**

Note: WSP Parsons Brinkerhoff's' capital costs table in *Ebenezer Intermodal Terminal High-Level Assessment* report does not account for bulk earthworks in the total, instead they are reported separately in Section 5 of their report. The totals in this Table have been adjusted to include the bulk earthworks costs.
Source: WSP Parsons Brinckerhoff, 2017

4.2.1.2 Operational Output Costs

Ongoing operating output costs of the intermodal terminal include the staffing requirements, maintenance and repairs of RMG's, shuttle carriers, utility tractor rigs and other specialised equipment. These costs have been assessed under both Option A2 and Option A4 for 350,000, 500,000 and 750,000 TEUs per annum, the costs of which were obtained from WSP Parsons Brinckerhoff's previous assessment. Each expenditure item has been allocated an input-output code based on the relevant industry in which the expenditure item is likely to be incurred and subsequently inputted into the economic contribution model.

The assessment has assumed five year ramp up period to full capacity for the Willowbank intermodal terminal, with the facility anticipated to be fully operational by 2036. For the purpose of this assessment the depreciation cost on equipment, as estimated by WSP Parsons Brinckerhoff, has been excluded.

Operating output estimates provided by WSP Parsons Brinckerhoff vary marginally between the level of TEUs and between Option A2 and Option A4 for one year at full capacity. At all levels of TEUs Option A2 has higher operating output costs than those estimated for Option A4. However, in both options the largest contributing expense to operating output costs is the wages estimated for equipment operators.

Table 4-3 details the estimated operating output costs of the proposed development for each level of TEUs for both Option A2 and Option A4.

Table 4-3 Estimated operating output costs, 350,000, 500,000 and 750,000 TEUs for Option A2 and Option A4 ($m)

	Option A2			Option A4		
	350,000 TEUs	500,000 TEUs	750,000 TEUs	350,000 TEUs	500,000 TEUs	750,000 TEUs
RMG's (electric)	$1.5	$3.2	$4.9	$2.0	$2.9	$3.9
Shuttle carriers (diesel)	$0.7	$1.0	$1.3	$0.7	$1.0	$1.3
Utility tractor rigs (diesel)	$0.0	$0.1	$0.1	$0.0	$0.1	$0.1
Top picks (diesel)	$0.0	$0.1	$0.1	$0.0	$0.1	$0.1
Reefer power (electric)	$1.6	$2.3	$3.1	$1.6	$2.3	$3.1
Maintenance and repair (consumables)	$0.5	$0.8	$1.1	$0.5	$0.8	$1.0
Gatehouse operators	$0.3	$0.3	$0.3	$0.3	$0.3	$0.3
Equipment operators	$8.0	$11.2	$14.5	$7.5	$10.8	$14.0
Rail yard operators	$0.0	$0.0	$0.0	$0.1	$0.1	$0.1
Maintenance operators	$0.8	$1.1	$1.5	$0.8	$1.1	$1.4

	Option A2			Option A4		
	350,000 TEUs	500,000 TEUs	750,000 TEUs	350,000 TEUs	500,000 TEUs	750,000 TEUs
Management and Corporate (10%)	$1.9	$2.7	$3.4	$1.9	$2.6	$3.3
Total	**$15.2**	**$22.8**	**$30.3**	**$15.3**	**$22.0**	**$28.6**

Note: This table excludes depreciation costs associated with the equipment at the proposed Willowbank Intermodal Facility.
Source: CDM Smith Analysis, 2020

4.2.2 Freight Forwarders and Proximate Businesses

4.2.2.1 Anticipated Size and Scale of Freight Forwarders and Proximate Industry

As previously outlined, an intermodal facility comprises three broad elements, these being:

- Intermodal facilities and rail terminals;
- Industry activity directly adjacent to the intermodal terminal; and
- Industry activity within close proximity but not immediately adjacent to the intermodal terminal.

Whilst the WSP Parsons Brinckerhoff report has provided information regarding the potential scale of the Willowbank Intermodal Terminal, the potential scale of industrial activity directly adjacent and within close proximity to the Willowbank Intermodal Terminal is less clear.

To consider the potential scale of activity at Willowbank, the assessment has considered the scale of activity at the Kewdale Intermodal Terminal, which handles throughput of approximately 400,000 – 450,000 TEUs per annum[20].

At the Kewdale facility, there are three freight forwarders that have co-located with the intermodal terminal, these being Linfox, K&S Freighters and Toll. It is understood that the combined footprint occupied by these three businesses is approximately 19 hectares[21].

The intermodal facility at Kewdale has also encouraged the establishment of industrial businesses nearby, with major distribution centres identified including Woolworths, Coles, Super Retail Group and Bunnings.

For the purpose of this assessment, the following assumptions have been made about the footprint immediately adjacent to the Willowbank Intermodal Terminal and within close proximity to the intermodal terminal:

- 350,000 TEUs per annum:
  - 14 hectares occupied by freight forwarders;
  - 28 hectares occupied by nearby industrial businesses;
- 500,000 TEUs per annum:
  - 20 hectares occupied by freight forwarders;
  - 40 hectares occupied by nearby industrial businesses;
- 750,000 TEUs per annum:
  - 30 hectares occupied by freight forwarders;
  - 60 hectares occupied by nearby industrial businesses.

[20] Source: PriceWaterhouseCoopers (2017) Future of Intermodal Terminals, Department of Infrastructure and Regional Development, May 2017
[21] Freight and Logistics Council of Western Australia (2014) Bulletin No. 3 – June 2014

4.2.2.2 Industry Sectors Stimulated by Intermodal Facility

The industrial businesses located immediately adjacent to the intermodal rail terminal are anticipated to be freight forwarders, as these businesses would derive the most significant benefit from immediate co-location with an intermodal facility. This is consistent with the Kewdale example, where the co-locating industries are Linfox, K&S Freighters and Toll.

In identifying the industry sectors that are likely to locate within close proximity to the Willowbank Intermodal Terminal, consideration was given to the national input-output tables. The handling of freight at an intermodal facility falls within the transport support services and storage sector. The twelve industrial land use sectors most likely to utilise transport support services and storage as an input are outlined in Table 4-4.

Table 4-4 summarises the industry sectors likely to be stimulated as a result of the proposed intermodal facility at Willowbank.

Table 4-4 Intermodal Facility Element and Industry Sectors Stimulated

Intermodal Facility Element	Industry Sectors Stimulated (from input output tables)
Industrial activity located immediately adjacent to the intermodal rail terminal (Freight Forwarders)	• Transport support services and storage
Industrial activity located within close proximity to the intermodal rail terminal (Proximate Businesses)	• Industry sectors identified in Section 4 of the report that are likely to utilise industrial land, namely: – Wholesale trade – Transport support services and storage – Road transport – Telecommunications services – Heavy and civil engineering construction – Construction services – Structural metal product manufacturing – Non-residential building construction – Rail transport – Paper stationery and other converted paper product manufacturing – Human pharmaceutical and medicinal product manufacturing – Motor vehicles and Parts, other transport equipment manufacturing

Note: Defence related industries are captured by the industries listed in this table.

In deriving the assumed mix of co-locating industry at Willowbank, the assessment has considered the distribution of industrial land use sectors utilising transport support services and storage as an input, as outlined in Table 4-5 (column 2), rescaled to sum to 100% (column 3).

Table 4-5 summarises the assumed distribution of industry sectors utilising the proposed intermodal facility.

Table 4-5 Assumed Distribution of Proximate Industrial Businesses at Willowbank

Industry Use Sector	% of Total, IO Tables	Rescaled% of Total
Wholesale Trade	13.4%	37.3%
Transport Support services and storage	9.5%	26.5%
Road Transport	2.1%	5.9%
Telecommunication Services	2.0%	5.7%
Heavy and Civil Engineering Construction	1.6%	4.4%
Construction Services	1.5%	4.2%
Structural Metal Product Manufacturing	1.4%	4.0%
Non-Residential Building Construction	1.2%	3.2%
Rail Transport	1.1%	3.0%
Paper Stationery and Other Converted Paper Product Manufacturing	1.1%	3.0%
Human Pharmaceutical and Medicinal Product Manufacturing	1.0%	2.8%
Balance	64.0%	-
Total	100.0%	100.0%

Source: Derived from ABS Cat. No. 5209.0.55.001, Australian National Accounts: Input-Output Tables, 2016-17

4.2.2.3 Take-Up

The assessment has made the following assumptions relating to the take-up of land for freight forwarders and co-locating industry:

- Freight Forwarders: Industrial activity located immediately to the intermodal rail terminal will establish their building footprint in Year 1, with employment density increasing as throughput increases. The assessment has assumed the freight forwarders will be operating at maximum capacity in Year 5, consistent with the five year ramp up of throughput at the intermodal terminal; and
- Proximate Industry: Industrial land take up is anticipated to occur over a fifteen year horizon under all throughput scenarios analysed, with the rate of take-up in the first year ranging between 1.1 hectares and 2.3 hectares.

Table 4-6 summarises the anticipated take up of land within close proximity to the intermodal rail terminal.

Table 4-6 Anticipated Cumulative Land Take Up (ha), Proximate Businesses, Year 1 to Year 15

	Industrial Land Take Up (ha), Proximate Businesses		
	350,000 TEUs	500,000 TEUs	750,000 TEUs
Year 1	1.1	1.5	2.3
Year 2	2.2	3.2	4.8
Year 3	3.6	5.1	7.7
Year 4	5.0	7.2	10.8
Year 5	6.7	9.5	14.3
Year 6	8.4	12.0	18.0
Year 7	10.3	14.7	22.1
Year 8	12.3	17.6	26.4

	Industrial Land Take Up (ha), Proximate Businesses		
	350,000 TEUs	500,000 TEUs	750,000 TEUs
Year 9	14.5	20.7	31.1
Year 10	16.8	24.0	36.0
Year 11	19.3	27.5	41.3
Year 12	21.8	31.2	46.8
Year 13	24.6	35.1	52.7
Year 14	27.4	39.2	58.8
Year 15	28.0	40.0	60.0

Source: CDM Smith estimates

To allocate industrial land take up outlined in Table 4-6, the assessment has assumed that industrial land take-up is consistent with the distribution outlined in Table 4-5 (column 3). The resulting assumed industrial land take up is summarised in Table 4-7.

Table 4-7 Anticipated Land Take Up for Industrial Activity within Close Proximity by Year (ha), 350,000, 500,000 and 750,000 TEUs, Year 1 to Year 15

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
350,000 TEUs															
Wholesale Trade	0.4	0.8	1.3	1.9	2.5	3.1	3.8	4.6	5.4	6.3	7.2	8.1	9.2	10.2	10.4
Transport Support services and storage	0.3	0.6	0.9	1.3	1.8	2.2	2.7	3.3	3.8	4.5	5.1	5.8	6.5	7.3	7.4
Road Transport	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1.0	1.1	1.2	1.4	1.6	1.6
Telecommunication Services	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.0	1.1	1.3	1.5	1.6	1.7
Heavy and Civil Engineering Construction	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2
Construction Services	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.6	0.7	0.9	1.0	1.1	1.2	1.2
Structural Metal Product Manufacturing	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.1
Non-Residential Building Construction	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.6	0.7	0.8	0.9	0.9
Rail Transport	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.8
Paper Stationery and Other Converted Paper Product Manufacturing	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.6	0.7	0.8	0.8
Human Pharmaceutical and Medicinal Product Manufacturing	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.7	0.7	0.8	0.8
Total	1.1	2.2	3.6	5.0	6.7	8.4	10.3	12.3	14.5	16.8	19.3	21.8	24.6	27.4	28.0
500,000 TEUs															
Wholesale Trade	0.6	1.2	1.9	2.7	3.5	4.5	5.5	6.6	7.7	8.9	10.2	11.6	13.1	14.6	14.9
Transport Support services and storage	0.4	0.8	1.4	1.9	2.5	3.2	3.9	4.7	5.5	6.4	7.3	8.3	9.3	10.4	10.6
Road Transport	0.1	0.2	0.3	0.4	0.5	0.7	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.3
Telecommunication Services	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.0	1.2	1.4	1.6	1.8	2.1	2.3	2.4
Heavy and Civil Engineering Construction	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.0	1.1	1.3	1.5	1.6	1.7
Construction Services	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.8	0.9	1.1	1.2	1.4	1.6	1.7	1.8
Structural Metal Product Manufacturing	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.1	1.2	1.4	1.6	1.6
Non-Residential Building Construction	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.3	1.3
Rail Transport	0.0	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.2
Paper Stationery and Other Converted Paper Product Manufacturing	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.1
Human Pharmaceutical and Medicinal Product Manufacturing	0.0	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.8	0.9	1.1	1.2	1.2

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Total	1.5	3.2	5.1	7.2	9.5	12.0	14.7	17.6	20.7	24.0	27.5	31.2	35.1	39.2	40.0
750,000 TEUs															
Wholesale Trade	0.8	1.8	2.8	4.0	5.3	6.7	8.2	9.8	11.6	13.4	15.4	17.4	19.6	21.9	22.4
Transport Support services and storage	0.6	1.3	2.0	2.9	3.8	4.8	5.8	7.0	8.2	9.5	10.9	12.4	14.0	15.6	15.9
Road Transport	0.1	0.3	0.4	0.6	0.8	1.0	1.3	1.5	1.8	2.1	2.3	2.7	3.0	3.3	3.4
Telecommunication Services	0.1	0.3	0.5	0.6	0.8	1.1	1.3	1.6	1.8	2.1	2.4	2.8	3.1	3.5	3.5
Heavy and Civil Engineering Construction	0.1	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.3	1.5	1.7	2.0	2.2	2.5	2.5
Construction Services	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.1	2.3	2.6	2.7
Structural Metal Product Manufacturing	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.0	1.2	1.4	1.6	1.9	2.1	2.3	2.4
Non-Residential Building Construction	0.1	0.2	0.2	0.4	0.5	0.6	0.7	0.9	1.0	1.2	1.3	1.5	1.7	1.9	1.9
Rail Transport	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.8	0.9	1.1	1.2	1.4	1.6	1.7	1.8
Paper Stationery and Other Converted Paper Product Manufacturing	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.0	1.2	1.3	1.5	1.7	1.7
Human Pharmaceutical and Medicinal Product Manufacturing	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.8	0.9	1.1	1.2	1.4	1.6	1.8	1.8
Total	2.3	4.8	7.7	10.8	14.3	18.0	22.1	26.4	31.1	36.0	41.3	46.8	52.7	58.8	60.0

Source: CDM Smith Analysis, 2020

4.2.3 Estimated Employment and Business Output

The anticipated land take-up has been converted into employment and business output estimates, through utilisation of assumptions relating to employment density, employment per FTE and output per FTE by relevant industry sector.

Table 4-8 reports the estimated employment densities for the relevant industry sectors and the respective employment per FTE and output per FTE estimates, as taken from the Australian national accounts data published by the Australian Bureau of Statistics.

Table 4-8 Assumed Employment Densities and Output per FTE by relevant industry sectors

	Emp. Density (emp./ha)	Emp. Per FTE	Output per FTE ($m)
Wholesale Trade	30	1.10	$0.33
Transport Support services and storage	25	1.09	$0.47
Road Transport	25	1.10	$0.23
Telecommunication Services	20	1.05	$0.57
Heavy and Civil Engineering Construction	20	1.02	$1.50
Construction Services	30	1.09	$0.29
Structural Metal Product Manufacturing	35	1.03	$0.60
Non-Residential Building Construction	40	1.07	$0.50
Rail Transport	3	1.02	$0.34
Paper Stationery and Other Converted Paper Product Manufacturing	40	1.06	$0.54
Human Pharmaceutical and Medicinal Product Manufacturing	30	1.07	$0.58

Source: ABS (2018) Australian National Accounts: Input-Output Table, 2012-13

The Willowbank intermodal terminal is anticipated to increase its throughput to full capacity within five years. In Year 5, it is anticipated that the freight forwarders would also be operating at full capacity. In Year 5, it is anticipated that the freight forwarders would employ an estimated 322.4-690.8 FTEs and would directly generate approximately $150.7 million to $323.0 million in output.

Table 4-9 Estimated output from Freight Forwarders, 350,000, 500,000 and 750,000 TEUS, Year 1-5

	Year 1	Year 2	Year 3	Year 4	Year 5
350,000 TEUs					
Estimated Employment	70	140	210	280	350
Estimated FTEs	64.5	128.9	193.4	257.9	322.4
Output ($m)	$30.1	$60.3	$90.4	$120.6	$150.7
500,000 TEUs					
Estimated Employment	100	200	300	400	500
Estimated FTEs	92.1	184.2	276.3	368.4	460.5
Output ($m)	$43.1	$86.1	$129.2	$172.3	$215.3
750,000 TEUs					
Estimated Employment	150	300	450	600	750
Estimated FTEs	138.2	276.3	414.5	552.6	690.8
Output ($m)	$64.6	$129.2	$193.8	$258.4	$323.0

Source: CDM Smith Analysis, 2020

The output generated by businesses within close proximity to the proposed Willowbank Intermodal Terminal is anticipated to increase from $11.8 to $25.3 million in Year 1 to $314.9 to $674.8 million in Year 15.

Table 4-10 summarises the estimated output of businesses located within close proximity to the proposed Willowbank Intermodal Terminal by year.

Table 4-10 Estimated output of Proximate Industry ($m), 350,000, 500,000 and 750,000 TEUS, Years 1 to 15

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
350,000 TEUs															
Wholesale Trade	$3.5	$7.5	$12.0	$17.0	$22.4	$28.3	$34.6	$41.5	$48.8	$56.6	$64.8	$73.5	$82.7	$92.4	$94.3
Transport Support services and storage	$3.0	$6.4	$10.2	$14.4	$19.0	$24.0	$29.4	$35.2	$41.4	$48.0	$54.9	$62.3	$70.1	$78.3	$79.9
Road Transport	$0.3	$0.7	$1.1	$1.5	$2.0	$2.5	$3.1	$3.7	$4.4	$5.1	$5.8	$6.6	$7.4	$8.3	$8.5
Telecommunication Services	$0.7	$1.4	$2.3	$3.2	$4.3	$5.4	$6.6	$7.9	$9.3	$10.8	$12.4	$14.0	$15.8	$17.6	$18.0
Heavy and Civil Engineering Construction	$1.3	$2.7	$4.4	$6.2	$8.1	$10.3	$12.6	$15.1	$17.8	$20.6	$23.6	$26.8	$30.1	$33.6	$34.3
Construction Services	$0.4	$0.8	$1.3	$1.8	$2.3	$2.9	$3.6	$4.3	$5.1	$5.9	$6.7	$7.7	$8.6	$9.6	$9.8
Structural Metal Product Manufacturing	$0.9	$1.8	$2.9	$4.1	$5.4	$6.8	$8.3	$10.0	$11.7	$13.6	$15.6	$17.7	$19.9	$22.2	$22.7
Non-Residential Building Construction	$0.6	$1.3	$2.1	$3.0	$4.0	$5.1	$6.2	$7.4	$8.7	$10.1	$11.6	$13.1	$14.8	$16.5	$16.8
Rail Transport	$0.0	$0.1	$0.1	$0.1	$0.2	$0.2	$0.3	$0.4	$0.4	$0.5	$0.6	$0.6	$0.7	$0.8	$0.8
Paper Stationery and Other Converted Paper Product Manufacturing	$0.6	$1.3	$2.0	$2.9	$3.8	$4.8	$5.9	$7.1	$8.3	$9.6	$11.0	$12.5	$14.1	$15.7	$16.1
Human Pharmaceutical and Medicinal Product Manufacturing	$0.5	$1.1	$1.7	$2.5	$3.2	$4.1	$5.0	$6.0	$7.1	$8.2	$9.4	$10.7	$12.0	$13.4	$13.7
Total	$11.8	$25.2	$40.1	$56.7	$74.8	$94.5	$115.7	$138.6	$163.0	$188.9	$216.5	$245.6	$276.3	$308.6	$314.9
500,000 TEUs															
Wholesale Trade	$5.0	$10.8	$17.2	$24.2	$32.0	$40.4	$49.5	$59.3	$69.7	$80.8	$92.6	$105.0	$118.2	$132.0	$134.7
Transport Support services and storage	$4.3	$9.1	$14.6	$20.6	$27.1	$34.3	$42.0	$50.2	$59.1	$68.5	$78.5	$89.1	$100.2	$111.9	$114.2
Road Transport	$0.5	$1.0	$1.5	$2.2	$2.9	$3.6	$4.5	$5.3	$6.3	$7.3	$8.3	$9.5	$10.6	$11.9	$12.1
Telecommunication Services	$1.0	$2.1	$3.3	$4.6	$6.1	$7.7	$9.4	$11.3	$13.3	$15.4	$17.7	$20.0	$22.6	$25.2	$25.7
Heavy and Civil Engineering Construction	$1.8	$3.9	$6.2	$8.8	$11.6	$14.7	$18.0	$21.6	$25.4	$29.4	$33.7	$38.2	$43.0	$48.0	$49.0
Construction Services	$0.5	$1.1	$1.8	$2.5	$3.3	$4.2	$5.2	$6.2	$7.3	$8.4	$9.6	$10.9	$12.3	$13.7	$14.0
Structural Metal Product Manufacturing	$1.2	$2.6	$4.1	$5.8	$7.7	$9.7	$11.9	$14.3	$16.8	$19.5	$22.3	$25.3	$28.5	$31.8	$32.4

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Non-Residential Building Construction	$0.9	$1.9	$3.1	$4.3	$5.7	$7.2	$8.8	$10.6	$12.4	$14.4	$16.5	$18.8	$21.1	$23.6	$24.1
Rail Transport	$0.0	$0.1	$0.2	$0.2	$0.3	$0.4	$0.4	$0.5	$0.6	$0.7	$0.8	$0.9	$1.0	$1.2	$1.2
Paper Stationery and Other Converted Paper Product Manufacturing	$0.9	$1.8	$2.9	$4.1	$5.5	$6.9	$8.4	$10.1	$11.9	$13.8	$15.8	$17.9	$20.1	$22.5	$23.0
Human Pharmaceutical and Medicinal Product Manufacturing	$0.7	$1.6	$2.5	$3.5	$4.6	$5.9	$7.2	$8.6	$10.1	$11.7	$13.4	$15.2	$17.1	$19.1	$19.5
Total	$16.9	$36.0	$57.4	$81.0	$106.8	$135.0	$165.3	$197.9	$232.8	$269.9	$309.3	$350.9	$394.7	$440.8	$449.8
750,000 TEUs															
Wholesale Trade	$7.6	$16.2	$25.8	$36.4	$48.0	$60.6	$74.2	$88.9	$104.5	$121.2	$138.9	$157.6	$177.2	$197.9	$202.0
Transport Support services and storage	$6.4	$13.7	$21.8	$30.8	$40.7	$51.4	$62.9	$75.4	$88.6	$102.8	$117.7	$133.6	$150.3	$167.8	$171.3
Road Transport	$0.7	$1.5	$2.3	$3.3	$4.3	$5.5	$6.7	$8.0	$9.4	$10.9	$12.5	$14.2	$15.9	$17.8	$18.2
Telecommunication Services	$1.4	$3.1	$4.9	$6.9	$9.2	$11.6	$14.2	$17.0	$20.0	$23.1	$26.5	$30.1	$33.8	$37.8	$38.6
Heavy and Civil Engineering Construction	$2.8	$5.9	$9.4	$13.2	$17.5	$22.1	$27.0	$32.3	$38.0	$44.1	$50.5	$57.3	$64.5	$72.0	$73.5
Construction Services	$0.8	$1.7	$2.7	$3.8	$5.0	$6.3	$7.7	$9.3	$10.9	$12.6	$14.5	$16.4	$18.5	$20.6	$21.0
Structural Metal Product Manufacturing	$1.8	$3.9	$6.2	$8.8	$11.6	$14.6	$17.9	$21.4	$25.2	$29.2	$33.4	$37.9	$42.7	$47.7	$48.7
Non-Residential Building Construction	$1.4	$2.9	$4.6	$6.5	$8.6	$10.8	$13.3	$15.9	$18.7	$21.7	$24.8	$28.1	$31.7	$35.4	$36.1
Rail Transport	$0.1	$0.1	$0.2	$0.3	$0.4	$0.5	$0.7	$0.8	$0.9	$1.1	$1.2	$1.4	$1.6	$1.7	$1.8
Paper Stationery and Other Converted Paper Product Manufacturing	$1.3	$2.8	$4.4	$6.2	$8.2	$10.3	$12.7	$15.2	$17.8	$20.7	$23.7	$26.9	$30.2	$33.7	$34.4
Human Pharmaceutical and Medicinal Product Manufacturing	$1.1	$2.3	$3.7	$5.3	$7.0	$8.8	$10.8	$12.9	$15.2	$17.6	$20.1	$22.9	$25.7	$28.7	$29.3
Total	$25.3	$54.0	$86.0	$121.5	$160.3	$202.4	$248.0	$296.9	$349.2	$404.9	$463.9	$526.3	$592.1	$661.3	$674.8

Source: CDM Smith Analysis, 2020

4.3 Economic Contribution Assessment Results

In the case of estimating the economic contribution of the Willowbank Intermodal Terminal, the analysis has considered:

- Intermodal facilities and rail terminals, namely:
  - Indicative capital costs associated with the construction of the intermodal terminal;
  - Indicative operating output costs associated with the ongoing operation of the intermodal terminal;
- Industry activity directly adjacent to the intermodal terminal; and
- Industry activity within close proximity but not immediately adjacent to the intermodal terminal.

Business output for each category of the analysis are allocated to upwards of 114 industry sectors identified in the input-output tables for each of the contribution measures, which include:

- Output (or consumption);
- Household income;
- Employment (FTEs); and
- Value added.

The extent of the total contribution for each of these measures is distributed across a broad range of industry sectors. The allocation of expenditures to industry sectors is based on the nature of the activity, as opposed to the nature of the enterprises involved in the transaction. The rationale for allocating purchases based on the type of activity is that the inputs to support a particular project purchase will be determined by the activity, rather than the entity undertaking the activity.

4.3.1 Construction of Intermodal Terminal

The results reported in this section of the report relate to total impacts associated with the construction of the Willowbank Intermodal Terminal, which is likely to occur over a three to five period. These economic impacts relate to short term impacts, which will cease once the construction of the facility is complete.

The outcomes of the economic contribution assessment are reported for both Option A2 and Option A4, which were identified in the WSP Parsons Brinckerhoff report as the preferred options.

4.3.1.1 Output

The regional economic contribution model estimates that Option A2 would provide a total maximum contribution to regional output of $655.06 million which consists of $355.59 million in direct contributions and $299.46 million indirectly (at 750,000 TEUs).

It is estimated the Option A4 will contribute a maximum of $355.38 million directly to regional output and $283.64 million indirectly (totalling a contribution of $619.02 million), indicating that Option A2 has a larger contribution to output. This is largely driven by the significantly higher earthworks charges associated with Option A2. However, in both options the construction industry accounts for approximately half of all contribution to output, while the manufacturing industry accounts for approximately a quarter of total contribution in both instances.

Table 4-11 details the contribution to regional output by industry for Option A2 and Option A4 at varying TEU capacities.

Table 4-11 Capital costs - Contribution to total output from Option A2 and Option A4 ($m)

	Option A2			Option A4		
	350,000 TEUs	500,000 TEUs	750,000 TEUs	350,000 TEUs	500,000 TEUs	750,000 TEUs
Agriculture, Forestry & Fishing	$0.81	$0.91	$1.01	$0.69	$0.84	$0.98
Mining	$46.92	$54.38	$61.83	$38.82	$48.18	$57.53
Manufacturing	$110.54	$137.01	$163.47	$97.45	$126.58	$155.70
Electricity, Gas, Water & Waste Services	$27.88	$32.09	$36.29	$23.34	$28.81	$34.28
Construction	$255.96	$274.93	$293.89	$203.39	$239.07	$274.75
Wholesale Trade	$6.10	$7.13	$8.17	$5.19	$6.48	$7.78
Retail Trade	$2.30	$2.65	$3.00	$1.94	$2.39	$2.85
Accommodation & Food Services	$1.62	$1.85	$2.09	$1.37	$1.69	$2.00
Transport, Postal & Warehousing	$13.63	$15.43	$17.24	$11.19	$13.66	$16.14
Information Media and Telecommunications	$0.90	$1.03	$1.15	$0.77	$0.94	$1.11
Financial & Insurance Services	$3.17	$3.58	$4.00	$2.73	$3.33	$3.93
Rental, Hiring & Real Estate Services	$7.64	$8.46	$9.28	$6.21	$7.45	$8.70
Professional, Scientific & Technical Services	$34.69	$39.68	$44.66	$31.34	$38.13	$44.91
Administrative & Support Services	$2.67	$3.01	$3.35	$2.19	$2.66	$3.13
Public Administration & Safety	$1.75	$1.96	$2.17	$1.45	$1.75	$2.05
Education & Training	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Health Care & Social Assistance	$0.04	$0.04	$0.04	$0.03	$0.04	$0.04
Arts & Recreation Services	$0.08	$0.09	$0.10	$0.07	$0.08	$0.10
Other Services	$2.63	$2.97	$3.30	$2.12	$2.58	$3.04
Direct	**$282.99**	**$319.29**	**$355.59**	**$233.90**	**$284.64**	**$335.38**
Indirect	**$236.35**	**$267.91**	**$299.46**	**$196.39**	**$240.02**	**$283.64**
Total	**$519.34**	**$587.20**	**$655.06**	**$430.29**	**$524.66**	**$619.02**

Source: CDM Smith Analysis, 2020

4.3.1.2 Household Income

Option A2 is estimated to contribute $99.91 million to total household incomes at 350,000 TEUs ($53.92 million directly and $45.98 million indirectly), increasing to $127.93 million at 750,000 TEUs ($69.94 million directly and $58.00 million indirectly). As is the case with contribution to output, Option A2 is estimated to contribute more to regional household incomes than has been estimated in Option A4. Option A4 is anticipated to contribute up to $119.49 million in total household incomes at 750,000 TEUs.

In both Option A2 and Option A4 construction is the largest contributing industry to household incomes, accounting for approximately 40.0% of all contributions across both options and at each capacity analysed. The manufacturing industry is also estimated to make significant contributions accounting for an average of 26.6% of total contributions in Option A2, and an average of 27.8% in Option A4. Both Options also recorded significant contributions from the professional, scientific and technical services industry.

Table 4-12 details the contribution to regional household incomes by industry for Option A2 and Option A4 at each level of TEUs.

Table 4-12 Capital costs - Contribution to total household income from Option A2 and Option A4 ($m)

	Option A2			Option A4		
	350,000 TEUs	500,000 TEUs	750,000 TEUs	350,000 TEUs	500,000 TEUs	750,000 TEUs
Agriculture, Forestry & Fishing	$0.09	$0.10	$0.11	$0.08	$0.09	$0.11
Mining	$7.84	$9.06	$10.27	$6.48	$8.03	$9.57
Manufacturing	$24.32	$30.51	$36.69	$21.59	$28.26	$34.93
Electricity, Gas, Water & Waste Services	$3.20	$3.68	$4.16	$2.67	$3.29	$3.91
Construction	$40.94	$43.77	$46.61	$31.19	$36.43	$41.66
Wholesale Trade	$1.88	$2.20	$2.52	$1.60	$2.00	$2.40
Retail Trade	$0.88	$1.01	$1.15	$0.74	$0.92	$1.09
Accommodation & Food Services	$0.47	$0.54	$0.61	$0.40	$0.50	$0.59
Transport, Postal & Warehousing	$3.20	$3.63	$4.06	$2.63	$3.22	$3.80
Information Media and Telecommunications	$0.15	$0.17	$0.19	$0.13	$0.16	$0.19
Financial & Insurance Services	$0.79	$0.90	$1.01	$0.68	$0.83	$0.99
Rental, Hiring & Real Estate Services	$1.50	$1.66	$1.82	$1.21	$1.45	$1.69
Professional, Scientific & Technical Services	$11.62	$13.29	$14.96	$10.50	$12.77	$15.04
Administrative & Support Services	$1.28	$1.45	$1.61	$1.05	$1.28	$1.50
Public Administration & Safety	$0.84	$0.94	$1.04	$0.69	$0.84	$0.98
Education & Training	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Health Care & Social Assistance	$0.02	$0.02	$0.03	$0.02	$0.02	$0.02
Arts & Recreation Services	$0.02	$0.02	$0.02	$0.02	$0.02	$0.02
Other Services	$0.86	$0.96	$1.07	$0.69	$0.84	$0.99
Direct	**$53.92**	**$61.93**	**$69.94**	**$44.37**	**$54.58**	**$64.79**
Indirect	**$45.98**	**$51.99**	**$58.00**	**$38.01**	**$46.36**	**$54.71**
Total	**$99.91**	**$113.92**	**$127.93**	**$82.38**	**$100.94**	**$119.49**

Source: CDM Smith Analysis, 2020

4.3.1.3 Employment

During the construction phase of the project, total employment impacts are anticipated to be in the order of:

- 1,138.3 FTEs to 1,496.6 FTEs under Option A2; and
- 989.4 FTEs to 1,462.5 FTEs under Option A4.

Under both scenarios, employment generation is anticipated to be most significant in the manufacturing and construction sectors, together accounting for over two thirds of employment contribution under both options.

Table 4-13 details the contribution to regional employment (FTEs) by industry for Option A2 and Option A4 at each level of TEUs.

Table 4-13 Capital costs - Contribution to total employment from Option A2 and Option A4 ($m)

	Option A2			Option A4		
	350,000 TEUs	500,000 TEUs	750,000 TEUs	350,000 TEUs	500,000 TEUs	750,000 TEUs
Agriculture, Forestry & Fishing	2.8	3.1	3.5	2.4	2.9	3.4
Mining	73.1	84.1	95.1	60.4	74.6	88.9
Manufacturing	332.3	419.7	507.0	295.7	388.7	481.7
Electricity, Gas, Water & Waste Services	29.8	34.2	38.6	24.8	30.6	36.4
Construction	404.4	438.9	473.5	349.4	416.0	482.6
Wholesale Trade	18.4	21.6	24.7	15.7	19.6	23.5
Retail Trade	18.0	20.7	23.5	15.2	18.7	22.3
Accommodation & Food Services	10.6	12.2	13.7	9.1	11.2	13.2
Transport, Postal & Warehousing	41.4	47.0	52.5	34.2	41.8	49.4
Information Media and Telecommunications	2.0	2.2	2.5	1.7	2.0	2.4
Financial & Insurance Services	6.0	6.8	7.6	5.2	6.3	7.5
Rental, Hiring & Real Estate Services	15.2	16.8	18.5	12.4	14.9	17.4
Professional, Scientific & Technical Services	147.3	168.5	189.6	133.1	161.9	190.7
Administrative & Support Services	6.8	7.7	8.6	5.6	6.8	8.0
Public Administration & Safety	10.4	11.6	12.9	8.6	10.4	12.2
Education & Training	0.0	0.0	0.0	0.0	0.0	0.0
Health Care & Social Assistance	0.3	0.3	0.4	0.2	0.3	0.4
Arts & Recreation Services	0.5	0.6	0.6	0.4	0.5	0.6
Other Services	18.9	21.4	23.8	15.3	18.6	21.9
Direct	**556.6**	**661.7**	**766.9**	**507.9**	**639.9**	**771.9**
Indirect	**581.7**	**655.7**	**729.7**	**481.5**	**586.1**	**690.6**
Total	**1,138.3**	**1,317.4**	**1,496.6**	**989.4**	**1,225.9**	**1,462.5**

Source: CDM Smith Analysis, 2020

4.3.1.4 Value Added

During the construction phase of the project, total value added contributions are estimated to be in the order of:

- 350,000 TEUs: $148.78 million - $180.89 million;
- 500,000 TEUs: $181.57 million - $205.01 million; and
- 750,000 TEUs: $214.35 million - $229.12 million.

The manufacturing and construction industries are anticipated to be the most significant contributors to value added, together contributing over 60% of total value added under both options at all terminal capacities.

Table 4-14 details the contribution to regional value added by industry for Option A2 and Option A4 for varying terminal sizes.

Table 4-14 Capital costs - Contribution to total Value Added from Option A2 and Option A4 ($m)

	Option A2			Option A4		
	350,000 TEUs	500,000 TEUs	750,000 TEUs	350,000 TEUs	500,000 TEUs	750,000 TEUs
Agriculture, Forestry & Fishing	$0.39	$0.43	$0.48	$0.33	$0.40	$0.47
Mining	$21.15	$24.50	$27.84	$17.50	$21.71	$25.91
Manufacturing	$34.72	$43.40	$52.08	$30.85	$40.29	$49.72
Electricity, Gas, Water & Waste Services	$8.78	$10.09	$11.40	$7.34	$9.05	$10.76
Construction	$78.26	$83.77	$89.29	$60.25	$70.48	$80.70
Wholesale Trade	$2.86	$3.35	$3.84	$2.44	$3.04	$3.65
Retail Trade	$1.31	$1.51	$1.70	$1.10	$1.36	$1.62
Accommodation & Food Services	$0.77	$0.88	$0.99	$0.65	$0.80	$0.95
Transport, Postal & Warehousing	$6.12	$6.92	$7.73	$5.02	$6.12	$7.23
Information Media and Telecommunications	$0.42	$0.48	$0.53	$0.36	$0.44	$0.51
Financial & Insurance Services	$2.10	$2.37	$2.65	$1.81	$2.21	$2.61
Rental, Hiring & Real Estate Services	$3.01	$3.34	$3.67	$2.48	$2.98	$3.48
Professional, Scientific & Technical Services	$17.29	$19.78	$22.26	$15.62	$19.01	$22.39
Administrative & Support Services	$1.45	$1.64	$1.82	$1.19	$1.44	$1.70
Public Administration & Safety	$0.98	$1.10	$1.21	$0.81	$0.98	$1.15
Education & Training	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Health Care & Social Assistance	$0.03	$0.03	$0.03	$0.02	$0.03	$0.03
Arts & Recreation Services	$0.03	$0.04	$0.04	$0.03	$0.03	$0.04
Other Services	$1.23	$1.39	$1.54	$1.00	$1.21	$1.42
Direct	**$94.15**	**$106.84**	**$119.52**	**$76.91**	**$93.84**	**$110.77**
Indirect	**$86.74**	**$98.17**	**$109.60**	**$71.87**	**$87.72**	**$103.58**
Total	**$180.89**	**$205.01**	**$229.12**	**$148.78**	**$181.57**	**$214.35**

Source: CDM Smith Analysis, 2020

4.3.2 Operation of Intermodal Terminal

The results reported in this section of the report relate to the yearly impacts associated with the operation of the Willowbank Intermodal Terminal, which is anticipated to occur over a five-year period, to be fully operational in 2036.

The outcomes of the economic contribution assessment are reported for both Option A2 and Option A4, which were identified in the WSP Parsons Brinckerhoff report as the preferred options. For conciseness, the body of the report focusses on direct and indirect impacts attributable to the Willowbank Intermodal Terminal, with impacts at a sectoral level reported in Appendix A.

4.3.2.1 Output

The economic contribution to output ranges by the ultimate capacity of the intermodal terminal facility and is marginally different between Option A2 and Option A4. The ranges of total output contribution by intermodal terminal capacity are:

- 350,000 TEUs: $21.2 million in Option A2 and $21.1 million in Option A4;
- 500,000 TEUs: $31.6 million in Option A2 and $30.5 million in Option A4; and
- 750,000 TEUs: $42.0 million in Option A2 and $39.8 million in Option A4.

Across all capacity scenarios in both Option A2 and Option A4, the transport, postal and warehousing industry is expected to be the most significantly contributing industry to regional output.

Table 4-15 details the direct and indirect contributions to regional output by intermodal terminal capacity size during the operational phase.

Table 4-15 Operating Output – Contribution to total regional output ($m), Year 1 to Year 5

	Option A2			Option A4		
	350,000 TEUs	500,000 TEUs	750,000 TEUs	350,000 TEUs	500,000 TEUs	750,000 TEUs
Direct						
Year 1	$3.0	$4.6	$6.1	$3.1	$4.4	$5.7
Year 2	$6.1	$9.1	$12.1	$6.1	$8.8	$11.5
Year 3	$9.1	$13.7	$18.2	$9.2	$13.2	$17.2
Year 4	$12.2	$18.2	$24.2	$12.2	$17.6	$22.9
Year 5+	$15.2	$22.8	$30.3	$15.3	$22.0	$28.6
Indirect						
Year 1	$1.2	$1.8	$2.3	$1.2	$1.7	$2.2
Year 2	$2.4	$3.5	$4.7	$2.4	$3.4	$4.5
Year 3	$3.6	$5.3	$7.0	$3.6	$5.1	$6.7
Year 4	$4.8	$7.1	$9.4	$4.8	$6.8	$8.9
Year 5+	$6.0	$8.9	$11.7	$6.0	$8.6	$11.1
Total						
Year 1	$4.2	$6.3	$8.4	$4.2	$6.1	$8.0
Year 2	$8.5	$12.7	$16.8	$8.5	$12.2	$15.9
Year 3	$12.7	$19.0	$25.2	$12.7	$18.3	$23.9
Year 4	$17.0	$25.3	$33.6	$17.0	$24.4	$31.8
Year 5+	$21.2	$31.6	$42.0	$21.2	$30.5	$39.8

Source: CDM Smith Analysis, 2020

4.3.2.2 Household Income

Total contributions to regional household incomes resulting from the ongoing operating output costs relating to the Willowbank Intermodal facility range from;

- 350,000 TEUs: $5.4 million in Option A2 and $5.4 million in Option A4;
- 500,000 TEUs: $8.1 million in Option A2 and $7.8 million in Option A4; and
- 750,000 TEUs: $10.8 million in Option A2 and $10.2 million in Option A4.

Table 4-16 details the direct and indirect contributions to regional household income resulting from 350,000, 500,000 and 750,000 TEUs at both Option A2 and Option A4 operating expenditures.

Table 4-16 Operating Output – Contribution to total regional household income ($m), year 1 to year 5

	Option A2			Option A4		
	350,000 TEUs	500,000 TEUs	750,000 TEUs	350,000 TEUs	500,000 TEUs	750,000 TEUs
Direct						
Year 1	$0.8	$1.2	$1.6	$0.8	$1.2	$1.5
Year 2	$1.6	$2.4	$3.2	$1.6	$2.3	$3.0
Year 3	$2.4	$3.6	$4.8	$2.4	$3.5	$4.5
Year 4	$3.2	$4.8	$6.4	$3.2	$4.6	$6.0
Year 5+	$4.0	$6.0	$8.0	$4.0	$5.8	$7.5
Indirect						
Year 1	$0.3	$0.4	$0.6	$0.3	$0.4	$0.5
Year 2	$0.6	$0.9	$1.1	$0.6	$0.8	$1.1
Year 3	$0.9	$1.3	$1.7	$0.9	$1.2	$1.6
Year 4	$1.1	$1.7	$2.3	$1.1	$1.6	$2.1
Year 5+	$1.4	$2.1	$2.8	$1.4	$2.1	$2.7
Total						
Year 1	$1.1	$1.6	$2.2	$1.1	$1.6	$2.0
Year 2	$2.2	$3.2	$4.3	$2.2	$3.1	$4.1
Year 3	$3.3	$4.9	$6.5	$3.3	$4.7	$6.1
Year 4	$4.3	$6.5	$8.6	$4.4	$6.3	$8.2
Year 5+	$5.4	$8.1	$10.8	$5.4	$7.8	$10.2

Source: CDM Smith Analysis, 2020

4.3.2.3 Employment

Contributions relating to the generation of FTEs resulting from ongoing operating output are best measured in the average number of FTEs per annum. The average FTEs per annum for each level of TEU and for each option analysed are as follows;

- 350,000 TEUs: average of 66 FTEs per annum in Option A2, and 67 per annum in Option A4;
- 500,000 TEUs: average of 100 FTEs per annum in Option A2, and 97 per annum in Option A4; and
- 750,000 TEUs: average of 134 FTEs per annum in Option A2, and 126 per annum in Option A4

As to be expected, the number of FTEs generated increases between the levels of TEUs under each option, with the 750,000 TEUs scenario holding the greatest benefit to employment generation.

Table 4-17 details the direct and indirect contributions to regional employment, measured in FTEs resulting from 350,000, 500,000 and 750,000 TEUs at both Option A2 and Option A4 operating expenditures.

Table 4-17 Operating output – Contribution to total regional employment (FTEs), year 1 to year 5

	Option A2			Option A4		
	350,000 TEUs	500,000 TEUs	750,000 TEUs	350,000 TEUs	500,000 TEUs	750,000 TEUs
Direct						
Year 1	9.7	14.8	19.9	9.9	14.3	18.7
Year 2	19.4	29.6	39.7	19.8	28.5	37.3
Year 3	29.1	44.4	59.6	29.6	42.8	56.0
Year 4	38.8	59.1	79.5	39.5	57.1	74.6
Year 5+	48.5	73.9	99.4	49.4	71.3	93.3
Indirect						
Year 1	3.5	5.2	6.9	3.5	5.0	6.6
Year 2	7.0	10.4	13.9	7.0	10.1	13.1
Year 3	10.5	15.7	20.8	10.5	15.1	19.7
Year 4	14.1	20.9	27.7	14.1	20.2	26.3
Year 5+	17.6	26.1	34.7	17.6	25.2	32.8
Total						
Year 1	13.2	20.0	26.8	13.4	19.3	25.2
Year 2	26.4	40.0	53.6	26.8	38.6	50.4
Year 3	39.6	60.0	80.4	40.2	57.9	75.7
Year 4	52.8	80.0	107.2	53.6	77.2	100.9
Year 5+	66.1	100.0	134.0	67.0	96.5	126.1

Source: CDM Smith Analysis, 2020

4.3.2.4 Value added

Total contribution of operating the proposed facility for 15-years is also dependent on the level of TEUs and which layout option is chosen. The estimated ranges of total value added to the Ipswich regional economy is as follows;

- 350,000 TEUs: $9.1 million in Option A2 and $9.0 million in Option A4;
- 500,000 TEUs: $13.4 million in Option A2 and $13.0 million in Option A4; and
- 750,000 TEUs: $17.8 million in Option A2 and $16.9 million in Option A4.

Table 4-18 details the direct and indirect contributions to regional value added resulting from 350,000, 500,000 and 750,000 TEUs at both Option A2 and Option A4 operating expenditures.

Table 4-18 Operating output – Contribution to total regional value added ($m), year 1 to year 5

	Option A2			Option A4		
	350,000 TEUs	500,000 TEUs	750,000 TEUs	350,000 TEUs	500,000 TEUs	750,000 TEUs
Direct						
Year 1	$1.3	$1.9	$2.6	$1.3	$1.9	$2.4
Year 2	$2.6	$3.9	$5.1	$2.6	$3.7	$4.9
Year 3	$3.9	$5.8	$7.7	$3.9	$5.6	$7.3
Year 4	$5.2	$7.8	$10.3	$5.2	$7.5	$9.8
Year 5+	$6.5	$9.7	$12.9	$6.5	$9.4	$12.2
Indirect						
Year 1	$0.5	$0.7	$1.0	$0.5	$0.7	$0.9
Year 2	$1.0	$1.5	$2.0	$1.0	$1.4	$1.9
Year 3	$1.5	$2.2	$3.0	$1.5	$2.2	$2.8
Year 4	$2.0	$3.0	$4.0	$2.0	$2.9	$3.8
Year 5+	$2.5	$3.7	$5.0	$2.5	$3.6	$4.7
Total						
Year 1	$1.8	$2.7	$3.6	$1.8	$2.6	$3.4
Year 2	$3.6	$5.4	$7.1	$3.6	$5.2	$6.8
Year 3	$5.4	$8.1	$10.7	$5.4	$7.8	$10.1
Year 4	$7.3	$10.8	$14.3	$7.2	$10.4	$13.5
Year 5+	$9.1	$13.4	$17.8	$9.0	$13.0	$16.9

Source: CDM Smith Analysis, 2020

4.3.3 Freight Forwarders and Proximate Industry

4.3.3.1 Output

By Year 15, the total contribution to output resulting from freight forwarders and proximate industry to the proposed Intermodal Terminal are as follows:

- Freight Forwarders – Total contribution to output of $211.5 million at 350,000 TEUs, $302.1 million at 500,000 TEUs and $453.2 million at 750,000 TEUs. The contribution of freight forwarders is anticipated to reach a maximum by Year 5 (across all TEU levels) and continue at that level into the future; and
- Proximate Industry – Total contribution to output of $444.3 million at 350,000 TEUs, $634.6 million at 500,000 TEUs and $952.0 million at 750,000 TEUs.

The economic contribution to output created by the intermodal terminal and proximate Industry is likely to be primarily in the transport, postal and warehousing industry, accounting for more than three quarters of all output effects.

The economic contribution to output created by proximate industry is anticipated to be most significant in the following industries:

- Transport, postal and warehousing industry, accounting for 24.4% of total contribution to output at all TEU capacities;
- Wholesale trade industry, accounting for accounting for 22.5% of total contribution to output at all TEU capacities; and
- Manufacturing industry, accounting for 16.1% of total contribution to output at all TEU capacities.

Table 4-19 reports on the total output contribution resulting from the freight forwarders and proximate industries likely to surround the proposed Willowbank Intermodal Terminal. A detailed breakdown of contribution to output at the single digit ANZSIC level is provided in Appendix B

.

Table 4-19 Contribution to Output ($m) – Freight Forwarders and Proximate Industry, 350,000, 500,000 and 750,000 TEUs, Year 1 to Year 15

	Freight Forwarders									Proximate Industry								
	350,000			500,000			750,000			350,000			500,000			750,000		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
Year 1	$30.1	$12.2	$42.3	$43.1	$17.4	$60.4	$64.6	$26.0	$90.6	$11.8	$4.9	$16.7	$16.9	$6.9	$23.8	$25.3	$10.4	$35.7
Year 2	$60.3	$24.3	$84.6	$86.1	$34.7	$120.9	$129.2	$52.1	$181.3	$25.2	$10.3	$35.5	$36.0	$14.8	$50.8	$54.0	$22.2	$76.2
Year 3	$90.4	$36.5	$126.9	$129.2	$52.1	$181.3	$193.8	$78.1	$271.9	$40.1	$16.5	$56.6	$57.4	$23.6	$80.9	$86.0	$35.3	$121.4
Year 4	$120.6	$48.6	$169.2	$172.3	$69.4	$241.7	$258.4	$104.2	$362.6	$56.7	$23.3	$80.0	$81.0	$33.3	$114.2	$121.5	$49.9	$171.4
Year 5	$150.7	$60.8	$211.5	$215.3	$86.8	$302.1	$323.0	$130.2	$453.2	$74.8	$30.7	$105.5	$106.8	$43.9	$150.7	$160.3	$65.8	$226.1
Year 6	$150.7	$60.8	$211.5	$215.3	$86.8	$302.1	$323.0	$130.2	$453.2	$94.5	$38.8	$133.3	$135.0	$55.4	$190.4	$202.4	$83.2	$285.6
Year 7	$150.7	$60.8	$211.5	$215.3	$86.8	$302.1	$323.0	$130.2	$453.2	$115.7	$47.5	$163.3	$165.3	$67.9	$233.2	$248.0	$101.9	$349.8
Year 8	$150.7	$60.8	$211.5	$215.3	$86.8	$302.1	$323.0	$130.2	$453.2	$138.6	$56.9	$195.5	$197.9	$81.3	$279.2	$296.9	$122.0	$418.9
Year 9	$150.7	$60.8	$211.5	$215.3	$86.8	$302.1	$323.0	$130.2	$453.2	$163.0	$66.9	$229.9	$232.8	$95.6	$328.4	$349.2	$143.5	$492.6
Year 10	$150.7	$60.8	$211.5	$215.3	$86.8	$302.1	$323.0	$130.2	$453.2	$188.9	$77.6	$266.6	$269.9	$110.9	$380.8	$404.9	$166.3	$571.2
Year 11	$150.7	$60.8	$211.5	$215.3	$86.8	$302.1	$323.0	$130.2	$453.2	$216.5	$88.9	$305.4	$309.3	$127.1	$436.3	$463.9	$190.6	$654.5
Year 12	$150.7	$60.8	$211.5	$215.3	$86.8	$302.1	$323.0	$130.2	$453.2	$245.6	$100.9	$346.5	$350.9	$144.1	$495.0	$526.3	$216.2	$742.5
Year 13	$150.7	$60.8	$211.5	$215.3	$86.8	$302.1	$323.0	$130.2	$453.2	$276.3	$113.5	$389.8	$394.7	$162.2	$556.9	$592.1	$243.2	$835.4
Year 14	$150.7	$60.8	$211.5	$215.3	$86.8	$302.1	$323.0	$130.2	$453.2	$308.6	$126.8	$435.4	$440.8	$181.1	$622.0	$661.3	$271.7	$932.9
Year 15+	$150.7	$60.8	$211.5	$215.3	$86.8	$302.1	$323.0	$130.2	$453.2	$314.9	$129.4	$444.3	$449.8	$184.8	$634.6	$674.8	$277.2	$952.0

Source: CDM Smith Analysis, 2020

4.3.3.2 Household Income

By Year 15, the total contribution to household incomes resulting from freight forwarders and proximate industries to the proposed Intermodal Terminal are as follows:

- Freight Forwarders – Total contribution to household incomes of $45.3 million at 350,000 TEUs, $64.8 million at 500,000 TEUs and $97.1 million at 750,000 TEUs. The contribution of Freight Forwarders is anticipated to reach a maximum by year 5 (across all TEU levels) and continue at that level into the future; and
- Proximate Industry – Total contribution to household incomes of $103.0 million at 350,000 TEUs, $147.1 million at 500,000 TEUs and $220.7 million at 750,000 TEUs.

Overall, the economic contribution to regional household income was most significant in the transport, postal and warehousing industry for freight forwarders (approximately 68.0% of the total contribution). For proximate industries, the largest contributors to regional household income was the wholesale trade industry.

Table 4-20 reports on the total contribution to regional household incomes resulting from the freight forwarders and proximate industries likely to surround the proposed Willowbank Intermodal Terminal. A detailed breakdown of contribution to household incomes at the single digit ANZSIC level is provided in Appendix C.

Table 4-20 Contribution to Household Income ($m)– Freight Forwarders and Proximate Industry, 350,000, 500,000 and 750,000 TEUs, Year 1 to Year 15

	Freight Forwarders									Proximate Industry								
	350,000			500,000			750,000			350,000			500,000			750,000		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
Year 1	$5.7	$3.4	$9.1	$5.7	$3.4	$9.1	$12.2	$7.3	$19.4	$2.6	$1.2	$3.9	$3.8	$1.8	$5.5	$5.6	$2.6	$8.3
Year 2	$11.3	$6.8	$18.1	$11.3	$6.8	$18.1	$24.3	$14.5	$38.9	$5.6	$2.6	$8.2	$8.0	$3.7	$11.8	$12.1	$5.6	$17.7
Year 3	$17.0	$10.2	$27.2	$24.3	$14.5	$38.9	$36.5	$21.8	$58.3	$9.0	$4.2	$13.1	$12.8	$6.0	$18.8	$19.2	$8.9	$28.1
Year 4	$22.7	$13.6	$36.3	$32.4	$19.4	$51.8	$48.6	$29.1	$77.7	$12.7	$5.9	$18.5	$18.1	$8.4	$26.5	$27.1	$12.6	$39.7
Year 5	$28.4	$17.0	$45.3	$40.5	$24.2	$64.8	$60.8	$36.4	$97.1	$16.7	$7.8	$24.5	$23.9	$11.1	$34.9	$35.8	$16.6	$52.4
Year 6	$28.4	$17.0	$45.3	$40.5	$24.2	$64.8	$60.8	$36.4	$97.1	$21.1	$9.8	$30.9	$30.1	$14.0	$44.1	$45.2	$21.0	$66.2
Year 7	$28.4	$17.0	$45.3	$40.5	$24.2	$64.8	$60.8	$36.4	$97.1	$25.8	$12.0	$37.8	$36.9	$17.2	$54.1	$55.4	$25.7	$81.1
Year 8	$28.4	$17.0	$45.3	$40.5	$24.2	$64.8	$60.8	$36.4	$97.1	$30.9	$14.4	$45.3	$44.2	$20.5	$64.7	$66.3	$30.8	$97.1
Year 9	$28.4	$17.0	$45.3	$40.5	$24.2	$64.8	$60.8	$36.4	$97.1	$36.4	$16.9	$53.3	$52.0	$24.2	$76.1	$78.0	$36.2	$114.2
Year 10	$28.4	$17.0	$45.3	$40.5	$24.2	$64.8	$60.8	$36.4	$97.1	$42.2	$19.6	$61.8	$60.3	$28.0	$88.3	$90.4	$42.0	$132.4
Year 11	$28.4	$17.0	$45.3	$40.5	$24.2	$64.8	$60.8	$36.4	$97.1	$48.3	$22.5	$70.8	$69.0	$32.1	$101.1	$103.6	$48.2	$151.7
Year 12	$28.4	$17.0	$45.3	$40.5	$24.2	$64.8	$60.8	$36.4	$97.1	$54.8	$25.5	$80.3	$78.3	$36.4	$114.7	$117.5	$54.6	$172.1
Year 13	$28.4	$17.0	$45.3	$40.5	$24.2	$64.8	$60.8	$36.4	$97.1	$61.7	$28.7	$90.4	$88.1	$41.0	$129.1	$132.2	$61.5	$193.6
Year 14	$28.4	$17.0	$45.3	$40.5	$24.2	$64.8	$60.8	$36.4	$97.1	$68.9	$32.0	$100.9	$98.4	$45.8	$144.2	$147.6	$68.6	$216.3
Year 15+	$28.4	$17.0	$45.3	$40.5	$24.2	$64.8	$60.8	$36.4	$97.1	$70.3	$32.7	$103.0	$100.4	$46.7	$147.1	$150.6	$70.0	$220.7

Source: CDM Smith Analysis, 2020

4.3.3.3 Employment

By Year 15, the total contribution to regional employment resulting from freight forwarders and co-locating industries to the proposed Intermodal Terminal are as follows:

- Freight Forwarders – Total annual contribution to employment of 515.0 FTEs at 350,000 TEUs, 735.7 FTEs at 500,000 TEUs and 1,103.6 FTEs at 750,000 TEUs at maximum capacity (Year 5); and
- Proximate Industry – Total average annual contribution to employment of 1,098.0 FTEs at 350,000 TEUs, 1,568.6 FTEs at 500,000 TEUs and 2,352.8 FTEs at 750,000 TEUs.

As to be expected the number of FTEs generated from freight forwarders is centred around the transport, postal and warehousing industry across all TEU levels. However, within proximate industries, wholesale trade accounted for the largest proportion overall of FTEs generated.

Table 4-21 reports on the total contribution to regional household incomes resulting from the freight forwarders and proximate industries likely to surround the proposed Willowbank Intermodal Terminal. A detailed breakdown of contribution to employment at the single digit ANZSIC level is provided in Appendix D.

Table 4-21 Contribution to Employment (FTEs) – Freight Forwarders and Proximate Industry, 350,000, 500,000 and 750,000 TEUs, Year 1 to Year 15

	Freight Forwarders									Proximate Industry								
	350,000			500,000			750,000			350,000			500,000			750,000		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
Year 1	64.5	38.5	103.0	92.1	55.0	147.1	138.2	82.6	220.7	25.8	15.4	41.2	36.9	22.0	58.8	55.3	32.9	88.2
Year 2	128.9	77.1	206.0	184.2	110.1	294.3	276.3	165.1	441.4	55.1	32.8	87.8	78.6	46.8	125.5	118.0	70.3	188.2
Year 3	193.4	115.6	309.0	276.3	165.1	441.4	414.5	247.7	662.1	87.7	52.3	140.0	125.3	74.6	200.0	188.0	112.0	300.0
Year 4	257.9	154.1	412.0	368.4	220.2	588.6	552.6	330.2	882.9	123.9	73.8	197.6	177.0	105.4	282.3	265.4	158.1	423.5
Year 5	322.4	192.6	515.0	460.5	275.2	735.7	690.8	412.8	1,103.6	163.4	97.3	260.8	233.5	139.0	372.5	350.2	208.6	558.8
Year 6	322.4	192.6	515.0	460.5	275.2	735.7	690.8	412.8	1,103.6	206.5	122.9	329.4	294.9	175.6	470.6	442.4	263.5	705.9
Year 7	322.4	192.6	515.0	460.5	275.2	735.7	690.8	412.8	1,103.6	252.9	150.6	403.5	361.3	215.2	576.4	541.9	322.7	864.7
Year 8	322.4	192.6	515.0	460.5	275.2	735.7	690.8	412.8	1,103.6	302.8	180.3	483.1	432.6	257.6	690.2	648.8	386.4	1,035.3
Year 9	322.4	192.6	515.0	460.5	275.2	735.7	690.8	412.8	1,103.6	356.1	212.1	568.2	508.8	303.0	811.7	763.1	454.5	1,217.6
Year 10	322.4	192.6	515.0	460.5	275.2	735.7	690.8	412.8	1,103.6	412.9	245.9	658.8	589.9	351.3	941.1	884.8	526.9	1,411.7
Year 11	322.4	192.6	515.0	460.5	275.2	735.7	690.8	412.8	1,103.6	473.1	281.8	754.9	675.9	402.5	1,078.4	1,013.8	603.8	1,617.6
Year 12	322.4	192.6	515.0	460.5	275.2	735.7	690.8	412.8	1,103.6	536.8	319.7	856.4	766.8	456.7	1,223.5	1,150.2	685.0	1,835.2
Year 13	322.4	192.6	515.0	460.5	275.2	735.7	690.8	412.8	1,103.6	603.9	359.6	963.5	862.7	513.7	1,376.4	1,294.0	770.6	2,064.6
Year 14	322.4	192.6	515.0	460.5	275.2	735.7	690.8	412.8	1,103.6	674.4	401.6	1,076.0	963.4	573.8	1,537.2	1,445.2	860.6	2,305.8
Year 15+	322.4	192.6	515.0	460.5	275.2	735.7	690.8	412.8	1,103.6	688.2	409.8	1,098.0	983.1	585.5	1,568.6	1,474.7	878.2	2,352.8

Source: CDM Smith Analysis, 2020

4.3.3.4 Value added

By Year 15, the total contribution to regional value added resulting from freight forwarders and proximate industries to the proposed Intermodal Terminal are as follows:

- Freight Forwarders – Total contribution to household incomes of $104.8 million at 350,000 TEUs, $145.3 million at 500,000 TEUs and $217.9 million at 750,000 TEUs. The contribution of freight forwarders is anticipated to reach a maximum by year 5 (across all TEU levels) and continue at that level into the future; and
- Proximate Industry – Total contribution to household incomes of $188.5 million at 350,000 TEUs, $269.3 million at 500,000 TEUs and $403.9 million at 750,000 TEUs.

Similarly, to the other economic contributions assessed, the most significant contributor to regional value added is the transport, postal and warehousing industry for the freight forwarders and the collocating industries assessment.

Table 4-22 reports on the total contribution to regional household incomes resulting from the freight forwarders and proximate industries likely to surround the proposed Willowbank Intermodal Terminal. A detailed breakdown of contribution to household incomes at the single digit ANZSIC level is provided in Appendix E.

Table 4-22 Contribution to Value added ($m) – Freight Forwarders and Proximate Industries, 350,000, 500,000 and 750,000 TEUs, Year 1 to Year 15

	Freight Forwarders									Proximate Industry								
	350,000			500,000			750,000			350,000			500,000			750,000		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
Year 1	$14.7	$5.7	$20.3	$21.0	$8.1	$29.1	$31.4	$12.1	$43.6	$4.9	$2.1	$7.1	$7.1	$3.0	$10.1	$10.6	$4.6	$15.1
Year 2	$29.4	$11.3	$40.7	$41.9	$16.2	$58.1	$62.9	$24.3	$87.2	$10.5	$4.5	$15.1	$15.1	$6.5	$21.5	$22.6	$9.7	$32.3
Year 3	$44.0	$17.0	$61.0	$62.9	$24.3	$87.2	$94.3	$36.4	$130.7	$16.8	$7.2	$24.0	$24.0	$10.3	$34.3	$36.0	$15.5	$51.5
Year 4	$58.7	$22.6	$81.4	$83.9	$32.4	$116.2	$125.8	$48.5	$174.3	$23.7	$10.2	$33.9	$33.9	$14.6	$48.5	$50.8	$21.9	$72.7
Year 5	$73.4	$28.3	$101.7	$104.8	$40.4	$145.3	$157.2	$60.7	$217.9	$31.3	$13.5	$44.8	$44.7	$19.2	$63.9	$67.1	$28.8	$95.9
Year 6	$73.4	$28.3	$101.7	$104.8	$40.4	$145.3	$157.2	$60.7	$217.9	$39.5	$17.0	$56.5	$56.5	$24.3	$80.8	$84.7	$36.4	$121.2
Year 7	$73.4	$28.3	$101.7	$104.8	$40.4	$145.3	$157.2	$60.7	$217.9	$48.4	$20.8	$69.3	$69.2	$29.8	$99.0	$103.8	$44.6	$148.4
Year 8	$73.4	$28.3	$101.7	$104.8	$40.4	$145.3	$157.2	$60.7	$217.9	$58.0	$24.9	$82.9	$82.9	$35.6	$118.5	$124.3	$53.4	$177.7
Year 9	$73.4	$28.3	$101.7	$104.8	$40.4	$145.3	$157.2	$60.7	$217.9	$68.2	$29.3	$97.5	$97.4	$41.9	$139.3	$146.2	$62.8	$209.0
Year 10	$73.4	$28.3	$101.7	$104.8	$40.4	$145.3	$157.2	$60.7	$217.9	$79.1	$34.0	$113.1	$113.0	$48.6	$161.6	$169.5	$72.9	$242.3
Year 11	$73.4	$28.3	$101.7	$104.8	$40.4	$145.3	$157.2	$60.7	$217.9	$90.6	$39.0	$129.6	$129.5	$55.7	$185.1	$194.2	$83.5	$277.7
Year 12	$73.4	$28.3	$101.7	$104.8	$40.4	$145.3	$157.2	$60.7	$217.9	$102.8	$44.2	$147.0	$146.9	$63.1	$210.0	$220.3	$94.7	$315.0
Year 13	$73.4	$28.3	$101.7	$104.8	$40.4	$145.3	$157.2	$60.7	$217.9	$115.7	$49.7	$165.4	$165.2	$71.0	$236.3	$247.9	$106.6	$354.4
Year 14	$73.4	$28.3	$101.7	$104.8	$40.4	$145.3	$157.2	$60.7	$217.9	$129.2	$55.5	$184.7	$184.5	$79.3	$263.9	$276.8	$119.0	$395.8
Year 15+	$73.4	$28.3	$101.7	$104.8	$40.4	$145.3	$157.2	$60.7	$217.9	$131.8	$56.7	$188.5	$188.3	$81.0	$269.3	$282.5	$121.4	$403.9

Source: CDM Smith Analysis, 2020

4.3.4 Summary of Results

4.3.4.1 Short Term Economic Benefits

The Willowbank Intermodal Terminal will provide both short term and long term economic benefits to the Ipswich regional economy, with the short term impacts relating to construction impacts. The assessment has identified the following impacts over the construction phase for the intermodal terminal.

- Output:
  - Option A2: Total output impacts of $519.34 million to $655.06 million, depending on the capacity of the intermodal terminal;
  - Option A4: Total output impacts of $430.29 million to $619.02 million, depending on the capacity of the intermodal terminal;
- Household income:
  - Option A2: Total household income impacts of $99.91 million to $127.93 million, depending on the capacity of the intermodal terminal;
  - Option A4: Total household income impacts of $82.38 million to $119.45 million, depending on the capacity of the intermodal terminal;
- Employment:
  - Option A2: Total employment impacts of 1,138.3 FTEs to 1,496.6 FTEs, depending on the capacity of the intermodal terminal;
  - Option A4: Total employment impacts of 989.4 FTEs to 1,462.5 FTEs, depending on the capacity of the intermodal terminal;
- Value added
  - Option A2: Total value added impacts of $180.89 million to $229.12 million, depending on the capacity of the intermodal terminal; and
  - Option A4: Total value added impacts of $148.78 million to $214.35 million, depending on the capacity of the intermodal terminal.

The employment impacts reported above relate to the total impacts over the construction period, as opposed to the actual additional persons employed to construct the facility (particularly if construction occurs over a number of years).

Table 4-23 summarises the economic contribution of the proposed Willowbank Intermodal Terminal under both Option A2 and Option A4, under the varying TEU scenarios assessed (i.e. 350,000 TEUs, 500,000 TEUs and 750,000 TEUs).

Table 4-23 Total Economic Impacts of Construction Phase, Willowbank Intermodal Terminal, Option A2 and Option A4

	Option A2			Option A4		
	350,000 TEU	500,000 TEU	750,000 TEU	350,000 TEU	500,000 TEU	750,000 TEU
Output ($m)						
Direct	$282.99	$319.29	$355.59	$233.90	$284.64	$335.38
Indirect	$236.35	$267.91	$299.46	$196.39	$240.02	$283.64
Total	$519.34	$587.20	$655.06	$430.29	$524.66	$619.02
Household Income ($m)						

	Option A2			Option A4		
	350,000 TEU	500,000 TEU	750,000 TEU	350,000 TEU	500,000 TEU	750,000 TEU
Direct	$53.92	$61.93	$69.94	$44.37	$54.58	$64.79
Indirect	$45.98	$51.99	$58.00	$38.01	$46.36	$54.71
Total	$99.91	$113.92	$127.93	$82.38	$100.94	$119.49
Employment (FTEs)						
Direct	556.6	661.7	766.9	507.9	639.9	771.9
Indirect	581.7	655.7	729.7	481.5	586.1	690.6
Total	1,138.3	1,317.4	1,496.6	989.4	1,225.9	1,462.5
Value Added ($m)						
Direct	$94.15	$106.84	$119.52	$76.91	$93.84	$110.77
Indirect	$86.74	$98.17	$109.60	$71.87	$87.72	$103.58
Total	$180.89	$205.01	$229.12	$148.78	$181.57	$214.35

Source: CDM Smith estimates

4.3.4.2 Ongoing Economic Benefits

The proposed Willowbank Intermodal Terminal is anticipated to generate ongoing positive economic impacts to the Ipswich regional economy, through the operation of the intermodal terminal, the co-location of freight forwarders immediately adjacent to the intermodal terminal and proximate industry choosing to locate within the Ebenezer MEIA due to the presence of the Willowbank Intermodal Terminal.

For conciseness, the reporting of ongoing impacts has been provided for the following timeframes:

- Year 5 (2036): By Year 5, it is assumed that the intermodal terminal and freight forwarders are operating at full capacity, with proximate industry starting to locate within the Ebenezer MEIA to be close to the Willowbank Intermodal Terminal; and
- Year 15 (2046+): By Year 15, it is assumed that proximate industry locating within the Ebenezer MEIA to be close to the Willowbank Intermodal Terminal is complete, with the intermodal terminal and freight forwarders continuing to operate at full capacity.

In Year 5 (2036), total economic impacts are anticipated to be as follows:

- Total output impacts of $338.21 million to $666.60 million;
- Total household income impacts of $75.21 million to $147.65 million;
- Total employment impacts of 841.8 FTEs to 1,661.1 FTEs; and
- Total value added impacts of $155.52 million to $308.44 million.

By Year 15 (2046+), total economic impacts of the proposed Willowbank Intermodal Terminal are anticipated to be as follows:

- Total output impacts of $676.95 million to $1,428.17 million;
- Total household income impacts of $153.73 million to $324.18 million;
- Total employment impacts of 1,679.1 FTEs to 3,543.4 FTEs; and
- Total value added impacts of $299.24 million to $631.55 million.

Tables 4-24 to 4-26 summarises the total ongoing economic impacts associated with the proposed Willowbank Intermodal Terminal based on varying capacities (350,000 TEUs, 500,000 TEUs and 750,000 TEUs).

Table 4-24 Ongoing Economic Impacts of Willowbank Intermodal Terminal - 350,000 TEUs, Year 5 and Year 15

	Year 5 (2036)				Year 15 (2046+)			
	Intermodal Terminal Operation	Freight Forwarders	Proximate Industry	Total	Intermodal Terminal Operation	Freight Forwarders	Proximate Industry	Total
Output ($m)								
Direct	$15.21	$150.73	$74.79	$240.73	$15.21	$150.73	$314.89	$480.83
Indirect	$5.99	$60.77	$30.72	$97.48	$5.99	$60.77	$129.36	$196.12
Total	$21.21	$211.49	$105.51	$338.21	$21.21	$211.49	$444.25	$676.95
Household Income ($m)								
Direct	$3.99	$28.36	$16.70	$49.05	$3.99	$28.36	$70.30	$102.65
Indirect	$1.43	$16.97	$7.76	$26.16	$1.43	$16.97	$32.68	$51.08
Total	$5.42	$45.33	$24.46	$75.21	$5.42	$45.33	$102.98	$153.73
Employment (FTEs)								
Direct	48.5	322.4	163.4	534.3	48.5	322.4	688.2	1,059.0
Indirect	17.6	192.6	97.3	307.5	17.6	192.6	409.8	620.0
Total	66.1	515.0	260.8	841.8	66.1	515.0	1,098.0	1,679.1
Value Added ($m)								
Direct	$6.53	$73.38	$31.31	$111.22	$6.53	$73.38	$131.82	$211.73
Indirect	$2.53	$28.31	$13.46	$44.30	$2.53	$28.31	$56.67	$87.51
Total	$9.06	$101.69	$44.76	$155.52	$9.06	$101.69	$188.48	$299.24

Source: CDM Smith estimates

Table 4-25 Ongoing Economic Impacts of Willowbank Intermodal Terminal - 500,000 TEUs, Year 5 and Year 15

	Year 5 (2036)				Year 15 (2046+)			
	Intermodal Terminal Operation	Freight Forwarders	Proximate Industry	Total	Intermodal Terminal Operation	Freight Forwarders	Proximate Industry	Total
Output ($m)								
Direct	$22.76	$215.32	$106.84	$344.92	$22.76	$215.32	$449.84	$687.92
Indirect	$8.87	$86.81	$43.89	$139.57	$8.87	$86.81	$184.80	$280.48
Total	$31.63	$302.13	$150.73	$484.49	$31.63	$302.13	$634.64	$968.40
Household Income ($m)								
Direct	$5.98	$40.51	$23.85	$70.34	$5.98	$40.51	$100.42	$146.91
Indirect	$2.13	$24.24	$11.09	$37.46	$2.13	$24.24	$46.69	$73.06
Total	$8.11	$64.76	$34.94	$107.80	$8.11	$64.76	$147.11	$219.98
Employment (FTEs)								
Direct	73.9	460.5	233.5	767.9	73.9	460.5	983.1	1,517.6
Indirect	26.1	275.2	139.0	440.4	26.1	275.2	585.5	886.8
Total	100.0	735.7	372.5	1,208.3	100.0	735.7	1,568.6	2,404.3
Value Added ($m)								
Direct	$9.70	$104.83	$44.72	$159.25	$9.70	$104.83	$188.31	$302.84
Indirect	$3.74	$40.44	$19.23	$63.42	$3.74	$40.44	$80.95	$125.14
Total	$13.45	$145.27	$63.95	$222.67	$13.45	$145.27	$269.26	$427.98

Source: CDM Smith estimates

Table 4-26 Ongoing Economic Impacts of Willowbank Intermodal Terminal - 750,000 TEUs, Year 5 and Year 15

	Year 5 (2036)				Year 15 (2046+)			
	Intermodal Terminal Operation	Freight Forwarders	Proximate Industry	Total	Intermodal Terminal Operation	Freight Forwarders	Proximate Industry	Total
Output ($m)								
Direct	$30.30	$322.99	$121.46	$474.75	$30.30	$322.99	$661.27	$1,014.56
Indirect	$11.74	$130.21	$49.90	$191.85	$11.74	$130.21	$271.66	$413.62
Total	$42.04	$453.20	$171.35	$666.60	$42.04	$453.20	$932.93	$1,428.17
Household Income ($m)								
Direct	$7.96	$60.77	$27.11	$95.85	$7.96	$60.77	$147.62	$216.35
Indirect	$2.83	$36.37	$12.61	$51.80	$2.83	$36.37	$68.64	$107.83
Total	$10.79	$97.14	$39.72	$147.65	$10.79	$97.14	$216.26	$324.18
Employment (FTEs)								
Direct	99.4	690.8	265.4	1,055.6	99.4	690.8	1,445.2	2,235.3
Indirect	34.7	412.8	158.1	605.5	34.7	412.8	860.6	1,308.1
Total	134.0	1,103.6	423.5	1,661.1	134.0	1,103.6	2,305.8	3,543.4
Value Added ($m)								
Direct	$12.87	$157.24	$50.84	$220.95	$12.87	$157.24	$276.81	$446.92
Indirect	$4.96	$60.67	$21.86	$87.48	$4.96	$60.67	$119.00	$184.63
Total	$17.83	$217.91	$72.70	$308.44	$17.83	$217.91	$395.81	$631.55

Source: CDM Smith estimates

Section 5 Heavy Vehicle Impacts of Willowbank Intermodal Terminal

The purpose of this chapter of the report is to assess the heavy vehicle impacts associated with the Willowbank Intermodal Terminal relative to the do nothing scenario. Our assessment has focussed on heavy vehicle impacts, as these impacts will be significant relative to the do nothing scenario, given the focus of an intermodal terminal (i.e. 100% focus on freight movements). On the other hand, light vehicle movements are likely to be similar under both scenarios, given the designation of the precinct for industrial uses (i.e. if the precinct is not utilised for an intermodal terminal, it is anticipated to be used for industrial purposes).

5.1 Projected Heavy Vehicle Average Annual Daily Traffic Volumes

Our assessment of the road network surrounding the site for the proposed Willowbank Intermodal Terminal identified two highway routes most likely to be impacted by heavy vehicle movements, namely:

- Route 1: Warrego Highway: Warrego Highway between Marburg and Dinmore (where Warrego Highway and Ipswich Motorway join); and
- Route 2: Cunningham Highway: Cunningham Highway from just south of Willowbank to Dinmore

In estimating average annual daily traffic volumes (AADT) heavy vehicle volumes along these routes, consideration was given to 2018 AADT traffic counts for heavy vehicles along these routes, with future volumes projected based on the outputs of the South East Queensland Strategic Transport Model (SEQ STM).

As previously identified, the assessment has assumed that the proposed Willowbank Intermodal Terminal would be fully operational at 2036.

In 2018, heavy vehicle traffic volumes along each route were estimated to be:

- Route 1: Warrego Highway: AADT of 31,307 heavy vehicles; and
- Route 2: Cunningham Highway: AADT of 20,337 heavy vehicles.

The SEQ STM anticipates the following average annual growth in heavy vehicle traffic volumes in the 2016-2036 period:

- Route 1: Warrego Highway: Average annual growth of 1.9% per annum; and
- Route 2: Cunningham Highway: Average annual growth of 1.2% per annum.

Based on the outcomes of the SEQ STM, heavy vehicle AADT volumes are projected to increase to:

- Route 1: Warrego Highway: AADT of 43,635 heavy vehicles in 2036; and
- Route 2: Cunningham Highway: AADT of 25,012 heavy vehicles in 2036.

5.2 Changes in Freight Flows Resulting from Willowbank Intermodal Terminal

It is assumed that the intermodal terminal will reduce the need for heavy vehicle movements coming from locations south of Ipswich City due to the direct rail link (via inland rail) and upgraded facilities. For the purpose of this assessment, it has therefore been assumed that the flow of TEUs at the proposed Willowbank intermodal terminal would be:

- Freight Northbound: two thirds of TEUs will be transported by road, and the remaining third will be via rail; and
- Freight Southbound: one third of TEUs will be transported by road, and the remaining two thirds will be via rail.

The distribution of terminal throughput at the Willowbank intermodal terminal by scenario is summarised in Table 5-1

Table 5-1 Distribution of Throughput at Willowbank Intermodal Terminal by Scenario

	350,000 TEUs	500,000 TEUs	750,000 TEUs
Total Throughput (TEUs)	350,000	500,000	750,000
Freight Northbound	233,333	333,333	500,000
Freight Southbound	116,667	166,667	250,000

For each freight vehicle heading northbound or southbound, there is also the likelihood that some vehicles will return to the intermodal terminal at Willowbank to collect the next freight load. Therefore, this analysis considers:

- Freight vehicles (loaded with freight) outbound from the terminal, heading both north and southbound along the existing road network; and
- Freight vehicles inbound to the terminal in order to collect freight for further distribution (75.0% of the total outbound freight vehicles).

In estimating the volume of freight travel likely to travel along each route, travelling inbound or outbound, there are several factors to consider. These factors include the projected AADT data detailed in the previous section, the likely end destination of freight being transferred at the terminal and the resulting direction of travel for vehicles both inbound and outbound from the terminal. An assessment of the destination of freight movements through Ipswich has informed the following assumptions regarding the proportion of directional travel along each freight corridor:

- Outbound traffic from Willowbank intermodal terminal distributed as follows:
  - 15% west along Warrego Highway;
  - 5% west along Cunningham Highway; and
  - 80% east along Cunningham Highway.
- Inbound traffic to Willowbank terminal distributed as follows:
  - 15% west along Warrego Highway;
  - 5% west along Cunningham Highway; and
  - 80% east along Cunningham Highway.

The impact of inland rail and the proposed intermodal terminal at Willowbank on the number of heavy freight vehicles on the road have both an inflationary and deflationary impact. On one hand, the number of road freight vehicles on the Cunningham and Warrego Highway will increase due to terminal acting as a hub for further distribution of freight to Queensland. However, there is also likely to be a reduction in some freight vehicles along these road corridors as distributors utilise the intermodal terminal to transport freight between Queensland and Victoria.

In determining these impacts, the throughput of TEUs at the intermodal terminal is a major factor. The number of TEUs determines the quantity of road freight required to transport the TEUs to their final destinations. On average, a freight vehicle can carry approximately 2.2 TEUs per trip (loaded or empty) and therefore, increased throughput at the proposed terminal will result in more significant changes in road freight traffic along the Warrego and Cunningham Highways.

This analysis has applied the above assumptions to the freight travel projections as detailed in Table 5-1 in order to obtain the net impact of inland rail and the proposed facility on freight travels along the two routes assessed. As with the economic contribution model detailed in Section 4, this assessment has been undertaken for the following intermodal terminal sizes:

- 350,000 TEUs per annum;
- 500,000 TEUs per annum; and
- 750,000 TEUs per annum.

The culmination of these assumptions has informed the calculation of the increase in heavy vehicle traffic volumes along each of the corridors directionally, for each intermodal facility size. These calculations show that the impact of road freight is magnified as the TEU capacity of the proposed intermodal terminal at Willowbank increases.

This assessment highlights the AADT heavy vehicle volumes are anticipated to increase as follows:

- Outbound heavy vehicle freight loads:
  - West along Warrego Highway: AADT impact of 76-163 additional heavy vehicles;
  - West along Cunningham Highway: AADT impact of 25-54 additional heavy vehicles;
  - East along Cunningham Highway: AADT impact of 407-872 additional heavy vehicles;
- Inbound heavy vehicle freight loads:
  - West along Warrego Highway: AADT impact of 38-82 heavy vehicles;
  - West along Cunningham Highway: AADT impact of 13-27 heavy vehicles; and
  - East along Cunningham Highway: AADT impact of 203-436 heavy vehicles.

Table 5-2 details the net impact of inland rail and the proposed intermodal terminal at Willowbank on the heavy vehicle AADT volumes along the relevant sections of the Warrego and Cunningham Highways.

Table 5-2 Distribution of Additional Heavy Vehicle Volumes by Terminal Throughput, 2036

	Annual Volumes			AADT
	Loaded Heavy Vehicles	Empty Reverse Direction	Total	Daily
350,000 TEUs				
Heavy vehicles outbound from terminal	106,061	79,545	185,606	509
Heavy vehicles inbound from terminal	53,030	39,773	92,803	254
Total heavy vehicle to shift loads	159,091	119,318	278,409	763
Outbound HV freight loads destined:				
West along Warrego	15,909	11,932	27,841	76
West along Cunningham	5,303	3,977	9,280	25
East along Cunningham	84,848	63,636	148,485	407
Inbound HV freight loads originating from				
West along Warrego	7,955	5,966	13,920	38
West along Cunningham	2,652	1,989	4,640	13
East along Cunningham	42,424	31,818	74,242	203
500,000 TEUs				
Heavy vehicles outbound from terminal	151,515	113,636	265,152	726
Heavy vehicles inbound from terminal	75,758	56,818	132,576	363
Total heavy vehicle to shift loads	227,273	170,455	397,727	1,090
Outbound HV freight loads destined:				
West along Warrego	22,727	17,045	39,773	109
West along Cunningham	7,576	5,682	13,258	36
East along Cunningham	121,212	90,909	212,121	581
Inbound HV freight loads originating from				
West along Warrego	11,364	8,523	19,886	54

	Annual Volumes			AADT
	Loaded Heavy Vehicles	Empty Reverse Direction	Total	Daily
West along Cunningham	3,788	2,841	6,629	18
East along Cunningham	60,606	45,455	106,061	291
750,000 TEUs				
Heavy vehicles outbound from terminal	227,273	170,455	397,727	1,090
Heavy vehicles inbound from terminal	113,636	85,227	198,864	545
Total heavy vehicle to shift loads	340,909	255,682	596,591	1,634
Outbound HV freight loads destined:				
West along Warrego	34,091	25,568	59,659	163
West along Cunningham	11,364	8,523	19,886	54
East along Cunningham	181,818	136,364	318,182	872
Inbound HV freight loads originating from				
West along Warrego	17,045	12,784	29,830	82
West along Cunningham	5,682	4,261	9,943	27
East along Cunningham	90,909	68,182	159,091	436

Source: CDM Smith estimates

On the other hand, the proposed Willowbank intermodal terminal is anticipated to reduce heavy traffic volumes along the Warrego Highway and Cunningham Highway due to the mode shift from road to rail.

In assessing the reduced freight volumes due to the Willowbank intermodal terminal, the following assumptions have been made:

- The assessment identified that there would be 106,061 to 227,273 loaded heavy vehicle movements outbound of the Willowbank intermodal terminal, which represent freight volumes that would have previously been transported via road. The assessment has assumed that prior to the Willowbank intermodal terminal, 80% of this freight would have arrived eastbound along the Warrego Highway, with the remaining 20% arriving eastbound along the Cunningham Highway; and
- The assessment identified that there would be 53,030 to 113,636 loaded heavy vehicle movements inbound from the Willowbank intermodal terminal, which represent freight volumes that would have previously been transported via road. The assessment has assumed that prior to the Willowbank intermodal terminal, 80% of this freight would have arrived westbound along the Warrego Highway, with the remaining 20% arriving westbound along the Cunningham Highway.

This assessment highlights the AADT heavy vehicle volumes are anticipated to decrease as follows:

- Outbound heavy vehicle freight loads:
  - East along Warrego Highway: AADT impact of heavy vehicles of 232-498 fewer heavy vehicles; and
  - East along Cunningham Highway: AADT impact of 58-125 fewer heavy vehicles;
- Inbound heavy vehicle freight loads:
  - West along Warrego Highway: AADT impact of 116-249 fewer heavy vehicles; and
  - West along Cunningham Highway: AADT impact of 29-62 fewer heavy vehicles.

Table 5-3 Distribution of Reduced Heavy Vehicle Volumes by Terminal Throughput, 2036

	Reduced Freight Volumes	
	Annual	Daily
350,000 TEUs		
Warrego Highway		
Eastbound	-84,848	-232
Westbound	-42,424	-116
Cunningham Highway		
Eastbound	-21,212	-58
Westbound	-10,606	-29
500,000 TEUs		
Warrego Highway		
Eastbound	-121,212	-332
Westbound	-60,606	-166
Cunningham Highway		
Eastbound	-30,303	-83
Westbound	-15,152	-42
750,000 TEUs		
Warrego Highway		
Eastbound	-181,818	-498
Westbound	-90,909	-249
Cunningham Highway		
Eastbound	-45,455	-125
Westbound	-22,727	-62

Source: CDM Smith estimates

The net impacts of AADT heavy vehicle traffic volumes for varying terminal sizes by link is summarised in Table 5-4. Table 5-4 highlights that overall, heavy vehicle volumes are anticipated to decrease along the Warrego Highway, but typically increase along the Cunningham Highway, except for the link to the west of the proposed intermodal site.

Table 5-4 AADT Heavy Vehicle Traffic Volumes by Link, With and Without Intermodal Terminal, 2036

Location	350,000 TEUs			500,000 TEUs			750,000 TEUs		
	Without Intermodal Terminal	With Intermodal Terminal	Change	Without Intermodal Terminal	With Intermodal Terminal	Change	Without Intermodal Terminal	With Intermodal Terminal	Change
Warrego Highway									
10021 – East of Seminary Road	11,608	11,374	-234	11,608	11,274	-335	11,608	11,106	-502
135964 – 1km West of Brisbane Valley Highway	10,000	9,652	-349	10,000	9,502	-498	10,000	9,253	-747
135715 – West of Kholo Road Overpass	10,560	10,211	-349	10,560	10,062	-498	10,560	9,813	-747
135546 - WiM Site Bremer River	11,466	11,117	-349	11,466	10,968	-498	11,466	10,719	-747
Cunningham Highway									
131819 – West of Champions Way	1,825	1,776	-49	1,825	1,755	-70	1,825	1,720	-105
135773 – At Warrill Creek	5,357	5,880	523	5,357	6,104	747	5,357	6,478	1,121
135782 – 0.8km West of Ripley Road	4,073	4,596	523	4,073	4,821	747	4,073	5,194	1,121
135718 – 100m North of Swanbank Road at Creek	6,027	6,550	523	6,027	6,774	747	6,027	7,148	1,121
140001 – 17B – South of Barclay St Overpass PTC	7,729	8,252	523	7,729	8,476	747	7,729	8,850	1,121

Source: CDM Smith estimates

Section 6 Summary of Economic Impacts

6.1 Workforce and Labour Market Impacts

6.1.1 Impacts on Employment

To assess the status quo / do nothing scenario, consideration was given to the Regional Employment Projections, 2010-11 to 2040-41 (Queensland Treasury, 2018), which were developed to inform ShapingSEQ. It is understood that these employment projections do not account for the potential introduction of an intermodal terminal at Willowbank.

Under the status quo / do nothing scenario, employment within Ipswich LGA is projected to increase from 67,927 persons in 2015-16 to 128,800 persons in 2040-41, representing average annual growth of 2.6% per annum. Employment growth is anticipated to be most significant within the following sectors:

- Health care and social assistance: Additional employment of 18,213 persons;
- Education and training: Additional employment of 8,591 persons; and
- Manufacturing: Additional employment of 7,173 persons.

The Willowbank Intermodal Terminal is expected to be fully operation by 2036, under the status quo / do nothing scenario, employment within Ipswich LGA is anticipated to stand at 113,315 persons by 2035-36.

Table 6-1 summarises the projected employment by industry within the City of Ipswich under the status quo / do nothing scenario.

Table 6-1 Projected Employment by Industry Under Status Quo / Do Nothing Scenario

	2015-16	2020-21	2025-26	2030-31	2035-36	2040-41	Ave. Ann. Growth, 2015-16 to 2040-41
Agriculture, Forestry and Fishing	311	284	273	262	251	241	-1.0%
Mining	442	519	600	694	790	889	2.8%
Manufacturing	10,835	11,427	12,341	13,798	15,733	18,008	2.1%
Electricity, Gas, Water and Waste Services	793	861	938	1,037	1,119	1,178	1.6%
Construction	4,634	6,498	7,656	8,611	9,468	10,355	3.3%
Wholesale Trade	1,714	1,780	1,837	1,901	1,966	2,036	0.7%
Retail Trade	7,882	8,355	9,318	10,341	11,343	12,404	1.8%
Accommodation and Food Services	4,558	4,900	5,313	5,704	6,035	6,318	1.3%
Transport, Postal and Warehousing	3,314	3,468	3,687	3,960	4,224	4,520	1.2%
Information Media and Telecommunications	293	300	316	336	352	370	0.9%
Financial and Insurance Services	1,448	1,392	1,318	1,302	1,386	1,516	0.2%
Rental, Hiring and Real Estate Services	848	1,017	1,216	1,435	1,659	1,918	3.3%
Professional, Scientific and Technical Services	2,521	2,930	3,401	3,915	4,441	5,079	2.8%
Administrative and Support Services	1,607	1,834	2,286	2,825	3,421	4,151	3.9%
Public Administration and Safety	6,906	7,388	8,115	8,908	9,757	10,655	1.7%
Education and Training	6,916	7,905	9,501	11,332	13,314	15,507	3.3%
Health Care and Social Assistance	10,144	12,058	15,272	19,111	23,423	28,357	4.2%

	2015-16	2020-21	2025-26	2030-31	2035-36	2040-41	Ave. Ann. Growth, 2015-16 to 2040-41
Arts and Recreation Services	498	529	576	631	690	756	1.7%
Other Services	2,264	2,518	2,937	3,424	3,946	4,541	2.8%
Total	67,927	75,962	86,900	99,527	113,315	128,800	2.6%

Source: Queensland Treasury (2019)

As outlined in the preceding chapters, the proposed Willowbank Intermodal Terminal will generate ongoing economic impacts relative to the do nothing / status quo, through the intermodal terminal operation, freight forwarders locating adjacent to the intermodal terminal and proximate industry that chooses to locate in the Ebenezer MEIA due to the intermodal terminal.

Employment impacts were estimated in terms of full time equivalents. To convert full time equivalent employment to employed persons, the assessment has assumed the relationship between full time equivalents and employment by industry sector is consistent with published estimates on economy.id for the City of Ipswich, as detailed in Table 6-2 below.

The assessment has assumed that the relationship between full time equivalents and employed persons remains constant throughout the projection period.

Table 6-2 Assumed Relationship between Employment and Full Time Equivalents by Industry Sector, Ipswich City Council

Industry Sector	Employment per FTE, 2018-19
Agriculture, Forestry & Fishing	1.05
Mining	0.99
Manufacturing	1.10
Electricity, Gas, Water & Waste Services	1.01
Construction	1.06
Wholesale Trade	1.03
Retail Trade	1.57
Accommodation & Food Services	1.70
Transport, Postal & Warehousing	0.99
Information Media and Telecommunications	1.27
Financial & Insurance Services	1.04
Rental, Hiring & Real Estate Services	1.16
Professional, Scientific & Technical Services	1.14
Administrative & Support Services	1.26
Public Administration & Safety	1.39
Education & Training	1.38
Health Care & Social Assistance	1.31
Arts & Recreation Services	1.27
Other Services	1.21

Source: economy.id 2018-19 data, Ipswich City Council

As previously stated, the assessment has assumed that the intermodal terminal and freight forwarders are operating at full capacity by 2036, with proximate industry activity also occurring (but still ramping up, as this is anticipated to occur over a fifteen year horizon). Based on the above assumptions, the employment impact directly attributable to the Willowbank Intermodal Terminal is anticipated to be:

- 2035-36: Additional 890 – 1,897 employed persons in the City of Ipswich (or a 0.8% to 1.7% uplift relative to the status quo / do nothing scenario); and
- 2040-41: Additional 1,306 to 2,792 employed persons in the City of Ipswich (or a 1.0% to 2.2% uplift relative to the status quo / do nothing scenario).

The most significant variances in employment opportunities at a sectoral level are within the transport, postal and warehousing, wholesale trade and manufacturing sectors, as detailed below:

- Transport, postal and warehousing: Additional 576 – 1,222 jobs relative to do nothing / status quo by 2040-41;
- Wholesale trade: Additional 198-423 jobs relative to do nothing / status quo by 2040-41; and
- Manufacturing: Additional 104-228 jobs relative to do nothing / status quo by 2040-41.

Table 6-3 outlines the alternative employment by industry for each of the terminal capacity scenarios as of 2035-36 and 2040-41.

Table 6-3 Anticipated Employment Impacts of Willowbank Intermodal Terminal Relative to Do Nothing / Status Quo, 2035-36 and 2040-41

	2035-36 Employment			2040-41 Employment			Difference Relative to Do Nothing, 2035-36			Difference Relative to Do Nothing, 2040-41		
	350,000 TEU	500,000 TEU	750,000 TEU	350,000 TEU	500,000 TEU	750,000 TEU	350,000 TEU	500,000 TEU	750,000 TEU	350,000 TEU	500,000 TEU	750,000 TEU
Agriculture, Forestry and Fishing	251	252	252	242	242	243	0	1	1	1	1	2
Mining	792	792	794	892	893	895	2	2	4	3	4	6
Manufacturing	15,790	15,820	15,861	18,112	18,162	18,236	57	87	128	104	154	228
Electricity, Gas, Water and Waste Services	1,124	1,126	1,130	1,186	1,189	1,194	5	7	11	8	11	16
Construction	9,515	9,535	9,568	10,452	10,493	10,561	47	67	100	97	138	206
Wholesale Trade	2,048	2,083	2,141	2,234	2,318	2,459	82	117	175	198	282	423
Retail Trade	11,354	11,360	11,368	12,423	12,432	12,445	11	17	25	19	28	41
Accommodation and Food Services	6,046	6,051	6,058	6,334	6,341	6,353	11	16	23	16	23	35
Transport, Postal and Warehousing	4,699	4,902	5,230	5,096	5,342	5,742	475	678	1,006	576	822	1,222
Information Media and Telecommunications	367	374	384	402	415	438	15	22	32	32	45	68
Financial and Insurance Services	1,403	1,410	1,422	1,539	1,549	1,565	17	24	36	23	33	49
Rental, Hiring and Real Estate Services	1,683	1,693	1,709	1,952	1,967	1,991	24	34	50	34	49	73
Professional, Scientific and Technical Services	4,496	4,519	4,558	5,162	5,198	5,256	55	78	117	83	119	177
Administrative and Support Services	3,470	3,492	3,526	4,215	4,243	4,288	49	71	105	64	92	137
Public Administration and Safety	9,772	9,778	9,789	10,675	10,684	10,698	15	21	32	20	29	43
Education and Training	13,314	13,314	13,314	15,507	15,507	15,507	0	0	0	0	0	0
Health Care and Social Assistance	23,424	23,424	23,425	28,358	28,359	28,359	1	1	2	1	2	2
Arts and Recreation Services	691	691	692	757	758	759	1	1	2	1	2	3
Other Services	3,966	3,976	3,991	4,569	4,582	4,602	20	30	45	28	41	61
Total	114,205	114,592	115,212	130,106	130,672	131,592	890	1,277	1,897	1,306	1,872	2,792

Source: CDM Smith estimates

6.1.2 Impacts on Employment Retention

The provision of additional jobs locally for Ipswich residents will positively influence employment retention.

Our estimates indicate that employment retention within the City of Ipswich will increase as follows:

- 2035-36: Employment retention to increase from 48.9% to between 49.3% and 49.8%, or by 0.4 to 0.9 percentage points; and
- 2040-41: Employment retention to increase from 44.7% to between 45.2% and 45.7%, or by 0.5 to 1.0 percentage points.

Table 6-4 outlines the impacts on employment retention under the status quo / do nothing scenario and the various terminal size scenarios.

Table 6-4 Estimated Impacts on Employment Retention, Do Nothing and With Terminal, 2015-16 to 2040-41

	2015-16	2020-21	2025-26	2030-31	2035-36	2040-41
Employed Residents – All Scenarios	87,848	110,507	143,992	184,841	231,566	288,006
Employed Workers						
Do Nothing	67,927	75,962	86,900	99,527	113,315	128,800
With Terminal						
350,000 TEU	67,927	75,962	86,900	99,527	114,205	130,106
500,000 TEU	67,927	75,962	86,900	99,527	114,592	130,672
750,000 TEU	67,927	75,962	86,900	99,527	115,212	131,592
Employment Retention						
Do Nothing	77.3%	68.7%	60.4%	53.8%	48.9%	44.7%
With Terminal						
350,000 TEU	77.3%	68.7%	60.4%	53.8%	49.3%	45.2%
500,000 TEU	77.3%	68.7%	60.4%	53.8%	49.5%	45.4%
750,000 TEU	77.3%	68.7%	60.4%	53.8%	49.8%	45.7%

Source: CDM Smith estimates

6.1.3 Impacts on Gross Regional Product

Economy id publishes annual estimates of gross regional product and industry value added by industry sector. Gross regional product is derived based on the industry value added by industry sector plus a balance item, which represents an adjustment based on taxes and subsidies.

Table 6-5 summarises the estimates of gross regional product by industry sector as of 2015-16 and 2018-19, based on the economy id data.

Table 6-5 Estimates of Real Gross Regional Product ($m), Ipswich City Council, 2015-16 and 2018-19

	2015-16	2018-19
Agriculture, Forestry and Fishing	$91	$100
Mining	$132	$128

	2015-16	2018-19
Manufacturing	$1,111	$1,189
Electricity, Gas, Water and Waste Services	$364	$363
Construction	$1,191	$1,089
Wholesale Trade	$271	$292
Retail Trade	$465	$559
Accommodation and Food Services	$191	$221
Transport, Postal and Warehousing	$351	$455
Information Media and Telecommunications	$54	$74
Financial and Insurance Services	$458	$525
Rental, Hiring and Real Estate Services	$192	$185
Professional, Scientific and Technical Services	$272	$301
Administrative and Support Services	$177	$229
Public Administration and Safety	$966	$846
Education and Training	$533	$550
Health Care and Social Assistance	$669	$811
Arts and Recreation Services	$30	$51
Other Services	$137	$162
Balance	$1,548	$1,638
Total	$9,204	$9,767

Note: Real GRP estimates are in 2016-17 dollars
Source: economy.id 2018-19 data, Ipswich City Council

In projecting gross regional product by industry sector for the City of Ipswich, the following assumptions have been made:

- Real GRP per worker has been calculated based on the GRP by industry data for 2015-16, compared against the employment by industry projections prepared by Queensland Treasury;
- Real GRP per worker remains constant throughout the projection period; and
- The balance item share of total gross regional product remains constant throughout the projection horizon.

Based on the above assumptions, total GRP in the City of Ipswich under the do nothing / status quo is projected to increase from $9,204 million in 2015-16 to $16,887 million in 2040-41.

Table 6-6 summarises the estimated gross regional product of the City of Ipswich under the do nothing / status quo scenario.

Table 6-6 Anticipated Gross Regional Product Impacts of Willowbank Intermodal Terminal Relative to Do Nothing / Status Quo, 2035-36 and 2040-41

	2035-36 GRP ($m)			2040-41 GRP ($m)			Difference Relative to Do Nothing, 2035-36			Difference Relative to Do Nothing, 2040-41		
	350,000 TEU	500,000 TEU	750,000 TEU	350,000 TEU	500,000 TEU	750,000 TEU	350,000 TEU	500,000 TEU	750,000 TEU	350,000 TEU	500,000 TEU	750,000 TEU
Agriculture, Forestry and Fishing	$73	$73	$73	$71	$71	$71	$0	$0	$0	$0	$0	$0
Mining	$237	$238	$238	$268	$268	$269	$1	$1	$2	$1	$2	$3
Manufacturing	$1,622	$1,626	$1,632	$1,864	$1,872	$1,883	$8	$12	$18	$17	$24	$36
Electricity, Gas, Water and Waste Services	$515	$516	$516	$543	$544	$545	$1	$2	$2	$2	$2	$4
Construction	$2,440	$2,443	$2,449	$2,677	$2,684	$2,696	$7	$11	$16	$16	$23	$35
Wholesale Trade	$323	$328	$337	$351	$363	$384	$12	$17	$26	$29	$42	$62
Retail Trade	$670	$670	$671	$733	$734	$735	$1	$1	$2	$1	$2	$3
Accommodation and Food Services	$254	$254	$254	$266	$266	$267	$1	$1	$1	$1	$1	$2
Transport, Postal and Warehousing	$543	$584	$651	$593	$642	$723	$96	$137	$204	$115	$164	$244
Information Media and Telecommunications	$69	$70	$72	$75	$78	$83	$3	$5	$7	$7	$10	$15
Financial and Insurance Services	$443	$445	$448	$486	$488	$492	$5	$7	$10	$6	$9	$13
Rental, Hiring and Real Estate Services	$381	$383	$386	$442	$445	$449	$5	$7	$10	$7	$10	$15
Professional, Scientific and Technical Services	$485	$488	$492	$557	$561	$568	$6	$9	$13	$9	$13	$20
Administrative and Support Services	$384	$387	$391	$466	$470	$476	$7	$9	$14	$9	$12	$18
Public Administration and Safety	$1,367	$1,367	$1,368	$1,493	$1,494	$1,495	$1	$2	$3	$2	$3	$4
Education and Training	$1,026	$1,026	$1,026	$1,195	$1,195	$1,195	$0	$0	$0	$0	$0	$0
Health Care and Social Assistance	$1,546	$1,546	$1,546	$1,871	$1,871	$1,871	$0	$0	$0	$0	$0	$0
Arts and Recreation Services	$41	$41	$41	$45	$45	$45	$0	$0	$0	$0	$0	$0
Other Services	$240	$240	$241	$276	$277	$278	$1	$2	$3	$2	$2	$4
Balance	$2,559	$2,573	$2,595	$2,885	$2,905	$2,937	$31	$45	$67	$45	$65	$97
Total	$15,218	$15,298	$15,429	$17,156	$17,272	$17,462	$187	$268	$399	$269	$385	$575

Source: CDM Smith estimates

To calculate gross regional product with the Willowbank Intermodal Terminal under each capacity scenario, the assessment has added in the value added impacts for the ongoing operation of the intermodal terminal, freight forwarders and proximate industry, as summarised in Section 4 of the report.

This analysis highlights that the most significant impacts on gross regional product in the City of Ipswich are anticipated to be within the following sectors.

- Transport, postal and warehousing: Additional GRP of $115-$224 million per annum relative to do nothing / status quo by 2040-41;
- Wholesale trade: Additional GRP of $29-$62 million per annum relative to do nothing / status quo by 2040-41; and
- Manufacturing: Additional GRP of $17-$36 million per annum relative to do nothing / status quo by 2040-41.

Table 6-7 summarises the resulting impacts on gross regional product for each of the terminal capacity scenarios as of 2036 and 2041.

Table 6-7 Anticipated Gross Regional Product Impacts of Willowbank Intermodal Terminal Relative to Do Nothing / Status Quo, 2035-36 and 2040-41

	2035-36 GRP ($m)			2040-41 GRP ($m)			Difference Relative to Do Nothing, 2035-36			Difference Relative to Do Nothing, 2040-41		
	350,000 TEU	500,000 TEU	750,000 TEU	350,000 TEU	500,000 TEU	750,000 TEU	350,000 TEU	500,000 TEU	750,000 TEU	350,000 TEU	500,000 TEU	750,000 TEU
Agriculture, Forestry and Fishing	$73	$73	$73	$71	$71	$71	$0	$0	$0	$0	$0	$0
Mining	$237	$238	$238	$268	$268	$269	$1	$1	$2	$1	$2	$3
Manufacturing	$1,622	$1,626	$1,632	$1,864	$1,872	$1,883	$8	$12	$18	$17	$24	$36
Electricity, Gas, Water and Waste Services	$515	$516	$516	$543	$544	$545	$1	$2	$2	$2	$2	$4
Construction	$2,440	$2,443	$2,449	$2,677	$2,684	$2,696	$7	$11	$16	$16	$23	$35
Wholesale Trade	$323	$328	$337	$351	$363	$384	$12	$17	$26	$29	$42	$62
Retail Trade	$670	$670	$671	$733	$734	$735	$1	$1	$2	$1	$2	$3
Accommodation and Food Services	$254	$254	$254	$266	$266	$267	$1	$1	$1	$1	$1	$2
Transport, Postal and Warehousing	$543	$584	$651	$593	$642	$723	$96	$137	$204	$115	$164	$244
Information Media and Telecommunications	$69	$70	$72	$75	$78	$83	$3	$5	$7	$7	$10	$15
Financial and Insurance Services	$443	$445	$448	$486	$488	$492	$5	$7	$10	$6	$9	$13
Rental, Hiring and Real Estate Services	$381	$383	$386	$442	$445	$449	$5	$7	$10	$7	$10	$15
Professional, Scientific and Technical Services	$485	$488	$492	$557	$561	$568	$6	$9	$13	$9	$13	$20
Administrative and Support Services	$384	$387	$391	$466	$470	$476	$7	$9	$14	$9	$12	$18
Public Administration and Safety	$1,367	$1,367	$1,368	$1,493	$1,494	$1,495	$1	$2	$3	$2	$3	$4
Education and Training	$1,026	$1,026	$1,026	$1,195	$1,195	$1,195	$0	$0	$0	$0	$0	$0
Health Care and Social Assistance	$1,546	$1,546	$1,546	$1,871	$1,871	$1,871	$0	$0	$0	$0	$0	$0
Arts and Recreation Services	$41	$41	$41	$45	$45	$45	$0	$0	$0	$0	$0	$0
Other Services	$240	$240	$241	$276	$277	$278	$1	$2	$3	$2	$2	$4
Balance	$2,559	$2,573	$2,595	$2,885	$2,905	$2,937	$31	$45	$67	$45	$65	$97
Total	$15,218	$15,298	$15,429	$17,156	$17,272	$17,462	$187	$268	$399	$269	$385	$575

Source: CDM Smith estimates

6.2 Impacts on Cost of Living Pressures

As outlined above, the proposed Willowbank Intermodal Terminal will provide additional opportunities to residents within the City of Ipswich, reducing the need for Ipswich residents to travel beyond the LGA boundary to find suitable employment, particularly within industrial sectors.

The provision of additional job opportunities, whilst significant, is not anticipated to flow through to significant increase in cost of living pressures relative to the status quo (i.e. the do nothing scenario). The Willowbank Intermodal Terminal is located within the Ebenezer MEIA which has been identified for some time as a location for industrial employment opportunities, and hence likely already inbuilt into the pricing of residential product within Ipswich.

As outlined above, the employment uplifts associated with the project are in the order of approximately 1,300 to 2,800 additional employment opportunities locally in 2040-41, which is representative of 1.0% to 2.2% uplift in the number of local jobs.

6.3 Impacts on Heavy Vehicle Movements

The introduction of the proposed intermodal terminal at Willowbank is anticipated to impact heavy vehicle movements along the Cunningham Highway and Warrego Highway. Heavy vehicle movements are anticipated to decrease along the Warrego Highway by approximately 349 to 747 heavy vehicles per day once the Willowbank Intermodal Terminal is fully operational. On the other hand, heavy vehicle movements along the Cunningham Highway are anticipated to increase by approximately 523 to 1,121 heavy vehicles per day.

This analysis highlights that there would be increasing maintenance costs likely incurred along the Cunningham Highway relative to the status quo / do noting scenario, whereas maintenance costs along the Warrego Highway are likely to fall relative to the status quo / do nothing scenario.

6.4 Productivity Benefits

The productivity benefits of the proposed Willowbank Intermodal Terminal are driven by the Inland Rail project through the cost saving per tonne kilometre through the transfer of freight from road to rail.

This productivity benefit generally accrues to the consumers of freight which are disparate, and not concentrated within a single location. The productivity benefit is anticipated to be distributed across a broad geography, including various locations within Queensland and interstate (e.g. Melbourne). Therefore, while it is recognised that Inland Rail will be an important contributor to improved productivity, it is challenging to ascertain the proportion of the productivity benefit that would ultimately be accrued in the City of Ipswich.

6.5 Impacts on Industrial Land Demand

The proposed Willowbank Intermodal Terminal is contained within the Ebenezer MEIA, which is intended to be established for industrial purposes. The intermodal terminal is anticipated to increase demand for industrial land within the Ebenezer MEIA by an additional 20.7 hectares to 44.3 hectares in 2036, increasing to 42 hectares to 90 hectares by 2046 relative to the status quo / do nothing scenario, as detailed below:

- **Freight forwarders:** With the Willowbank Intermodal Terminal, freight forwarders will locate immediately adjacent to the intermodal facility to ensure the efficient operation of the terminal. The industrial land demanded by these uses will be influenced by the likely capacity of the intermodal facility. Based on our capacity estimates of 350,000 TEUs, 500,000 TEUs and 750,000 TEUs, industrial land demand by freight forwarders is anticipated to be 14 to 30 hectares at build out (assumed to be 2036), with this land not demanded under the status quo (do nothing) scenario; and

- **Proximate businesses:** The presence of the Willowbank Intermodal Terminal will entice businesses to the Ebenezer MEIA which may have otherwise chosen to locate in other parts of South East Queensland. Our estimates suggest that industrial land demand generated by proximate businesses is in the order of 6.7 to 14.3 hectares by 2036, increasing to 28 to 60 hectares by 2046, with this land not demanded under the status quo (do nothing) scenario.

Section 7 Social Impact Assessment

7.1 Methodology

7.1.1 Approach to Social Impact Assessment

This Social Impact Assessment (SIA) has been undertaken essentially in accordance with the Queensland Government Department of State Development, Manufacturing, Infrastructure and Planning's Social Impact Assessment Guideline (2018) and generally national and international best practice methodologies. While the Guidelines are a statutory instrument only for resource projects, they provide a useful framework for considering the project's social benefits and impacts.

Social impacts for the project are identified and described, then compared to the base case or 'baseline' situation established in Section 3 of the report. These are subsequently analysed, and their significance is assessed. The assessment should be considered preliminary at this stage until further detail is available. In the evaluation of the significance of benefits and impacts, the precautionary principle has been applied where information is unknown resulting in an understatement of potential positive benefits and an overstatement of negative impacts. Additionally, in assessing the significance of impacts, the assessment has assumed that no mitigation measures would be taken to address the potential impact. However, the negative impacts have potential for mitigation via the development of appropriate management measures, with potential mitigation measures outlined in the identification and assessment of social impacts.

Community engagement is considered essential to inform the development of the SIA. Targeted stakeholder engagement with government stakeholders was undertaken and has informed the analysis, including the identification of anticipated benefits and social impacts.

7.1.2 Scenarios and Assumptions

The social benefits and impacts of two scenarios are considered in the assessment:

Scenario 1: Status Quo - Do nothing.

This scenario is the base case where the Willowbank Intermodal is not developed, and therefore no catalyst to the activation of surrounding industrial land is not achieved. In the absence of an intermodal at Willowbank, Inland Rail and expected future freight requirements will be routed through to existing intermodal and freight handling centres such as Acacia Ridge Intermodal and Brisbane multi-modal facilities, which must consider the impact on surrounding road and land use.

Scenario 2: Development of Intermodal Terminal

This scenario expects the development of the Willowbank Intermodal Terminal and considers it to be a catalyst for the activation of surrounding industrial land. Total employment impacts are estimated to be in the order of 1,000 to 1,500 FTEs over the construction phase, which is anticipated to be more than a single year. The assessment has assumed a three year construction phase, which translates to FTE employment in the order of 333 to 500 FTEs.

Total operational impacts associated with the Willowbank Intermodal Terminal (operation of the terminal itself, co-location of freight forwarders and proximate industry has been estimated as follows:

- Scenario 2A – Assumes 350,000 TEU volume per year and employment of approximately 1700 FTEs once the terminal, freight forwarders and proximate industry are fully operational (likely to be 2046);
- Scenario 2B – Assumes 500,000 TEU volume per year and employment of approximately 2,400 FTEs once the terminal, freight forwarders and proximate industry are fully operational (likely to be 2046); and
- Scenario 2C – Assumes 750,000 TEU volume per year and employment of approximately 3,500 FTEs once the terminal, freight forwarders and proximate industry are fully operational (likely to be 2046).

Phases of the proposal considered will be:

- Planning;
- Construction; and
- Operation.

7.1.3 Social Impact Categories

Identified social benefits and impacts have been categorised into eight themes as outlined below (based on the Queensland SIA Guideline (Queensland Government (Coordinator General), 2018)):

- Community Values and Functioning: Changes to community values and/or the way the community functions;
- Way of Life: Impacts on how people live, work, play and interact with one another on a day-to-day basis;
- Culture: Impacts on culture, history, and ability to access cultural resources;
- Safety: Impacts on communities' physical safety, exposure to hazards or risks, and access to and control over resources;
- Quality of Life: Impacts on communities' quality of life including liveability and aesthetics, as well as the condition of their environment (for example, air quality, noise levels, and access to water);
- Infrastructure: Impacts on communities' access to, and quality of, infrastructure, services and facilities;
- Health and Wellbeing: Impacts on communities' physical and mental health and well-being, as well as their social, cultural and economic well-being; and
- Livelihoods: Changes to livelihoods, for example, whether peoples' jobs, properties or businesses are affected, or whether they experience advantage/disadvantage.

7.1.4 Significance Assessment

The significance assessment has been undertaken based on consideration of:

- Probability that identified social benefit or impact will occur: rare, unlikely, possible, likely, and almost certain;
- Consequence of the impact: minimal, minor, moderate, major, and severe based on an analysis of:
  - Scale;
  - Duration; and
  - Intensity.

The evaluation of significance applies the precautionary principle where information is unknown resulting in an understatement of potential positive benefits and an overstatement of negative impacts.

Figure 7-1 is a matrix of significance for possible social benefits or negative impacts that the proposal may have on stakeholders. The consequence weights the impacts while the likelihood weights the possibility of the impact happening. The significance of the impact is then arrived at through cross tabulating these two variables (see colour coding). Significance is rated:

- Low;
- Moderate;
- High; or
- Very High.

Figure 7-1 Social benefits and impacts significance matrix

7.2 Identification and Assessment of Social Impacts

7.2.1 Benefits

1. Health and wellbeing benefits of increased employment opportunities and associated income

New employment opportunities would be generated by the intermodal terminal, both in construction and operation phases. During construction, it is estimated that 500 to 750 direct FTE jobs would be generated throughout the construction period of the project, which is likely to occur over multiple years. During operation of the intermodal terminal, it is estimated that approximately 70 and 140 FTE jobs would be generated per annum.

In addition to employment at the intermodal facility itself, between 500 and 1,100 FTE jobs are anticipated to be generated annually from freight forwarders that co-locate with the intermodal facility (five year ramp-up period), and an additional 1,100 to 2,300 FTE jobs annually associated with businesses that choose to locate within proximity to the intermodal facility (15-year ramp up period).

The employment uplifts associated with the project are in the order of approximately 1,300 to 2,800 additional employment opportunities locally in 2040-41, which is representative of 1.0% to 2.2% uplift in the number of local jobs relative to the status quo / do nothing scenario.

Although the Rosewood SA2 has a lower unemployment rate (6.5%) compared to the Ipswich LGA, SEQ and Queensland, it also has a lower workforce participation rate (59.2%). Both Rosewood SA2 and Ipswich LGA are characterised by a high incidence of households with a mortgage. Ipswich LGA also has a high proportion of households renting and the highest unemployment rate (9.0%) of any of the areas compared. Both Rosewood SA2 and Ipswich LGA have significantly lower average household incomes than SEQ as a whole. Further, the social baseline demonstrated that Ipswich currently has poorer health and wellbeing outcomes compared to Queensland and

Australia, including a high health risk factor profile, higher rates of chronic diseases and conditions (including mental and behavioural), and lower self-assessed health and wellbeing.

This data suggests that additional job creation in the region would be highly desirable and could deliver improved health and wellbeing outcomes for residents. Increased employment opportunities would deliver associated economic benefits for residents of the Ipswich LGA and the local economy. In addition to providing income, being employed is accepted to deliver individual health, social and emotional wellbeing outcomes, and contributes to connection with society, skill development and a sense of self-worth (Australian Institute of Health and Welfare 2019). Therefore, improved employment opportunities associated with the project may result in increased financial security and improved health and wellbeing outcomes for Ipswich LGA.

Should the proposal not proceed, associated new employment will not be generated, and employment growth in the Ipswich LGA may be slower without the intermodal terminal as a catalyst for the remainder of the industrial area. This would result in lower job creation levels and continued or increasing disadvantage.

Table 7-1 Health and Wellbeing – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Health and wellbeing benefits of new direct and indirect employment opportunities for Ipswich LGA residents.	Ipswich LGA community	Do Nothing	NA	Minimal	Unlikely	Low
		350,000 TEU	Construction	Moderate	Likely	High
			Operation	Moderate	Likely	High
		500,000 TEU	Construction	Major	Likely	High
			Operation	Major	Likely	High
		750,000 TEU	Construction	Major	Likely	High
			Operation	Major	Likely	High

Source: CDM Smith Analysis (2020)

2. Potential for upskilling of local workers

Stakeholders involved in consultation noted that the proposal would support industries that may create demand for local skilled employment. This would result in a skill development opportunity for the Ipswich LGA.

One stakeholder suggested that Queensland's selection as an Advanced Manufacturing Hub by the World Economic Forum may present an opportunity for the industrial estate broadly, including a proposed intermodal terminal (Dick and Jones, 2020). In addition, the Queensland Government's Regional Skill Investment Strategy is funding a skills development project for Ipswich incorporating transport and logistics and advanced manufacturing, demonstrating an existing commitment to upskilling residents (Department of Employment, Small Business and Training 2020).

Ipswich is considered a young population which is skilled in manufacturing and with history in supporting train maintenance and supply productivity. However, there is evidence of relevant skills shortages in Ipswich. For example, difficulty accessing skilled staff and a need to regularly upskill staff to adapt to new technology and processes is identified as a key challenge for the Ipswich manufacturing sector (State of Queensland 2018). An increase in skills would provide opportunities to gain social advantage in an area which the baseline analysis has shown has higher unemployment and more disadvantage compared to Queensland.

Increased skills will usually lead to increased and more permanent employment prospects, increased wages and the opportunity for advancement. In turn this may contribute to increasing the relative level of advantage for individuals and households across Ipswich LGA as a whole. Should the proposal not proceed, the opportunity to upskill for Ipswich residents may be lost, thereby losing the potential associated social benefits, and may result in stagnant or declining employment prospects, wages and opportunity for advancement.

Table 7-2 Upskilling – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
New training and upskilling opportunities for Ipswich workforce.	Ipswich LGA community	Do Nothing	N/A	Minimal	Unlikely	Low
		350,000 TEU	Construction	Minor	Likely	Moderate
			Operation	Moderate	Likely	High
		500,000 TEU	Construction	Minor	Likely	Moderate
			Operation	Moderate	Likely	High
		750,000 TEU	Construction	Moderate	Likely	High
			Operation	Moderate	Likely	High

Source: CDM Smith Analysis (2020)

3. Social benefits of higher employment self-containment

The vast majority of residents of Rosewood SA2 work within the Ipswich SA4, and similarly, the majority of Ipswich LGA residents work within the Ipswich LGA. However, recent population growth in the LGA has demonstrated a lack of employment containment, and the proportion of Ipswich LGA residents working within the Ipswich LGA is anticipated to decline significantly by 2041 to less than 45% as the population grows, meaning 159,000 workers are projected to travel outside of the LGA for work each day unless new employment is created.

As identified in the baseline, the City of Ipswich has identified aims to facilitate support employment self-containment through local industry development and employment; and identifies strategic priorities for sustained health, safety and connection. Government stakeholders identified that the proposal has the potential to create employment for local residents which could reduce the need for some local residents to leave the LGA for employment. This containment of residents would likely result in shorter commuting times, offering several associated social benefits, including improvements to physical and mental health, greater opportunities for social connection, cost savings, and reduced exposure to nuisances and hazards such as congestion and pollution, and reduced environmental impacts (Chatterjee et all 2020; Ettema et al 2010; Stutzer and Fre 2008). Furthermore, as demonstrated in the social and economic baseline, Ipswich LGA already has a ready pool of blue-collar labour (e.g. manufacturing and construction employment) where residents, due to their skill base, are ideally placed to support an intermodal terminal.

Based on the assumption that each future worker drives a vehicle and lives in the LGA, there could be between 1,370 and 3,040 less vehicles travelling out of the Ipswich LGA as a result of the proposal (direct and indirect employment) than if those workers were employed outside of the LGA. Alternatively applying current journey to work vehicle usage rate of 44% could indicate between 602 and 1,337 less vehicles may travel out of the Ipswich LGA as a result of the proposal. Both assumptions indicate considerable vehicle numbers which would impact congestion levels to some extent. It is unlikely that all workers would be Ipswich LGA residents, however the proportions are unknown at this early stage of planning. Currently, 66.9% of people working in Rosewood SA2 live in the Ipswich LGA, suggesting a local employment trend.

In the case that the proposal were not to proceed, the projection for a large proportion of Ipswich residents leaving the LGA for work purposes is more likely, resulting in longer commutes and associated poor mental and physical health outcomes, increased social isolation, higher costs, greater environmental impacts, and overall liveability decline.

Table 7-3 Social Benefits – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Potential reduction in commuting times for residents of Ipswich LGA due to creation of employment opportunities and higher employment containment, resulting in a range of financial, health and wellbeing benefits.	Ipswich LGA community	Do Nothing	N/A	Minimal	Unlikely	Low
		350,000 TEU	Operation	Moderate	Likely	High
		500,000 TEU	Operation	Moderate	Likely	High
		750,000 TEU	Operation	Moderate	Likely	High

Source: CDM Smith Analysis (2020)

4. Improved road network due to upgrades

There is potential for road upgrades associated with the proposal. Transport planning stakeholders advise that significant transport planning will likely be required to identify how the road network will manage with increased traffic, including heavy vehicle traffic. This transport planning may result in identification of improvements in the network such as intersection upgrades, facilitation of the Western Ipswich Bypass, increase in carrying capacity, and surface upgrades. Significant projects identified to date, but not yet funded/ progressed include upgrade of the Cunningham Highway to Dinmore, a 4.74km upgrade known as the Cunningham Highway – Yamanto Interchange to Ebenezer Creek upgrade (Infrastructure Australia) (including the Amberley interchange) and an intersection upgrade at the industrial estate's entry.

The proposal may help to attract State and Commonwealth funding for road improvements at an earlier time than they would otherwise occur, and consequently offer associated safety and improved health and wellbeing benefits to the wider community. This would reduce the social costs of accidents to the community, lead to a reduced number of deaths, injuries and hospitalisations as a result of crashes, and reduce trauma from road crashes for members of the community and emergency workers. It would also lead to improvements in travel time reliability which can contribute to an increase in family and leisure time among workers and improved social outcomes.

The exact nature of the benefit resulting from upgrades to road networks is not able to be determined given the proposal status in the early planning phase. A more detailed traffic assessment would need to be carried out to further understand any potential road investments needed as a result of the proposal. The assessment in this section has attempted to consider the social impacts of traffic improvements without this detailed traffic modelling and therefore should be considered as indicative only.

Should the proposal not proceed, improvement of the road network may not occur or may take longer to be delivered, thereby slowing down or preventing any benefit to be accrued, and potentially leading to sustained or increasing congestion, road safety risk and poorer social and health outcomes.

Table 7-4 Improved Road Network – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Potential upgrades to roads and key intersections resulting in time savings and improved safety for road users.	Nearby residents Road users of the Cunningham Highway to Dinmore Workers and families	Do nothing	N/A	Minimal	Possible	Low
		350,000 TEU	Operation	Minor	Likely	Moderate
		500,000 TEU	Operation	Moderate	Likely	High
		750,000 TEU	Operation	Moderate	Likely	High

Source: CDM Smith Analysis (2020)

5. Potential increase in property values for existing landholders

The development of the Ebenezer Regional Industrial Area will result in a major change in land use and a resultant uplift in the value of land. The development of the intermodal terminal would further contribute to this broader impact, increasing the value of land again as this area becomes sought after as an industrial and transport hub. This is likely to benefit original and subsequent landholders in the Regional Industrial Area. An uplift in value would benefit and enable landholders who wish to relocate to afford resumption of their lifestyle in an alternative location.

Should the proposal not proceed, potential substantial property value increases may not occur, or the rate of increase may be slower, impacting on the ability of landholders who may still wish to relocate due to the anticipated future industrial intent for the area.

Table 7-5 Improved Road Network – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Potential reduced properties values for nearby landholders associated with loss of amenity.	Nearby landholders	Do Nothing	N/A	Minimal	Possible	Low
		350,000 TEU	Construction	Minor	Likely	Moderate
			Operation	Minor	Likely	Moderate
		500,000 TEU	Construction	Minor	Likely	Moderate
			Operation	Minor	Likely	Moderate
		750,000 TEU	Construction	Minor	Likely	Moderate
			Operation	Minor	Likely	Moderate

Source: CDM Smith Analysis (2020)

6. Benefits of improved access to broader markets for local businesses

Intermodal terminal and Inland Rail offer connectivity and potentially open up markets (including import/export) for local businesses. Stakeholders involved in engagement activities suggested there may be potential for local businesses to benefit from improved access to broader markets. However, other stakeholders suggested that it is likely "big business" would mainly benefit from this access and smaller businesses may miss out on the economic opportunity due to lack of capacity.

Regardless, local workers may benefit from increased availability of local jobs. Should strategies be developed to target opportunities and capacity for local businesses to tap broader markets, the multiplier effects of jobs within the community will increase. In turn, this will enhance the social development and relative advantage of the community and area.

However, further analysis is required to understand the likely opportunities for local businesses and therefore the impacts on the community. The assessment in this section has attempted to consider the social impacts without this detailed analysis and therefore should be considered as indicative only.

Should the proposal not proceed, social, health and wellbeing benefits associated with increased financial security and economic prosperity generated from new business opportunities may not be realised or may be achieved at a slower rate or lesser extent. It is likely that the stimulus to the level of relative advantage across Ipswich LGA would not occur.

Table 7-6 Improved Access to Broader Markets – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Economic benefits for local businesses associated with improved connecting opening up of new markets.	Ipswich LGA businesses Road users of the Cunningham Highway to Dinmore Workers and families	Do Nothing	N/A	Minimal	Unlikely	Low
		350,000 TEU	Operation	Unknown	Unknown	Unknown
		500,000 TEU	Operation	Unknown	Unknown	Unknown
		750,000 TEU	Operation	Unknown	Unknown	Unknown

Source: CDM Smith Analysis (2020)

7.2.2 Possible Negative Social Impacts

7. Safety risks associated with increased heavy vehicle traffic on specific nearby roads

The proposal would result in a decrease in heavy vehicle traffic volume by road from Melbourne, and therefore a decrease in heavy vehicle traffic volume mainly on the Warrego Highway, and to a lesser extent on the Cunningham Highway (see analysis in Section 5). This would improve safety on these roads.

Heavy vehicle traffic volumes are likely to increase on the Cunningham Highway to the east of the project area compared to baseline, with a key impact area being between the proposal site at Willowbank and the Ipswich Motorway at Dinmore. An estimated 80% of the outbound and inbound heavy vehicle traffic associated with the proposal is anticipated to travel along this route. Average annual daily traffic (AADT) for heavy vehicles along this route is expected to increase by:

- 523 vehicles for a 350,000 TEU facility;
- 747 vehicles for a 500,000 TEU facility; and
- 1,121 vehicles for a 750,000 TEUs facility.

In 2018, the AADT for sites to the east of the proposal site along the Cunningham Highway ranged from 20,110 to 36,500 vehicles (Table 7-7) with heavy vehicles representing around 15% of total traffic. The increase in traffic associated with the project at these sites to the east of the proposal site is therefore in the order of (in comparison to 2018 data):

- 1-3% of total traffic and 8-16% of heavy vehicle traffic for a 350,000 TEU facility;
- 2-4% of total traffic and 12-23% of heavy vehicle traffic for a 500,000 TEU facility; and
- 3-6% of total traffic and 18-34% of heavy vehicle traffic for a 750,000 TEUs facility.

Table 7-7 Annual average daily traffic, Sites east of project site, 2018

Site	Average annual daily traffic (AADT)	Average annual daily traffic (AADT) - Heavy vehicles
Site #131819 – West of Champion Way, Willowbank	6,659	1,484 (22.3%)
Site #135773 – At Warrill Creek	25,667	4,356 (17.0%)
Site #135782 – West of Ripley Road	20,110	3,312 (16.5%)
Site #135718 – Swanbank Road at creek	34,954	4,901 (14.0%)
Site #140001 – South of Barclay St Overpass	36,454	6,285 (17.2%)

Source: Queensland Government (2018)

As part of modelling undertaken for this report, future heavy vehicle traffic was modelled to 2036 based on a continuation of existing trends in annual traffic growth / decline. Based on this more detailed modelling for heavy vehicle traffic only, the increase in traffic associated with the project at these sites to the east of the proposal site is in the order of (in comparison to future expected baseline trends):

- 7-13% of heavy vehicle traffic for a 350,000 TEU facility;
- 10-18% of heavy vehicle traffic for a 500,000 TEU facility; and
- 15-28% of heavy vehicle traffic for a 750,000 TEUs facility.

An increase in heavy vehicles on roads would lead to a subsequent potential increase in road safety risk. Relative to distance travelled, heavy vehicles are under-represented in the number of serious crashes. However, heavy vehicles are over-represented in crashes causing deaths and serious injuries because of the significant impact they can have on other road users when involved in a crash due to their size (National Road Safety Action Plan 2018-2020).

This would increase the social costs of accidents to the community, lead to an increased number of deaths, serious injuries and hospitalisations as a result of crashes and therefore worse health outcomes, and increase trauma from road crashes for members of the community and emergency workers.

A more detailed traffic assessment would need to be carried out to further understand any potential traffic safety issues brought about by the proposal, and the net impact on road safety. The assessment in this section has attempted to consider the social impacts of traffic safety without this detailed traffic modelling and therefore should be considered as indicative only.

Appropriate management strategies may be able to mitigate this impact, thereby reducing the potential negative safety risks.

Table 7-8 Safety Risks – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Increase safety risk on specific nearby roads due to additional heavy vehicle traffic.	Nearby residents Road users of the Cunningham Highway to Dinmore Workers and families	Do Nothing	N/A	Minimal	Unlikely	Low
		350,000 TEU	Operation	Minor	Likely	Moderate
		500,000 TEU	Operation	Moderate	Likely	High
		750,000 TEU	Operation	Major	Likely	High

Source: CDM Smith Analysis (2020)

8. Delays from increased traffic on specific nearby roads and additional rail crossings

Increased traffic associated with the proposal may cause delay and congestion on specific nearby roads. The impact will be particularly evident for the stretch of Cunningham Highway to Dinmore. As discussed in detail in the previous

section, the proposal is likely to increase the number of heavy vehicles on this portion of highway. The proposal will also generate traffic associated with local employment (both direct and indirect employment).

During construction, the proposal could generate up to 500 additional vehicles accessing the surrounding road network each day, assuming one vehicle for each FTE worker (and a three year construction period). However, this is considered a maximum figure as the number of workers accessing the site each day may be lower or some workers may access the site using other means of transport.

During operation, the proposal may generate up to 3,543 FTE jobs, potentially resulting in a significant uplift in vehicles accessing the surrounding road network each day. However, the actual number of vehicles each day is likely to be lower than this maximum. It should also be considered that in the absence of the Willowbank Intermodal Terminal, additional traffic would be anticipated through the development of the Ebenezer Regional Industrial Area for industrial purposes other than an intermodal terminal.

Furthermore, queuing trains may also result in road congestion around the proposal site. This is unlikely to impact the Cunningham Highway as current planning by Inland Rail suggests that a road bridge over the highway is proposed (ARTC 2019). However, this could be an issue for other surrounding local roads.

Additional traffic may increase travel times for local residents and workers and result in negative impacts such as physical and mental health effects, social disconnection resulting from lost time, and increased exposure to nuisances and hazards such as pollution (Chatterjee et all 2020; Ettema et al 2010; Stutzer and Fre 2008). Furthermore, heavy vehicles also contribute to congestion via physical and psychological effects on surrounding traffic flow because of their length and size and acceleration/ deceleration (Moridopour et al 2014).

Congestion also results in negative economic impact. For example, the current congestion resulting from the existing intersection of the Cunningham Highway and Ipswich Rosewood Road is estimated to have a direct cost of approximately $45 million per year (Infrastructure Australia 2016).

A more detailed traffic assessment would need to be carried out to further understand any potential traffic delays brought about by the proposal and its impacts. The assessment in this section has attempted to consider the social impacts of traffic delays without this detailed traffic modelling and therefore should be considered as indicative only.

Appropriate management strategies around road network planning may be able to mitigate this impact, thereby reducing congestion and associated social and health and wellbeing effects.

Table 7-9 Delays from Increased Traffic – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Increased traffic and rail crossings potentially causing delay for road users contributing to environmental, financial, health and wellbeing issues.	Nearby residents Road users of the Cunningham Highway to Dinmore Workers and families	Do Nothing	N/A	Minimal	Unlikely	Low
		350,000 TEU	Construction	Minor	Likely	Moderate
			Operation	Minor	Likely	Moderate
		500,000 TEU	Construction	Minor	Likely	Moderate
			Operation	Moderate	Likely	High
		750,000 TEU	Construction	Minor	Likely	Moderate
			Operation	Major	Likely	High

Source: CDM Smith Analysis (2020)

9. Diversion of public funding expenditure on road upgrades associated with increased traffic

An increase in road traffic, particularly heavy vehicles, may necessitate local road upgrades to increase carrying capacity and safety. The City of Ipswich's Transport Plan, iGO, for instance, identifies the requirement for future planning for an arterial road system for the Ebenezer Regional Industrial Area, and an East-West commuter link road between Ebenezer and Ripley.

The planning and implementation of road upgrades will require significant investment of public funds, some of which will fall on Council. Although these upgrades will be necessary to service the broader Ebenezer Regional Industrial Area, the proposal would be a catalyst or enabler of the industrial area. The investment of public funds may divert resources from other priorities which the community could consider more important. However, road upgrades are likely to be required to support other industrial projects in the Willowbank/ Ebenezer area and may also be required to support existing levels of traffic as the population grows, regardless of whether the intermodal terminal proceeds.

A more detailed traffic assessment would need to be carried out to further understand any potential for required road upgrades brought about by the proposal, and the implications of funding these. The assessment in this section has attempted to consider the social impacts of road upgrades without this detailed traffic modelling and therefore should be considered as indicative only.

Table 7-10 Diversion of Public Funding: Road Upgrades – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Increased expenditure of public funds on new road upgrades due to traffic generated, including heavy vehicles.	Taxpayers/ Ratepayers	Do Nothing	N/A	Minimal	Unlikely	Low
		350,000 TEU	Construction	Minor	Possible	Moderate
			Operation	Minor	Likely	Moderate
		500,000 TEU	Construction	Minor	Possible	Moderate
			Operation	Minor	Likely	Moderate
		750,000 TEU	Construction	Minor	Possible	Moderate
			Operation	Minor	Likely	Moderate

Source: CDM Smith Analysis (2020)

9. Diversion of public funding expenditure for ongoing road maintenance associated with increased traffic

As the proposal would also increase heavy vehicle traffic, it would be likely to contribute more significantly to wear / deterioration of road surfaces and safety issues compared to other traffic, with the impact of one semi-trailer estimated to be equivalent to 1,408 additional passenger cars (Wilde 2014). An increase in road traffic associated with the intermodal terminal, particularly heavy vehicles, would therefore be likely to lead to an increase in road maintenance requirements. The planning and implementation of road upgrades and intensified maintenance regimes will require significant investment of public funds. Although these upgrades are likely to be necessary to service the broader Ebenezer Regional Industrial Area regardless of whether an intermodal terminal progresses or not, the additional traffic generated by the intermodal terminal will exacerbate this impact. This is particularly so for the Cunningham Highway between the intermodal terminal and the Ipswich Motorway at Dinmore.

However, while heavy vehicle traffic will increase north/east of the intermodal terminal along the Cunningham Highway, the intermodal terminal will result in a reduction in heavy vehicle movements elsewhere in the surrounding network. A decrease in heavy vehicles is anticipated from south of the intermodal terminal along the Cunningham Highway due to substitution of rail for freight movement via Inland Rail (decrease of between 49 and 105 heavy vehicles per day, depending on the size of the terminal). Furthermore, heavy vehicle traffic along the Warrego Highway would be anticipated to decrease by between 234 and 747 vehicles daily as a result of the development of the intermodal terminal. These heavy vehicle decreases could reduce road maintenance requirements on the Cunningham Highway south of the intermodal terminal, and along the Warrego Highway to Toowoomba and therefore partially offset the increased road maintenance costs associated with the intermodal terminal, as discussed above.

A more detailed traffic assessment would need to be carried out to further understand any potential consequences for maintenance brought about by the proposal, and the funding implications of this. The assessment in this section has attempted to consider the social impacts of road maintenance without this detailed traffic modelling and therefore should be considered as indicative only.

Increased road maintenance may be required to support other industrial projects in the Willowbank/ Ebenezer area, regardless of whether the intermodal terminal proceeds. Furthermore, increased road maintenance would also offer associated safety and health and wellbeing benefits to the community in general.

Table 7-11 Diversion of Public Funding: Road Maintenance – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Increased public fund expenditure on intensified road maintenance.	Taxpayers/ Ratepayers	Do Nothing	N/A	Minimal	Unlikely	Low
		350,000 TEU	Construction	Minor	Possible	Moderate
			Operation	Moderate	Likely	High
		500,000 TEU	Construction	Minor	Possible	Moderate
			Operation	Major	Likely	High
		750,000 TEU	Construction	Minor	Possible	Moderate
			Operation	Major	Likely	High

Source: CDM Smith Analysis (2020)

10. Amenity and health impacts from increase in road noise

The increase in traffic, particularly heavy vehicle traffic noted earlier, will also have amenity implications for residents and other land uses through an increase in road noise. The Cunningham Highway between the intermodal terminal and Dinmore traverses the 'urban areas' within the city's identified settlement pattern, directly abuts suburbs in Ipswich's south-east urban footprint, and is positioned between the existing urban areas of Ipswich and the growth suburb of Ripley. This means that noise impacts arising from an increase in traffic, particularly heavy vehicle traffic, could potentially impact a large number of residents and other landowners.

Based on an exposure zone of up to 500m from the Cunningham Highway and an average per household size of 2.8 persons, there are approximately 4,303 dwellings and an estimated 11,169 residents who may be impacted by amenity and health impacts associated with an increase in traffic.

Nearby residents may be at increased risk of health issues from increased noise both during construction and on operation. Noise impacts can range from annoyance, to interference with daily life, and in the worst case, to sleep disruption and deprivation.

It would be anticipated that an Environmental Management Plan would include mitigations to manage noise during construction, and potentially to result in noise reduction measures such as noise barriers on operation. A detailed noise assessment would need to be carried out to further understand any potential noise implications of the proposal. The assessment in this section has attempted to consider the social impacts of noise without this detailed noise modelling and therefore should be considered as indicative only.

Table 7-12 Amenity and Health Impacts: Road Noise – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Amenity impacts for neighbouring landholders from an increase in traffic noise.	Nearby residents Residents along Cunningham Highway to Dinmore	Do Nothing	N/A	Minimal	Unlikely	Low
		350,000 TEU	Construction	Minor	Possible	Moderate
			Operation	Moderate	Likely	High
		500,000 TEU	Construction	Minor	Possible	Moderate
			Operation	Moderate	Likely	High
		750,000 TEU	Construction	Minor	Possible	Moderate
			Operation	Moderate	Likely	High

Source: CDM Smith Analysis (2020)

11. Amenity and health impacts of noise and vibration from train and heavy vehicle movements

The movement of train and heavy vehicles in and out of the intermodal terminal, combined with the movement of freight from train to truck and vice versa will result in the creation of noise and vibration which may impact on the amenity of nearby residents and other adjacent land holders. Much of the land surrounding the proposed intermodal terminal is owned by government stakeholders and further land is being purchased to the north. This means that the impact is likely to be minimal in terms of the number of adjacent landholders. There may be landholders further away from the site which could be impacted, such as rural residential properties, residents and businesses in the Willowbank community, and Warrill Park Lawn Cemetery.

These residents and other land holders may be at increased risk of health issues from decreased air quality and noise on operation. In particular, intermittent noise impacts from shunting, coupling and decoupling etc could cause serious health issues from sleep disruption and deprivation.

It would be anticipated that an Environmental Management Plan and Operational Plan would include mitigations to manage operational noise.

The severity of noise and vibration would depend on the types of adjacent land uses planned and the distance of nearest residences. It would need to be investigated in a detailed noise assessment. The assessment in this section has attempted to consider the social impacts of noise without this detailed noise modelling and therefore should be considered as indicative only.

Management strategies may be able to mitigate noise and vibration impacts to acceptable levels.

Table 7-13 Amenity and Health Impacts: Train and Heavy Vehicle Movements – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Amenity impacts for neighbouring landholders from noise and vibration associated with proposal.	Nearby residents and other landholders	Do Nothing	N/A	Minimal	Unlikely	Low
		350,000 TEU	Construction	Minor	Likely	Moderate
			Operation	Minor	Likely	Moderate
		500,000 TEU	Construction	Minor	Likely	Moderate
			Operation	Minor	Likely	Moderate
		750,000 TEU	Construction	Minor	Likely	Moderate
			Operation	Minor	Likely	Moderate

Source: CDM Smith Analysis (2020)

12. Increased risk of health issues arising from a reduction in air quality

Increased risk of health issues to nearby residents could arise from a decline in air quality associated with increased traffic and freight movements brought about by the proposal. An exposure zone of 300 to 500m from a major road has been suggested as the most highly affected by traffic emissions, with traffic-related air pollution linked to exacerbation of asthma, non-asthma respiratory symptoms, impaired lung function, total and cardiovascular mortality and cardiovascular mortality (NSW Health 2014).

Based on an exposure zone of up to 500m from the Cunningham Highway and an average per household size of 2.8 persons, there are approximately 4,303 dwellings and 11,169 residents who may be impacted by a reduction in air quality associated with an increase in traffic.

The air quality impacts of the freight movements at the intermodal terminal itself are more difficult to consider due to a lack of understanding of the types of freight to be moved.

In either case, any decrease in air quality could impact on the health of nearby residents and adjacent landholders. It would be anticipated that an Environmental Management Plan would include mitigations to manage air quality to acceptable levels.

A detailed air quality assessment would need to be carried out to further assess the social impacts of any potential air quality implications of the proposal. The assessment in this section has attempted to consider the impact on air quality without this detailed air quality modelling and therefore should be considered as indicative only.

Table 7-14 Reduction in Air Quality – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Potential increase to health risk associated with reduced air quality.	Nearby residents Residents along Cunningham Highway to Dinmore	Do Nothing	N/A	Minimal	Unlikely	Low
		350,000 TEU	Construction	Minimal	Possible	Low
			Operation	Minor	Likely	Moderate
		500,000 TEU	Construction	Minimal	Possible	Low
			Operation	Moderate	Likely	High
		750,000 TEU	Construction	Minimal	Possible	Low
			Operation	Moderate	Likely	High

Source: CDM Smith Analysis (2020)

14. Inconvenience during construction

Local residents, businesses and road users could be inconvenienced by roadworks, diversions and delays. During the construction phase there may be day and night roadworks and diversions in place when necessary. Traffic management measures would be employed to minimise delays and inconvenience.

Table 7-15 Inconvenience During Construction – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Inconvenience during construction	Nearby residents Residents along Cunningham Highway to Dinmore	Do Nothing	N/A	Minimal	Unlikely	Low
		350,000 TEU	Construction	Minimal	Possible	Low
			Operation	Minor	Likely	Moderate
		500,000 TEU	Construction	Minimal	Possible	Low
			Operation	Moderate	Likely	High
		750,000 TEU	Construction	Minimal	Possible	Low
			Operation	Moderate	Likely	High

Source: CDM Smith Analysis (2020)

15. Concern about safety of drinking water due to potential air quality impacts

Stakeholder engagement indicated that many residents in the area utilise rainwater tanks for their drinking water. There was considered to be a risk that dust and other particles generated from the proposal and increased traffic may contaminate drinking water supplies, potentially impacting on the health of local residents, but also impacting on their rural way of life if they were forced to cease use of rainwater tanks for drinking water purposes.

Research suggests it is unlikely that industrial and traffic emissions would cause significant impacts on rainwater stored in domestic rainwater tanks, however, a detailed air quality assessment would need to be carried out to further understand any potential air quality implications of the proposal. The assessment in this section has attempted to consider the social impacts on air quality without this detailed air quality modelling and therefore should be considered as indicative only.

Management strategies may be able to mitigate the potential contamination risks that could arise from dust deposition.

Table 7-16 Potential Impact on Drinking Water Quality – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Concern about potential contamination of drinking water stored in the rainwater tanks of nearby landholders.	Nearby residents	Do Nothing	N/A	Minimal	Unlikely	Low
		350,000 TEU	Construction	Minimal	Possible	Low
			Operation	Minimal	Possible	Low
		500,000 TEU	Construction	Minimal	Possible	Low
			Operation	Minimal	Possible	Low
		750,000 TEU	Construction	Minimal	Possible	Low
			Operation	Minimal	Possible	Low

Source: CDM Smith Analysis (2020)

16. Light spillage impacting visual amenity

The operation of the intermodal terminal during nighttime hours may result in light emissions exceeding the boundaries of the site which could adversely impact on the amenity of surrounding properties. It is understood that the current program of purchasing surrounding properties by government stakeholders means light spill from the intermodal terminal onto surrounding landholders is likely to be minimal. However, a change to the rural character of the area may occur if landholders further away experience a change to their existing night environment. This impact may not be as widespread from other types of industries that establish.

A detailed visual amenity assessment would need to be carried out to understand any potential lighting implications of the proposal. The assessment in this section has attempted to consider the social impacts of visual amenity without this detailed study and therefore should be considered as indicative only.

Management strategies may assist to minimise visual amenity impacts arising from light spillage.

Table 7-17 Visual Amenity – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Amenity impacts of light spill for neighbouring rural landholders.	Nearby residents	Do Nothing	N/A	Minimal	Unlikely	Low
		350,000 TEU	Construction	Minor	Possible	Moderate
			Operation	Minor	Possible	Moderate
		500,000 TEU	Construction	Minor	Possible	Moderate
			Operation	Minor	Possible	Moderate
		750,000 TEU	Construction	Minor	Possible	Moderate
			Operation	Minor	Possible	Moderate

Source: CDM Smith Analysis (2020)

17. Cumulative traffic, noise and air quality impacts on surrounding landholders

The cumulative impact of the intermodal terminal in concert with broader industrial activities, the Willowbank Raceway and Amberley Airbase may impact the sense of place, way of life, safety, quality of life and health and wellbeing of surrounding landholders. Each of these uses results in traffic volumes, noise and air quality impacts. Furthermore, development of the Ebenezer Regional Industrial Area, intermodal terminal as well as continued expansion of the Amberley Airbase are likely to create intensification of activity, including traffic.

The character of the existing area has already been substantially altered from that of a quiet rural area. The Ebenezer/ Willowbank area has been identified for industrial development for a long period, and in 2014 substantial community consultation was undertaken for the Ebenezer Regional Industrial Area which subsequently informed incorporation of the development of Guideline 32 in the Ipswich Planning Scheme. Therefore, the community is in the process of

change that could have been expected by landholders for some time. This will help to mitigate the impacts likely to be felt by existing landholders.

Should the intermodal terminal not be built, it is still likely that industrial development would occur, albeit at a slower pace and possibly a lesser scale, and therefore a similar long term impact could occur depending on the industries that enter the area.

Table 7-18 Cumulative Traffic, Noise and Air Quality Impacts – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Cumulative amenity, quality of life and health and wellbeing impacts associated with an increase in traffic, noise and decline in air quality.	Adjacent residents Residents along Cunningham Highway to Dinmore	Do Nothing	N/A	Minor	Likely	Moderate
		350,000 TEU	Construction	Minor	Likely	Moderate
			Operation	Moderate	Likely	High
		500,000 TEU	Construction	Minor	Likely	Moderate
			Operation	Moderate	Likely	High
		750,000 TEU	Construction	Minor	Likely	Moderate
			Operation	Moderate	Likely	High

Source: CDM Smith Analysis (2020)

18. Potential change in property values for nearby residents and landholders

The development of the intermodal terminal and associated acoustic, air quality and light impacts combined with traffic increases may result in some amenity impacts for nearby residents which could lead to a reduction in property values. It is likely that the intermodal terminal would contribute to broader impact as a result of the development of the Ebenezer Regional Industrial Area.

This could create a loss of financial security and social and economic wellbeing for those who are purchasing or have purchased dwellings. However, this may result from other planned industrial and inland rail proposals planned for the Ebenezer/ Willowbank area regardless of whether the proposal proceeds.

On the other hand, should amenity impacts be appropriately mitigated, it is possible that these areas will become sought after by workers at the industrial area and intermodal terminal. In this case the opposite effect would occur.

The effect on the value of farmland is difficult to identify. However similarly, properties which experience environmental effects may be subject to some loss of value. Generally little effect on surrounding farmlands would be expected.

Table 7-19 Change in Property Values – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Potential reduced properties values for nearby landholders associated with loss of amenity.	Nearby residents	Do Nothing	N/A	Minimal	Unlikely	Low
		350,000 TEU	Construction	Minor	Possible	Moderate
			Operation	Minor	Possible	Moderate
		500,000 TEU	Construction	Minor	Likely	Moderate
			Operation	Minor	Likely	Moderate
		750,000 TEU	Construction	Minor	Likely	Moderate
			Operation	Minor	Likely	Moderate

Source: CDM Smith Analysis (2020)

19. Change to sense of place

The activities associated with the intermodal terminal and the increase in vehicle movements (particularly heavy vehicles) will change the rural character of the area, potentially bringing about noise and changes in air quality, and increased traffic congestion. One stakeholder engaged suggested the rural farming character and way of life of the surrounding communities was valuable to residents. Properties in the area are understood to be intergenerational, passing down family lines over significant periods. This is further confirmed by statistics which indicate the area has a higher proportion of residents who had been living at the same address for the past five years, less residents who had been living elsewhere in Australia or overseas, and residents are more likely to have a mortgage or own their home outright, compared to Queensland.

Combined, these points suggest that residents are likely to feel connected to the sense of place currently on offer. The increase in activities which could result in noise and air quality changes, as well as an increase in the pace of living in the area would change this sense of place.

However, it was noted above that the character of the existing area has already been substantially altered from that of a quiet rural area. In addition, the area has been earmarked for industrial development for a long period and therefore the community is aware of this and these issues would have been raised with the planning scheme engagement. The planning scheme is considered to reflect community vision for the area, balancing up the various benefits and impacts of development, and therefore the change to sense of place is likely to be balanced by the benefits of the proposal – jobs and industry.

Should the proposal not occur, it is still likely that industrial development would occur, albeit at a slower pace and possibly a lesser scale, and therefore a potentially similar long term result could be expected.

Table 7-20 Sense of Place – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Change to sense of place as rural character of the area changes to industrial uses.	Nearby residents	Do Nothing	N/A	Minimal	Possible	Low
		350,000 TEU	Construction	Minimal	Possible	Low
			Operation	Moderate	Likely	High
		500,000 TEU	Construction	Minimal	Possible	Low
			Operation	Moderate	Likely	High
		750,000 TEU	Construction	Minimal	Possible	Low
			Operation	Moderate	Likely	High

Source: CDM Smith Analysis (2020)

20. Loss of community values associated with Koala populations

Development of the intermodal terminal and the intensification of traffic volumes has potential to impact on environmental values of the surrounding lands, specifically koala populations. Koala populations are considered abundant in Ebenezer, Mt Forbes and Purga, localities surrounding the proposed intermodal terminal, and a distinct koala habitat hotspot corridor is indicated in the area stretching from the Amberley Airbase to Ebenezer and Mutdapilly (City of Ipswich). The southern half of Ebenezer is a well-known hot spot for koala habitation. Cunningham Highway is considered a major barrier to koala movement and a koala-vehicle collision hotspot has been identified next to the Willowbank Raceway.

The potential impact to the community would be a loss of community values associated with sustaining a healthy koala population the locality. This effect could potentially be partly mitigated through environmental management measures. The effect could be expected to be greater than under the Do-Nothing scenario.

Table 7-21 Koala Population – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Potential damage to community values associated with existing koala populations	Nearby residents	Do Nothing	N/A	Minimal	Possible	Low
		350,000 TEU	Construction	Minimal	Possible	Low
			Operation	Minor	Possible	Moderate
		500,000 TEU	Construction	Minimal	Possible	Low
			Operation	Minor	Possible	Moderate
		750,000 TEU	Construction	Minimal	Possible	Low
			Operation	Minor	Possible	Moderate

Source: CDM Smith Analysis (2020)

21. Fear of intermodal role facilitating Ipswich 'super dump'

The City of Ipswich has been exploring the potential for commercialisation of waste disposal in mining voids in the LGA and has been presented with various private sector propositions for waste facilities. This has led to community members raising their concerns about development of a "super dump" and Ipswich becoming a centre for waste treatment, or a "dumping ground" (Moore 2019).

Engagement activities conducted for the Inland Rail project identified an ongoing concern within the local community reference group that the intermodal terminal will be a key enabler for transfer of waste from broader regions to a central waste facility in Ipswich, thus facilitating a "super dump."

The City's Corporate Plan maintains a vision to create a sense of belonging and pride in the city which may not be felt to be compatible with establishing the LGA as a resource recovery hotspot. Therefore, the proposal may increase fears for the identity of Ipswich. This may or may not occur without the intermodal terminal, depending on whether the waste treatment centre proceeds.

The realization of these fears in terms of the impact on the identity of Ipswich as distinct from the role of the terminal in enabling large scale resource recovery projects could be mitigated by Council through communication strategies and environmental management measures which reinforce the sustainability status of the City of Ipswich through the facility.

Table 7-22 Fear of Super Dump – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Damage to sense of place associated with the proposal potentially contributing to the facilitation of Ipswich as a centre for waste treatment.	Ipswich LGA residents	Do Nothing	N/A	Minimal	Unlikely	Low
		350,000 TEU	Construction	N/A	N/A	N/A
			Operation	Moderate	Possible	Moderate
		500,000 TEU	Construction	N/A	N/A	N/A
			Operation	Moderate	Possible	Moderate
		750,000 TEU	Construction	N/A	N/A	N/A
			Operation	Moderate	Possible	Moderate

Source: CDM Smith Analysis (2020)

22. Localised community composition changes

The existing community surrounding the proposed intermodal terminal site has a higher proportion of middle-age and older age groups to 79 years and a lower proportion of those aged 29-34 compared to Queensland, suggesting that younger adults may be moving away in search of job or training opportunities. Development of the intermodal terminal may change the composition of the local community by facilitating local employment opportunities which may attract younger adults. This could happen both through a construction workforce, and a permanent workforce on operation.

The change in community composition could impact on the community functioning, community values and way of life associated with the existing demographic. However, localised community composition changes may be likely as a result of implementation of other proposals for the Ebenezer/ Willowbank area, regardless of whether the intermodal terminal proceeds. Furthermore, while change may be experienced by existing residents, increased balance in the age profile has the potential to revitalise an ageing community and may contribute to retention or improvement of community facilities and services, local retailing and community activity.

Table 7-23 Localised Composition Changes – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Change in sense of place, community values and way of life associated with changes in community composition.	Nearby residents	Do Nothing	N/A	Minimal	Possible	Low
		350,000 TEU	Construction	Minor	Possible	Moderate
			Operation	Moderate	Possible	Moderate
		500,000 TEU	Construction	Minor	Possible	Moderate
			Operation	Moderate	Likely	High
		750,000 TEU	Construction	Minor	Possible	Moderate
			Operation	Major	Likely	High

Source: CDM Smith Analysis (2020)

23. Increased demand for housing

The Willowbank Intermodal Terminal is likely to stimulate the following employment once fully operational:

- During operation at 350,000 TEUs scenario, a total workforce of up to 1,679.1 FTEs;
- During operation at 500,000 TEUs scenario, a total workforce of up to 2,404.3 FTEs; and
- During operation at 750,000 TEUs scenario, a total workforce of up to 3,543.4 FTEs.

It is likely that a proportion of these workers both during construction and operation will already live in the LGA, however it is reasonable to assume that some of the workforce may either temporarily (construction) or permanently (operation) relocate to the Ipswich LGA.

Permanent accommodation

In June 2019, Ipswich had a rental vacancy rate of 2.9%, considered to be healthy (REIQ 2019) suggesting the rental market has room to accommodate some population growth. Furthermore, Ipswich has been considered to be in a construction boom in recent years, and the availability of greenfield land that is easy to develop and comparatively affordable enables of this demand. Ipswich has a reducing level of home ownership and increasing levels of rental, and it is assumed that a substantial proportion of new development is owned by investors outside of the city. The economic impacts associated with Covid-19 are unfolding but could potentially impact on this trend and subsequently tighten the rental market in the coming period.

Short term and temporary/overnight accommodation

In addition to permanent accommodation, there may be an increase in demand for short term (3-6 months) or temporary/ overnight accommodation. This will come from a proportion of construction workers. This demand will largely focus on rental accommodation, caravan parks and hotels. The effect of this demand will be to increase rental

demand but also to place added pressure on some of the most affordable accommodation in the Ipswich region. It is also undesirable that tourists may not be able to find accommodation in the area, or that accommodation such as caravan parks used by service providers for crisis accommodation, be unavailable.

Currently, there are two caravan parks and a motel in close proximity to the proposed site, and nine other hotels/ motels in the Ipswich area which may provide low-medium cost temporary accommodation for the proportion of the construction workforce originating from outside the region.

However, it is anticipated that the project will provide a high proportion of employment for local workers already living in the area. This effect could be enhanced by local procurement policies, both during construction and on operation, and relieve pressure on local housing and accommodation.

Table 7-24 Housing Demand – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Difficulty accessing housing resulting from increased demand generated by workers and associated population growth	Workers Ipswich LGA residents	Do Nothing	N/A	Minimal	Possible	Low
		350,000 TEU	Construction	Moderate	Possible	High
			Operation	Moderate	Possible	Moderate
		500,000 TEU	Construction	Moderate	Possible	Moderate
			Operation	Moderate	Possible	Moderate
		750,000 TEU	Construction	Moderate	Possible	Moderate
			Population	Moderate	Possible	Moderate

Source: CDM Smith Analysis (2020)

The benefits of the project for workers and local residents could be extended by providing social infrastructure which may improve local and working conditions such as cycling facilities, end of trip facilities, fitness facilities such as a gym. Any future management plan should include social investments such as these.

24. Increased demand on social infrastructure

The increased workforce to be generated by the proposal is likely to increase demand on social infrastructure. The following sections provide a high-level summary of current and planned provision for key social infrastructure.

Health

The Ipswich hospital is a public hospital with 429 beds, and the largest hospital in the West Moreton Hospital and Health service. It provides moderate-risk inpatient and ambulatory care clinical services for emergencies, with higher level or more complicated care patients transferred to hospitals in Brisbane. The hospital's wait time performance is recognised to be better than or within range of the latest national performance. Future hospital expansions are confirmed, with $146 million in funding committed to the first stage which will include delivery an additional 26 beds, as well as a 50-bed mental health unit. Additional expansion stages are also planned for Ipswich Hospital.

St Andrews Ipswich is a 175-bed private hospital that services the West Morton region. It has a 24-hour emergency department, operating theatres, critical care unit and specialist facilities for oncology, maternity and renal dialysis, among other services. The hospital underwent an expansion in 2018 which increased its capacity significantly.

Recent and future expansions at both of these hospitals suggest these facilities are being geared to support the projected population growth in the region.

Education

A total of 46 primary schools, 14 secondary schools and 10 combined primary and secondary schools are located in the Ipswich LGA.

Two primary schools and one secondary school were recently opened in the LGA, one primary school in Spring Mountain/ Springfield Lakes and primary and secondary schools in South Ripley. No further information was available

on any additional schools that might be planned for future in the future. The construction of new schools in the city's major growth corridor suggest that educational facilities in the region are being planned to service the projected population growth expected.

There are six tertiary education facilities in Ipswich:

- University of Southern Queensland Ipswich Campus;
- University of Southern Queensland Springfield Campus;
- Ipswich TAFE Campus;
- Inala TAFE Campus;
- Springfield TAFE Campus; and
- Bundamba TAFE Campus.

Each of the TAFE facilities have been assessed as having the capacity to meet the training demand expected over the coming years (Department of Employment, Small Business and Training 2019). Furthermore, USQ's Springfield Campus opened a new building in 2015 to accommodate students from the region's major growth corridor. This information suggests that planning for tertiary facilities in the Ipswich LGA will support the growth projected in the region.

Emergency Services

Ipswich LGA currently has five fire stations and six police stations. There have been three new fire stations built in Ipswich LGA in recent years, being Bundamba in 2018 (Waters 2018), Ripley in 2013, and Brassall in 2013 (Korner 2013). A new fire station is planned for completion at Rosewood in 2021 (Crawford 2020). Furthermore, a new Ipswich headquarters has been suggested for Ripley, although limited information was available to confirm this development. The recent development of new fire stations and possible new police station suggests planning for emergency services infrastructure is considering population growth, particularly given a new fire station has already been developed and a new police station is proposed in Ripley, a planned growth suburb.

Community facilities

A total of 143 Council and non-Council community facilities have been identified by Ipswich City Council in the LGA, which include a community centres, halls, churches and meeting spaces, service clubs, small halls, performing arts and function centres, sports clubhouses, multipurpose sports centres, aquatic centres, community gardens, education and training facilities, showground facilities, and multipurpose/ nature facilities. Council's 10 year Community Facilities Plan recommends the delivery of 27 new multipurpose community facilities for the LGA to respond to population growth. The recently delivered or upgraded and new social infrastructure combined with known planned facilities suggests that social infrastructure is indeed being planned to accommodate the projected population growth expected in the Ipswich LGA.

This review of existing and planned key social infrastructure indicates that Ipswich City Council, the Queensland Government, and other infrastructure providers are already planning for significant population growth. It's therefore considered that the future provision of social infrastructure is likely to be able to appropriately service the workforce and associated population growth that may be generated by the proposed intermodal terminal. It should be noted that this is a high-level assessment to provide guidance for this stage of impact assessment only. Further, more detailed infrastructure planning would need to inform any further assessment.

Furthermore, it is anticipated that the project will provide a high proportion of employment for local workers already living in the area. This effect could be enhanced by local procurement policies, both during construction and on operation, and relieve pressure on social infrastructure requirements.

Table 7-25 Social Infrastructure – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Difficulty accessing community infrastructure resulting from increased demand generated by workers and associated population growth	Workers Ipswich LGA residents	Do Nothing	N/A	Minimal	Possible	Low
		350,000 TEU	Construction	Moderate	Possible	Moderate
			Operation	Moderate	Possible	Moderate
		500,000 TEU	Construction	Moderate	Possible	Moderate
			Operation	Moderate	Possible	Moderate
		750,000 TEU	Construction	Moderate	Possible	Moderate
			Population	Moderate	Possible	Moderate

Source: CDM Smith Analysis (2020)

25. Loss of Aboriginal cultural heritage sites

The broader Ebenezer Regional Industrial Area contains 16 recorded Aboriginal cultural heritage sites and there may also be potential for additional unrecorded cultural heritage artifacts (City of Ipswich 2014). However, it is unclear if these sites are located where the intermodal terminal will be located (location yet to be determined).

The proposal may have the potential to result in the loss of these Aboriginal cultural heritage sites and artifacts. In addition, if these sites were identified and able to be retained, their geographic context would be significantly altered with a range of industrial uses locating in the area. This may reduce their cultural relevance and reduce the ability for the sites to be visited and utilised.

Cultural heritage impacts are difficult to capture without a fully scoped development scenario which includes scale and operational intensity. A comprehensive Aboriginal cultural heritage investigation would be required to determine the extent of Aboriginal cultural heritage items on the site and whether management measures could be implemented to retain and protect these areas and would be legislatively required at different business case stages. The assessment in this section has attempted to consider the social impacts on Aboriginal cultural heritage without this detailed study and therefore should be considered as indicative only.

Table 7-26 Aboriginal Cultural Heritage Sites – Significance Assessment

Impact	Impacted stakeholder	Scenario	Project Phase	Consequence	Likelihood	Significance
Potential loss of Aboriginal cultural heritage sites.	Aboriginal community	No change	Construction and Operation	Unknown	Unknown	Unknown
		350,000 TEU	Construction and Operation	Unknown	Unknown	Unknown
		500,000 TEU	Construction and Operation	Unknown	Unknown	Unknown
		750,000 TEU	Construction and Operation	Unknown	Unknown	Unknown
Retained Aboriginal cultural heritage sites may have reduced cultural relevance.	Aboriginal community	No change	Construction and Operation	Unknown	Unknown	Unknown
		350,000 TEU	Construction and Operation	Unknown	Unknown	Unknown
		500,000 TEU	Construction and Operation	Unknown	Unknown	Unknown
		750,000 TEU	Construction and Operation	Unknown	Unknown	Unknown

Source: CDM Smith Analysis (2020)

7.3 Summary of Impact Assessment

Table 7-27 summarises the benefits and impacts identified, with Table 7-28 providing a detailed overview of the benefits and impacts identified by category, project phase

Table 7-27 Summary of identified benefits and impacts

Impact	Timing	Nature	Affected Parties
Increase in health and wellbeing benefits associated with creation of employment, business opportunities, upskilling, and reduced commuting times.	Construction and Operation	Benefit	Ipswich LGA residents
Improved road network from road upgrades required as a result of the proposal.	Construction and Operation	Benefit	Nearby residents
Potential increase in property values for existing landholders.	Construction and Operation	Benefit	Nearby landholders
Change to sense of place, community values and way of life resulting from amenity issues including noise and vibration, air quality, light spillage, traffic and congestion.	Construction and Operation	Negative	Nearby landholders
Decline in health and wellbeing could arise from amenity issues including noise and vibration, air quality, light spillage, traffic and congestion as well as increased safety risk associated with increased traffic.	Construction and Operation	Negative	Nearby landholders Landholders adjacent to Cunningham Highway to Dinmore
Additional public cost for upgraded road infrastructure and road maintenance resulting from an increase in heavy traffic, particularly heavy vehicle.	Construction and Operation	Negative	Taxpayers
Increased difficulty accessing housing and social infrastructure due to generated by workers and associated population growth.	Construction and Operation	Negative	Workers Ipswich LGA residents
Potential reduction in property values associated with change to sense of place, community values and way of life resulting from loss of amenity as well as possible health and wellbeing risks.	Construction and Operation	Negative	Nearby landholders

Source: CDM Smith Analysis (2020)

Table 7-28 Summary of preliminary social impacts and benefits

Benefits and impacts	Category	Project Phase	Impacted stakeholder	Significance Assessment			
				Do Nothing	350,000 TEU	500,000 TEU	750,000 TEU
Benefits							
1. Health and wellbeing benefits of new direct and indirect employment opportunities for Ipswich LGA residents.	Livelihoods	Construction and Operation	Ipswich LGA community	Low	High	High	High
2. New training and upskilling opportunities for Ipswich workforce.	Livelihoods	Construction and Operation	Ipswich LGA community	Low	High	High	High
3. Potential reduction in commuting times for residents of Ipswich LGA due to creation of employment opportunities and higher employment containment, resulting in a range of financial, health and wellbeing benefits.	Quality of Life Health and Wellbeing	Operation	Ipswich LGA community	Low	High	High	High
4. Potential upgrades to roads and key intersections resulting in time savings and improved safety for road users.	Infrastructure	Construction and Operation	Ipswich LGA businesses Road users of the Cunningham Highway to Dinmore Workers	Low	Moderate	High	High
5. Potential reduced properties values for nearby landholders associated with loss of amenity.	Livelihoods	Construction and Operation	Nearby landholders	Low	Moderate	Moderate	Moderate
6. Economic benefits for local businesses associated with improved connecting opening up of new markets.	Livelihoods	Operation	Ipswich LGA businesses	Low	Unknown	Unknown	Unknown
Impacts							
7. Increase safety risk on specific nearby roads due to additional heavy vehicle traffic.	Health and Wellbeing	Construction and Operation	Nearby residents Road users of the Cunningham Highway to Dinmore Workers	Low	Moderate	High	High

Benefits and impacts	Category	Project Phase	Impacted stakeholder	Significance Assessment			
				Do Nothing	350,000 TEU	500,000 TEU	750,000 TEU
8. Increased traffic and rail crossings potentially causing delay for road users contributing to environmental, financial, health and wellbeing issues.	Quality of Life Health and Wellbeing	Construction and Operation	Nearby residents Road users of the Cunningham Highway to Dinmore Workers	Low	Moderate	High	High
9. Increased expenditure of public funds on new road upgrades due to traffic generated, including heavy vehicles.	Infrastructure	Construction and Operation	Nearby residents Road users of the Cunningham Highway to Dinmore Workers	Low	Moderate	Moderate	Moderate
10. Increased public fund expenditure on intensified road maintenance.	Infrastructure	Construction and Operation	Taxpayers/ ratepayers	Low	High	High	High
11. Amenity impacts for neighbouring landholders from an increase in traffic noise.	Quality of Life Health and Wellbeing	Construction and Operation	Taxpayers/ ratepayers	Low	High	High	High
12. Amenity impacts for neighbouring landholders from noise and vibration associated with proposal.	Quality of Life Health and Wellbeing	Construction and Operation	Nearby residents Residents along Cunningham Highway to Dinmore	Low	Moderate	Moderate	Moderate
13. Potential increase to health risk associated with reduced air quality.	Quality of Life Health and Wellbeing	Construction and Operation	Nearby residents Residents along Cunningham Highway to Dinmore	Low	Moderate	High	High
14. Inconvenience during construction	Quality of Life	Construction	Nearby residents	Low	High	High	High
15. Concern about potential contamination of drinking water stored in the rainwater tanks of nearby landholders.	Quality of Life Health and Wellbeing	Construction and Operation	Nearby residents	Low	Low	Low	Low
16. Amenity impacts of light spill for neighbouring rural landholders.	Quality of Life Health and Wellbeing	Construction and Operation	Nearby residents	Low	Low	Low	Low

Benefits and impacts	Category	Project Phase	Impacted stakeholder	Significance Assessment			
				Do Nothing	350,000 TEU	500,000 TEU	750,000 TEU
17. Cumulative amenity, quality of life and health and wellbeing impacts associated with an increase in traffic, noise and decline in air quality.	Quality of Life Health and Wellbeing	Construction and Operation	Adjacent residents Residents along Cunningham Highway to Dinmore	Moderate	High	High	High
18. Potential reduced properties values for nearby landholders associated with loss of amenity.	Livelihoods	Construction and Operation	Nearby residents	Moderate	Moderate	Moderate	Moderate
19. Change to sense of place as rural character of the area changes to industrial uses.	Community Values and Functioning	Construction and Operation	Nearby residents	Low	High	High	High
20. Potential damage to community values associated with existing koala populations	Community Values and Functioning	Construction and Operation	Nearby residents	Low	Moderate	Moderate	Moderate
21. Damage to sense of place associated with the proposal potentially contributing to the facilitation of Ipswich as a centre for waste treatment.	Community Values and Functioning	Operation	Ipswich LGA residents	Low	Moderate	Moderate	Moderate
22. Increased difficulty accessing housing resulting from increased demand generated by workers and associated population growth.	Quality of Life Health and Wellbeing	Construction and Operation	Workers	Low	Moderate	Moderate	Moderate
23. Increased difficulty accessing housing resulting from increased demand generated by workers and associated population growth.	Quality of Life Health and Wellbeing	Construction and Operation	Ipswich LGA residents	Low	Moderate	Moderate	Moderate
24. Potential loss of Aboriginal cultural heritage sites.	Community Values and Functioning Way of Life	Construction and Operation	Aboriginal community	Unknown	Unknown	Unknown	Unknown
25. Retained Aboriginal cultural heritage sites may have reduced cultural relevance.	Community Values and Functioning Way of Life	Construction and Operation	Aboriginal community	Unknown	Unknown	Unknown	Unknown

Source: CDM Smith Analysis (2020)

7.4 Conclusion

The social impact analysis has incorporated a review of literature and background information, the findings of targeted early consultation with government/ government corporation stakeholders, and consideration of socio-economic baseline data to identify and assess potential social benefits and impacts of the proposed Willowbank Intermodal Terminal. This is a preliminary social impact analysis, with many details of the proposal unknown at this stage, and detailed investigations into various elements of the proposal are yet to be undertaken. The assessment has been undertaken only on available information, and social benefits and impacts should be considered further as more information becomes available. Therefore, only potential or preliminary social benefits and impacts have been identified. These potential social impacts should be subjected to verification through community and stakeholder engagement and to identify any gaps.

There were 25 potential benefits and impacts identified in total, with six of these benefits, and 19 potential negative impacts. Of the potential benefits, four were assessed as having high significance. At 750,000 and 500,000 TEUs scenarios, four potential benefits were assessed as having high significance and one at moderate, and at 350,000, three benefits were assessed as having high significance and two as having moderate significance. The significance of one benefit was unknown due to insufficient information. If the proposal were not to proceed, the potential benefits of the Do Nothing scenario would only be considered to have low significance. All potential benefits are considered likely to be of considerable duration, with maximum benefit during operation thereby delivering sustained benefit, and new employment delivering major benefit during the construction phase.

There were 19 potential negative impacts identified, however generally of lesser significance than benefits. When considered against the 750,000 TEUs scenario, eight negative impacts were assessed as having high significance, six assessed as having moderate significance, and two assessed as low significance. For the 500,000 TEUs scenario, eight impacts had high significance, six were of moderate significance and two had low significance. For the 350,000 TEUs scenario, five impacts had high significance, nine had moderate significance and two had low significance. Two impacts had an unknown significance due to insufficient information. Several of the negative impacts identified are likely to impact a relatively small number of neighbouring landholders and this has been factored into the assessment. If the proposal were not to proceed, 13 potential impacts would have and two would have low significance. All of the identified negative impacts identified are likely to be of considerable duration, many commencing during construction and continuing and/or intensifying during operation.

When a more detailed Social Impact Assessment is undertaken as a part of an Environmental Impact Statement, a Social Impact Management Plan should be developed subsequent to that analysis to further enhance benefits and mitigate negative impacts. A management plan could also include the possibility of an intermodal facility bond for social investment to mitigate or offset social impacts.

The majority of the negative impacts identified have potential for mitigation via the development of appropriate management measures. Furthermore, several of the impacts are likely to arise with the development of the Ebenezer Regional Industrial Area and Inland Rail regardless of whether the Intermodal terminal progresses or not, albeit the impact may be slower to occur and in some cases of lesser magnitude. Given the area has been identified for industrial purposes for many years, that Ipswich City Council's existing planning scheme designates this future use, and community engagement has been undertaken in preparation of the planning scheme and during planning for the Ebenezer Regional Industrial Area, it's reasonable to assume the community is expecting this change to the area.

Based on the analysis undertaken, it is our view that significant benefit would be derived from the proposal, primarily from the creation of employment opportunities and the potential positive social benefits this would have for relative advantage, health and wellbeing in Ipswich LGA. Of the potential negative social impacts, change to sense of place for the most immediate landholders/ residents is a significant potential impact, however, this will affect a relatively small number of residents, and the character of the existing area has already been substantially altered from that of a quiet rural area. Furthermore, the impacts associated with increased traffic are likely to be most widely felt, however, various mitigation measures could be instituted to reduce impacts which are likely to affect areas wider than the immediate neighbouring properties (largely associated with increased heavy vehicle traffic). In addition, planning and

development of housing and community infrastructure appears to be taking into consideration the population growth expected for the Ipswich LGA, suggesting that the region is preparing for proposals such as this, therefore lessening potential impacts in this regard.

When considered against the Do Nothing scenario, it would be expected that there would be less new employment opportunities created, increasingly more commuting out of the LGA for work and associated decline in health and wellbeing indicators, less opportunity and continued or increasing disadvantage in Ipswich LGA. These social impacts would be compounded under the Do Nothing scenario by the development of the remainder of the Ebenezer Regional Industrial Area occurring at a slower pace and possibly on a lesser scale, due to the catalytic potential of the intermodal terminal. This means that the social benefits of the Regional Industrial Area would not receive the stimulus that would be provided by the intermodal terminal and would be delayed in being experienced by the community of Ipswich.

Section 8 References

Australian Institute of Health and Welfare 2019, *Australia's welfare 2019 in brief.* Cat. No. AUS 227. Canberra: AIHW.

Australian Bureau of Statistics 2012 (ABS 2012), Census of Population and Housing: Basic Community Profile, 2011 Third Release, Cat. No. 2001.0

Australian Bureau of Statistics 2017a (ABS 2017a), Census of Population and Housing: General Community Profile, Australia, 2016, Cat. No. 2001.0

Australian Bureau of Statistics 2017b (ABS 2017b), Census of Population and Housing: Time Series Profile, Australia, 2016, Cat. No. 2003.0

Australian Bureau of Statistics 2017c (ABS 2017c), Census of Population and Housing: Working Population Profile, 2016, Cat. No. 2006.0

Australian Bureau of Statistics 2018 (ABS 2018), Regional Population by Age and Sex, Australia, 2018, Cat. No. 3235.0

Australian Bureau of Statistics 2020a (ABS 2020a), Regional Population Growth, Australia, 2018-19, Cat. No. 3218.0

Australian Bureau of Statistics 2020b (ABS 2020b), Wage Price Index, Australia, December 2019, Cat. No. 6345.0

Australian Rail Track Corporation (ARTC) 2019a, Calvert to Kagaru Newsletter – May 2019, accessed 1 September 2020, https://www.ipswich.qld.gov.au/__data/assets/pdf_file/0003/112629/Inland-Rail-C2K-Project-Newsletter-May-2019.pdf

Australian Rail Track Corporation (ARTC) 2019b, Calvert to Kagaru (Qld) (Social PinPoint), accessed 18 June 2020, https://maps.inlandrail.com.au/c2k#/

Chatterjee, K., Chng, S., Clark, B., Davis, A., De Vos., and Ettema, D 2019, Commuting and wellbeing: a critical overview of the literature with implications for policy and future research, *Transport Reviews*, vol. 40, Issue 1, 2020, accessed 17 June 2020, https://www.tandfonline.com/doi/full/10.1080/01441647.2019.1649317.

City of Ipswich, *Koala Conservation and Habitat Management Plan*, accessed 18 June 2020, https://www.ipswich.qld.gov.au/__data/assets/pdf_file/0006/86271/Koala-Conservation-Plan.pdf.

City of Ipswich 2017, Ipswich Affordable Housing Forum 2017: Summary and Outcomes, accessed 17 June 2020, https://www.ipswich.qld.gov.au/__data/assets/pdf_file/0004/93370/Affordable-Housing-Forum-2017-Summary-and-Outcomes.pdf

City of Ipswich 2014, Ipswich Planning Scheme Implementation Guideline No. 32., accessed 17 June 2020, https://www.ipswichplanning.com.au/__data/assets/pdf_file/0004/18850/ips_implementation_guide_32.pdf.

Commonwealth of Australia 2010, *Guidance on use of rainwater tanks*, accessed 18 June 2020, https://www1.health.gov.au/internet/main/publishing.nsf/Content/0D71DB86E9DA7CF1CA257BF0001CBF2F/$File/en health-raintank.pdf.

Crawford, C (Minister for Fire and Emergency Services and Minister for Aboriginal and Torres Strait Islander Partnerships) 2020, *Rosewood to get its own fire station*, Media Statement, The State of Queensland (Department of the Premier and Cabinet), 24 June 20202, accessed 25 June 2020, http://statements.qld.gov.au/Statement/2020/6/24/rosewood-to-get-its-own-fire-station.

Department of Education, Skills and Employment (various years), Small Area Labour Markets, smoothed data

Department of Employment, Small Business and Training 2019, *Building future skills – A tafe infrastructure plan for Ipswich*, State of Queensland, November 2019, accessed 25 June 2020, https://desbt.qld.gov.au/__data/assets/pdf_file/0010/11116/tafe-infrastructure-plan-ipswich.pdf

Department of Employment, Small Business and Training 2020, *Regional Skills Investment Strategy*, The State of Queensland, 15 May, accessed 17 June 2020, https://desbt.qld.gov.au/training/employers/funding/rsis.

Dick, C (Minister for State Development, Manufacturing, Infrastructure and Planning) and Jones, K (Minister for Innovation and Tourism Industry Development and Minister for Cross River Rail) 2020, *Queensland declared World Economic Forum Advanced Manufacturing Hub*, Media statement, The State of Queensland (Department of the Premier and Cabinet), April 19, accessed 16 June 2020, http://statements.cabinet.qld.gov.au/Statement/2020/4/19/queensland-declared-world-economic-forum-advanced-manufacturing-hub.

Economy.id 2020, City of Ipswich Economic Profile, accessed 18 June 2020, http://economy.id.com.au/ipswich

Ettema, D., Garlin, T., Olsson, L., and Friman, M 2010, Out-of-home activities, daily travel, and subjective well-being, *Transportation Research Part A: Policy and Practice*, vol. 44, Issue 9, November 2010, pp 723-732, accessed 18 June 2020, https://www.sciencedirect.com/science/article/abs/pii/S0965856410000960.

IdCommunity 2017. City of Ipswich Community Profile, accessed 18 June 2020, https://profile.id.com.au/ipswich

Infrastructure Australia 2016 , *Cunningham Highway – Yamanto Interchange to Ebenezer Creek congestion – Priority Initiative*, Australian Government, 17 February 2016, accessed 18th June 2020, https://www.infrastructureaustralia.gov.au/map/cunningham-highway-yamanto-interchange-ebenezer-creek.

Jensen, R. and West, G. 2001, Community Economic Analysis, Department of Primary Industries, Brisbane, Queensland

Korner, A 2013, Firies make themselves at home in new station, *The Queensland Times*, 16th August 2013, accessed 25th June 2020, https://www.qt.com.au/news/firies-make-themselves-at-home-in-new-station/1985924/.

Moore, T 2019, New dumps planned despite Ipswich generating 1000 waste complaints, *Brisbane Times*, January 22 2019, accessed 18 June 2020, https://www.brisbanetimes.com.au/national/queensland/new-dumps-planned-despite-ipswich-generating-1000-waste-complaints-20190122-p50sxi.html

Moridpour, Sara., Mazloumi, Ehsan., and Mesbah, Mahmoud, 2015, Impact of heavy vehicles on surrounding traffic characteristics: IMPACT OF HEAVY VEHICLES, *Journal of Advanced Transportation*, vol. 49, issue 4, June 2015, pp 535–552, accessed 18 June 2020, https://onlinelibrary.wiley.com/doi/full/10.1002/atr.1286

National Road Safety Strategy 2020, *National Road Safety Action Plan 2018–2020*, accessed 19 June 2020, https://www.roadsafety.gov.au/action-plan/2018-2020/priority_action_8#:~:text=While%20heavy%20trucks%20are%20under,when%20involved%20in%20a%20crash.

NSW Health 2014, *TP03: Health Effects of Traffic-Related Air Pollution*, NSW Government, accessed 18th June 2020, https://www.chiefscientist.nsw.gov.au/__data/assets/pdf_file/0004/52987/Road-Tunnels_TP03_Health_effects_of_traffic_related_air_pollution.pdf.

Pricefinder 2020, Pricefinder Property Market Database – Queensland, data available via paid subscription at https://www.pricefinder.com.au/.

Public Health Information Development Unit (PHIDU) 2020, *Social Health Atlas of Australia – Data by Local Government Area (online),* accessed 31 August 2020, http://phidu.torrens.edu.au/social-health-atlases/data#social-health-atlases-of-australia-local-government-areas.

Queensland Government 2018, Traffic census for the Queensland state-declared road network, accessed 17 June 2020, from https://www.data.qld.gov.au/dataset/traffic-census-for-the-queensland-state-declared-road-network.

Queensland Treasury 2016, Regional Employment Projections, 2010-11 to 2040-41, accessed 1 September 2020, from https://www.qgso.qld.gov.au/statistics/theme/economy/labour-employment/economic-projections

Queensland Government Statistician's Office 2018 (QGSO 2018), Projected Population by SA2, Local Government Area and SA4, medium series, 2018 series, accessed 17 June 2020, from https://www.qgso.qld.gov.au/statistics/theme/population/population-projections

Residential Tenancies Authority 2020 (RTA 2020), Median Weekly Rents Quarterly Data by Postcode, accessed 17 June 2020, from https://www.rta.qld.gov.au/forms-resources/median-rents-quick-finder/median-rents-quarterly-data

The Queensland Times 2019, Top Cop Eyes off Ripley Real-estate, accessed 17 June 2020, https://www.qt.com.au/news/top-cop-eyes-off-ripley-real-estate/3638256/

REIQ 2019, REIQ Vacancy Rate Report 2019, accessed 17 June 2020, https://www.reiq.com/whitepapers/reiq-vacancy-rate-report-2019/

State of Queensland 2018, Ipswich Manufacturing Environmental Scan, Jobs Queensland, January 2018.

Stutzer, A and Fre, B 2008, Stress that Doesn't Pay: The Commuting Paradox, *The Scandinavian Journal of Economics*, vol. 110, Issue 2, July 2008, pp 339-366, accessed 17 June 2020, https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-9442.2008.00542.x

Tilley, P 2018, The Queensland Times, Ipswich Building Boom not Slowing Down, accessed 17 June 2020, https://www.qt.com.au/news/ipswich-building-boom-not-slowing-down/3361617/

Waters, B 2018, Take a peek inside Ipswich's newest fire station, *Ipswich First*, Ipswich City Council, February 27 2018, accessed 25th June 2020, https://www.ipswichfirst.com.au/take-peek-inside-ipswichs-newest-fire-station/.

Wilde, W.J., 2014. *Assessing the Effects of Heavy Vehicles on Local Roadways*, Centre for Transportation Research and Implementation, Minnesota State University, August 2014.

WSP Parsons Brinckerhoff, 2017, Ebenezer Intermodal Terminal High Level Terminal Assessment, February 2017

Appendix A Audit of nearby community facilities and sensitive uses

Table 8-1 Audit of nearby community facilities and sensitive uses

Type	Facility Name	Address	Details	Distance to Project	Distance to Project (Cunningham Highway)
Education					
Child care	Building Futures Montessori Child Care	3a Hill St, Blackstone QLD 4304	• 80 approved places • 6 weeks to 6 years[v]	17.01km	1.22km
	Goodstart Early Learning Churchill	274 Warwick Rd, Churchill QLD 4305	• 99 approved places • Before school 5-12 years	11.46km	2.28km
	C&K Amberley Community Childcare Centre	Lot 1, Amberley District State School, Deebing Creek Rd, Yamanto QLD 4305	• 75 approved places • 6 weeks – 2 years, 2- 3 years, 3-5 years	10.90km	1.13km
	Winston Glades Early Education Centre	133 Kensington Dr, Flinders View QLD 4305	• 117 approved places • 2-3 years, 4-5 years	11.92km	0.76km
	Amaze Early Education Centre Silkstone Ipswich - Pre School & Child Care Centre	17 Cambridge St, Silkstone QLD 4304	• 76 approved places • 6 weeks – 12 months, 12 months – 24 months, 24 months – 3 years, 3-4 years, 4-5 years	15.53km	2.46km
	Bindarra Daycare	18 Cole St, Booval QLD 4304	• 44 approved places • Birth to over preschool age, not including school children[vi]	16.55km	2.65km
	Early Childhood Centre Raceview	219 Whitehill Rd, Raceview QLD 4305	• 62 approved places • Ages from birth up to an including school child. A maximum of 15 school children[vii].	14.54km	2.10km

Type	Facility Name	Address	Details	Distance to Project	Distance to Project (Cunningham Highway)
	Goodstart Early Learning Raceview	5 Banksia Dr, Raceview QLD 4305	• 99 approved places • 6 weeks – 15 months, 15 months – 2 years, 2 years – 30 months, 30 months – 3 years, 3- 4 years, 4-5 years	13.67km	1.40km
	Raceview Kids Early Learning Centre	80 Thornton St, Raceview QLD 4305	• 118 approved places • 6 weeks – 15 months, 15 months – 2 years, 2-3 years, 3-4 years, 4-5 years	14.48km	1.61km
Preschool	Raceview Congregational Kindergarten	117 Wildey St, Raceview QLD 4305	*This facility has not provided any information on vacancy details.*	14.36km	0.90km
	C&K Amaroo Kindergarten/Preschool	4 Madden St, Silkstone QLD 4304	*This facility has not provided any information on vacancy details.* • 3-5 years	15.39km	1.96km
	Bundamba Preschool	Bundamba State School 221 Brisbane Rd, Bundamba QLD 4304	*This facility has not provided any information on vacancy details.*	17.92km	1.97km
	Yamanto Community Kindergarten & Pre-School Assoc. Inc	125 Equestrian Dr, Yamanto QLD 4305	• 25 approved places • 3.5- 4.5 years	10.95km	0.25km
Primary School	Amberley District State School	37 Deebing Creek Rd, Yamanto QLD 4305	• 852 enrolments (2019)	10.71km	0.92km
	Bundamba State School	221 Brisbane Rd, Bundamba QLD 4304	• 517 enrolments (2019) [viii]	18.25km	2.24km
	Bethany Lutheran Primary School	126 Cascade St, Raceview QLD 4305	N/A	14.19km	1.69km
	Churchill State School	Warwick Rd, Churchill QLD 4305	• 339 enrolments (2019)	11.56km	2.51km
	Claremont State Special School	136A Robertson Rd, Silkstone QLD 4304	• 5 years to school leave age [ix] • 146 enrolments (2019)	15.47km	1.68km
	Deebing Heights State School	81 Rawlings Rd, Deebing Heights QLD 4306	• 433 enrolments (2019)	10.15km	0.87km

Type	Facility Name	Address	Details	Distance to Project	Distance to Project (Cunningham Highway)
	Raceview State School	State School - Raceview State School, 96 Wildey St, Raceview QLD 4305	• 960 enrolments (2019)	14.52km	0.88km
	Ripley Valley State School		• Ripley Valley State School has a maximum student enrolment capacity of 1,131 students		
	Riverview Sate School	131 Old Ipswich Rd, Riverview QLD 4303	• 270 enrolments (2019) • School fully booked out[x]	22.14km	0.68km
	Spring Mountain State School		• 760 enrolments (2019)	23.83km	1.53km
	Silkstone State School	Molloy St, Silkstone QLD 4304	• 831 enrolments (2019)	15.98km	2.62km
Secondary School	Bundamba State Secondary College	15a Naomai St, Bundamba QLD 4304	• 967 enrolments (2019)	18.24km	1.32km
	Ripley Valley State Secondary College		• 139 enrolments (2019) years 7 and 8	15.82km	0.94km
	St Peter Claver College	10 Old Ipswich Rd, Riverview QLD 4303	• Co-educational secondary Catholic College (920 enrolments) • School fully booked out	21.45km	0.31km
Tertiary	TAFE Queensland Ipswich Campus	Corner Mary Street and, Byrne St, Bundamba QLD 4304	• The Bundamba Ipswich TAFE campus offers 122 different courses	18.83km	1.84km

Type	Facility Name	Address	Details	Distance to Project	Distance to Project (Cunningham Highway)
Tertiary	University of Southern Queensland Ipswich Campus	USQ Ipswich Campus, 11 Salisbury Rd, Ipswich QLD 4305	• Home to 1,682 students • Degrees offered in the following areas: – Business and Commerce – Creative Arts and Media – Education – Engineering and Built Environment – Health and Community – Humanities and Communication – Information Technology – Law and Justice – Sciences and; – Pathways programs.	12.94km	3.78km
Tertiary	Inala TAFE Campus	54 Thrush St, Inala QLD 4077	• The Inala TAFE Campus specialises in delivering English language classes • The campus has recently doubled in size with a $3.4 million expansion of its teaching spaces. • Courses available: – Diploma in Nursing – Certificate ll in Retail Cosmetics – Certficate l in Skills for Education and Training Pathways	14.18km	33.82km

Type	Facility Name	Address	Details	Distance to Project	Distance to Project (Cunningham Highway)
Tertiary	Springfield TAFE Campus	Education City Dr, Springfield QLD 4300	• The Springfield campus offers a range of study areas including business, childcare, first aid, justice studies, leadership and management and remedial massage. • The campus is located close to Springfield train station and nearby childcare facilities	25.27km	10.58km
Community Facility					
Hall	Riverview State School	131 Old Ipswich Rd, Riverview QLD 4303	• Hall seats 250-300 people	22.14km	0.68km
	Riverview Community Centre	138 Old Ipswich Rd, Riverview QLD 4303	• Hall seats 180-200 people	22.16km	0.64km
	St Peter Claver College	10 Old Ipswich Rd, Riverview QLD 4303	• Hall seats 250-300 people	21.45km	0.31km
	Raceview Congregational Church	117 Wildey St, Raceview QLD 4305	• Hall seats 250-300 people	14.50km	1.01km
	Claremont State Special School	136A Robertson Rd, Silkstone QLD 4304	• Hall seats 100-200 people	15.47km	1.68km
Community Centre	Riverview Community Centre	138 Old Ipswich Rd, Riverview QLD 4303		22.16km	0.64km
Church	Citipointe Church Ipswich	25 Goddards Rd, Yamanto QLD 4305		9.19km	0.31km
Church	Christian Outreach Centre	25 Goddards Rd, Yamanto QLD 4305		9.16km	0.31km
Church	Cityhope Church	Rex Hills Dr, Ripley QLD 4306		13.50km	0.32km
Church	Raceview Congregational Church	117 Wildey St, Raceview QLD 4305		14.50km	1.01km
Church	Romanian Orthodox Church St Dimitrie	Brisbane Rd, Bundamba QLD 4304		22.73km	0.07km

Type	Facility Name	Address	Details	Distance to Project	Distance to Project (Cunningham Highway)
Church	Citipointe Church Ipswich	25 Goddards Rd, Yamanto QLD 4305		9.19km	0.31km
Library	Little Blessings Toy Library	332 Ripley Rd, Flinders View QLD 4305		13.31km	0.59km
Cultural Facility					
Art Gallery	Julesart Gallery	16 Jacob St, Dinmore QLD 4303	• Working studio/gallery open by appointment[xi]	21.16km	0.24km
Art Space	N/A	N/A	N/A	N/A	N/A
Cultural Space	N/A	N/A	N/A	N/A	N/A
Museum	RAAF Amberley Aviation Heritage Centre	Southern Amberley Rd, Amberley QLD 4306	• Heritage museum, open Tuesday and Wednesday (9-3pm)	8.26km	1.96km
Performing Arts Facility	N/A	N/A	N/A	N/A	N/A
Aquatic Centre	David Urquhart Swimming School	256 Brisbane Rd, Bundamba QLD 4304		8.26km	2.21km
	Judy's Junior Swim School	32 Cowley Dr, Flinders View QLD 4305		13.11km	0.94km
	Shapland Swim Schools - Ipswich	23 Cambridge St, Silkstone QLD 4304		15.48km	2.45km
Multi-Purpose Facility					
Multi-Purpose Centre	Riverview Local Multi-Purpose Centre		Estimated timing of delivery (2031-2036)**		
Multi-Purpose Centre	Booval District Multi-Purpose Centre		Estimated timing of delivery (2016-2021)		
Multi-Purpose Centre	Yamanto District Multi-Purpose Centre		Estimated timing of delivery (2016-2021)		
Multi-Purpose Centre	Bundamba Local Multi-Purpose Centre		Estimated timing of delivery (2036-Ultimate)		
Recreation Facility					
Multi-Purpose Centre	Booval District Multi-Purpose Centre		• Estimated timing of delivery (2016-2021)		

Type	Facility Name	Address	Details	Distance to Project	Distance to Project (Cunningham Highway)
Indoor Recreation Facility	N/A	N/A	N/A	N/A	N/A
Major Outdoor Recreation Facility	Willowbank Raceway	38 Champions Way, Willowbank QLD 4307	• Home of Australia's largest drag racing event[xii] • Also home of the Pro Rally Experience (rally driving school)	1.81km	0.42km
	Ipswich Kart Club	56 Champions Way, Willowbank QLD 4306	• 1 kart track	1.71km	0.56km
	Ipswich City Dirt Kart Club	23 Champions Way, Willowbank QLD 4306	• 1 dirt kart track	1.20km	1.13km
	Ipswich Golf Day & Night Driving Range	59 Huxham St, Raceview QLD 4305	• 25 bay lit driving range[xiii]	12.41km	2.94km
	Ipswich Turf Club	219 Brisbane Rd, Bundamba QLD 4304	• Function room/event hire facilities[xiv]	17.73km	1.84km
	West Moreton Darts Association	West Moreton Darts Association, 66 Riverview Rd, Riverview QLD 4303	• 1 playing field	22.10km	0.35km
	Swifts Home Ground	40-64 Ipswich Boonah Rd, Purga QLD 4306	• Rugby league club • 1 playing field	9.36km	0.53km
Community Service					
Multicultural	Blue Care Ipswich Multicultural Services	15 Robertson Rd, Eastern Heights QLD 4305	• Aims to assist culturally and linguistically diverse (CALD) communities to access appropriate Home and Community Care (HACC) services[xv].	14.22km	2.68km
Health Centre	Amberley Health Centre (AMBHC)	Unnamed Rd, Amberley QLD 4306		8.33km	2.64km
GP	Willowbank Medical Practice	20-28 O'Neills Rd, Willowbank QLD 4306		5.99km	0.33km
	Winston Glades Family Practice	12 Edwards St, Raceview QLD 4305		12.60km	1.84km

Type	Facility Name	Address	Details	Distance to Project	Distance to Project (Cunningham Highway)
Pharmacy	Willowbank Pharmacy	Shop 2/20 O'Neills Road, Willowbank QLD 4306		6.01km	0.29km
	Footes Pharmacy Raceview	64/4 Raceview St, Raceview QLD 4305		14.07km	1.94km
	Priceline Pharmacy Yamanto	Yamanto Shopping Centre, 512-514 Warwick Rd, Yamanto QLD 4305		9.76km	0.31km
	TerryWhite Chemmart Winston Glades	Shop 1 Winston Glades Shopping Centre, 259 Ash St, Flinders View QLD 4305		12.38km	0.89km
Hospital	Ipswich Hospital	Chelmsford Avenue, Ipswich	• 429 beds and the largest hospital as part of West Moreton Hospital and Health services[xvi] • Provides impatient specialist services in ear, nose and throat surgery, eye surgery, gynaecology, orthopaedics, plastic surgery, urology, obstetrics, oncology, paediatrics, and psychiatry.	13.94km	4.59km
Hospital	Ipswich Day Hospital	10 Churchill St, Ipswich QLD 4305	• Is a purpose built, day surgery facility located at the Medicross Centre in Ipswich • Ipswich Day Hospital offers a broad range of surgical services for all patients. Surgical specialties include: Dental, Ophthalmology, and Plastic and Reconstructive • The day hospital is open from 6:00am to 6:00pm Monday to Friday	13.89km	4.29km
Hospital	Mater Private Hospital Springfield	30 Health Care Dr, Springfield Central QLD 4300	• Opened in 2015, the Mater Private Hospital Springfield includes 80 private beds, and a day surgery unit.	25.56km	11.11km

Type	Facility Name	Address	Details	Distance to Project	Distance to Project (Cunningham Highway)
			• The facilities offers a range of medical and surgical services for overnight and day patients		
Hospital	St Andrews Hospital	12 Roderick Street, Ipswich, QLD, 4305	• St Andrew's Emergency Department provides care 24 hours a day, including two undercover ambulance parking bays and 6 monitored emergency bays[22]	14.23km	4.16km
Emergency Facility					
Ambulance Station	Rosewood Ambulance Station	70 John St, Rosewood QLD 4340		8.83km	10.46km
	Ipswich Ambulance Station	6 Garden St, Ipswich QLD 4305	• Opened in 2011 • Twelve ambulances • Located 500m from Ipswich Hospital[xvii]	14.49km	4.14km
Police Station	Yamanto Police Station	300 Warwick Rd, Yamanto QLD 4305		11.45km	1.96km
	Leichhardt Neighbourhood Police Beat	21 Toongarra Rd, Leichhardt QLD 4305		11.71km	4.46km
	Booval Police Beat Shopfront	Shop 26A, Booval Fair Shopping Centre, 139 Brisbane Rd, Booval QLD 4304		16.50km	2.77km
	Booval Police Station	2A Cothill Rd, Booval QLD 4304		16.88km	2.82km
	Ipswich Police Station	37 Ellenborough St, Ipswich QLD 4305		13.86km	5.26km
Fire Station	Amberley RAAF Base Fire Station	Amberley QLD 4306		8.91km	2.69km
	Bundamba Fire Station	61 Brisbane Rd, Bundamba QLD 4304		19.06km	1.51km

22

Type	Facility Name	Address	Details	Distance to Project	Distance to Project (Cunningham Highway)
	Ripley Fire Station and West Moreton Area Office	338/350 Ripley Rd, Ripley QLD 4306	• Services an area of approximately 170 square kilometres and a population in excess of 100,000 people[xviii].	13.48km	0.60km

Table 8-2 Audit of Social Infrastructure (Other)

Type	Facility Name	Address	Details	Distance to Project (Estimated location of terminal to be confirmed)*	Distance to Project (Cunningham Highway)
Other					
B&B	Willowbank Drive Bed & Breakfast	114 Willowbank Dr, Willowbank QLD 4306	• Three room B&B	4.64km	4.56km
Aged Care Facility	Blue Care Nowlanvil Residential Care Facilities	205/215 Ripley Rd, Flinders View QLD 4305	• 116 beds • 24/7 Registered nursing • Residential aged care/palliative care[xix]	13.2km	0.87km
	Southern Cross Care Raceview - St Mary's	129 Wildey St, Raceview QLD 4305	• 73 beds • 24/7 Registered nursing • Residential aged care/palliative care/respite beds[xx]	14.35km	0.84km
Charity	Ipswich Historical Society	1041 Redbank Plains Rd, New Chum QLD 4303		18.01km	0.42km
Caravan Park	Willowbank Caravan Park	15 Coopers Rd, Willowbank QLD 4306	• 14 short-term cabins • 150 camping sites[xxi]	4.87km	0.13km
	Amberley Caravan Park	2692-2736 Cunningham Hwy, Ipswich QLD 4306	• No cabins provided[xxii]	5.39km	0.09km
Cemetery	Warrill Park Lawn Cemetry	12 Anderson Day Drive, Willowbank QLD 4306		4.13km	0.10km
	Willowbank Morial Cemetery Queensland	N/A		6.21km	0.06km

Type	Facility Name	Address	Details	Distance to Project (Estimated location of terminal to be confirmed)*	Distance to Project (Cunningham Highway)
Fast Food Outlet	KFC Yamanto	444 Warwick Rd, Yamanto QLD 4305		10.36km	0.86km
	Flinders View Takeaway	3/1 Hibiscus St, Flinders View QLD 4305		13.36km	0.68km
	McDonald's Ripley	332 Ripley Rd, Ripley QLD 4306		13.43km	0.31km
	McDonald's Yamanto	Yamanto Shopping Village, Warwick Rd, Yamanto QLD 4305		9.56km	0.18km
Major Retail Centre	ALDI Yamanto	475-481 Warwick Rd, Yamanto QLD 4305		9.98km	0.64km
	Winston Glades Shopping Centre	259 Ash St, Flinders View QLD 4305		12.32km	0.92km
	The Oaks Shopping Village	65 Naomai St, Bundamba QLD 4304		18.13km	0.88km
	Woolworths Yamanto	512-514 Warwick Rd, Yamanto QLD 4305		9.64km	0.22km
	Dan Murphy's Yamanto	510 Warwick Rd, Yamanto QLD 4305		9.77km	0.39km
	Bunnings Trade Centre Raceview	4 Saunders St, Raceview QLD 4305		14.72km	0.15km
Motel	Willowbank Motel	15 Coopers Rd, Willowbank QLD 4306	• 21 motel rooms	4.75km	0.17km
	Ipswich Country Motel	250 S Station Rd, Ipswich QLD 4305	• On-site accommodation (45 rooms) • Three function rooms to cater for up to 200+ guests[xxiii]	15.22km	1.12km
Petrol Station	Caltex Woolworths	512 Warwick Rd, Yamanto QLD 4305		9.65km	0.25km
	United Amberley	2708 Cunningham Hwy, Willowbank QLD 4306		5.39km	0.03km

Type	Facility Name	Address	Details	Distance to Project (Estimated location of terminal to be confirmed)*	Distance to Project (Cunningham Highway)
	BP	2487 Cunningham Hwy, Purga QLD 4306		7.12km	0.04km
	Liberty Oil Purga	2288 Cunningham Hwy, Purga QLD 4306		8.61km	0.05km
	Freedom Fuels	62 Brisbane Rd, Ebbw Vale QLD 4304		20.36km	0.59km
	7-Eleven Dinmore	29-31 Brisbane Rd, Dinmore QLD 4303		20.36km	0.28km
	7-Eleven Flinders View	130 Ash St, Yamanto QLD 4305		12.17km	0.88km
Retirement Village	Palm Meadows Home Village	25 Coopers Rd, Willowbank QLD 4306	• Over 50s village	Over 50s village	4.83km
Tavern	The Eatery	Willowbank QLD 4306		1.80km	0.43km
	The Grill House	Willowbank QLD 4306		1.61km	0.62km
	Yamanto Tavern	510 Warwick Rd, Yamanto QLD 4305		9.67km	0.34km
	Falvey's Grand Hotel	406 Warwick Rd, Yamanto QLD 4305		10.71km	1.05km
Tourist Attraction	Coopers Road	2812 Cunningham Hwy, Willowbank QLD 4306	• Historical landmark	4.78km	0.04km
	Castle Blackstone	LOT 1 Thomas St, Blackstone QLD 4304	• Historic site – 3-storey Italianate mansion of 49 rooms. Largest residence to be built in Ipswich. • 16km of dirt trails to discover throughout Blackstone Hill[xxiv]	16.73km	0.97km
Other	Dinmore Cottage Tea House	1A Dinmore St, Dinmore QLD 4303	• Historic cottage[xxv]	21.06km	0.31km

**The distance to the location of the intermodal terminal (The Project) has been estimated, as this information is yet to be confirmed. For the audit of social infrastructure, the location of the intermodal terminal is assumed to be the corner of Paynes Rd and Seppanen Rd. The values given for the distance to the Project are therefore estimates only.*

***Taken and adapted from the LGIP's Supporting Document Land for Community Facilities 2016. Estimated timing refers to land to be secured*

[1] Ramsay Health Care (2020). Multimillion Development Announced for St Andrew's Ipswich Private Hospital. Retrieved from Ramsay Health Care, St Andrew's Ipswich Private Hospital: https://www.standrewsipswich.com.au/About-Us/Media-Releases/Multimillion-Development-Announced-for-St-Andrews-Ipswich-Private-Hospital
[1] The Queensland Times (2013). Firies make themselves at home in new station. Retrieved from Queensland Times: https://www.qt.com.au/news/firies-make-themselves-at-home-in-new-station/1985924/
[1] Queensland Government (2020). Rosewood to get its own fire station. Retrieved from Queensland Government: http://statements.qld.gov.au/Statement/2020/6/24/rosewood-to-get-its-own-fire-station
[1] CareforKids.com.au. (2020). Retrieved from CareforKids.com.au: https://www.careforkids.com.au/
[1] ACECQA. (n.d.). *Bindarra Children's Daycare Centre*. Retrieved from ACECQA: https://www.acecqa.gov.au/resources/national-registers/services/bindarra-childrens-daycare-centre
[1] ACECQA. (n.d.). *Raceview Kindergarten & Child Care Centre*. Retrieved from ACECQA: https://www.acecqa.gov.au/resources/national-registers/services/raceview-kindergarten-child-care-centre
[1] Queensland Government . (2020). *Downloadable data files* . Brisbane: Queensland Government.
[1] The State of Queensland (Department of Education). (2020). *Enrolments*. Retrieved from https://claremontspecs.eq.edu.au/enrolments
[1] City of Ipswich. (2018). *Capacity analysis of a sample of local community facilities: a methodology paper* . Ipswich: City of Ipswich.
[1] Discover Ipswich. (2020). *Julesart Studio/Gallery*. Retrieved from https://www.discoveripswich.com.au/attraction/julesart-studio-gallery/
[1] Willowbank Raceway. (2020). *Willowbank Raceway Drag Racing's Finest*. Retrieved from https://www.willowbankraceway.com.au/
[1] Ipswich Golf Driving Course. (n.d.). Retrieved from Ipswich Golf Driving Course: http://www.ipswichgolfdrivingrange.com.au/driving-range/
[1] Ipswichturfclub. (n.d.). *Functions & Events*. Retrieved from Ipswichturfclub: https://ipswichturfclub.com.au/functions/
[1] My Community Directory. (2020). *Blue Care - Multicultural Community Services - Ipswich*. Retrieved from My Community Directory: https://www.mycommunitydirectory.com.au/Queensland/Ipswich/Ageing_Services/General_Ageing_Services/2985/102060/Blue_Care_-_Multicultural_Community_Services_-_Ipswich
[1] Queensland Health. (2020). Ipswich Hospital . Retrieved from Queensland Government: http://www.performance.health.qld.gov.au/Hospital/Index/15
[1] Ramsay Health Care. (202). Private Emergency Department. Retrieved from Ramsay Health Care: https://www.standrewsipswich.com.au/Our-Services/Emergency-Department
[1] Queensland Government . (2008). *Rural Fires Bulletin.* Brisbane: Queensland Government Department of Emergency Services.
[1] Aged Care Guide. (n.d.). *Blue Care Flinders View Nowlanvil Aged Care Facility*. Retrieved from Aged Care Guide: https://www.agedcareguide.com.au/blue-care-flinders-view-nowlanvil-aged-care-facility
[1] Aged Care Guide. (n.d.). *Southern Cross Care St Mary's*. Retrieved from Aged Care Guide: https://www.agedcareguide.com.au/southern-cross-care-st-marys
[1] Brisbane Marketing. (2018). *Willowbank Village*. Retrieved from Brisbane Marketing: https://www.visitbrisbane.com.au/ipswich/accommodation/camping-and-caravan-parks/willowbank-village?sc_lang=en-au
[1] Full Range Camping. (2020). *Amberley Caravan Park (CP)*. Retrieved from Full Range Camping: https://directory.fullrangecamping.com.au/item/amberley-caravan-park-25/
[1] Ipswich Country Motel. (n.d.). *Function and Conference Venue Ipswich*. Retrieved from Ipswich Country Motel: https://www.ipswichcountrymotel.com/functions-conference.php
[1] Must Do Brisbane Pty Ltd. (2020). *Castle Hill Blackstone Reserve*. Retrieved from Must Do Brisbane Pty Ltd: https://www.mustdobrisbane.com/outdoors-walks-bush-heritage-trails-cycling-bush/castle-hill-blackstone-reserve-ipswich
[1] Dinmore Cottage Tea House. (2019). *Dinmore Cottage Tea House*. Retrieved from Dinmore Cottage Tea House: https://www.dinmorecottageteahouse.com/men

Appendix B Economic Contribution from Intermodal Terminal Operation

Table 8-3 350,000 TEUs – Contribution to regional output resulting from operating output, year 1 to year 5 onwards

	Option A2					Option A4				
	1	2	3	4	5+	1	2	3	4	5+
Agriculture, Forestry & Fishing	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Mining	$0.0	$0.0	$0.0	$0.1	$0.1	$0.0	$0.0	$0.0	$0.1	$0.1
Manufacturing	$1.0	$2.1	$3.1	$4.2	$5.2	$1.1	$2.3	$3.4	$4.6	$5.7
Electricity, Gas, Water & Waste Services	$0.0	$0.1	$0.1	$0.2	$0.2	$0.0	$0.1	$0.1	$0.1	$0.2
Construction	$0.2	$0.3	$0.5	$0.6	$0.8	$0.1	$0.3	$0.4	$0.6	$0.7
Wholesale Trade	$0.1	$0.2	$0.2	$0.3	$0.4	$0.1	$0.2	$0.2	$0.3	$0.4
Retail Trade	$0.0	$0.1	$0.1	$0.1	$0.1	$0.0	$0.1	$0.1	$0.1	$0.1
Accommodation & Food Services	$0.0	$0.0	$0.0	$0.0	$0.1	$0.0	$0.0	$0.0	$0.0	$0.1
Transport, Postal & Warehousing	$2.4	$4.8	$7.2	$9.5	$11.9	$2.3	$4.6	$6.8	$9.1	$11.4
Information Media and Telecommunications	$0.0	$0.1	$0.1	$0.1	$0.1	$0.0	$0.1	$0.1	$0.1	$0.1
Financial & Insurance Services	$0.1	$0.1	$0.2	$0.2	$0.3	$0.1	$0.1	$0.2	$0.2	$0.3
Rental, Hiring & Real Estate Services	$0.1	$0.2	$0.3	$0.5	$0.6	$0.1	$0.2	$0.3	$0.4	$0.6
Professional, Scientific & Technical Services	$0.1	$0.2	$0.3	$0.4	$0.5	$0.1	$0.2	$0.3	$0.4	$0.5
Administrative & Support Services	$0.1	$0.1	$0.2	$0.3	$0.3	$0.1	$0.1	$0.2	$0.3	$0.3
Public Administration & Safety	$0.0	$0.0	$0.0	$0.1	$0.1	$0.0	$0.0	$0.0	$0.1	$0.1
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Arts & Recreation Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Other Services	$0.1	$0.2	$0.3	$0.4	$0.6	$0.1	$0.2	$0.4	$0.5	$0.6
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$3.0	$6.1	$9.1	$12.2	$15.2	$3.1	$6.1	$9.2	$12.2	$15.3
Indirect	$1.2	$2.4	$3.6	$4.8	$6.0	$1.2	$2.4	$3.6	$4.8	$6.0
Total	$4.2	$8.5	$12.7	$17.0	$21.2	$4.2	$8.5	$12.7	$17.0	$21.2

Source: CDM Smith Analysis, 2020

Table 8-4 350,000 TEUs – Contribution to regional household income resulting from operating output, year 1 to year 5 onwards

	Option A2					Option A4				
	1	2	3	4	5+	1	2	3	4	5+
Agriculture, Forestry & Fishing	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Mining	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Manufacturing	$0.3	$0.5	$0.8	$1.0	$1.3	$0.3	$0.6	$0.8	$1.1	$1.4
Electricity, Gas, Water & Waste Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Construction	$0.0	$0.1	$0.1	$0.1	$0.1	$0.0	$0.1	$0.1	$0.1	$0.1
Wholesale Trade	$0.0	$0.0	$0.1	$0.1	$0.1	$0.0	$0.0	$0.1	$0.1	$0.1
Retail Trade	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.1
Accommodation & Food Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Transport, Postal & Warehousing	$0.6	$1.2	$1.8	$2.5	$3.1	$0.6	$1.2	$1.8	$2.3	$2.9
Information Media and Telecommunications	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Financial & Insurance Services	$0.0	$0.0	$0.1	$0.1	$0.1	$0.0	$0.0	$0.1	$0.1	$0.1
Rental, Hiring & Real Estate Services	$0.0	$0.0	$0.1	$0.1	$0.1	$0.0	$0.0	$0.1	$0.1	$0.1
Professional, Scientific & Technical Services	$0.0	$0.1	$0.1	$0.1	$0.2	$0.0	$0.1	$0.1	$0.1	$0.2
Administrative & Support Services	$0.0	$0.1	$0.1	$0.1	$0.2	$0.0	$0.1	$0.1	$0.1	$0.2
Public Administration & Safety	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Arts & Recreation Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Other Services	$0.0	$0.1	$0.1	$0.1	$0.2	$0.0	$0.1	$0.1	$0.1	$0.2
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$0.8	$1.6	$2.4	$3.2	$4.0	$0.8	$1.6	$2.4	$3.2	$4.0
Indirect	$0.3	$0.6	$0.9	$1.1	$1.4	$0.3	$0.6	$0.9	$1.1	$1.4
Total	$1.1	$2.2	$3.3	$4.3	$5.4	$1.1	$2.2	$3.3	$4.4	$5.4

Source: CDM Smith Analysis, 2020

Table 8-5 350,000 TEUs – Contribution to regional employment resulting from operating output, year 1 to year 5 onwards

	Option A2					Option A4				
	1	2	3	4	5+	1	2	3	4	5+
Agriculture, Forestry & Fishing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mining	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1
Manufacturing	3.4	6.8	10.2	13.7	17.1	3.8	7.6	11.5	15.3	19.1
Electricity, Gas, Water & Waste Services	0.1	0.1	0.2	0.2	0.3	0.1	0.1	0.2	0.2	0.3
Construction	0.4	0.9	1.3	1.7	2.2	0.4	0.8	1.2	1.6	2.1
Wholesale Trade	0.2	0.5	0.7	0.9	1.2	0.2	0.5	0.7	1.0	1.2
Retail Trade	0.2	0.4	0.6	0.8	1.0	0.2	0.4	0.6	0.8	1.0
Accommodation & Food Services	0.1	0.2	0.3	0.3	0.4	0.1	0.2	0.3	0.3	0.4
Transport, Postal & Warehousing	6.8	13.5	20.3	27.0	33.8	6.4	12.9	19.3	25.8	32.2
Information Media and Telecommunications	0.1	0.1	0.2	0.2	0.3	0.1	0.1	0.2	0.2	0.3
Financial & Insurance Services	0.1	0.3	0.4	0.5	0.6	0.1	0.3	0.4	0.5	0.6
Rental, Hiring & Real Estate Services	0.2	0.5	0.7	1.0	1.2	0.2	0.5	0.7	1.0	1.2
Professional, Scientific & Technical Services	0.4	0.8	1.2	1.6	1.9	0.4	0.8	1.2	1.6	2.0
Administrative & Support Services	0.3	0.5	0.8	1.1	1.4	0.3	0.5	0.8	1.1	1.3
Public Administration & Safety	0.1	0.2	0.2	0.3	0.4	0.1	0.2	0.2	0.3	0.4
Education & Training	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Health Care & Social Assistance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arts & Recreation Services	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1
Other Services	0.8	1.6	2.4	3.2	4.1	0.9	1.8	2.7	3.6	4.5
Ownership of Dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Direct	9.7	19.4	29.1	38.8	48.5	9.9	19.8	29.6	39.5	49.4
Indirect	3.5	7.0	10.5	14.1	17.6	3.5	7.0	10.5	14.1	17.6
Total	13.2	26.4	39.6	52.8	66.1	13.4	26.8	40.2	53.6	67.0

Source: CDM Smith Analysis, 2020

Table 8-6 350,000 TEUs – Contribution to regional value added resulting from operating output, year 1 to year 5 onwards

	Option A2					Option A4				
	1	2	3	4	5+	1	2	3	4	5+
Agriculture, Forestry & Fishing	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Mining	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Manufacturing	$0.4	$0.7	$1.1	$1.5	$1.9	$0.4	$0.8	$1.2	$1.7	$2.1
Electricity, Gas, Water & Waste Services	$0.0	$0.0	$0.0	$0.1	$0.1	$0.0	$0.0	$0.0	$0.1	$0.1
Construction	$0.0	$0.1	$0.1	$0.2	$0.2	$0.0	$0.1	$0.1	$0.2	$0.2
Wholesale Trade	$0.0	$0.1	$0.1	$0.1	$0.2	$0.0	$0.1	$0.1	$0.2	$0.2
Retail Trade	$0.0	$0.0	$0.0	$0.1	$0.1	$0.0	$0.0	$0.0	$0.1	$0.1
Accommodation & Food Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Transport, Postal & Warehousing	$1.1	$2.1	$3.2	$4.3	$5.3	$1.0	$2.0	$3.1	$4.1	$5.1
Information Media and Telecommunications	$0.0	$0.0	$0.0	$0.0	$0.1	$0.0	$0.0	$0.0	$0.0	$0.1
Financial & Insurance Services	$0.0	$0.1	$0.1	$0.1	$0.2	$0.0	$0.1	$0.1	$0.1	$0.2
Rental, Hiring & Real Estate Services	$0.1	$0.1	$0.2	$0.2	$0.3	$0.1	$0.1	$0.2	$0.2	$0.3
Professional, Scientific & Technical Services	$0.0	$0.1	$0.1	$0.2	$0.2	$0.0	$0.1	$0.1	$0.2	$0.2
Administrative & Support Services	$0.0	$0.1	$0.1	$0.1	$0.2	$0.0	$0.1	$0.1	$0.1	$0.2
Public Administration & Safety	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Arts & Recreation Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Other Services	$0.0	$0.1	$0.1	$0.2	$0.2	$0.1	$0.1	$0.2	$0.2	$0.3
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$1.3	$2.6	$3.9	$5.2	$6.5	$1.3	$2.6	$3.9	$5.2	$6.5
Indirect	$0.5	$1.0	$1.5	$2.0	$2.5	$0.5	$1.0	$1.5	$2.0	$2.5
Total	$1.8	$3.6	$5.4	$7.3	$9.1	$1.8	$3.6	$5.4	$7.2	$9.0

Source: CDM Smith Analysis, 2020

Table 8-7 500,000 TEUs – Contribution to regional output resulting from operating output, year 1 to year 5 onwards

	Option A2					Option A4				
	1	2	3	4	5+	1	2	3	4	5+
Agriculture, Forestry & Fishing	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Mining	$0.0	$0.0	$0.1	$0.1	$0.1	$0.0	$0.0	$0.1	$0.1	$0.1
Manufacturing	$1.8	$3.5	$5.3	$7.0	$8.8	$1.7	$3.4	$5.1	$6.8	$8.5
Electricity, Gas, Water & Waste Services	$0.1	$0.1	$0.2	$0.2	$0.3	$0.1	$0.1	$0.2	$0.2	$0.3
Construction	$0.2	$0.4	$0.7	$0.9	$1.1	$0.2	$0.4	$0.6	$0.8	$1.1
Wholesale Trade	$0.1	$0.2	$0.4	$0.5	$0.6	$0.1	$0.2	$0.3	$0.5	$0.6
Retail Trade	$0.0	$0.1	$0.1	$0.2	$0.2	$0.0	$0.1	$0.1	$0.2	$0.2
Accommodation & Food Services	$0.0	$0.0	$0.1	$0.1	$0.1	$0.0	$0.0	$0.1	$0.1	$0.1
Transport, Postal & Warehousing	$3.3	$6.7	$10.0	$13.4	$16.7	$3.2	$6.5	$9.7	$12.9	$16.1
Information Media and Telecommunications	$0.0	$0.1	$0.1	$0.2	$0.2	$0.0	$0.1	$0.1	$0.2	$0.2
Financial & Insurance Services	$0.1	$0.2	$0.3	$0.3	$0.4	$0.1	$0.2	$0.3	$0.3	$0.4
Rental, Hiring & Real Estate Services	$0.2	$0.3	$0.5	$0.7	$0.8	$0.2	$0.3	$0.5	$0.6	$0.8
Professional, Scientific & Technical Services	$0.1	$0.3	$0.4	$0.6	$0.7	$0.1	$0.3	$0.4	$0.6	$0.7
Administrative & Support Services	$0.1	$0.2	$0.3	$0.4	$0.5	$0.1	$0.2	$0.3	$0.4	$0.5
Public Administration & Safety	$0.0	$0.0	$0.1	$0.1	$0.1	$0.0	$0.0	$0.1	$0.1	$0.1
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Arts & Recreation Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Other Services	$0.2	$0.4	$0.6	$0.7	$0.9	$0.2	$0.4	$0.5	$0.7	$0.9
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$4.6	$9.1	$13.7	$18.2	$22.8	$4.4	$8.8	$13.2	$17.6	$22.0
Indirect	$1.8	$3.5	$5.3	$7.1	$8.9	$1.7	$3.4	$5.1	$6.8	$8.6
Total	$6.3	$12.7	$19.0	$25.3	$31.6	$6.1	$12.2	$18.3	$24.4	$30.5

Source: CDM Smith Analysis, 2020

Table 8-8 500,000 TEUs – Contribution to regional household income resulting from operating output, year 1 to year 5 onwards

	Option A2					Option A4				
	1	2	3	4	5+	1	2	3	4	5+
Agriculture, Forestry & Fishing	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Mining	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Manufacturing	$0.4	$0.9	$1.3	$1.7	$2.1	$0.4	$0.8	$1.2	$1.7	$2.1
Electricity, Gas, Water & Waste Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Construction	$0.0	$0.1	$0.1	$0.2	$0.2	$0.0	$0.1	$0.1	$0.1	$0.2
Wholesale Trade	$0.0	$0.1	$0.1	$0.1	$0.2	$0.0	$0.1	$0.1	$0.1	$0.2
Retail Trade	$0.0	$0.0	$0.0	$0.1	$0.1	$0.0	$0.0	$0.0	$0.1	$0.1
Accommodation & Food Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Transport, Postal & Warehousing	$0.9	$1.7	$2.6	$3.5	$4.3	$0.8	$1.7	$2.5	$3.3	$4.2
Information Media and Telecommunications	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Financial & Insurance Services	$0.0	$0.1	$0.1	$0.1	$0.1	$0.0	$0.1	$0.1	$0.1	$0.1
Rental, Hiring & Real Estate Services	$0.0	$0.1	$0.1	$0.1	$0.1	$0.0	$0.1	$0.1	$0.1	$0.1
Professional, Scientific & Technical Services	$0.0	$0.1	$0.1	$0.2	$0.2	$0.0	$0.1	$0.1	$0.2	$0.2
Administrative & Support Services	$0.0	$0.1	$0.1	$0.2	$0.2	$0.0	$0.1	$0.1	$0.2	$0.2
Public Administration & Safety	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Arts & Recreation Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Other Services	$0.1	$0.1	$0.2	$0.2	$0.3	$0.1	$0.1	$0.2	$0.2	$0.3
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$1.2	$2.4	$3.6	$4.8	$6.0	$1.2	$2.3	$3.5	$4.6	$5.8
Indirect	$0.4	$0.9	$1.3	$1.7	$2.1	$0.4	$0.8	$1.2	$1.6	$2.1
Total	$1.6	$3.2	$4.9	$6.5	$8.1	$1.6	$3.1	$4.7	$6.3	$7.8

Source: CDM Smith Analysis, 2020

Table 8-9 500,000 TEUs – Contribution to regional employment resulting from operating output, year 1 to year 5 onwards

	Option A2					Option A4				
	1	2	3	4	5+	1	2	3	4	5+
Agriculture, Forestry & Fishing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mining	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.1
Manufacturing	5.8	11.7	17.5	23.4	29.2	5.7	11.3	17.0	22.6	28.3
Electricity, Gas, Water & Waste Services	0.1	0.2	0.2	0.3	0.4	0.1	0.2	0.2	0.3	0.4
Construction	0.6	1.2	1.8	2.4	3.0	0.6	1.2	1.8	2.3	2.9
Wholesale Trade	0.4	0.7	1.1	1.5	1.8	0.4	0.7	1.1	1.4	1.8
Retail Trade	0.3	0.6	0.9	1.2	1.5	0.3	0.6	0.9	1.2	1.5
Accommodation & Food Services	0.1	0.3	0.4	0.5	0.6	0.1	0.3	0.4	0.5	0.6
Transport, Postal & Warehousing	9.5	19.0	28.4	37.9	47.4	9.1	18.3	27.4	36.5	45.6
Information Media and Telecommunications	0.1	0.2	0.2	0.3	0.4	0.1	0.2	0.2	0.3	0.4
Financial & Insurance Services	0.2	0.4	0.6	0.7	0.9	0.2	0.4	0.5	0.7	0.9
Rental, Hiring & Real Estate Services	0.4	0.7	1.1	1.4	1.8	0.3	0.7	1.0	1.4	1.7
Professional, Scientific & Technical Services	0.6	1.2	1.8	2.4	3.0	0.6	1.2	1.7	2.3	2.9
Administrative & Support Services	0.4	0.8	1.2	1.6	2.0	0.4	0.8	1.1	1.5	1.9
Public Administration & Safety	0.1	0.2	0.4	0.5	0.6	0.1	0.2	0.3	0.5	0.6
Education & Training	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Health Care & Social Assistance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arts & Recreation Services	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.2
Other Services	1.4	2.7	4.1	5.5	6.9	1.3	2.7	4.0	5.3	6.6
Ownership of Dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Direct	14.8	29.6	44.4	59.1	73.9	14.3	28.5	42.8	57.1	71.3
Indirect	5.2	10.4	15.7	20.9	26.1	5.0	10.1	15.1	20.2	25.2
Total	20.0	40.0	60.0	80.0	100.0	19.3	38.6	57.9	77.2	96.5

Source: CDM Smith Analysis, 2020

Table 8-10 500,000 TEUs – Contribution to regional value added resulting from operating output, year 1 to year 5 onwards

	Option A2					Option A4				
	1	2	3	4	5+	1	2	3	4	5+
Agriculture, Forestry & Fishing	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Mining	$0.0	$0.0	$0.0	$0.1	$0.1	$0.0	$0.0	$0.0	$0.1	$0.1
Manufacturing	$0.6	$1.3	$1.9	$2.5	$3.2	$0.6	$1.2	$1.8	$2.4	$3.1
Electricity, Gas, Water & Waste Services	$0.0	$0.0	$0.1	$0.1	$0.1	$0.0	$0.0	$0.1	$0.1	$0.1
Construction	$0.1	$0.1	$0.2	$0.3	$0.3	$0.1	$0.1	$0.2	$0.3	$0.3
Wholesale Trade	$0.1	$0.1	$0.2	$0.2	$0.3	$0.1	$0.1	$0.2	$0.2	$0.3
Retail Trade	$0.0	$0.0	$0.1	$0.1	$0.1	$0.0	$0.0	$0.1	$0.1	$0.1
Accommodation & Food Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Transport, Postal & Warehousing	$1.5	$3.0	$4.5	$6.0	$7.5	$1.4	$2.9	$4.3	$5.8	$7.2
Information Media and Telecommunications	$0.0	$0.0	$0.1	$0.1	$0.1	$0.0	$0.0	$0.1	$0.1	$0.1
Financial & Insurance Services	$0.1	$0.1	$0.2	$0.2	$0.3	$0.0	$0.1	$0.1	$0.2	$0.2
Rental, Hiring & Real Estate Services	$0.1	$0.2	$0.2	$0.3	$0.4	$0.1	$0.1	$0.2	$0.3	$0.4
Professional, Scientific & Technical Services	$0.1	$0.1	$0.2	$0.3	$0.4	$0.1	$0.1	$0.2	$0.3	$0.3
Administrative & Support Services	$0.1	$0.1	$0.2	$0.2	$0.3	$0.1	$0.1	$0.2	$0.2	$0.3
Public Administration & Safety	$0.0	$0.0	$0.0	$0.0	$0.1	$0.0	$0.0	$0.0	$0.0	$0.1
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Arts & Recreation Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Other Services	$0.1	$0.2	$0.2	$0.3	$0.4	$0.1	$0.2	$0.2	$0.3	$0.4
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$1.9	$3.9	$5.8	$7.8	$9.7	$1.9	$3.7	$5.6	$7.5	$9.4
Indirect	$0.7	$1.5	$2.2	$3.0	$3.7	$0.7	$1.4	$2.2	$2.9	$3.6
Total	$2.7	$5.4	$8.1	$10.8	$13.4	$2.6	$5.2	$7.8	$10.4	$13.0

Source: CDM Smith Analysis, 2020

Table 8-11 750,000 TEUs – Contribution to regional output resulting from operating output, year 1 to year 5 onwards

	Option A2					Option A4				
	1	2	3	4	5+	1	2	3	4	5+
Agriculture, Forestry & Fishing	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Mining	$0.0	$0.1	$0.1	$0.1	$0.2	$0.0	$0.1	$0.1	$0.1	$0.2
Manufacturing	$2.5	$4.9	$7.4	$9.9	$12.3	$2.2	$4.5	$6.7	$9.0	$11.2
Electricity, Gas, Water & Waste Services	$0.1	$0.1	$0.2	$0.3	$0.4	$0.1	$0.1	$0.2	$0.3	$0.3
Construction	$0.3	$0.6	$0.9	$1.1	$1.4	$0.3	$0.5	$0.8	$1.1	$1.4
Wholesale Trade	$0.2	$0.3	$0.5	$0.7	$0.8	$0.2	$0.3	$0.5	$0.6	$0.8
Retail Trade	$0.1	$0.1	$0.2	$0.2	$0.3	$0.0	$0.1	$0.1	$0.2	$0.2
Accommodation & Food Services	$0.0	$0.0	$0.1	$0.1	$0.1	$0.0	$0.0	$0.1	$0.1	$0.1
Transport, Postal & Warehousing	$4.3	$8.6	$12.9	$17.2	$21.6	$4.2	$8.3	$12.5	$16.7	$20.9
Information Media and Telecommunications	$0.1	$0.1	$0.2	$0.2	$0.3	$0.0	$0.1	$0.1	$0.2	$0.2
Financial & Insurance Services	$0.1	$0.2	$0.3	$0.5	$0.6	$0.1	$0.2	$0.3	$0.4	$0.5
Rental, Hiring & Real Estate Services	$0.2	$0.4	$0.6	$0.9	$1.1	$0.2	$0.4	$0.6	$0.8	$1.0
Professional, Scientific & Technical Services	$0.2	$0.4	$0.6	$0.8	$1.0	$0.2	$0.4	$0.5	$0.7	$0.9
Administrative & Support Services	$0.1	$0.3	$0.4	$0.5	$0.7	$0.1	$0.3	$0.4	$0.5	$0.6
Public Administration & Safety	$0.0	$0.1	$0.1	$0.1	$0.1	$0.0	$0.0	$0.1	$0.1	$0.1
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Arts & Recreation Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Other Services	$0.3	$0.5	$0.8	$1.1	$1.3	$0.2	$0.5	$0.7	$1.0	$1.2
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$6.1	$12.1	$18.2	$24.2	$30.3	$5.7	$11.5	$17.2	$22.9	$28.6
Indirect	$2.3	$4.7	$7.0	$9.4	$11.7	$2.2	$4.5	$6.7	$8.9	$11.1
Total	$8.4	$16.8	$25.2	$33.6	$42.0	$8.0	$15.9	$23.9	$31.8	$39.8

Source: CDM Smith Analysis, 2020

Table 8-12 750,000 TEUs – Contribution to regional household income resulting from operating output, year 1 to year 5 onwards

	Option A2					Option A4				
	1	2	3	4	5+	1	2	3	4	5+
Agriculture, Forestry & Fishing	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Mining	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Manufacturing	$0.6	$1.2	$1.8	$2.4	$3.0	$0.5	$1.1	$1.6	$2.2	$2.7
Electricity, Gas, Water & Waste Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Construction	$0.0	$0.1	$0.1	$0.2	$0.2	$0.0	$0.1	$0.1	$0.2	$0.2
Wholesale Trade	$0.1	$0.1	$0.2	$0.2	$0.3	$0.0	$0.1	$0.1	$0.2	$0.2
Retail Trade	$0.0	$0.0	$0.1	$0.1	$0.1	$0.0	$0.0	$0.1	$0.1	$0.1
Accommodation & Food Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Transport, Postal & Warehousing	$1.1	$2.2	$3.3	$4.4	$5.6	$1.1	$2.2	$3.2	$4.3	$5.4
Information Media and Telecommunications	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Financial & Insurance Services	$0.0	$0.1	$0.1	$0.1	$0.2	$0.0	$0.1	$0.1	$0.1	$0.2
Rental, Hiring & Real Estate Services	$0.0	$0.1	$0.1	$0.2	$0.2	$0.0	$0.1	$0.1	$0.1	$0.2
Professional, Scientific & Technical Services	$0.1	$0.1	$0.2	$0.3	$0.3	$0.1	$0.1	$0.2	$0.2	$0.3
Administrative & Support Services	$0.1	$0.1	$0.2	$0.2	$0.3	$0.1	$0.1	$0.2	$0.2	$0.3
Public Administration & Safety	$0.0	$0.0	$0.0	$0.1	$0.1	$0.0	$0.0	$0.0	$0.0	$0.1
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Arts & Recreation Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Other Services	$0.1	$0.2	$0.2	$0.3	$0.4	$0.1	$0.1	$0.2	$0.3	$0.4
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$1.6	$3.2	$4.8	$6.4	$8.0	$1.5	$3.0	$4.5	$6.0	$7.5
Indirect	$0.6	$1.1	$1.7	$2.3	$2.8	$0.5	$1.1	$1.6	$2.1	$2.7
Total	$2.2	$4.3	$6.5	$8.6	$10.8	$2.0	$4.1	$6.1	$8.2	$10.2

Source: CDM Smith Analysis, 2020

Table 8-13 750,000 TEUs – Contribution to regional employment resulting from operating output, year 1 to year 5 onwards

	Option A2					Option A4				
	1	2	3	4	5+	1	2	3	4	5+
Agriculture, Forestry & Fishing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mining	0.0	0.1	0.1	0.2	0.2	0.0	0.1	0.1	0.2	0.2
Manufacturing	8.3	16.6	24.8	33.1	41.4	7.5	15.0	22.5	30.0	37.5
Electricity, Gas, Water & Waste Services	0.1	0.2	0.3	0.4	0.5	0.1	0.2	0.3	0.4	0.5
Construction	0.8	1.6	2.4	3.2	3.9	0.8	1.5	2.3	3.0	3.8
Wholesale Trade	0.5	1.0	1.5	2.0	2.5	0.5	0.9	1.4	1.8	2.3
Retail Trade	0.4	0.8	1.3	1.7	2.1	0.4	0.8	1.2	1.6	2.0
Accommodation & Food Services	0.2	0.3	0.5	0.7	0.9	0.2	0.3	0.5	0.7	0.8
Transport, Postal & Warehousing	12.2	24.4	36.6	48.8	61.0	11.8	23.6	35.4	47.2	59.1
Information Media and Telecommunications	0.1	0.2	0.3	0.4	0.5	0.1	0.2	0.3	0.4	0.5
Financial & Insurance Services	0.2	0.5	0.7	1.0	1.2	0.2	0.5	0.7	0.9	1.2
Rental, Hiring & Real Estate Services	0.5	0.9	1.4	1.9	2.3	0.5	0.9	1.4	1.8	2.3
Professional, Scientific & Technical Services	0.8	1.6	2.4	3.2	4.0	0.8	1.5	2.3	3.0	3.8
Administrative & Support Services	0.5	1.0	1.5	2.1	2.6	0.5	1.0	1.5	2.0	2.5
Public Administration & Safety	0.2	0.3	0.5	0.6	0.8	0.1	0.3	0.4	0.6	0.7
Education & Training	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Health Care & Social Assistance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arts & Recreation Services	0.0	0.1	0.1	0.2	0.2	0.0	0.1	0.1	0.2	0.2
Other Services	1.9	3.9	5.8	7.7	9.7	1.8	3.5	5.3	7.0	8.8
Ownership of Dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Direct	19.9	39.7	59.6	79.5	99.4	18.7	37.3	56.0	74.6	93.3
Indirect	6.9	13.9	20.8	27.7	34.7	6.6	13.1	19.7	26.3	32.8
Total	26.8	53.6	80.4	107.2	134.0	25.2	50.4	75.7	100.9	126.1

Source: CDM Smith Analysis, 2020

Table 8-14 750,000 TEUs – Contribution to regional value added resulting from operating output, year 1 to year 5 onwards

	Option A2					Option A4				
	1	2	3	4	5+	1	2	3	4	5+
Agriculture, Forestry & Fishing	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Mining	$0.0	$0.0	$0.1	$0.1	$0.1	$0.0	$0.0	$0.1	$0.1	$0.1
Manufacturing	$0.9	$1.8	$2.7	$3.6	$4.5	$0.8	$1.6	$2.4	$3.2	$4.0
Electricity, Gas, Water & Waste Services	$0.0	$0.1	$0.1	$0.1	$0.1	$0.0	$0.1	$0.1	$0.1	$0.1
Construction	$0.1	$0.2	$0.3	$0.3	$0.4	$0.1	$0.2	$0.3	$0.3	$0.4
Wholesale Trade	$0.1	$0.2	$0.2	$0.3	$0.4	$0.1	$0.1	$0.2	$0.3	$0.4
Retail Trade	$0.0	$0.1	$0.1	$0.1	$0.2	$0.0	$0.1	$0.1	$0.1	$0.1
Accommodation & Food Services	$0.0	$0.0	$0.0	$0.0	$0.1	$0.0	$0.0	$0.0	$0.0	$0.1
Transport, Postal & Warehousing	$1.9	$3.9	$5.8	$7.7	$9.7	$1.9	$3.7	$5.6	$7.5	$9.4
Information Media and Telecommunications	$0.0	$0.0	$0.1	$0.1	$0.1	$0.0	$0.0	$0.1	$0.1	$0.1
Financial & Insurance Services	$0.1	$0.1	$0.2	$0.3	$0.3	$0.1	$0.1	$0.2	$0.3	$0.3
Rental, Hiring & Real Estate Services	$0.1	$0.2	$0.3	$0.4	$0.5	$0.1	$0.2	$0.3	$0.4	$0.5
Professional, Scientific & Technical Services	$0.1	$0.2	$0.3	$0.4	$0.5	$0.1	$0.2	$0.3	$0.4	$0.5
Administrative & Support Services	$0.1	$0.1	$0.2	$0.3	$0.3	$0.1	$0.1	$0.2	$0.3	$0.3
Public Administration & Safety	$0.0	$0.0	$0.0	$0.1	$0.1	$0.0	$0.0	$0.0	$0.1	$0.1
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Arts & Recreation Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Other Services	$0.1	$0.2	$0.3	$0.5	$0.6	$0.1	$0.2	$0.3	$0.4	$0.5
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$2.6	$5.1	$7.7	$10.3	$12.9	$2.4	$4.9	$7.3	$9.8	$12.2
Indirect	$1.0	$2.0	$3.0	$4.0	$5.0	$0.9	$1.9	$2.8	$3.8	$4.7
Total	$3.6	$7.1	$10.7	$14.3	$17.8	$3.4	$6.8	$10.1	$13.5	$16.9

Source: CDM Smith Analysis, 2020

Appendix C Economic Contribution from Freight Forwarders and Proximate Industry - Output

Table 8-15 350,000 TEUs – Contribution to output from freight forwarders and proximate industry, year 1 to year 15 ($m)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Agriculture, Forestry & Fishing	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.2	$0.2	$0.2	$0.2	$0.3	$0.3	$0.3	$0.3	$0.3
Mining	$0.2	$0.4	$0.7	$0.9	$1.2	$1.3	$1.5	$1.7	$1.9	$2.1	$2.3	$2.5	$2.8	$3.0	$3.1
Manufacturing	$3.4	$7.3	$11.4	$15.9	$20.8	$25.3	$30.1	$35.3	$40.8	$46.7	$52.9	$59.5	$66.5	$73.8	$75.2
Electricity, Gas, Water & Waste Services	$0.5	$0.9	$1.4	$1.9	$2.5	$2.7	$2.9	$3.2	$3.5	$3.7	$4.1	$4.4	$4.7	$5.1	$5.2
Construction	$3.8	$7.9	$12.4	$17.3	$22.6	$27.4	$32.5	$38.1	$44.0	$50.3	$57.0	$64.0	$71.5	$79.3	$80.8
Wholesale Trade	$4.1	$8.6	$13.7	$19.3	$25.3	$31.6	$38.3	$45.6	$53.4	$61.6	$70.4	$79.7	$89.4	$99.7	$101.7
Retail Trade	$0.2	$0.5	$0.7	$1.0	$1.3	$1.4	$1.6	$1.8	$2.0	$2.2	$2.4	$2.7	$2.9	$3.2	$3.2
Accommodation & Food Services	$0.2	$0.5	$0.8	$1.0	$1.3	$1.5	$1.6	$1.7	$1.9	$2.0	$2.2	$2.4	$2.5	$2.7	$2.8
Transport, Postal & Warehousing	$36.6	$73.8	$111.5	$149.7	$188.5	$195.3	$202.6	$210.5	$218.9	$227.8	$237.3	$247.3	$257.9	$269.0	$271.2
Information Media and Telecommunications	$1.3	$2.7	$4.3	$5.9	$7.7	$9.2	$10.8	$12.5	$14.4	$16.4	$18.5	$20.7	$23.0	$25.4	$25.9
Financial & Insurance Services	$1.4	$2.8	$4.3	$5.8	$7.3	$7.8	$8.2	$8.8	$9.3	$9.9	$10.6	$11.2	$12.0	$12.7	$12.8
Rental, Hiring & Real Estate Services	$1.8	$3.7	$5.6	$7.6	$9.7	$10.5	$11.4	$12.3	$13.3	$14.4	$15.5	$16.7	$18.0	$19.3	$19.6
Professional, Scientific & Technical Services	$2.2	$4.5	$6.9	$9.3	$11.9	$13.0	$14.2	$15.4	$16.8	$18.2	$19.8	$21.4	$23.1	$24.9	$25.3
Administrative & Support Services	$2.3	$4.7	$7.2	$9.7	$12.2	$12.9	$13.6	$14.3	$15.1	$15.9	$16.8	$17.7	$18.7	$19.7	$19.9
Public Administration & Safety	$0.4	$0.9	$1.4	$1.9	$2.3	$2.5	$2.6	$2.8	$3.0	$3.2	$3.3	$3.6	$3.8	$4.0	$4.0
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.2	$0.2	$0.2
Arts & Recreation Services	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.2	$0.2	$0.2	$0.2	$0.2	$0.3	$0.3	$0.3
Other Services	$0.4	$0.8	$1.2	$1.6	$2.1	$2.2	$2.4	$2.6	$2.8	$3.1	$3.3	$3.6	$3.8	$4.1	$4.2
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$42.0	$85.5	$130.6	$177.3	$225.5	$245.2	$266.4	$289.3	$313.7	$339.7	$367.2	$396.3	$427.0	$459.3	$465.6
Indirect	$17.0	$34.7	$53.0	$71.9	$91.5	$99.6	$108.3	$117.7	$127.7	$138.4	$149.7	$161.7	$174.3	$187.5	$190.1
Total	$59.0	$120.1	$183.5	$249.2	$317.0	$344.8	$374.8	$407.0	$441.4	$478.0	$516.9	$558.0	$601.3	$646.9	$655.7

Source: CDM Smith Analysis, 2020

Table 8-16 500,000 TEUs – Contribution to output from freight forwarders and proximate industry, year 1 to year 15 ($m)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Agriculture, Forestry & Fishing	$0.0	$0.1	$0.1	$0.1	$0.2	$0.2	$0.2	$0.3	$0.3	$0.3	$0.4	$0.4	$0.4	$0.5	$0.5
Mining	$0.3	$0.6	$1.0	$1.3	$1.7	$1.9	$2.2	$2.4	$2.7	$3.0	$3.3	$3.6	$3.9	$4.3	$4.4
Manufacturing	$4.9	$10.4	$16.3	$22.8	$29.7	$36.1	$43.0	$50.4	$58.3	$66.7	$75.6	$85.1	$95.0	$105.5	$107.5
Electricity, Gas, Water & Waste Services	$0.7	$1.3	$2.0	$2.8	$3.5	$3.8	$4.2	$4.5	$4.9	$5.4	$5.8	$6.3	$6.8	$7.3	$7.4
Construction	$5.4	$11.3	$17.7	$24.7	$32.3	$39.1	$46.5	$54.4	$62.8	$71.8	$81.4	$91.5	$102.1	$113.3	$115.4
Wholesale Trade	$5.8	$12.3	$19.6	$27.5	$36.2	$45.1	$54.8	$65.1	$76.2	$88.0	$100.6	$113.8	$127.8	$142.4	$145.3
Retail Trade	$0.3	$0.7	$1.0	$1.4	$1.8	$2.0	$2.3	$2.5	$2.8	$3.1	$3.5	$3.8	$4.2	$4.5	$4.6
Accommodation & Food Services	$0.4	$0.7	$1.1	$1.5	$1.9	$2.1	$2.3	$2.4	$2.7	$2.9	$3.1	$3.4	$3.6	$3.9	$4.0
Transport, Postal & Warehousing	$52.3	$105.4	$159.2	$213.9	$269.3	$278.9	$289.4	$300.6	$312.7	$325.4	$339.0	$353.3	$368.5	$384.3	$387.4
Information Media and Telecommunications	$1.9	$3.9	$6.1	$8.5	$11.0	$13.1	$15.4	$17.9	$20.6	$23.4	$26.4	$29.5	$32.8	$36.3	$37.0
Financial & Insurance Services	$2.0	$4.0	$6.1	$8.2	$10.4	$11.1	$11.8	$12.5	$13.3	$14.2	$15.1	$16.1	$17.1	$18.1	$18.3
Rental, Hiring & Real Estate Services	$2.6	$5.3	$8.0	$10.9	$13.9	$15.0	$16.3	$17.6	$19.0	$20.6	$22.2	$23.9	$25.7	$27.6	$28.0
Professional, Scientific & Technical Services	$3.1	$6.4	$9.8	$13.3	$16.9	$18.5	$20.2	$22.0	$24.0	$26.1	$28.3	$30.6	$33.1	$35.6	$36.1
Administrative & Support Services	$3.4	$6.8	$10.3	$13.8	$17.5	$18.4	$19.4	$20.4	$21.5	$22.7	$24.0	$25.3	$26.7	$28.2	$28.5
Public Administration & Safety	$0.6	$1.3	$2.0	$2.6	$3.3	$3.5	$3.8	$4.0	$4.2	$4.5	$4.8	$5.1	$5.4	$5.7	$5.8
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2
Arts & Recreation Services	$0.0	$0.1	$0.1	$0.1	$0.2	$0.2	$0.2	$0.2	$0.3	$0.3	$0.3	$0.3	$0.4	$0.4	$0.4
Other Services	$0.6	$1.1	$1.7	$2.3	$3.0	$3.2	$3.5	$3.7	$4.1	$4.4	$4.7	$5.1	$5.5	$5.9	$5.9
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$59.9	$122.1	$186.5	$253.2	$322.2	$350.3	$380.6	$413.3	$448.1	$485.2	$524.6	$566.2	$610.1	$656.2	$665.2
Indirect	$24.3	$49.5	$75.6	$102.7	$130.7	$142.3	$154.7	$168.1	$182.4	$197.7	$213.9	$231.0	$249.0	$267.9	$271.6
Total	$84.2	$171.6	$262.2	$355.9	$452.9	$492.5	$535.4	$581.4	$630.6	$682.9	$738.5	$797.2	$859.0	$924.1	$936.8

Source: CDM Smith Analysis, 2020

Table 8-17 750,000 TEUs – Contribution to output from freight forwarders and proximate industry, year 1 to year 15 ($m)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Agriculture, Forestry & Fishing	$0.0	$0.1	$0.2	$0.2	$0.3	$0.3	$0.3	$0.4	$0.4	$0.5	$0.5	$0.6	$0.7	$0.7	$0.7
Mining	$0.5	$0.9	$1.5	$2.0	$2.6	$2.9	$3.2	$3.6	$4.0	$4.5	$4.9	$5.4	$5.9	$6.4	$6.6
Manufacturing	$7.4	$15.5	$24.5	$34.1	$44.6	$54.1	$64.5	$75.6	$87.4	$100.0	$113.4	$127.6	$142.5	$158.2	$161.2
Electricity, Gas, Water & Waste Services	$1.0	$2.0	$3.0	$4.1	$5.3	$5.7	$6.3	$6.8	$7.4	$8.0	$8.7	$9.4	$10.1	$10.9	$11.1
Construction	$8.1	$16.9	$26.6	$37.1	$48.4	$58.7	$69.7	$81.6	$94.2	$107.7	$122.0	$137.2	$153.1	$169.9	$173.2
Wholesale Trade	$8.7	$18.5	$29.3	$41.3	$54.2	$67.7	$82.2	$97.7	$114.4	$132.1	$150.8	$170.7	$191.6	$213.6	$217.9
Retail Trade	$0.5	$1.0	$1.5	$2.1	$2.7	$3.1	$3.4	$3.8	$4.2	$4.7	$5.2	$5.7	$6.2	$6.8	$6.9
Accommodation & Food Services	$0.5	$1.1	$1.7	$2.2	$2.9	$3.1	$3.4	$3.7	$4.0	$4.3	$4.7	$5.0	$5.4	$5.8	$5.9
Transport, Postal & Warehousing	$78.5	$158.1	$238.8	$320.8	$403.9	$418.4	$434.1	$451.0	$469.0	$488.2	$508.5	$530.0	$552.7	$576.5	$581.2
Information Media and Telecommunications	$2.8	$5.8	$9.1	$12.7	$16.5	$19.7	$23.2	$26.9	$30.8	$35.1	$39.5	$44.3	$49.3	$54.5	$55.5
Financial & Insurance Services	$3.0	$6.0	$9.2	$12.4	$15.6	$16.6	$17.7	$18.8	$20.0	$21.3	$22.6	$24.1	$25.6	$27.2	$27.5
Rental, Hiring & Real Estate Services	$3.9	$7.9	$12.1	$16.4	$20.8	$22.5	$24.4	$26.4	$28.6	$30.9	$33.3	$35.9	$38.6	$41.4	$42.0
Professional, Scientific & Technical Services	$4.7	$9.6	$14.7	$20.0	$25.4	$27.8	$30.3	$33.1	$36.0	$39.1	$42.4	$45.9	$49.6	$53.4	$54.2
Administrative & Support Services	$5.0	$10.2	$15.4	$20.8	$26.2	$27.6	$29.0	$30.6	$32.3	$34.1	$36.0	$38.0	$40.1	$42.3	$42.7
Public Administration & Safety	$1.0	$1.9	$2.9	$4.0	$5.0	$5.3	$5.6	$6.0	$6.4	$6.8	$7.2	$7.6	$8.1	$8.6	$8.7
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.1	$0.1	$0.1	$0.2	$0.2	$0.2	$0.2	$0.2	$0.3	$0.3	$0.3	$0.3	$0.4	$0.4
Arts & Recreation Services	$0.0	$0.1	$0.1	$0.2	$0.2	$0.3	$0.3	$0.3	$0.4	$0.4	$0.5	$0.5	$0.5	$0.6	$0.6
Other Services	$0.8	$1.7	$2.6	$3.5	$4.4	$4.8	$5.2	$5.6	$6.1	$6.6	$7.1	$7.6	$8.2	$8.8	$8.9
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$89.9	$183.2	$279.8	$379.8	$483.2	$525.4	$571.0	$619.9	$672.2	$727.8	$786.9	$849.3	$915.1	$984.3	$997.7
Indirect	$36.4	$74.3	$113.5	$154.1	$196.0	$213.4	$232.1	$252.2	$273.7	$296.5	$320.8	$346.4	$373.5	$401.9	$407.4
Total	$126.3	$257.4	$393.3	$533.9	$679.3	$738.8	$803.0	$872.1	$945.8	$1,024.4	$1,107.7	$1,195.7	$1,288.6	$1,386.1	$1,405.2

Source: CDM Smith Analysis, 2020

Appendix D Economic Contribution from Freight Forwarders and Proximate Industry – Household Income

Table 8-18 350,000 TEUs – Contribution to household income from freight forwarders and proximate industry, year 1 to year 15 ($m)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Agriculture, Forestry & Fishing	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Mining	$0.0	$0.1	$0.1	$0.1	$0.2	$0.2	$0.2	$0.2	$0.3	$0.3	$0.3	$0.4	$0.4	$0.4	$0.4
Manufacturing	$0.7	$1.4	$2.3	$3.2	$4.1	$5.0	$6.0	$7.1	$8.2	$9.4	$10.7	$12.0	$13.4	$14.9	$15.2
Electricity, Gas, Water & Waste Services	$0.1	$0.2	$0.2	$0.3	$0.4	$0.5	$0.5	$0.6	$0.6	$0.7	$0.7	$0.8	$0.8	$0.9	$0.9
Construction	$0.6	$1.4	$2.1	$3.0	$3.9	$4.7	$5.6	$6.6	$7.6	$8.7	$9.8	$11.0	$12.3	$13.7	$13.9
Wholesale Trade	$1.3	$2.7	$4.2	$5.9	$7.8	$9.8	$11.8	$14.1	$16.5	$19.0	$21.7	$24.6	$27.6	$30.8	$31.4
Retail Trade	$0.1	$0.2	$0.3	$0.4	$0.5	$0.5	$0.6	$0.7	$0.8	$0.8	$0.9	$1.0	$1.1	$1.2	$1.2
Accommodation & Food Services	$0.1	$0.2	$0.2	$0.3	$0.4	$0.4	$0.5	$0.5	$0.6	$0.6	$0.7	$0.7	$0.8	$0.8	$0.9
Transport, Postal & Warehousing	$7.0	$14.1	$21.3	$28.6	$36.0	$37.3	$38.8	$40.4	$42.0	$43.8	$45.7	$47.7	$49.8	$52.0	$52.4
Information Media and Telecommunications	$0.2	$0.4	$0.6	$0.8	$1.1	$1.3	$1.5	$1.7	$1.9	$2.2	$2.5	$2.8	$3.1	$3.4	$3.5
Financial & Insurance Services	$0.4	$0.9	$1.3	$1.8	$2.2	$2.4	$2.5	$2.7	$2.9	$3.0	$3.2	$3.4	$3.6	$3.9	$3.9
Rental, Hiring & Real Estate Services	$0.3	$0.7	$1.0	$1.4	$1.7	$1.9	$2.0	$2.2	$2.4	$2.6	$2.8	$3.0	$3.2	$3.4	$3.5
Professional, Scientific & Technical Services	$0.7	$1.5	$2.3	$3.2	$4.0	$4.4	$4.8	$5.2	$5.7	$6.2	$6.7	$7.3	$7.9	$8.5	$8.6
Administrative & Support Services	$1.1	$2.2	$3.3	$4.4	$5.6	$5.8	$6.2	$6.5	$6.8	$7.2	$7.6	$8.0	$8.5	$8.9	$9.0
Public Administration & Safety	$0.2	$0.4	$0.7	$0.9	$1.1	$1.2	$1.3	$1.3	$1.4	$1.5	$1.6	$1.7	$1.8	$1.9	$1.9
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.0	$0.0	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1
Arts & Recreation Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1
Other Services	$0.1	$0.2	$0.4	$0.5	$0.6	$0.7	$0.7	$0.8	$0.9	$0.9	$1.0	$1.1	$1.2	$1.3	$1.3
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$8.3	$17.0	$26.0	$35.3	$45.1	$49.4	$54.2	$59.3	$64.7	$70.5	$76.7	$83.2	$90.0	$97.2	$98.7
Indirect	$4.6	$9.4	$14.3	$19.5	$24.7	$26.8	$29.0	$31.4	$33.9	$36.6	$39.4	$42.5	$45.7	$49.0	$49.7
Total	$12.9	$26.4	$40.3	$54.8	$69.8	$76.2	$83.2	$90.6	$98.6	$107.1	$116.1	$125.7	$135.7	$146.2	$148.3

Source: CDM Smith Analysis, 2020

Table 8-19 500,000 TEUs – Contribution to household income from freight forwarders and proximate industry, year 1 to year 15 ($m)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Agriculture, Forestry & Fishing	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.1
Mining	$0.0	$0.1	$0.1	$0.2	$0.2	$0.3	$0.3	$0.3	$0.4	$0.4	$0.5	$0.5	$0.6	$0.6	$0.6
Manufacturing	$0.9	$1.9	$3.2	$4.5	$5.9	$7.2	$8.6	$10.1	$11.7	$13.4	$15.2	$17.2	$19.2	$21.3	$21.7
Electricity, Gas, Water & Waste Services	$0.1	$0.2	$0.4	$0.5	$0.6	$0.7	$0.7	$0.8	$0.9	$0.9	$1.0	$1.1	$1.2	$1.3	$1.3
Construction	$0.9	$1.8	$3.1	$4.3	$5.6	$6.7	$8.0	$9.4	$10.8	$12.4	$14.0	$15.8	$17.6	$19.5	$19.9
Wholesale Trade	$1.8	$3.7	$6.0	$8.5	$11.2	$13.9	$16.9	$20.1	$23.5	$27.2	$31.1	$35.1	$39.5	$44.0	$44.9
Retail Trade	$0.1	$0.2	$0.4	$0.5	$0.7	$0.8	$0.9	$1.0	$1.1	$1.2	$1.3	$1.5	$1.6	$1.7	$1.8
Accommodation & Food Services	$0.1	$0.2	$0.3	$0.5	$0.6	$0.6	$0.7	$0.8	$0.8	$0.9	$1.0	$1.0	$1.1	$1.2	$1.2
Transport, Postal & Warehousing	$7.3	$14.8	$30.4	$40.8	$51.4	$53.3	$55.4	$57.6	$60.0	$62.6	$65.3	$68.1	$71.1	$74.3	$74.9
Information Media and Telecommunications	$0.2	$0.5	$0.8	$1.2	$1.5	$1.8	$2.1	$2.4	$2.8	$3.2	$3.5	$4.0	$4.4	$4.9	$5.0
Financial & Insurance Services	$0.5	$0.9	$1.9	$2.5	$3.2	$3.4	$3.6	$3.8	$4.1	$4.3	$4.6	$4.9	$5.2	$5.5	$5.6
Rental, Hiring & Real Estate Services	$0.4	$0.7	$1.4	$1.9	$2.5	$2.7	$2.9	$3.1	$3.4	$3.7	$4.0	$4.3	$4.6	$4.9	$5.0
Professional, Scientific & Technical Services	$0.8	$1.7	$3.3	$4.5	$5.8	$6.3	$6.9	$7.5	$8.2	$8.9	$9.6	$10.4	$11.3	$12.1	$12.3
Administrative & Support Services	$1.1	$2.3	$4.7	$6.3	$8.0	$8.4	$8.8	$9.3	$9.8	$10.3	$10.9	$11.5	$12.1	$12.8	$12.9
Public Administration & Safety	$0.2	$0.5	$0.9	$1.3	$1.6	$1.7	$1.8	$1.9	$2.0	$2.2	$2.3	$2.4	$2.6	$2.7	$2.8
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1
Arts & Recreation Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1
Other Services	$0.1	$0.3	$0.5	$0.7	$0.9	$1.0	$1.1	$1.1	$1.2	$1.3	$1.4	$1.6	$1.7	$1.8	$1.8
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$9.4	$19.4	$37.1	$50.5	$64.4	$70.6	$77.4	$84.7	$92.5	$100.8	$109.6	$118.8	$128.6	$138.9	$140.9
Indirect	$5.1	$10.5	$20.5	$27.8	$35.3	$38.3	$41.4	$44.8	$48.4	$52.3	$56.3	$60.7	$65.2	$70.0	$70.9
Total	$14.6	$29.9	$57.6	$78.3	$99.7	$108.9	$118.8	$129.5	$140.9	$153.0	$165.9	$179.5	$193.8	$208.9	$211.9

Source: CDM Smith Analysis, 2020

Table 8-20 750,000 TEUs – Contribution to household income from freight forwarders and proximate industry, year 1 to year 15 ($m)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Agriculture, Forestry & Fishing	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1
Mining	$0.1	$0.1	$0.2	$0.3	$0.4	$0.4	$0.5	$0.5	$0.6	$0.6	$0.7	$0.8	$0.8	$0.9	$0.9
Manufacturing	$1.5	$3.1	$4.8	$6.8	$8.9	$10.8	$12.9	$15.2	$17.6	$20.1	$22.9	$25.7	$28.8	$32.0	$32.6
Electricity, Gas, Water & Waste Services	$0.2	$0.3	$0.5	$0.7	$0.9	$1.0	$1.1	$1.2	$1.3	$1.4	$1.5	$1.6	$1.8	$1.9	$1.9
Construction	$1.4	$2.9	$4.6	$6.4	$8.3	$10.1	$12.0	$14.1	$16.2	$18.6	$21.0	$23.6	$26.4	$29.3	$29.9
Wholesale Trade	$2.7	$5.7	$9.1	$12.7	$16.8	$20.9	$25.4	$30.2	$35.3	$40.8	$46.6	$52.7	$59.2	$66.0	$67.3
Retail Trade	$0.2	$0.4	$0.6	$0.8	$1.0	$1.2	$1.3	$1.5	$1.6	$1.8	$2.0	$2.2	$2.4	$2.6	$2.6
Accommodation & Food Services	$0.2	$0.3	$0.5	$0.7	$0.9	$1.0	$1.0	$1.1	$1.2	$1.3	$1.4	$1.6	$1.7	$1.8	$1.8
Transport, Postal & Warehousing	$15.0	$30.2	$45.6	$61.2	$77.1	$80.0	$83.1	$86.5	$90.0	$93.9	$97.9	$102.2	$106.7	$111.4	$112.3
Information Media and Telecommunications	$0.4	$0.8	$1.3	$1.7	$2.3	$2.7	$3.2	$3.6	$4.2	$4.7	$5.3	$5.9	$6.6	$7.3	$7.4
Financial & Insurance Services	$0.9	$1.8	$2.8	$3.8	$4.8	$5.1	$5.4	$5.7	$6.1	$6.5	$6.9	$7.3	$7.8	$8.3	$8.4
Rental, Hiring & Real Estate Services	$0.7	$1.4	$2.2	$2.9	$3.7	$4.0	$4.4	$4.7	$5.1	$5.5	$5.9	$6.4	$6.9	$7.4	$7.5
Professional, Scientific & Technical Services	$1.6	$3.3	$5.0	$6.8	$8.6	$9.4	$10.3	$11.2	$12.2	$13.3	$14.4	$15.6	$16.9	$18.2	$18.5
Administrative & Support Services	$2.3	$4.6	$7.0	$9.4	$11.9	$12.5	$13.2	$13.9	$14.7	$15.5	$16.3	$17.2	$18.2	$19.2	$19.3
Public Administration & Safety	$0.5	$0.9	$1.4	$1.9	$2.4	$2.5	$2.7	$2.9	$3.0	$3.2	$3.4	$3.6	$3.9	$4.1	$4.2
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2
Arts & Recreation Services	$0.0	$0.0	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1
Other Services	$0.3	$0.5	$0.8	$1.1	$1.4	$1.5	$1.6	$1.7	$1.9	$2.0	$2.2	$2.3	$2.5	$2.7	$2.7
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$17.8	$36.4	$55.7	$75.7	$96.5	$106.0	$116.1	$127.0	$138.7	$151.1	$164.3	$178.3	$192.9	$208.4	$211.4
Indirect	$9.9	$20.1	$30.7	$41.7	$53.0	$57.4	$62.1	$67.2	$72.6	$78.4	$84.5	$91.0	$97.8	$105.0	$106.4
Total	$27.7	$56.5	$86.4	$117.4	$149.5	$163.3	$178.2	$194.2	$211.3	$229.5	$248.8	$269.3	$290.8	$313.4	$317.8

Source: CDM Smith Analysis, 2020

Appendix E Economic Contribution from Freight Forwarders and Proximate Industry – Employment

Table 8-21 350,000 TEUs – Contribution to employment from freight forwarders and proximate industry, year 1 to year 15 (FTEs)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Agriculture, Forestry & Fishing	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.2
Mining	0.3	0.6	0.9	1.2	1.5	1.7	1.9	2.1	2.4	2.6	2.9	3.2	3.5	3.8	3.9
Manufacturing	6.3	13.2	20.7	28.8	37.5	45.1	53.2	62.0	71.5	81.5	92.1	103.3	115.2	127.6	130.0
Electricity, Gas, Water & Waste Services	0.8	1.7	2.6	3.5	4.5	4.9	5.4	5.8	6.3	6.9	7.4	8.0	8.6	9.3	9.4
Construction	7.2	15.0	23.4	32.5	42.3	50.4	59.2	68.7	78.7	89.5	100.9	112.9	125.6	138.9	141.5
Wholesale Trade	12.3	26.1	41.4	58.2	76.5	95.5	115.9	137.9	161.3	186.3	212.8	240.8	270.4	301.4	307.5
Retail Trade	1.8	3.7	5.6	7.7	9.9	11.2	12.5	14.0	15.5	17.2	18.9	20.8	22.8	24.8	25.2
Accommodation & Food Services	1.8	3.8	5.8	7.8	9.9	10.8	11.7	12.7	13.8	14.9	16.2	17.4	18.8	20.2	20.5
Transport, Postal & Warehousing	80.7	162.8	246.1	330.8	416.8	433.3	451.1	470.2	490.6	512.4	535.5	559.9	585.6	612.6	617.9
Information Media and Telecommunications	2.4	5.0	7.8	10.9	14.1	16.8	19.7	22.8	26.1	29.7	33.4	37.4	41.6	45.9	46.8
Financial & Insurance Services	2.9	6.0	9.1	12.2	15.5	16.5	17.5	18.6	19.8	21.1	22.4	23.8	25.3	26.9	27.2
Rental, Hiring & Real Estate Services	3.9	8.0	12.2	16.6	21.1	22.9	24.8	26.8	29.0	31.3	33.8	36.4	39.2	42.1	42.7
Professional, Scientific & Technical Services	9.2	18.8	28.8	39.1	49.8	54.5	59.5	64.8	70.5	76.6	83.1	89.9	97.1	104.7	106.2
Administrative & Support Services	8.7	17.6	26.7	36.0	45.5	47.9	50.5	53.4	56.4	59.7	63.1	66.7	70.5	74.6	75.3
Public Administration & Safety	2.6	5.3	8.1	10.9	13.8	14.7	15.6	16.5	17.6	18.7	19.9	21.1	22.4	23.8	24.1
Education & Training	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Health Care & Social Assistance	0.1	0.3	0.4	0.5	0.7	0.8	0.8	0.9	1.0	1.1	1.2	1.2	1.4	1.5	1.5
Arts & Recreation Services	0.1	0.2	0.4	0.5	0.7	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.5	1.6	1.6
Other Services	2.8	5.8	8.8	12.0	15.2	16.5	17.8	19.3	20.8	22.5	24.2	26.1	28.0	30.1	30.5
Ownership of Dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Direct	90.3	184.0	281.2	381.8	485.8	528.8	575.3	625.2	678.5	735.3	795.5	859.1	926.2	996.8	1,010.5
Indirect	53.9	109.8	167.8	227.9	290.0	315.6	343.2	373.0	404.7	438.5	474.4	512.3	552.3	594.3	602.5

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Total	144.2	293.8	449.0	609.6	775.8	844.4	918.5	998.1	1,083.2	1,173.8	1,269.9	1,371.4	1,478.5	1,591.0	1,613.0

Source: CDM Smith Analysis, 2020

Table 8-22 500,000 TEUs – Contribution to employment from freight forwarders and proximate industry, year 1 to year 15 (FTEs)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Agriculture, Forestry & Fishing	0.1	0.2	0.3	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.3	1.4	1.5	1.7	1.7
Mining	0.4	0.8	1.2	1.7	2.2	2.4	2.7	3.0	3.4	3.8	4.1	4.5	5.0	5.4	5.5
Manufacturing	9.0	18.8	29.5	41.1	53.5	64.4	76.1	88.6	102.1	116.4	131.6	147.6	164.5	182.3	185.7
Electricity, Gas, Water & Waste Services	1.2	2.4	3.7	5.1	6.4	7.0	7.6	8.3	9.0	9.8	10.6	11.5	12.4	13.3	13.5
Construction	10.2	21.4	33.5	46.5	60.4	72.0	84.6	98.1	112.5	127.8	144.1	161.3	179.4	198.5	202.2
Wholesale Trade	17.5	37.2	59.1	83.1	109.3	136.4	165.6	196.9	230.5	266.2	304.0	344.0	386.2	430.6	439.2
Retail Trade	2.5	5.2	8.1	11.0	14.1	15.9	17.9	20.0	22.2	24.5	27.1	29.7	32.5	35.5	36.0
Accommodation & Food Services	2.6	5.4	8.2	11.2	14.2	15.4	16.8	18.2	19.7	21.3	23.1	24.9	26.8	28.8	29.2
Transport, Postal & Warehousing	115.3	232.5	351.6	472.5	595.4	618.9	644.4	671.7	700.9	732.0	764.9	799.8	836.5	875.2	882.7
Information Media and Telecommunications	3.4	7.2	11.2	15.5	20.2	24.0	28.2	32.6	37.3	42.4	47.7	53.4	59.4	65.6	66.9
Financial & Insurance Services	4.2	8.5	13.0	17.5	22.1	23.5	25.0	26.6	28.3	30.1	32.0	34.0	36.2	38.4	38.9
Rental, Hiring & Real Estate Services	5.6	11.4	17.5	23.7	30.1	32.7	35.4	38.3	41.4	44.8	48.3	52.1	56.0	60.1	61.0
Professional, Scientific & Technical Services	13.2	26.9	41.1	55.9	71.2	77.8	84.9	92.6	100.8	109.5	118.7	128.5	138.8	149.6	151.7
Administrative & Support Services	12.4	25.1	38.1	51.4	64.9	68.4	72.2	76.3	80.6	85.2	90.1	95.3	100.8	106.5	107.6
Public Administration & Safety	3.8	7.6	11.6	15.6	19.7	20.9	22.2	23.6	25.1	26.7	28.4	30.2	32.0	34.0	34.4
Education & Training	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Health Care & Social Assistance	0.2	0.4	0.6	0.8	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.8	1.9	2.1	2.1
Arts & Recreation Services	0.2	0.4	0.5	0.7	1.0	1.1	1.2	1.3	1.5	1.6	1.8	1.9	2.1	2.3	2.3
Other Services	4.1	8.3	12.6	17.1	21.7	23.5	25.5	27.5	29.8	32.1	34.6	37.3	40.1	43.0	43.6
Ownership of Dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Direct	129.0	262.9	401.7	545.4	694.0	755.5	821.8	893.1	969.3	1,050.4	1,136.4	1,227.3	1,323.2	1,424.0	1,443.6
Indirect	77.0	156.9	239.8	325.5	414.2	450.8	490.3	532.8	578.2	626.5	677.7	731.9	788.9	848.9	860.7
Total	206.0	419.8	641.4	870.9	1,108.3	1,206.3	1,312.2	1,425.9	1,547.4	1,676.9	1,814.1	1,959.2	2,112.1	2,272.9	2,304.3

Source: CDM Smith Analysis, 2020

Table 8-23 **750,000 TEUs – Contribution to employment from freight forwarders and proximate industry, year 1 to year 15 (FTEs)**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Agriculture, Forestry & Fishing	0.2	0.3	0.5	0.7	0.9	1.1	1.2	1.4	1.5	1.7	1.9	2.1	2.3	2.5	2.6
Mining	0.6	1.2	1.8	2.5	3.2	3.6	4.1	4.6	5.1	5.6	6.2	6.8	7.5	8.1	8.3
Manufacturing	13.5	28.2	44.3	61.6	80.3	96.5	114.1	133.0	153.1	174.6	197.3	221.4	246.8	273.4	278.6
Electricity, Gas, Water & Waste Services	1.8	3.7	5.6	7.6	9.7	10.5	11.5	12.5	13.5	14.7	15.9	17.2	18.5	19.9	20.2
Construction	15.3	32.1	50.2	69.7	90.6	108.1	126.9	147.1	168.7	191.7	216.1	241.9	269.1	297.7	303.3
Wholesale Trade	26.3	55.9	88.7	124.7	164.0	204.6	248.4	295.4	345.7	399.2	456.0	516.1	579.3	645.9	658.8
Retail Trade	3.8	7.8	12.1	16.5	21.2	23.9	26.8	29.9	33.3	36.8	40.6	44.6	48.8	53.2	54.0
Accommodation & Food Services	4.0	8.1	12.3	16.7	21.3	23.1	25.1	27.3	29.6	32.0	34.6	37.3	40.2	43.3	43.9
Transport, Postal & Warehousing	173.0	348.8	527.4	708.8	893.1	928.4	966.6	1,007.5	1,051.3	1,098.0	1,147.4	1,199.7	1,254.8	1,312.7	1,324.0
Information Media and Telecommunications	5.1	10.7	16.8	23.3	30.3	36.0	42.2	48.9	56.0	63.6	71.6	80.1	89.1	98.5	100.3
Financial & Insurance Services	6.3	12.8	19.4	26.2	33.2	35.3	37.5	39.9	42.4	45.1	48.0	51.1	54.3	57.6	58.3
Rental, Hiring & Real Estate Services	8.4	17.2	26.2	35.5	45.2	49.0	53.1	57.5	62.2	67.2	72.5	78.1	84.0	90.2	91.4
Professional, Scientific & Technical Services	19.8	40.3	61.7	83.9	106.8	116.7	127.4	138.9	151.2	164.2	178.1	192.7	208.2	224.4	227.6
Administrative & Support Services	18.6	37.7	57.2	77.1	97.4	102.7	108.3	114.4	120.9	127.8	135.2	143.0	151.2	159.8	161.4
Public Administration & Safety	5.6	11.4	17.3	23.4	29.6	31.4	33.4	35.4	37.7	40.0	42.6	45.2	48.0	51.0	51.6
Education & Training	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Health Care & Social Assistance	0.3	0.6	0.9	1.2	1.5	1.6	1.8	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.2
Arts & Recreation Services	0.3	0.5	0.8	1.1	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.9	3.2	3.4	3.5
Other Services	6.1	12.4	18.9	25.7	32.6	35.3	38.2	41.3	44.6	48.2	51.9	55.9	60.1	64.5	65.3
Ownership of Dwellings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Direct	193.5	394.3	602.5	818.1	1,041.0	1,133.2	1,232.7	1,339.6	1,453.9	1,575.6	1,704.6	1,841.0	1,984.8	2,136.0	2,165.4
Indirect	115.5	235.4	359.6	488.3	621.4	676.2	735.5	799.2	867.3	939.7	1,016.5	1,097.8	1,183.4	1,273.4	1,291.0
Total	308.9	629.7	962.1	1,306.4	1,662.4	1,809.4	1,968.2	2,138.8	2,321.2	2,515.3	2,721.2	2,938.8	3,168.2	3,409.4	3,456.4

Source: CDM Smith Analysis, 2020

Appendix F Economic Contribution from Freight Forwarders and Proximate Industry – Value added

Table 8-24 350,000 TEUs – Contribution to regional value added from freight forwarders and proximate industry, year 1 to year 15 ($m)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Agriculture, Forestry & Fishing	$0.0	$0.0	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.2	$0.2
Mining	$0.1	$0.3	$0.4	$0.5	$0.7	$0.8	$0.9	$1.0	$1.1	$1.2	$1.4	$1.5	$1.6	$1.8	$1.8
Manufacturing	$1.1	$2.2	$3.5	$5.0	$6.5	$7.9	$9.5	$11.1	$12.9	$14.8	$16.9	$19.0	$21.2	$23.6	$24.1
Electricity, Gas, Water & Waste Services	$0.2	$0.4	$0.6	$0.8	$1.1	$1.2	$1.3	$1.4	$1.5	$1.6	$1.7	$1.9	$2.0	$2.2	$2.2
Construction	$1.2	$2.5	$3.9	$5.5	$7.2	$8.7	$10.4	$12.1	$14.0	$16.1	$18.2	$20.5	$22.8	$25.3	$25.8
Wholesale Trade	$1.9	$4.1	$6.4	$9.0	$11.9	$14.8	$18.0	$21.4	$25.1	$28.9	$33.1	$37.4	$42.0	$46.8	$47.8
Retail Trade	$0.1	$0.3	$0.4	$0.6	$0.7	$0.8	$0.9	$1.0	$1.1	$1.2	$1.4	$1.5	$1.7	$1.8	$1.8
Accommodation & Food Services	$0.1	$0.2	$0.4	$0.5	$0.6	$0.7	$0.7	$0.8	$0.9	$0.9	$1.0	$1.1	$1.2	$1.3	$1.3
Transport, Postal & Warehousing	$17.7	$35.6	$53.8	$72.2	$90.9	$94.1	$97.6	$101.3	$105.3	$109.5	$114.0	$118.8	$123.8	$129.0	$130.1
Information Media and Telecommunications	$0.6	$1.2	$1.8	$2.5	$3.3	$3.9	$4.6	$5.3	$6.0	$6.9	$7.7	$8.7	$9.6	$10.7	$10.9
Financial & Insurance Services	$0.8	$1.7	$2.6	$3.5	$4.4	$4.6	$4.9	$5.2	$5.6	$5.9	$6.3	$6.7	$7.1	$7.6	$7.7
Rental, Hiring & Real Estate Services	$0.8	$1.7	$2.6	$3.5	$4.5	$4.8	$5.3	$5.7	$6.2	$6.7	$7.2	$7.7	$8.3	$8.9	$9.1
Professional, Scientific & Technical Services	$1.1	$2.2	$3.4	$4.7	$6.0	$6.5	$7.1	$7.7	$8.4	$9.2	$9.9	$10.8	$11.6	$12.5	$12.7
Administrative & Support Services	$1.2	$2.5	$3.8	$5.1	$6.4	$6.8	$7.1	$7.5	$7.9	$8.4	$8.8	$9.3	$9.8	$10.4	$10.5
Public Administration & Safety	$0.2	$0.5	$0.8	$1.0	$1.3	$1.4	$1.5	$1.6	$1.7	$1.8	$1.9	$2.0	$2.1	$2.2	$2.3
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.0	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1
Arts & Recreation Services	$0.0	$0.0	$0.0	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1
Other Services	$0.2	$0.4	$0.5	$0.7	$0.9	$1.0	$1.1	$1.2	$1.3	$1.4	$1.5	$1.6	$1.7	$1.9	$1.9
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$19.6	$39.9	$60.8	$82.4	$104.7	$112.9	$121.8	$131.4	$141.6	$152.5	$164.0	$176.2	$189.0	$202.6	$205.2
Indirect	$7.8	$15.9	$24.2	$32.8	$41.8	$45.3	$49.1	$53.2	$57.6	$62.3	$67.3	$72.5	$78.0	$83.8	$85.0
Total	$27.4	$55.8	$85.0	$115.3	$146.5	$158.2	$171.0	$184.6	$199.2	$214.8	$231.3	$248.7	$267.1	$286.4	$290.2

Source: CDM Smith Analysis, 2020

Table 8-25 500,000 TEUs – Contribution to regional value added from freight forwarders and proximate industry, year 1 to year 15 ($m)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Agriculture, Forestry & Fishing	$0.0	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2
Mining	$0.2	$0.4	$0.6	$0.8	$1.0	$1.1	$1.3	$1.4	$1.6	$1.8	$1.9	$2.1	$2.3	$2.6	$2.6
Manufacturing	$1.5	$3.2	$5.1	$7.1	$9.3	$11.3	$13.5	$15.9	$18.5	$21.2	$24.1	$27.1	$30.3	$33.7	$34.4
Electricity, Gas, Water & Waste Services	$0.3	$0.6	$0.9	$1.2	$1.5	$1.6	$1.8	$2.0	$2.1	$2.3	$2.5	$2.7	$2.9	$3.1	$3.2
Construction	$1.7	$3.6	$5.6	$7.9	$10.3	$12.5	$14.8	$17.3	$20.1	$22.9	$26.0	$29.2	$32.6	$36.2	$36.9
Wholesale Trade	$2.7	$5.8	$9.2	$12.9	$17.0	$21.2	$25.7	$30.6	$35.8	$41.4	$47.2	$53.5	$60.0	$66.9	$68.2
Retail Trade	$0.2	$0.4	$0.6	$0.8	$1.0	$1.2	$1.3	$1.4	$1.6	$1.8	$2.0	$2.2	$2.4	$2.6	$2.6
Accommodation & Food Services	$0.2	$0.3	$0.5	$0.7	$0.9	$1.0	$1.1	$1.1	$1.2	$1.3	$1.5	$1.6	$1.7	$1.8	$1.9
Transport, Postal & Warehousing	$25.2	$50.8	$76.8	$103.1	$129.8	$134.4	$139.4	$144.7	$150.4	$156.4	$162.9	$169.6	$176.8	$184.3	$185.8
Information Media and Telecommunications	$0.8	$1.6	$2.6	$3.6	$4.7	$5.5	$6.5	$7.5	$8.6	$9.8	$11.1	$12.4	$13.8	$15.2	$15.5
Financial & Insurance Services	$1.2	$2.4	$3.7	$4.9	$6.3	$6.6	$7.1	$7.5	$8.0	$8.5	$9.0	$9.6	$10.2	$10.8	$10.9
Rental, Hiring & Real Estate Services	$1.2	$2.4	$3.7	$5.0	$6.4	$6.9	$7.5	$8.1	$8.8	$9.5	$10.3	$11.1	$11.9	$12.8	$12.9
Professional, Scientific & Technical Services	$1.6	$3.2	$4.9	$6.7	$8.5	$9.3	$10.1	$11.1	$12.0	$13.1	$14.2	$15.4	$16.6	$17.9	$18.1
Administrative & Support Services	$1.8	$3.6	$5.4	$7.3	$9.2	$9.7	$10.2	$10.7	$11.3	$11.9	$12.6	$13.3	$14.0	$14.8	$15.0
Public Administration & Safety	$0.4	$0.7	$1.1	$1.5	$1.9	$2.0	$2.1	$2.2	$2.4	$2.5	$2.7	$2.8	$3.0	$3.2	$3.2
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.2	$0.2	$0.2	$0.2
Arts & Recreation Services	$0.0	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.2	$0.2
Other Services	$0.2	$0.5	$0.8	$1.0	$1.3	$1.4	$1.6	$1.7	$1.8	$2.0	$2.1	$2.3	$2.5	$2.6	$2.7
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$28.0	$57.0	$86.9	$117.8	$149.6	$161.3	$174.0	$187.7	$202.3	$217.8	$234.3	$251.7	$270.1	$289.4	$293.1
Indirect	$11.1	$22.7	$34.6	$46.9	$59.7	$64.7	$70.2	$76.1	$82.3	$89.0	$96.1	$103.6	$111.5	$119.8	$121.4
Total	$39.2	$79.6	$121.5	$164.7	$209.2	$226.1	$244.2	$263.7	$284.6	$306.8	$330.4	$355.3	$381.5	$409.1	$414.5

Source: CDM Smith Analysis, 2020

Table 8-26 750,000 TEUs – Contribution to regional value added from freight forwarders and proximate industry, year 1 to year 15 ($m)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Agriculture, Forestry & Fishing	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.2	$0.2	$0.2	$0.2	$0.3	$0.3	$0.3	$0.3	$0.3
Mining	$0.3	$0.6	$0.9	$1.2	$1.5	$1.7	$1.9	$2.1	$2.4	$2.7	$2.9	$3.2	$3.5	$3.8	$3.9
Manufacturing	$2.3	$4.8	$7.6	$10.6	$13.9	$17.0	$20.3	$23.9	$27.7	$31.8	$36.1	$40.7	$45.5	$50.6	$51.5
Electricity, Gas, Water & Waste Services	$0.4	$0.9	$1.3	$1.8	$2.3	$2.5	$2.7	$2.9	$3.2	$3.5	$3.7	$4.0	$4.4	$4.7	$4.8
Construction	$2.6	$5.4	$8.5	$11.8	$15.4	$18.7	$22.2	$26.0	$30.1	$34.4	$39.0	$43.8	$48.9	$54.3	$55.4
Wholesale Trade	$4.1	$8.7	$13.8	$19.4	$25.5	$31.8	$38.6	$45.9	$53.7	$62.0	$70.9	$80.2	$90.0	$100.3	$102.4
Retail Trade	$0.3	$0.6	$0.9	$1.2	$1.5	$1.7	$1.9	$2.2	$2.4	$2.7	$2.9	$3.2	$3.5	$3.9	$3.9
Accommodation & Food Services	$0.2	$0.5	$0.8	$1.1	$1.3	$1.5	$1.6	$1.7	$1.9	$2.0	$2.2	$2.4	$2.5	$2.7	$2.8
Transport, Postal & Warehousing	$37.9	$76.3	$115.2	$154.7	$194.8	$201.6	$209.1	$217.1	$225.6	$234.7	$244.3	$254.5	$265.2	$276.5	$278.7
Information Media and Telecommunications	$1.2	$2.5	$3.9	$5.4	$7.0	$8.3	$9.8	$11.3	$13.0	$14.7	$16.6	$18.6	$20.6	$22.8	$23.3
Financial & Insurance Services	$1.8	$3.6	$5.5	$7.4	$9.4	$10.0	$10.6	$11.2	$12.0	$12.7	$13.5	$14.4	$15.3	$16.2	$16.4
Rental, Hiring & Real Estate Services	$1.8	$3.6	$5.6	$7.5	$9.6	$10.4	$11.3	$12.2	$13.2	$14.3	$15.4	$16.6	$17.8	$19.2	$19.4
Professional, Scientific & Technical Services	$2.4	$4.8	$7.4	$10.0	$12.8	$13.9	$15.2	$16.6	$18.1	$19.6	$21.3	$23.0	$24.9	$26.8	$27.2
Administrative & Support Services	$2.6	$5.4	$8.1	$10.9	$13.8	$14.5	$15.3	$16.1	$17.0	$17.9	$18.9	$20.0	$21.1	$22.2	$22.4
Public Administration & Safety	$0.5	$1.1	$1.6	$2.2	$2.8	$3.0	$3.1	$3.3	$3.6	$3.8	$4.0	$4.3	$4.5	$4.8	$4.8
Education & Training	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Health Care & Social Assistance	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.3	$0.3
Arts & Recreation Services	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2
Other Services	$0.4	$0.8	$1.1	$1.6	$2.0	$2.1	$2.3	$2.5	$2.7	$3.0	$3.2	$3.4	$3.7	$4.0	$4.0
Ownership of Dwellings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Direct	$42.0	$85.5	$130.4	$176.6	$224.3	$242.0	$261.0	$281.5	$303.4	$326.7	$351.4	$377.6	$405.1	$434.1	$439.7
Indirect	$16.7	$34.0	$51.9	$70.4	$89.5	$97.1	$105.3	$114.1	$123.5	$133.5	$144.2	$155.4	$167.2	$179.7	$182.1
Total	$58.7	$119.5	$182.2	$247.0	$313.8	$339.1	$366.3	$395.6	$426.9	$460.2	$495.6	$532.9	$572.3	$613.7	$621.8

Source: CDM Smith Analysis, 2020

[i] TAFE Queensland (2020). *Inala*. Retrieved from: https://tafeqld.edu.au/courses/study-locations/greater-brisbane/inala.html

[ii] Ramsay Health Care (2020). Multimillion Development Announced for St Andrew's Ipswich Private Hospital. Retrieved from Ramsay Health Care, St Andrew's Ipswich Private Hospital: https://www.standrewsipswich.com.au/About-Us/Media-Releases/Multimillion-Development-Announced-for-St-Andrews-Ipswich-Private-Hospital
[iii] The Queensland Times (2013). Firies make themselves at home in new station. Retrieved from Queensland Times: https://www.qt.com.au/news/firies-make-themselves-at-home-in-new-station/1985924/
[iv] Queensland Government (2020). Rosewood to get its own fire station. Retrieved from Queensland Government: http://statements.qld.gov.au/Statement/2020/6/24/rosewood-to-get-its-own-fire-station
[v] CareforKids.com.au. (2020). Retrieved from CareforKids.com.au: https://www.careforkids.com.au/
[vi] ACECQA. (n.d.). *Bindarra Children's Daycare Centre*. Retrieved from ACECQA: https://www.acecqa.gov.au/resources/national-registers/services/bindarra-childrens-daycare-centre
[vii] ACECQA. (n.d.). *Raceview Kindergarten & Child Care Centre*. Retrieved from ACECQA: https://www.acecqa.gov.au/resources/national-registers/services/raceview-kindergarten-child-care-centre
[viii] Queensland Government . (2020). *Downloadable data files* . Brisbane: Queensland Government.
[ix] The State of Queensland (Department of Education). (2020). *Enrolments*. Retrieved from https://claremontspecs.eq.edu.au/enrolments
[x] City of Ipswich. (2018). *Capacity analysis of a sample of local community facilities: a methodology paper* . Ipswich: City of Ipswich.
[xi] Discover Ipswich. (2020). *Julesart Studio/Gallery*. Retrieved from https://www.discoveripswich.com.au/attraction/julesart-studio-gallery/
[xii] Willowbank Raceway. (2020). *Willowbank Raceway Drag Racing's Finest*. Retrieved from https://www.willowbankraceway.com.au/
[xiii] Ipswich Golf Driving Course. (n.d.). Retrieved from Ipswich Golf Driving Course: http://www.ipswichgolfdrivingrange.com.au/driving-range/
[xiv] Ipswichturfclub. (n.d.). *Functions & Events*. Retrieved from Ipswichturfclub: https://ipswichturfclub.com.au/functions/
[xv] My Community Directory. (2020). *Blue Care - Multicultural Community Services - Ipswich*. Retrieved from My Community Directory: https://www.mycommunitydirectory.com.au/Queensland/Ipswich/Ageing_Services/General_Ageing_Services/2985/102060/Blue_Care_-_Multicultural_Community_Services_-_Ipswich
[xvi] Queensland Health. (2020). Ipswich Hospital . Retrieved from Queensland Government: http://www.performance.health.qld.gov.au/Hospital/Index/15
[xvii] Ramsay Health Care. (202). Private Emergency Department. Retrieved from Ramsay Health Care: https://www.standrewsipswich.com.au/Our-Services/Emergency-Department
[xviii] Queensland Government . (2008). *Rural Fires Bulletin.* Brisbane: Queensland Government Department of Emergency Services.
[xix] Aged Care Guide. (n.d.). *Blue Care Flinders View Nowlanvil Aged Care Facility*. Retrieved from Aged Care Guide: https://www.agedcareguide.com.au/blue-care-flinders-view-nowlanvil-aged-care-facility
[xx] Aged Care Guide. (n.d.). *Southern Cross Care St Mary's*. Retrieved from Aged Care Guide: https://www.agedcareguide.com.au/southern-cross-care-st-marys
[xxi] Brisbane Marketing. (2018). *Willowbank Village*. Retrieved from Brisbane Marketing: https://www.visitbrisbane.com.au/ipswich/accommodation/camping-and-caravan-parks/willowbank-village?sc_lang=en-au
[xxii] Full Range Camping. (2020). *Amberley Caravan Park (CP)*. Retrieved from Full Range Camping: https://directory.fullrangecamping.com.au/item/amberley-caravan-park-25/
[xxiii] Ipswich Country Motel. (n.d.). *Function and Conference Venue Ipswich*. Retrieved from Ipswich Country Motel: https://www.ipswichcountrymotel.com/functions-conference.php
[xxiv] Must Do Brisbane Pty Ltd. (2020). *Castle Hill Blackstone Reserve*. Retrieved from Must Do Brisbane Pty Ltd: https://www.mustdobrisbane.com/outdoors-walks-bush-heritage-trails-cycling-bush/castle-hill-blackstone-reserve-ipswich
[xxv] Dinmore Cottage Tea House. (2019). *Dinmore Cottage Tea House*. Retrieved from Dinmore Cottage Tea House: https://www.dinmorecottageteahouse.com/men

Mayor Teresa Harding

City of Ipswich
Queensland, Australia

Dr Kerry Schott AO

IR.Review@infrastructure.gov.au

11 November 2022

Dear Dr Schott

Independent Review into the delivery of Inland Rail

Submission by Ipswich City Council

Ipswich City Council (Council) appreciates the opportunity to provide a submission to the Independent Review into the delivery of Inland Rail. Council supports the Inland Rail project as it will have significant economic benefits for Ipswich and Queensland in terms of construction jobs and the development of new economic precincts. At the same time, the Ipswich community express a desire to conserve the best parts of their community – character, heritage and identity, waterways, bushland, and rural areas. These two priorities guide Council's engagement in the delivery of the Inland Rail project.

Opportunities to contribute to the freight task at Ebenezer Regional Industrial Area.

Ebenezer Regional Industrial Area (ERIA) is a future industrial area for South East Queensland. Catalyst infrastructure to enable an employment-generating industrial precinct at Ebenezer will support national supply chains, Inland Rail, and the proposed Ebenezer Intermodal Terminal. This investment will unlock 3,000 full time equivalent jobs across diversely skilled and high-value industries including manufacturing, transport, postal and warehousing, and provide critical trunk infrastructure to nearby residential expansion areas.

Strategically located, ERIA has direct access to major national road freight routes of Cunningham Highway and proximate access to Warrego Highway. Council delivered a Social and Economic Benefits and Impacts Study which highlighted the importance of this project in providing local jobs for Ipswich residents.

Ipswich City Council procured in 2020 a Social and Economic Benefits and Impacts Study (*attached*) which examined the impact on an intermodal Terminal in Ebenezer / Willowbank. It revealed that an intermodal terminal in the vicinity of Ebenezer / Willowbank is critical to ensuring social and economic local benefit for the Ipswich region from Inland Rail operations. This has also been provided to the Department of Infrastructure, Transport, Regional Development, Communication and the Arts for consideration in the SEQ Intermodal Terminal Business Case. The study outlines that the minimum economic impact of the Ebenezer Intermodal Terminal in

2041 can provide more than twice the number of local jobs, and five times the expected economic output of Inland Rail operations outlined in the EIS.

The Social and Economic Benefits and Impacts Study revealed that an intermodal in the vicinity of Ebenezer / Willowbank would be integral to securing long term economic benefit and ongoing employment above and beyond Inland Rail operations and would drive the uptake of industrial land in the ERIA. To summarise the outcomes of the report:

Social Benefits:

- Would enable increased access to local employment opportunities and associated income
- New training and upskilling opportunities for Ipswich workforce
- Potential reduction in commuting times for residents of Ipswich LGA due to creation of local employment opportunities and increased employment containment resulting in a range of financial, health and wellbeing benefits
- Potential upgrades to road and key intersections resulting in time savings and improved road user
- Possible land value changes; uplift due to demand for proximate demand
- Potential economic benefits for local businesses associated with improved connecting to / opening up of new markets

Economically, an intermodal in the vicinity of Ebenezer / Willowbank will provide in 2041:

- $676 million (minimum) and $1,428 million (maximum) to output
- $153 million (min) and $324 million (max) to household income
- 1,679 (min) and 3,543 (max) FTEs jobs
- $299 million (min) and $631 million (max) to value add

The study outlines that the large-scale benefits to the whole of the LGA in regard to employment opportunities, quality of life improvements related to localised employment and accessibility, and improvements to social and transport infrastructure are often of higher significance and farther-reaching in consequence than many of the negative impacts which were considered to be more localised in their impact. These positive benefits would be unlikely to be achieved without the development of the intermodal terminal. However, due to the industrial zoning of the land, many of the negative impacts that are closely tied to perceptions of place and are localised to the immediate neighbourhood will be realised albeit at a slower pace and potentially of lesser significance as land is developed for industrial purposes without the intermodal terminal. This may represent an additional cumulative impact to communities impacted by Inland Rail than outlined in the EIS.

Community Impacts

The areas impacted by the Inland Rail project will be changed forever and Council is focused on ensuring the impacts of these changes are minimised and mitigated, through robust assessment and rigorous mitigation.

While previous submissions by Council as part of the draft Environmental Impact Statement process for the Calvert to Kagaru and Helidon to Calvert Inland Rail projects have set out details of a wide range of issues, Council has strong concerns in four particular areas which are reiterated below.

Level Crossings

Council made clear that level crossings on the Inland Rail project would not be an acceptable outcome, and Officers have worked with ARTC to develop designs to remove level crossings. ARTC has recently announced that four proposed level crossings have been removed from the reference design in the Ipswich region and replaced with either a road over rail bridge or a road detour. However, Council and the Ipswich community remain concerned that a new level crossing will be constructed at Grandchester and the existing level crossing at Calvert will see train traffic increase from around 8 trains per day to 47 trains per day. This is not an acceptable outcome for Council and the Ipswich community on a nation building project with a multi decade horizon. The safety, economic and community impacts of level crossings which will close these roads for 5-10 minutes every half an hour will result in impacts on productivity and efficiency, particularly in emergency or disaster events.

Council acknowledges that there will be an impact on the capital cost of the current project, but this must be balanced against future costs which will be locked in for the life of the rail network, as well as the long-term safety and productivity gains.

In 2021, Council set out these concerns in its response to the draft Environmental Impact Statements for both the C2K and H2C Inland Rail projects, which are published on Council's website. Council's response included the following:

- Safety risks cannot be eliminated at level crossings
- Short, medium and long-term costs will be shifted to Council
- Delays at level crossings will result in unacceptable impacts on productivity and efficiency for local residents and businesses
- Potential for isolation of residents and businesses

Council has heard many community members express concerns with the level crossings proposed in the Ipswich Region and advocate for bridges or road network realignments instead of level crossings. Level crossings introduce a safety risk which does not currently exist, and can only be reduced, not removed, by safety measures such as signage. Two level crossings are proposed on the H2C project in the Ipswich region, one new crossing and one widened existing crossing, each representing potential safety concerns and additional delay to residents and businesses. There are also potential delays for emergency services, to either reach an emergency situation or transport persons with injuries to hospital.

The EIS does not meet the *Queensland Level Crossing Safety Strategy* to 'add no further open level crossings to the network.' This is a long-term project and should be designed for the highest safety standard for the future.

As this is a nation building project with a 100-year horizon, and with the expected volume of freight trains on the rail network, Council considers that not constructing bridges on all road-rail interfaces is short-sighted and not compatible with the future focus of this project.

Noise Mitigation

Many areas along the proposed alignment are quiet, rural environments with very low background noise. These areas will be changed forever by the noise, air quality and visual impacts. The noise impact assessment and proposed mitigation strategies are not adequate to reduce the noise impacts to an acceptable level, and do not cover enough residents, businesses, and other organisations in these residential and tourist sensitive areas, in particular the omission of acoustic profiling including the effects of topography and meteorology, and resultant mitigation requirements.

Noise impacts must be fully and appropriately assessed, and the impacts mitigated adequately to avoid adverse impacts on residents and businesses.

Construction Traffic

Many of the construction routes identified in the EIS are inappropriate for the level of traffic to be generated. A more realistic plan of construction traffic routes is required, including site visits to establish the nature of the roads, and discussion with Council officers to understand the usage, history and plans for each route. Council must be able to approve the use of local roads as construction traffic routes, and to impose conditions on the use of those roads to preserve the safety, efficiency and amenity of the local road network. Traffic on some local roads will be more than doubled during construction and this must be considered a significant impact requiring infrastructure upgrades and other mitigation measures to maintain the safety and efficiency of the roads.

Flooding

Flooding is a major concern of the community which could have a significant, long-term impact on residents and businesses in the region. The flood modelling used must be robust, accurate and comprehensive in order to avoid flooding impacts. The conclusions of the independent Flood Panel set up by the Australian and Queensland Governments must be taken into account in flood modelling in future design work. Council requires that the engagement of the independent Flood Panel be extended to include review of the Inland Rail detailed design to ensure that all recommendations are implemented appropriately and provide Council and community with confidence that flooding is being managed to prevent worsening flooding in Ipswich communities.

Engagement with Council and the Community

ARTC has facilitated Council's engagement with the Inland Rail project over a period of several years, and at all levels of Council's operations including presentations to the Mayor and Councillors, as well as engagement with Council Officers in a wide range of disciplines on a regular, often weekly basis. Council Officers have undertaken detailed and protracted negotiation with ARTC over several years to ensure that the project is delivered within Council's Local Government Area in a way which Council is able to support, and which does not introduce new risks or costs to Council.

While ARTC has worked hard to continue to improve engagement with Council and the community, the organisation of meetings and workshops appears to be ad hoc with dates changing at short notice and inadequate advance notice of meetings. Promotion of events has focussed heavily on social media which is not a primary channel for many residents of the region. Better use of community channels such as local notice boards and community groups such as schools and Lions Clubs for example would ensure wider awareness. A calendar established 3 months in advance would enable better planning and awareness of events in the community.

Council has more recently been able to share ARTC's posts on social media but more use could be made of Council's e-newsletters and mailing lists.

Regionally significant changes

The Inland Rail project through the Ipswich region will produce regionally significant changes, both positive and negative. Council considers that regionally significant impacts require regionally significant impact mitigation, at a community level and at an individual level.

ARTC has established many valuable programs covering small grants to community organisations, free mental health support, training programs and business engagement strategies. While these programs provide significant benefits, they are limited to the delivery phase of the project.

Council requests that ARTC and the Australian Government consider how to deliver regionally significant projects which will continue to deliver benefits to the community and individuals beyond the delivery phase. As an example, both residents and businesses would benefit from strengthening provision of mobile phone and internet access in areas of the region with poor coverage. Other projects could provide long-term community development projects or leave a legacy of long-term economic growth.

Council will continue to collaborate on potential regionally significant projects to balance the regionally significant negative impacts on the Ipswich community.

Thank you for the opportunity to provide a submission to Independent Review into delivery of the Inland Rail project. Should you require any further information, please contact Council.

Yours sincerely,

Teresa Harding

Mayor Teresa Harding