

APPENDIX

INLAND
RAIL 

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Economics Technical Report

HELIDON TO CALVERT ENVIRONMENTAL IMPACT STATEMENT


ARTC

The Australian Government is delivering
Inland Rail through the Australian
Rail Track Corporation (ARTC), in
partnership with the private sector.



Inland Rail

Helidon to Calvert

Environmental Impact Statement

Economic Impact Assessment

2-0000-330-EAP-00-RP-0001

Disclaimers

Inherent Limitations

This report has been prepared as per the purpose outlined in the Introduction. The services provided in connection with this engagement comprise an advisory engagement, which is not subject to assurance or other standards issued by the Australian Auditing and Assurance Standards Board and, consequently no opinions or conclusions intended to convey assurance have been expressed.

No warranty of completeness, accuracy or reliability is given in relation to the statements and representations made by, and the information and documentation provided by, ARTC management, personnel and stakeholders consulted as part of the process.

KPMG have indicated within this report the sources of the information provided. We have not sought to independently verify those sources unless otherwise noted within the report.

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The findings in this report have been formed on the above basis.

Third Party Reliance

This report is solely for the purpose set out in the Introduction and for ARTC's information, and is not to be used for any other purpose without KPMG's prior written consent.

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Summary

Introduction

The following economic impact assessment (EIA) report has been prepared to identify potential economic impacts of the proposed Helidon to Calvert (the Project and H2C) link of Inland Rail. Inland Rail is a direct interstate freight rail corridor, approximately 1,700 kilometres (km), between Melbourne and Brisbane via central-west New South Wales (NSW) and Toowoomba, Queensland (QLD).

The purpose of this EIA is to form part of an Environmental Impact Statement (EIS) being prepared by ARTC under the *State Development and Public Works Organisation Act 1971* (SDPWO Act) and the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (Cwlth)(EPBC Act). The Commonwealth Minister for the Environment and Energy determined that the Project is a 'controlled action' under the EPBC Act on 17 March 2017.

The final Terms of Reference (ToR) were issued on 5 October 2017. The following assessment addresses the economic specific information requirements of Section 5.1, 11.153 and 11.150 of the ToR.

EIA ToR Information Requirements

Section 11.153: EIS Economic Objectives

The construction and operation of the project should aim to:

- (a) avoid or mitigate adverse economic impacts arising from the project
- (b) capitalise on opportunities potentially available for capable local industries and communities
- (c) create a net economic benefit to the region and State.

Information Requirements	EIA Section
Identify the economic impacts of the project on the local and regional area and the State.	Section 4, Section 5, and Section 6
Estimate the costs and benefits and economic impacts of the proposal using both regional impact analysis and cost-benefit analysis. The analysis should be consistent with the Coordinator-General's Economic impact assessment guideline (April 2017).	Section 5.4 and 5.5

Other relevant ToR Information Requirements

Information Requirements	EIA Section
5.1 The objectives of the EIS are to ensure that all relevant environmental, social and economic impacts of the project are identified and assessed, and to recommend mitigation measures to avoid or minimise adverse impacts. The EIS should demonstrate that the project is based on sound environmental principles and practices.	Section 5 and Section 7 (These requirements are addressed through remainder of the EIS)

11.150

The impact assessment should also evaluate and discuss the potential cumulative social impacts resulting from the proposed project in combination with other existing major projects and/or developments and those which are progressing through planning and approval processes (where public information is available) within the SIA study area. Key issues assessed should include:

- (a) population
- (b) workforce (construction and operation)
- (c) workforce accommodation
- (d) local and regional housing markets
- (e) use of and access to community infrastructure, services and facilities (including social and health services and facilities).

(b) addressed in Section 55

(other requirements addressed through the Social Impact Assessment)

To meet the requirements of the ToR, this assessment:

- Establishes the **existing economic environment and local context** to understand the local economic context and form the basis to measure the economic impacts;
- Identifies potential **economic benefits and impacts** on affected local and regional communities and businesses. This will be drawn from local community consultation and industry engagement undertaken by ARTC, evaluation of publically available information, and the outputs from the Social Impact Assessment and Land Use and Tenure Assessment;
- Assesses the projected economic benefits of the Project, including the basis for their estimation through a detailed economic benefits assessment. The outcomes of the proposed Project link-specific analysis will be contextualised against the results of the **cost benefit analysis (CBA)** undertaken for the entire Inland Rail Program, as per the Inland Rail Business Case (2015);
- Assesses the economic significance of the Project on the regional, state and national economies through **computable general equilibrium modelling (CGE)**;
- Evaluates the potential **cumulative impacts** on local and regional economies resulting from the construction and operation of related projects, including adjacent Inland Rail project links; and
- Outlines ARTC's commitments to **enhance** economic benefits and to **avoid, mitigate or manage** adverse economic impacts.

Study area

The Project traverses two local government areas (LGAs) – Lockyer Valley and Ipswich. These LGA boundaries have been utilised as the **study area** for assessing the local economic impacts of the Project, reflecting a local catchment for workers and economic activity.

For the purposes of the regional impact analysis, the **regional economic catchment area** is defined as the Australian Bureau of Statistics (ABS) labour market region (Statistical Area Level 4 (SA4) or Greater Capital City Statistical Area (GCCSA)) boundaries of the Australian Statistical Geography Standard that captures the integrated regional economy within which the Project is located. The Project crosses two labour market regions, the Toowoomba region and the Greater Brisbane region; 77 percent of the Project lies in the Toowoomba region and the remainder in the Greater Brisbane region. The economic assessment also considers the broader impact of the Project at a state and national level.

Baseline and impact assessment

Since the completion of the analysis detailed in this report there have been a series of changes to the project and the project environment. This includes changes to the Inland Rail construction program and the economic shock associated with the 2020 quarter 2 market conditions which are not reflected in the economic analysis or economic impact assessment contained within this report at the request of ARTC.

Existing labour market conditions

According to the Australian Government's quarterly regional estimates of unemployment, as at December 2019 there were a total of 9,607 unemployed persons in the study area, and 85,172 across the Toowoomba and Greater Brisbane labour market regions. 88.7 percent of unemployed persons in the study area are located in Ipswich, which also has the highest unemployment rate at 7.5 percent. The unemployment rate across the regional economic catchment is 4.4 percent in Toowoomba and 6.1 percent in Greater Brisbane, this is compared to an unemployment rate of 6.1 percent across QLD.¹

For the December 2019 quarter, the labour force participation rate across the study area was lower than the QLD average. The lowest rate of labour force participation was in Lockyer Valley at 65.9 percent, followed by Ipswich at 71.2 percent (compared to the QLD rate of 78.7 percent). The labour force participation rate for the regional economic catchment (78.6 percent) is comparable to the QLD rate.

According to the 2016 Census, the Indigenous population is inadequately represented in the study area's workforce, which is reflected in high rates of Indigenous unemployment and low labour force participation. Across the study area, approximately one fifth of the Indigenous population is unemployed (19.5 percent) and the labour force participation rate is low at 56.6 percent (compared to 70.3 percent for the population as a whole).

Youth unemployment rates are also high across the impact assessment area and regional economic catchment, more than double the total unemployment rate.

Overall, based on current labour market trends, there may be latent capacity within the study area and regional economic catchment to support the construction and operation of the Project.

Employment by industry

The sectoral distribution of employment for local residents is diverse, reflecting the study area's land use and the geographic distribution of the population.

In the Lockyer Valley, the highest number of residents are employed in Agriculture, Forestry and Fishing (13.8 percent), followed by Health Care and Social Assistance (9.8 percent), Retail Trade (9.1 percent) and Education and Training (9.1 percent). This reflects the land uses of the LGA, primarily regional landscape and rural production with a small urban footprint.

In Ipswich, the largest proportion of workers are employed in service based industries such as Health Care and Social Assistance (13.2 percent) and Retail Trade (10.5 percent). A significant proportion of the population are also employed in secondary industries, with a further 18.4 percent of residents employed in the Manufacturing (10.0 percent) or Construction (8.4 percent) industries. The Manufacturing industry has the highest specialisation ratio in Ipswich (1.6).

As at June 2016, there were a number of residents within the study area employed in directly relevant industry sectors and occupations to support the construction of the Project. The largest proportion are employed in Construction Services (5,073 workers) and Heavy and Civil Engineering Construction (815 workers). Across the Toowoomba labour market region, 3,380 workers are employed in Construction Services and 556 workers in Heavy and Civil Engineering Construction. Workers may also be drawn from Greater Brisbane where 8.9 percent of total workers (92,559 workers) are employed in the Construction industry.

¹ Australian Government's Small Area Labour Markets publication, December 2019; ABS, *Labour Force Survey, Australia*, December 2019 (12-month moving average) – published 26 March 2020; ABS 2016 Census of Population and Housing

Occupation

The study area's primary occupations of employment reflects the area's industry profile and distribution of employment across industries. At the broadest level, the area has a higher proportion of Technicians and Trade Workers (15.1 percent), Labourers (13.5 percent) and Machinery Operators and Drivers (10.0 percent), than the QLD average (14.3 percent, 10.5 percent and 6.9 percent respectively).

In the Lockyer Valley, most residents are employed as Labourers (18.1 percent) and Technicians and Trades Workers (15.0 percent). Of those employed as Labourers, 813 are employed as Farm, Forestry and Garden Workers (28.5 percent of all Labourers) and a further 288 are employed as Construction and Mining Labourers.

In Ipswich, the leading occupations of employment are Technicians and Trades Workers (15.1 percent) and Professionals (14.5 percent). Within these occupations, the highest number of workers are employed as Mechanical Engineering Trades Workers (1,616 workers) and School Teachers (2,285 workers). 1,245 workers are employed as Construction and Mining Labourers.

Construction labour availability

A Railway Skills Capability Study was undertaken by the Australasian Railway Association in 2018 which evaluated workforce capability for the rail industry based on planned and forecast rail infrastructure development in Australia and New Zealand over the next 10 years. The results of the analysis found that in QLD, workforce gaps are present in rail infrastructure construction sectors, most severe among specialist managers and professionals (such as engineers). The analysis also found that there is currently a slight oversupply of labourers. These trends are also reflected at a national level.²

Further, the Australian Industry Group Construction Outlook (November 2018) found that, at a national level, businesses are reporting widespread and increasing difficulties in sourcing skilled labour.³

According to the survey, construction companies are forecasting strong growth in major project work, led by a strong pipeline of transport infrastructure projects. The results indicate that 69.2 percent of respondents, up from 66.7 percent six months prior, reported either 'major' or 'moderate' difficulty in recruiting skilled labour in the six months to September 2018. With workforce demand expected to continue at high levels in line with major project activity, labour sourcing difficulties are expected to remain.⁴ It is most likely that these shortages in labour availability are for specific specialist trades.

Workforce profile

Direct employment resulting from the construction and operation of the Project has been estimated based on the indicative construction schedule and component activities. The Project is anticipated to require a workforce of up to 50 full time equivalent (FTE) personnel during pre-construction, an average of 190 FTE personnel per year during construction (peaking at 410 FTE), and 15 to 20 FTE personnel once operational.

Further, the industrial and consumption effects of the Project will result in the creation of indirect jobs both due to upstream and downstream linkages between the Project's activities and the rest of the economy, such as the stimulation of businesses further up the supply chain (e.g. manufacturers and suppliers of industry inputs), and the stimulation of activities downstream (e.g. through the provision of inputs to other sectors and the expenditure patterns of employees).

Overall, the Project has a significant opportunity to support local employment, however this is dependent on a number of factors including labour market conditions, skills availability and the existence of local workforce participation programs to support Indigenous and youth employment. Based on current labour market trends, there may be latent capacity within the study area and regional economic catchment to support the construction and operation of the Project.

² Australasian Railway Association, 2018, *Skills Capability Study*

³ A national perspective of labour availability can be used to identify trends in skills shortages. According to the Productivity Commission, workers in the construction industry are likely to be more geographically mobile because of the inherent project-based or seasonal nature of the work; Productivity Commission, 2014, *Geographic Labour Mobility*.

⁴ AiGroup, Construction Outlook November 2018

Local businesses and industry

Agriculture

Agriculture is a significant industry for the Lockyer Valley, located within the Toowoomba agricultural region. In 2017-18, the gross value of total agricultural production in the Toowoomba region was \$348 million, 33.0 percent of the total gross value of agricultural production in QLD (\$13 billion).⁵ Measured as a proportion of total agricultural production, the region's main agricultural products are poultry (\$50 million), followed by sweet corn (\$44 million) and lettuce (\$3636 million). As such, the agriculture industry offers significant export opportunities for the region, particularly for agricultural and livestock products.

As identified in EIS Chapter 8: Land Use and Tenure, there is one intensive livestock operation located in close proximity to the Project alignment - the Darwalla Milling Company poultry farming operation. Darwalla Milling Company is located within the study area at Laidley North.

The construction and operation of the Project has the potential to impact farming operations and general agricultural uses across the study area. These impacts include:

- Loss of agricultural land;
- Land fragmentation and disruption to access and infrastructure; and
- Disruption to stock and product movement.

Loss of agricultural land

As detailed in the EIS, Chapter 8: Land use and Tenure, the Project will result in the sterilisation of productive agricultural land within the permanent disturbance footprint.⁶ The scale of the total loss of Class A and B agricultural land is anticipated to be low. At a local government level, within the Lockyer Valley, the permanent disturbance footprint traverses approximately 86.81 hectares (ha) of Class A (0.1 percent) and 1.72 ha of Class B (<0.1 percent) land. Within Ipswich the permanent disturbance footprint traverses approximately 11.47 ha of Class A (0.1 percent) and 39.23 ha of Class B (1.0 percent) land. According to the QLD Agricultural Audit, these land classes are considered the most productive agricultural land in QLD, with soil and land characteristics which may allow successful crop and pasture production.

In 2017-18, the gross value of agricultural production in the Lockyer Valley and Ipswich LGAs was \$15.8 million.⁷ Accordingly, it is estimated that the Project could result in a loss of approximately \$17,274 (value foregone) in gross agricultural production per year.⁸

No local intensive livestock operations will be impacted by land acquisition or sterilisation.

Land fragmentation and disruption to access and infrastructure

The Project may result in impacts to agricultural land outside of the permanent disturbance footprint. Where the Project alignment does not utilise existing rail corridors, the Project may sever or isolate parcels of agricultural land, limiting internal movements and reducing access to agricultural land.

The overall disturbance of construction areas has been limited where possible. Where agricultural land is required to be used temporarily during construction, disturbed areas will be rehabilitated as close as possible to pre-construction conditions in accordance with the Reinstatement and Rehabilitation Plan. Where soils may have

⁵ SA4 – Toowoomba region; Value of Agricultural Commodities Produced, Australia, 72017-18 cat.no. 7503.0

⁶ The permanent disturbance footprint is defined as the physical rail corridor including the rail tracks and associated infrastructure. It also includes other permanent works associated with the Project, such as where changes to the road network are required.

⁷ Queensland Government, 2019, Queensland Spatial Catalogue: Gross Value of Agricultural Production (GVAP) per Local Government Area in Queensland.

⁸ This value is an indicative estimate only - it does not consider the value of individual commodities produced per lot or the value-add activities which contribute to the gross value of agricultural production in the region. An assessment of the composition of agricultural production by lot and commodity may be undertaken following detail design once a more accurate depiction of the lot-specific impacts are able to be quantified.

been damaged, reinstatement will include appropriate amelioration measures such as fertilizer to restore soils to pre-construction productivity. It is also noted that construction will occur progressively along the rail corridor and as such the need (duration) for temporary laydown areas has been minimised at each location. Further details on construction mitigation measures relating to agricultural land is provided in EIS Chapter 23.

The specific impact on the economic viability of farming operations as a result of this potential disruption to access and infrastructure is not quantified in this assessment, and the extent of these impacts will be confirmed during detailed design. ARTC will work with individual land owners to develop suitable solutions based on individual farm management practices.

Disruption to stock and product movement

There is one identified stock route reserve within the study area, located to the south of the permanent disturbance footprint at Calvert. This stock route reserve has a classification of 'minor and unused' and is approximately 2.02 ha in area. The permanent disturbance footprint will not sever or inhibit the use of this stock route reserve.

It is understood that there may also be informal stock routes which may be used to transfer stock to various grazing paddocks and holding yards within or across the study area.

The permanent disturbance footprint is likely to be fenced or constructed in a manner that prevents stock moving onto the rail line. Accordingly, the Project has the potential to alienate and isolate parcels used for traveling stock. The nature and magnitude of the impact of the Project on these travelling stock routes and informal stock routes is currently unknown. Stock movements will be considered during detailed design and ARTC is undertaking consultation with landholders to identify stock routes across grazing properties that may be affected during construction or operation of the Project (and will identify appropriate mitigation measures where impacts are identified).

Tourism

There is a strong focus on tourism in both the Lockyer Valley and Ipswich LGAs, recognised as a popular tourist destination for visitors seeking to explore SEQ's natural landscapes and scenic amenity.

The Project has the potential to change local amenity within the study area, during both construction (temporary) and operation (permanent).

During construction, there is potential for pollution (e.g. noise and dust), traffic disruption and changes in visual amenity to impact on local tourism businesses, and the attractiveness of the region to tourists and visitors. These impacts will be temporary whilst construction activities are undertaken, however some tourists may be deterred from visiting the area during these periods. A temporary decline in tourist visitation may impact on tourism based businesses within the area, however any impact on tourism expenditure is likely to be small.

ARTC is undertaking consultation with hotel operators to identify mitigations (such as communication mechanisms, dust controls, noise mitigation measures and amenity offsets) to reduce the impact of the Project on the amenity of local hotels and the attractiveness of the Forest Hill and Gatton town centres to tourists and visitors during construction.

During operation, there is potential for diminished scenic amenity due to the Project's location within the regional landscape and proximity to rural townships. The impact of the Project on the landscape and visual amenity has been assessed in EIS Chapter 10. The assessment identifies that some visitors will see the Project diminishing rural character while others will find interest in the Project structure. As a result, the assessment concludes that a significant decrease in visitation as a result of this impact is unlikely.

Mineral, petroleum and gas resource interests

The permanent disturbance footprint does not cross any areas of mineral resource interest. Accordingly, no resources identified, inferred or implied, related to the activities currently carried out within the existing mining leases are expected to be impacted by the Project.

Local businesses

Construction

There are a number of construction business located within the study area, with a total of 1,024 employing businesses and a further 1,447 non-employing businesses across the Lockyer Valley and Ipswich.⁹ These businesses are likely to be a significant source of services and equipment during the Project's construction.

Services which could potentially be sourced from within local or regional communities include:

- Fencing;
- Electrical installation (excluding rail systems) and instrumentation;
- Rehabilitation and landscaping;
- Cleaning and maintenance of construction and accommodation facilities;
- Trades services;
- Professional services (e.g. human resources); and
- Community adaptation to the rail corridor (e.g. community and economic development services).

Transportation

There are 458 employing businesses across the study area in the Transport, Postal and Warehousing industry, with 300 of these businesses located in Ipswich.¹⁰ During construction, there will be opportunities for the local transportation businesses to bring construction materials to laydown areas and remove waste materials and recyclables from construction compounds.

During operation, the anticipated mode shift from road freight to rail freight is likely to reduce the number of heavy vehicles travelling on the road network, with the potential to impact on levels of trade for local transportation businesses. These impacts may be partially offset by the aforementioned opportunities for investment and increased activity in freight / logistics operations adjacent to Inland Rail.

Local secondary service and supply businesses

The Project is likely to offer opportunities in secondary service and supply industries (such as retail, hospitality and other support services) for businesses in close proximity to the construction footprint. The expansion in construction activity will support additional flow-on demand and additional spending by the construction workforce in the local community; local retail businesses have the potential to benefit from increased trade. ARTC has developed a Sustainable Procurement Strategy which will ensure that local, regional and Indigenous businesses will have opportunities to supply the Project and benefit from increased local demand.

Inland Rail Program impacts

As per the requirements of the ToR, this EIA has focussed on the specific economic impacts resulting from the construction and operation of the Project. However, the assessment acknowledges the role of the Project, and the remaining project links, in collectively delivering the benefits of the Inland Rail Program. In its entirety, Inland Rail will enhance Australia's existing national rail network and serve the interstate freight market. As per the Inland Rail Business Case (2015), the anticipated key economic impacts of the Inland Rail include:

- Lower prices for consumers as a result of lower intercapital freight transport costs, which reduces the cost of living for households.
- Positive direct net economic benefits, driven by improvements in freight productivity, reliability and availability, and benefits to the community from reduced environmental externalities, reduced road congestion and improved safety benefits. The Program is stated to be economically viable with a cost benefit ratio of 1.02 at a 7 percent discount rate (2.62 at a 4 percent discount rate).

⁹ ABS, 2019, Count of Australian Businesses, including Entries and Exits, June 2014 to June 2018, cat. no. 8165.0

¹⁰ ABS, 2019, Count of Australian Businesses, including Entries and Exits, June 2014 to June 2018, cat. no. 8165.0

- Economic growth as increased profits (for industries and producers where intercapital freight is an input or output) and incomes are multiplied through the economy. The Program is anticipated to deliver a net positive impact of \$16 billion on Gross Domestic Product over its 10 year construction period and 50 years of operation.
- Nationally, the Program is also expected to deliver an additional 16,000 jobs at the peak of construction, and an average of 700 additional jobs per annum during operation.
- Enhanced competition between rail and road freight, by providing a credible transport alternative, which will drive further innovation and efficiency.
- Potential to promote the expansion and development of freight precincts around Inland Rail terminals as a result of the benefits from co-location and clustering of industries (as a result of reduced transport costs to warehousing, economies of scale and knowledge-sharing opportunities).

Economic benefits assessment

The results of the economic benefits assessment estimate that the Project is expected to provide a total of \$147.40 million (\$2019) in incremental benefits to the project area¹¹ (at a 7 percent discount rate). This consists of \$112.41 million in freight benefits and \$34.99 million in community benefits (\$2019).

Observing the composition of Project benefits, the largest share of benefits is freight operating cost savings, representing ~49 percent of the total benefits (at a 7 percent discount rate). Freight benefits more broadly (including freight time travel savings, operating cost savings, as well as improved reliability and availability) represent ~76 percent of the total projected benefits.

Reductions in environmental externalities (i.e. air pollution and greenhouse gas emissions) and road decongestion benefits from reduced heavy vehicle kilometres travelled represents ~20 percent of the total benefits (at a 7 percent discount rate). Crash reductions represent a further ~3 percent of the total benefits (at a 7 percent discount rate).

Results of the economic benefits assessment, present value terms (\$2019)

Benefits	Discount Rate		
	4%	7%	10%
Freight Benefits	\$220.22 m	\$112.41 m	\$66.39 m
Travel Time Savings	\$15.16 m	\$7.91 m	\$4.74 m
Operating Cost Savings	\$133.68 m	\$72.36 m	\$44.76 m
Improved Availability	\$55.59 m	\$24.72 m	\$12.80 m
Improved Reliability	\$15.80 m	\$7.42 m	\$4.09 m
Community Benefits	\$64.47 m	\$34.99 m	\$21.69 m
Crash Reduction	\$8.84 m	\$4.80 m	\$2.97 m
Environmental Externalities	\$25.71 m	\$13.96 m	\$8.65 m
Road Decongestion Benefits	\$29.91 m	\$16.23 m	\$10.06 m
TOTAL BENEFITS	\$284.69 m	\$147.40 m	\$88.08 m

¹¹ The transport network impacted by these freight movements represent the project area for the purposes of the economic benefits assessment. Benefits attributed to the project area will accrue to users of the transport network and to non-users within the surrounding area who will be impacted by environmental externalities resulting from transportation.

Source: KPMG

Cost Benefit Analysis: Inland Rail Program Business Case

As detailed above, due to the nature of the incremental assessment approach adopted for this EIA, a Project-specific CBA has not been undertaken as the results will not capture the full economic impact that is expected to be delivered upon completion of the Inland Rail Program. The total Program is anticipated to deliver benefits above the sum of the individual benefits of each individual link.

The results of the economic analysis undertaken for the full Inland Rail Program, as presented in the Inland Rail Business Case (2015), are provided in the table below. As shown, the construction and operation of Inland Rail is estimated to deliver positive net economic benefits with a cost benefit ratio above one.

Economic appraisal results for Inland Rail (\$2015)

	Net Present Value	Cost Benefit Ratio
PV at 4% Discount Rate	\$13,928 m	2.62
PV at 7% Discount Rate	\$116.1 m	1.02

Source: Inland Rail Business Case 2015

Note: Assumes complementary investment on the QR network (Western Line and Brisbane metropolitan network).

Regional impact analysis

A regional impact analysis has been undertaken to highlight the economic impacts of the Project on the regional, state and national economy using an equilibrium modelling framework. The regional economy is represented by the Toowoomba and Greater Brisbane labour market regions.

A CGE model (KPMG-SD) was developed to examine the direct and indirect (flow-on) effects arising from the construction of the Project on the broader economy. The modelling framework assesses the direct and indirect effects of significant net government expenditure on traditional measures of regional economic performance such as Gross Regional product (GRP), Gross State Product (GSP) and Gross Domestic Product (GDP). KPMG-SD also provides estimates of employment supported through these investment shocks, noting that estimates of employment produced by the model reflect the direct and indirect jobs generated across the economy.¹²

The key impacts of the Project on the Toowoomba and Greater Brisbane regions during the construction phase are summarised in the table below

Direct and indirect economic impacts of the Project on the regional economic catchment, construction phase

Measure	Toowoomba SA4		Greater Brisbane GCCSA	
	Slack Labour Markets	Tight Labour Markets	Slack Labour Markets	Tight Labour Markets
Additional Real GRP (\$2018-19)	\$235 m	\$81 m	\$81 m	\$29 m
Annual average annual direct and indirect employment (persons)	337	73	108	21

Source: KPMG

Recent labour market trends can be used to inform workforce capacity and capability within the local region. In Greater Brisbane, over the four quarters ending in the December quarter 2019, the unemployment rate averaged

¹² As compared to the direct jobs determined through the indicative construction schedule and component activities as described in the workforce profile.

6.1 percent¹³, and the participation rate averaged 78.6 percent over the 12 months ending in December 2019.¹⁴ Labour market conditions in Greater Brisbane appear to have been stable with the unemployment rate within the range of 6.0 – 6.2 percent since the December quarter 2018 and the participation rate staying above 78.2 percent since the start of 2019. Sustained high unemployment rates coupled with an upward trend in participation rates suggests that the labour market in the Greater Brisbane area is not stretched.

The labour market conditions in Toowoomba also suggest a degree of slackness based on data as at December 2019. Although the average annual unemployment rate declined from 5.5 percent in the December quarter of 2018 to 4.8 percent in the December quarter of 2019,¹⁵ the total number of employed persons has fallen by 16.6 percent from the corresponding period in 2018.¹⁶ The rolling 12-month average participation rate in Toowoomba has been declining since the start of 2019. As at December 2019, it was down from its peak in January 2019 of 78.5 percent to 74.9 percent.¹⁷ The labour market indicators suggest that economic activity has been declining in the region and there has been a build-up of a potential pool of working-age people who are not currently in the labour force. The career and training opportunities offered by the Project can help re-skill or up-skill this group of potential workers. Official labour force data at this level of regional granularity is quite volatile and it is important to consider these statistics in a broader context, including with regard to labour market conditions at the state and national levels.

At the time of writing the latest available regional labour market statistics in the Small Area Labour Markets (SALM) publication contained data to December 2019. More recent macro-economic data suggest that labour market conditions may have deteriorated further and the economic shock associated with the 2020 quarter 2 market conditions has added considerable downside risks to the broader economy in the short to medium term. The National Accounts data for Quarter 4, 2019 show domestic demand has remained soft, even before recent natural disaster events (i.e., bushfires and floods) and the global coronavirus outbreak. Economic conditions are anticipated to deteriorate markedly in the short to medium run, increasing the likelihood that the national and regional labour markets will be consistent with the 'slack' labour market scenario during the construction phase.

The possibility of some tightness in the labour market cannot be completely dismissed. If the government's health and economic policy responses to the 2020 quarter 2 market conditions are highly effective the economy may grow much faster than expected resulting in significantly more activity in the construction sector than anticipated. For example, the government may seek to bring forward projects to stimulate the economy. If this transpires then labour market conditions may tend towards somewhere between the 'slack' and 'tight' scenarios.

Cumulative economic impacts

The cumulative economic impact assessment refers to the potential impact of cumulative stimulus to the economy resulting from the construction of existing or planned projects within or adjacent to the study area. Cumulative impacts may result from the spatial and / or temporal interaction between these projects.

For the purposes of this report, the cumulative impact assessment has two components:

- **Inland Rail Program in QLD**

A quantitative assessment of the cumulative macroeconomic impact of Inland Rail on the economy, resulting from the construction of the QLD sections of the Inland Rail Program.

There are five sections of Inland Rail which fall in QLD, including Border to Gowrie (B2G), Gowrie to Helidon (G2H), H2C, Calvert to Kagaru (C2K) and Kagaru to Acacia Ridge and Bromelton (K2ARB).

- **Broader cumulative assessment**

¹³ Based on Australian Government's Small Area Labour Markets (SALM) publication, September 2019

¹⁴ Participation rate of working-age population 15 – 64 years; ABS, Labour Force Survey 2020, cat. no. 6291.0. Released 27 February 2020.

¹⁵ Based on Australian Government's Small Area Labour Markets (SALM) publication, September 2019

¹⁶ Based on ABS, Labour Force Survey 2020, cat. no. 6291.0. Released 27 February 2020.

¹⁷ Participation rate of working-age population 15 – 64 years; ABS, Labour Force Survey 2020, cat. no. 6291.0. Released 27 February 2020.

A qualitative assessment of cumulative impact of state significant projects (that have been identified by ARTC as having a relationship to the Project - refer Appendix A) on local and regional labour markets, the supply chain and local businesses.

Inland Rail Program in QLD

The construction phases of the QLD sections of Inland Rail have been jointly simulated to analyse the cumulative economic impacts of these projects. Table 20 and Source: KPMG

Table 21 summarise the cumulative macroeconomic impacts of the QLD sections of the Inland Rail Program. Under the assumption of slack labour markets the incremental economic impacts of the QLD sections include an increase in real GSP of \$1.75 billion (measured in \$2019) and an increase in the average number of jobs over the period 2020 to 2025 of 2,059 jobs per year. If labour markets are tight then the incremental benefits are smaller with real GSP increasing by \$0.83 billion and the average annual number of jobs increasing by 485 over the same period.

The Project traverses the Greater Brisbane and Toowoomba regions. The other sections of Inland Rail that are also located in the Greater Brisbane and Toowoomba regions include Calvert to Kagaru (Greater Brisbane), Kagaru to Acacia Ridge (Greater Brisbane), and Gowrie to Helidon (Toowoomba). Construction activities related to these sections will directly impact the Greater Brisbane and Toowoomba economies. The remaining QLD section of Inland Rail - Border to Gowrie (B2G) - is located in the Darling Downs and Maranoa region, which will impact Greater Brisbane and Toowoomba indirectly.

The previous section reported results of simulations when the Project was considered in isolation. In that context the direct and indirect increment to jobs in the Greater Brisbane and Toowoomba economies was estimated to be 73 and 337 jobs per year respectively under the assumption of slack labour markets, and 21 and 108 jobs per year respectively under the assumption of tight labour markets. When all the QLD projects are considered jointly, the analogous increment to jobs (direct and indirect) in Greater Brisbane and Toowoomba increases to 703 and 1,071 per year respectively under the assumption of slack labour markets and 153 and 258 per year respectively under the assumption of tight labour markets.

The increment to jobs in Greater Brisbane peaks in 2022 at 1,610 and 370 jobs under slack and tight labour market conditions respectively; the jobs increment in Toowoomba also peaks in 2022 at 2,106 and 523 under the alternative labour market assumptions. As discussed in the regional economic analysis, the labour market conditions expected to prevail in the Greater Brisbane and Toowoomba economies over the period 2020 to 2025 will be most consistent with those assumed in the 'slack' labour market scenarios which have been simulated. KPMG's assessment of the labour market conditions in other regional economies in QLD over the Inland Rail construction phase period is that they will generally be much closer to the 'slack' than to the 'tight' characterisation.

Broader cumulative assessment

The concurrent construction of interacting projects will increase the demand for labour in the local and regional economy, particularly for workers with trade and construction skills / knowledge. The demand for construction workers within a similar timeframe will lead to cumulative demands on construction labour, not only within the local and regional economy, but also across QLD, and potentially nationally.

The results of the regional economic impact assessment indicate that it is reasonable to assume that the regional labour market will have the capacity to supply a portion of the workforce requirements of the Project, without major disruption. However, these conditions may change in the context of cumulative labour market demand. Prior to the change in 2020 quarter 2 market conditions, the major infrastructure projects in the adjacent and surrounding areas, including those associated with Inland Rail, had the potential to put some pressure on labour markets if inopportune scheduling resulted in cumulative and competing demand for trades and construction labour. However, the overall labour demands of the various infrastructure projects expected to be constructed were modest and that scheduling could be optimised to minimise market impact. The prevailing trends in the Toowoomba and Greater Brisbane labour market, and the ability of workers to mobilise to project locations, suggested that the risks of labour market disruption were limited. In the current environment, this risk has now been further reduced.

There may be benefits from having additional infrastructure projects in the adjacent and surrounding areas around the same time as the Project. These benefits come in the form of lowered mobilisation costs and

transfer of labour experience and skills to projects, particularly those constructed in the period leading up to, and the period following, the Project's construction phase.

Mitigation and management strategies

The Project will result in a number of economic impacts, with potential economic benefits realised at a local and regional level. In order to maximise the positive outcomes of the Project, a number of strategies to avoid, reduce or mitigate the negative economic impacts, and enhance and facilitate the capture of positive impacts have been proposed by ARTC.

A Social Impact Management Plan (SIMP) has been developed which outlines the objectives, outcomes and performance measures required to manage the social and socio-economic impacts of the Project, and enhance the Project benefits and opportunities. There are two sub-plans which are directly relevant to the economic impacts identified and assessed in this EIA – Workforce Management and Local Business and Industry Participation.

There are a number of economic impacts identified within this EIA which are not addressed within the SIMP. Where these impacts cannot be avoided, a range of measures have been proposed by ARTC to carefully manage and mitigate these impacts. For example, measures include working with individual land owners to develop suitable solutions based on individual farm management practices, rehabilitating land as close as possible to pre-construction conditions, and consulting with tourism associations to develop a strategy to ensure that generalised impacts on tourism values are reduced wherever possible.

Conclusions

Local and regional employment, business and industry impacts

At a local level, the Project will support regional economic development through opportunities for local and regional employment, businesses and industries:

- The Project offers opportunities to encourage, develop and grow Indigenous, local, and regional businesses through the supply of resources and materials for the construction and operation of the Project (e.g. borrow and ballast materials, fencing, electrical installation (excluding rail systems) and instrumentation, rehabilitation and landscaping, cleaning and maintenance of construction and accommodation facilities)
- Opportunities in secondary service and supply industries (such as retail, hospitality and other support services) for businesses in close proximity to the construction footprint. The expansion in construction activity is also likely support additional flow-on demand and additional spending by the construction workforce in the local community.
- The Project is a critical link in the broader Inland Rail Program. As both a greenfield and brownfield development, the Project comprises new dual gauge track to create a more direct rail freight corridor for freight operators. As a critical link of the broader Inland Rail Program, the Project offers opportunities to support the local agricultural industry, by driving savings in freight costs, improving market access, and reducing the volume of freight vehicles on the region's road network.

The Project alignment has been designed to minimise impacts to local business and industry, however the Project may result in the disruption to the agricultural and tourism industries through:

- The loss of agricultural land (through disturbance, acquisition, or sterilisation by the permanent disturbance footprint), disruption to farm management, or changes in accessibility or connectivity to market. This may negatively impact on the productive capacity and total economic value add from the local agricultural industry. Based on the proportion of productive agricultural land lost, it is estimated that the Project could

result in a loss of \$17,274 (value foregone) in gross agricultural production per year.¹⁸ ARTC will work with individual land owners to develop suitable management solutions based on individual farm management practices to mitigate and manage these impacts; and

- Changes to the amenity of, or connectivity to, local attractions. The Social Impact Assessment (EIS Appendix Q) assessment concludes that a significant decrease in visitation as a result of this impact is unlikely. ARTC will work with tourism associations to ensure that generalised impacts on tourism values are reduced wherever possible.

Economic benefits assessment

The economic benefits assessment estimates that the Project is expected to provide a total of \$147.4 million (\$2019) in incremental benefits (at a 7 percent discount rate). These benefits result from improvements in freight productivity, reliability and availability, and benefits to the community from crash reductions, reduced environmental externalities and road decongestion benefits.

Regional impact analysis

The Project will promote regional economic growth across the Toowoomba and Greater Brisbane regions. Using recent labour market trends and projected construction sector activity to inform workforce capacity and capability within the local region, it has been concluded that it is likely that the labour market conditions that will prevail during the construction phase of the Project will most likely be closer to those characterised by the slack labour market scenario. Under this scenario, over the construction phase, real Gross Regional Product is projected to be \$235 million higher than the baseline level in Toowoomba and \$81 million higher in Greater Brisbane.

Under a slack labour market scenario, the Project is also expected to deliver an additional 337 jobs per year in Toowoomba and 108 jobs per year in Greater Brisbane over the construction period.

The possibility of some tightness in the labour market cannot be completely dismissed. If the government's health and economic policy responses to the 2020 quarter 2 market conditions are highly effective the economy may grow much faster than expected resulting in significantly more activity in the construction sector than anticipated. For example, the government may seek to bring forward projects to stimulate the economy. If this transpires then labour market conditions may tend towards somewhere between the 'slack' and 'tight' scenarios.

Cumulative regional impact analysis

Under the assumption of slack labour markets the incremental economic impacts of the QLD sections include an increase in real GSP of \$1.75 billion (measured in 2019 dollars) and an increase in the average number of jobs over the period 2020 to 2025 of 2,059 jobs per year. If labour markets are tight then the incremental benefits are smaller with real GSP increasing by \$0.83 billion and the average number of jobs increasing by 485 per year over the same period.

The results of the regional economic impact assessment indicate that it is reasonable to assume that the regional labour market will have the capacity to supply a portion of the workforce requirements of the Project, without major disruption. However, these conditions may change in the context of cumulative labour market demand. Prior to the change in 2020 quarter 2 market conditions, the major infrastructure projects in the adjacent and surrounding areas, including those associated with Inland Rail, had the potential to put some pressure on labour markets if inopportune scheduling resulted in cumulative and competing demand for trades and construction labour. However, the overall labour demands of the various infrastructure projects expected to be constructed were modest and that scheduling could be optimised to minimise market impact. The prevailing trends in the Toowoomba and Greater Brisbane labour market, and the ability of workers to mobilise to project locations, suggested that the risks of labour market disruption were limited. In the current environment, this risk has now been further reduced.

¹⁸ This value is an indicative estimate only - it does not consider the value of individual commodities produced per lot or the value-add activities which contribute to the gross value of agricultural production in the region. An assessment of the composition of agricultural production by lot and commodity may be undertaken following detail design.

The expansion in construction activity and regional employment is also likely to increase demand for a range of local infrastructure and services, including in the construction supply chain and for local retail and hospitality businesses.

Impact management

ARTC are committed to enhancing the economic benefits of the Project while avoiding, mitigating or managing any adverse economic impacts. Accordingly, they have developed a SIMP which outlines the objectives, outcomes and performance measures required to manage the social and socio-economic impacts of the Project, and enhance the Project benefits and opportunities. There are a number of economic impacts identified within this EIA which are not addressed within the SIMP. Where these impacts cannot be avoided, a range of measures have been proposed by ARTC to carefully manage and mitigate these impacts. For example, measures include working with individual land owners to develop suitable solutions based on individual farm management practices, rehabilitating land as close as possible to pre-construction conditions, and consulting with tourism associations to develop a strategy to ensure that generalised impacts on tourism values are reduced wherever possible.

1 Introduction

The following economic impact assessment (EIA) report has been prepared to identify potential economic impacts of the proposed Helidon to Calvert (the Project) link of the Inland Rail. Inland Rail is a direct interstate freight rail corridor, approximately 1,700 kilometres (km), between Melbourne and Brisbane via central-west New South Wales (NSW) and Toowoomba, Queensland (QLD).

Inland Rail will enhance Australia's existing national rail network and serve the interstate freight market. The primary economic objective of Inland Rail is to promote economic growth by improving the efficiency of transport for Australia's exports, and increasing the productivity of domestic supply chains. Australian Rail Track Corporation Ltd (ARTC) has sought approval to construct and operate Inland Rail.

Since the completion of the economic modelling detailed in this report there have been a series of changes to the Project and the Project environment. This includes changes to the Inland Rail construction program and the economic shock associated with the 2020 quarter 2 market conditions which are not reflected in the economic analysis or economic impact assessment contained within this report at the request of ARTC.

1.1 Legislation

The purpose of this EIA is to form part of an Environmental Impact Statement (EIS) being prepared by ARTC under the *State Development and Public Works Organisation Act 1971* (SDPWO Act) and the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (Cwlth)(EPBC Act). The Commonwealth Minister for the Environment and Energy determined that the Project is a 'controlled action' under the EPBC Act on 17 March 2017.

The final Terms of Reference (ToR) were issued on 5 October 2017. The following assessment addresses the economic specific information requirements of Section 5.1, 11.153 and 11.150 of the ToR.

Table 1: EIA ToR Information Requirements

Section 11.153: EIS Economic Objectives	
The construction and operation of the project should aim to:	
(a) avoid or mitigate adverse economic impacts arising from the project	
(b) capitalise on opportunities potentially available for capable local industries and communities	
(c) create a net economic benefit to the region and State.	
Information Requirements	EIA Section
Identify the economic impacts of the project on the local and regional area and the State.	Section 4, Section 5, and Section 6
Estimate the costs and benefits and economic impacts of the proposal using both regional impact analysis and cost-benefit analysis. The analysis should be consistent with the Coordinator-General's Economic impact assessment guideline (April 2017).	Section 5.4 and 5.5

Table 2: Other relevant ToR Information Requirements

Information Requirements	EIA Section
<p>5.1</p> <p>The objectives of the EIS are to ensure that all relevant environmental, social and economic impacts of the project are identified and assessed, and to recommend mitigation measures to avoid or minimise adverse impacts. The EIS should demonstrate that the project is based on sound environmental principles and practices.</p>	<p>Section 5 and Section 7</p> <p>(These requirements are addressed through remainder of the EIS)</p>
<p>11.150</p> <p>The impact assessment should also evaluate and discuss the potential cumulative social impacts resulting from the proposed project in combination with other existing major projects and/or developments and those which are progressing through planning and approval processes (where public information is available) within the SIA study area. Key issues assessed should include:</p> <p>(a) population</p> <p>(b) workforce (construction and operation)</p> <p>(c) workforce accommodation</p> <p>(d) local and regional housing markets</p> <p>(e) use of and access to community infrastructure, services and facilities (including social and health services and facilities).</p>	<p>(b) addressed in Section 6</p> <p>(other requirements addressed through the Social Impact Assessment)</p>

1.2 Guidelines

The following EIA has been undertaken in accordance with the guidance provided by the Coordinator-General's Economic Impact Assessment Guideline (April 2017).

The guideline state that the 'EIA must estimate the project's economic impacts and identify measures to manage any negative impacts and capture the economic opportunities generated by the project. It must:

- include both a description of the economic environment with and without the project;
- use standardised methodologies and information;
- make all assumptions transparent; and
- propose targeted impact management measures.

The EIA must meet the requirements of the TOR and be consistent with the social impact assessment and other elements of the EIS. The EIA must be developed in consultation with key stakeholders such as local governments, industry bodies and local businesses.'

1.3 Local and regional policy and planning

There are a number of strategic policy and planning documents that align to the objectives and intent of the development of the Project. These documents are discussed below.

Australian Infrastructure Plan 2016

The Australian Infrastructure Plan (the Plan) was developed by Infrastructure Australia as a long-term plan for infrastructure reform and investment in Australia. The Plan is guided by four headline aspirations:

- Productive cities, productive regions
- Efficient infrastructure markets
- Sustainable and equitable infrastructure
- Better decisions and better delivery.

Within the ‘productive cities, productive regions’ aspiration, the Plan recognises that at a national level the efficient movement of freight into, out of and across Australia is critical to the nation’s ongoing productivity growth and competitiveness. The Plan identifies a number of challenges facing the freight network and supply chains, including constraints such as missing links, pinch points, operational restrictions, and first and last mile access challenges.

The Plan highlights the importance of the Melbourne to Brisbane freight corridor in supporting population, production and employment precincts. Inland Rail will improve the efficiency, effectiveness and safety of freight movements travelling along this corridor. As both a greenfield and brownfield development, the Project is a critical link within Inland Rail and will contribute to benefits being realised, including improvements to the productivity and competitiveness of Australia’s freight sector.

QLD Freight Strategy – Advancing Freight in QLD

The QLD Freight Strategy (the Strategy) sets a shared vision for the state’s freight system through a series of commitments that have the aim of guiding policy, planning and investment decision-making over the next ten years. The vision for QLD is ‘an integrated, resilient and safe freight system that supports the economy and community’.

The Strategy makes a commitment to optimise existing freight infrastructure and target investment towards creating economic opportunities. The Strategy also acknowledges the importance of smarter connectivity and access, identifying the role of competitive rail freight services in promoting the mode shift for freight from road to rail. As part of Inland Rail Program, the development of the Project supports the strategic intent and direction of the Strategy, by improving the efficiency of rail freight and subsequently increasing the productivity of regional and state supply-chains and industry.

South East QLD Regional Plan 2017 (Shaping SEQ)

Shaping SEQ (South East QLD Regional Plan, or the Plan) is the QLD Government’s plan to guide the future development of the South East QLD (SEQ) region. The Plan aims to “set the direction for sustainability, global competitiveness and high-quality living”. The planning framework for the next 25 years is based off five strategic goals; grow, prosper, connect, sustain and live.

In particular, the Plan addresses ‘prosper’ through a focus on regional economic clusters such as the Western Gateway and South West Industrial Corridor (including Ipswich), which will be further enabled by the development of Inland Rail (including the Project, which is a critical Inland Rail link). The Plan recognises the role of Inland Rail in unlocking opportunities for the greater intensification and consolidation of industrial activities (and rail-dependent industries) within the western subregion.

Additionally, the Plan recognises the role of Inland Rail in improving national freight network connections, including links to the port of Brisbane. This will support efficient freight movements, align with the Plan’s goal of ‘connection’ and contribute to economic development throughout SEQ.

DRAFT South East QLD Regional Transport Plan 2018

The draft SEQ Regional Transport Plan (SEQ RTP) outlines a shared direction for shaping the region’s transport system over the next 15 years. The SEQ RTP sets out regional transport priorities and actions for developing the transport system in a way that supports regional communities, growth and productivity. The SEQ RTP details the economic importance of the relationship between infrastructure, transport and land use.

The SEQ RTP recognises the vital role of SEQ's freight network in supporting the future growth of SEQ's export orientated industries to support a globalised economy. Inland Rail has been identified as an opportunity to improve the efficiency of SEQ's east-west freight link, by improving the availability of rail freight. Specifically, the Plan highlights the potential for Inland Rail to provide convenient access for freight to the Bromelton State Development Area and intermodal terminal. The Project is a critical link to deliver Inland Rail through QLD.

Overall, the Project, as part of Inland Rail, will increase the attractiveness and competitiveness of rail freight, consistent with the planning intent of the SEQ RTP.

SEQ Regional Freight Strategy 2007-2012

The SEQ Regional Freight Strategy (the Strategy) aims to "facilitate freight moving efficiently across the transport network", enhancing economic development, safety, quality of life and environmental sustainability. While the Strategy is no longer current, the document has not been superseded at the time of writing.

The Strategy acknowledges freight as an important issue for the region. The efficient movement of freight listed as crucial to industry and commercial productivity. Inland Rail is noted as having the potential to influence future freight movements and the development of the SEQ freight network.

The Strategy acknowledges the potential for Inland Rail to encourage mode shift from road freight to rail freight, in addition to opening up interstate rail freight movements entering SEQ from the west. The Project will play an important role in moving freight into SEQ from the west, and is consistent with the Strategy's intent.

Advance Ipswich (2015)

Advance Ipswich (the Plan) provides a shared vision for the future of Ipswich, covering the social, economic and environmental priorities for the area. There are five key themes included in the Plan, two which align to the outcomes of the Project and Inland Rail - 'Strengthening our [Ipswich's] Local Economy and Building Prosperity (Jobs)' and 'Managing Growth and Delivering Key Infrastructure'.

From an economic development perspective, the region is focused on promoting economic activity and employment within the regionally significant business and industry areas at Swanbank/New Chum and Ebenezer/Willowbank. By offering opportunities to better link the rail freight network and the proposed intermodal freight terminal and industrial areas at Ebenezer, the development of Inland Rail is consistent with the Plan's intent to support the region's transport, logistics and manufacturing industries within these areas. In line with the Plan's key themes, improved transport accessibility has the potential to increase the productive output of local industries and business, increasing opportunities for local employment and economic growth.

Ipswich and West Moreton Regional Committee – Regional Roadmap 2016-2020

The Australian Government along with Regional Development Australia established a network of committees to support and broker economic development opportunities for specific regions. One of the committees established was for the Ipswich and West Moreton Region. The committee's vision is that by '2024, the Ipswich and West Moreton Region has been able to successfully negotiate a balance between protection of natural assets and facilitating economic growth'.

There are five economic development themes under the Regional Roadmap which will support various projects and initiatives. Investing in critical infrastructure needed to support growth in a large region of rural through to urban areas has been identified as one key theme. The Regional Roadmap recognises that the development of an inland freight rail line will increase the importance of the Region with its distribution channels, which will help to attract new businesses to the area on a long term basis. Subsequently, a key nominated project for growth in the region identified by the Committee is Inland Rail.

City of Ipswich Transport Plan (iGo) (2015)

The City of Ipswich Transport Plan (iGo) outlines the Ipswich City Council's aspirations to advance Ipswich's transport system, and guide future investment decision-making. iGo highlights the importance of efficient and effective freight movements in supporting industry development and sustainable economic growth. Specifically, the Plan outlines the potential for improved freight movements to unlock industrial development in Ipswich within areas such as Carole Park, Wulkuraka, Redbank, Dinmore, Bundamba, Swanbank and Ebenezer.

iGo recognises the importance of Inland Rail, and 'continuing the planning and development of Inland Rail' which is listed as one of the key actions of the Plan. Specifically, the Project (as part of Inland Rail) has the potential to increase the accessibility and efficiency of rail freight. Inland Rail may unlock opportunities for potential connections to the proposed logistics hubs and industrial developments at Ebenezer (Ipswich) and Bromelton (Scenic Rim) via inter-modal freight terminals. Overall, the Project has the potential to support economic development and jobs growth in Ipswich.

Lockyer Economic Development Plan 2018 – 2022

The Lockyer Economic Development Plan (the Plan) outlines the key development and investment opportunities to advance economic development in the Lockyer Valley region. Opportunities listed that are partly or fully fulfilled by Inland Rail include opportunities for major economic development initiatives and industry growth.

The Plan hopes to continue growing Lockyer as a major packaging, distribution, logistics and freight distribution centre, for not only local producers but those from throughout QLD and northern NSW. Additionally, the Plan recognises the potential for stronger intermodal freight options that can be fulfilled by Inland Rail, and aims to investigate the need for supporting infrastructure.

Lockyer – Our Valley, Our Vision Community Plan 2017 – 2027

Lockyer – Our Valley, Our Vision' Community Plan 2027 (the Plan) details the community's vision for the Lockyer Valley to the year 2027. The Plan outlines the region's proposed future direction across seven themes, and details a number of strategic objectives which underpin this direction.

There are three strategic objectives which align to the Project, and the economic development of the region:

- Our rural land provides sustainable economic development.
- We can access infrastructure to enable business operation and growth.
- We promote sustainable economic development.

As one of the top ten most fertile farming areas in the world, the Lockyer Valley places a strong emphasis on agricultural development. The Project, as part of Inland Rail, will enable the region's transport network to continue to facilitate the movement of agricultural goods between QLD's south-east and west, enabling access to domestic and international markets through strategic ports along the east coast. The Project also has the potential to provide supply chain benefits and cost savings for freight companies and producers. Improvements to freight efficiency will improve the productivity of local industry and businesses, promoting employment and economic development.

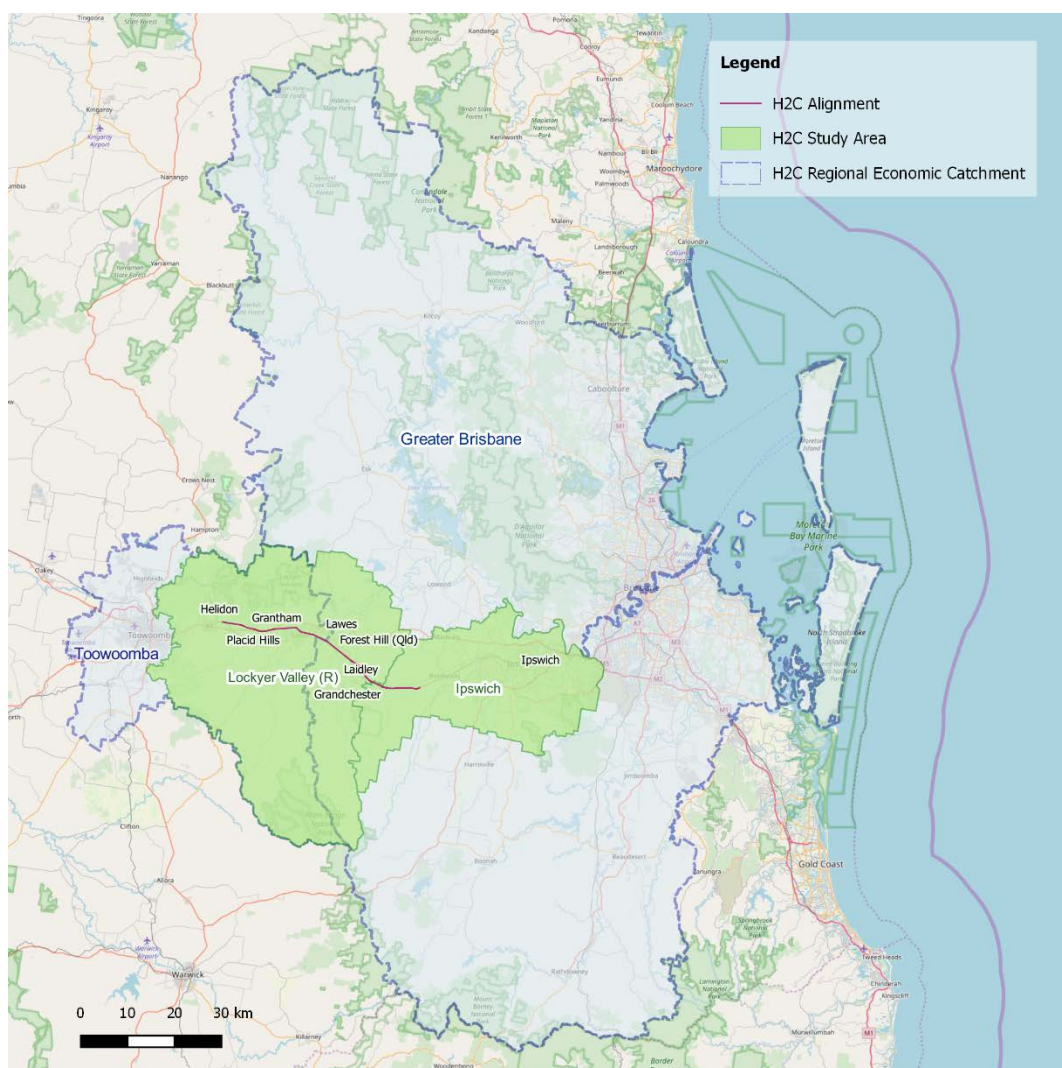
2 Methodology

2.1 Study area

The Project traverses two local government areas (LGAs) – Lockyer Valley and Ipswich. These LGA boundaries have been utilised as the **study area** for assessing the local economic impacts of the Project, reflecting a local catchment for workers and economic activity.

For the purposes of the regional impact analysis, the **regional economic catchment area** is defined as the Australian Bureau of Statistics (ABS) labour market region (Statistical Area Level 4 (SA4) or Greater Capital City Statistical Area (GCCSA)) boundaries of the Australian Statistical Geography Standard that captures the integrated regional economy within which the Project is located. The Project crosses two labour market regions, the Toowoomba region and the Greater Brisbane region; 77 percent of the Project lies in the Toowoomba region and the remainder in the Greater Brisbane region. The economic assessment also considers the broader impact of the Project at a state and national level.

Figure 1: Project study area and regional economic catchment



Source: ARTC

Importantly, this EIA acknowledges the potential impacts of the Project on stakeholders within the study area and regional economic catchment, in addition to the surrounding areas, particularly at the Project extents.

There are a number of population centres that are located within close proximity to the Project including Helidon, Grantham, Placid Hills, Gatton, Lawes, Forest Hill, Laidley, Grandchester, Calvert and Ipswich. As a result of their proximity to the Project, these communities may be impacted during the construction or operation of the Project. These population centres align with ARTC's local business and industry participation catchment, as they are located within 125 km of the Project alignment.

Helidon

Located within the Lockyer Valley LGA, Helidon is approximately 100 km west of Brisbane, 20 km east of Toowoomba and north of the Project alignment. The Gatton Shire Council Planning Scheme designates the area as a rural agricultural zone with predominant land uses in the area being grazing native vegetation, and conservation and natural environments, with some residential, mining and industrial areas. Helidon has a population of approximately 1,059 persons.¹⁹

Grantham

Grantham is located within the Lockyer Valley LGA, approximately 30 km east of Toowoomba and 100 km west of Brisbane. The town is located north of the Project alignment. Grantham is surrounded by premier agricultural land, and can be accessed via the Warrego Highway. The Grantham area is entirely designated as a rural production and regional landscape area. The town has a population of 634 people.

Placid Hills

Located within the Lockyer Valley LGA, Placid Hills is a rural-residential locality on the outskirts of the town of Gatton, approximately 30 km east of Toowoomba and 100 km west of Brisbane. The area's land use is predominantly rural-residential with the floodplains of the Lockyer Creek supporting irrigated agricultural and some areas of grazing native vegetation. Placid Hills is south of the Project and can be accessed by Gatton-Helidon Road. The town has a population of 832 people.

Gatton

Located within the Lockyer Valley LGA, Gatton is considered the administrative centre of the Lockyer Valley. The town is situated approximately 86 km west of Brisbane and 37 km east of Toowoomba connected east to west by the Warrego Highway. Gatton is situated on the Project alignment. The township has defined commercial and residential precincts, with grazing native vegetation and irrigated agricultural uses dominating the outer margins of the township. Gatton has a population of 7,101 persons.

Lawes

Lawes is located within the Locker Valley LGA approximately 5 km east of Gatton and 40 km east of Toowoomba, and is home to the University of Queensland Gatton Campus. The town can be accessed via the Warrego Highway and is north of the Project alignment. Lawes has a population of 328 persons.

Forest Hill

Forest Hill is a town located approximately 80 km west of Brisbane and 50 km east of Toowoomba in the Lockyer Valley LGA. The town is part of the Cobb & Co tourist route, 5 km south of the Warrego Highway and the existing Main Line runs through the centre of the town. The town centre is urban residential with some small businesses and the surrounding area is defined as rural agricultural land. The town is located north of the Project alignment. Forest Hill has a population of 968 persons.

Laidley

Located within the Lockyer Valley LGA, Laidley lies 83 km west of Brisbane and 47 km west of Ipswich, adjacent to the Warrego Highway. Laidley is located south of the Inland Rail alignment. It has long been regarded as QLD's country garden with production of fruit and vegetables dominating local industry. Outside of the township, land use is predominantly irrigated agriculture with some limited areas of mining / quarrying, manufacturing and land in transition. Laidley has a population of 3,808 persons.

¹⁹ ABS, 2016 Census of Population and Housing

Grandchester

Located in the Ipswich LGA, the town of Grandchester is approximately 76 km west of Brisbane. Situated south of the Project alignment, access to the town is provided via Rosewood Laidley Road. Land use is predominantly grazing native pastures and rural residential, and the Main railway line runs directly through the town. Grandchester has a population of 444 persons.

Calvert

The town of Calvert is located in the Ipswich LGA and is located 26 km south east of Gatton and 25 km south west of the Ipswich City centre. The town is located approximately 3 km south west of the Project alignment and can be accessed via Rosewood Laidley Road. The primary land use for the area is grazing modified pasture with some areas of irrigated cropping and seasonal horticulture. Residential lots have been established in the township area which has been subject to low density development. Calvert has a population of 313 persons.

Ipswich

Located within the Ipswich LGA, Ipswich lies 40 km west of Brisbane and is situated on the Bremer River. Ipswich is renowned for its architectural, natural and cultural heritage. It is connected to other major townships and cities via the Warrego highway to the west and the Ipswich Motorway to the east. Ipswich is located to the east of the Project alignment. Ipswich is considered an urban area with a population of 2,459 people.

2.2 Assessment methodology

The EIA has been developed according to the ToR and Coordinator-General's economic impact assessment guideline. Accordingly, the approach adopted for this report is reflective of the recognised industry approach to undertaking an EIA. It represents a whole of life approach, comprising an evaluation of the economic impacts and benefits generated by the Project across both the construction and operational phases. Further, the report considers the cumulative impacts and benefits that will be realised due to the development and operation of adjacent and complementary projects.

Specifically, this assessment:

- Establishes the **existing economic environment, and local and regional context** to understand the local economic context and form the basis to measure the economic impacts;
- Identifies potential **economic benefits** and impacts on affected local and regional communities, industries and businesses. This will be drawn from local community consultation and industry engagement undertaken by ARTC, evaluation of publically available information, and the outputs from the Social Impact Assessment, economic benefits assessment and regional impact analysis;
- Assesses the projected economic benefits of the Project, including the basis for their estimation through a detailed economic benefits assessment. The outcomes of the proposed Project-specific analysis will be contextualised against the results of the **cost benefit analysis (CBA)** undertaken for the entire Inland Rail Program, as per the Inland Rail Business Case (2015);
- Assesses the economic significance of the Project on the regional, state and national economies through **computable general equilibrium modelling (CGE)**;
- Evaluates the potential **cumulative impacts** on local and regional economies resulting from the construction and operation of related projects, including adjacent Inland Rail project links; and
- Proposes measures to **enhance** economic benefits and to **avoid, mitigate or manage** adverse economic impacts.

2.2.1 Existing economic environment

The existing economic environment section describes the local context and existing economic profile of the study area and provides a baseline for assessment of the potential economic impacts of the Project. The economic baseline includes key socio-economic characteristics and identifies existing economic activities in the study area.

This section has been developed based on data and information sourced from:

- Strategic economic development, transport and community plans for the study area and regional economic catchment (refer Section 1.3)
- ABS 2016 Census of Population and Housing
- ABS Regional Population Growth, 182018-19
- QLD Government Statisticians Office 2018 edition population projections
- ABS, Labour Force Survey, Australia, December 2019
- Australian Government's Small Area Labour Markets publication, December 2019.

2.2.2 Local economic impact assessment

The local economic impact assessment section describes potential economic impacts resulting from the Project on local business, industry and the community. This assessment has been developed based on:

- Consultation with the local community;
- Outcomes of the Social Impact Assessment (refer Chapter 16: Social) process to identify local and regional business capacity, aspirations and initiatives; and
- Outcomes of the Land Use and Tenure Assessment (refer Chapter 8: Land use and tenure) to identify local and regional impacts on industry resulting from land use changes.

2.2.3 Economic benefits assessment

A large proportion of the benefits of Inland Rail stem from improving the connection between regional producers and markets; through to both domestic markets in cities and international markets through ports. An incremental CBA approach assessing each link of Inland Rail individually and in isolation will not capture the full impact that is expected to be delivered upon completion of the entire Melbourne to Brisbane connection. Put simply, the benefits of Inland Rail will outweigh the sum of the individual projects.

Accordingly, to meet the requirements of the ToR, there are two components to the assessment:

1. Evaluation of the likely benefits of the discrete Project (economic benefits assessment). This analysis assesses just those impacts that would be likely if freight operators were to respond to the completion of the individual Project.
2. Description of the CBA economic performance measures calculated for Inland Rail as a whole (as per the Inland Rail Business Case 2015).

The approach to the economic benefits assessment taken for the EIA draws from the existing literature and guidelines surrounding the economic appraisal of infrastructure projects, including, but not limited to:

- Infrastructure Australia's Assessment Framework;
- QLD Government's Project Assessment Framework guidance material;
- Transport for NSW's Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives (2018); and
- The Australian Transport Assessment and Planning guidelines.

2.2.4 Regional impact analysis

A regional impact analysis has been undertaken to highlight the economic impacts of the Project on the regional, state and national economies using an equilibrium modelling framework. For the purposes of this analysis, a CGE model has been developed to examine the flow-on impacts arising from the Project on the broader economy. These impacts have been modelled using KPMG-SD, a proprietary regional CGE model of the Australian economy developed and maintained by KPMG.

A CGE model is ideally suited to quantifying the industry, regional and economy-wide impacts of major projects like Inland Rail, because it can capture the upstream and downstream linkages between a project's activities and the rest of the economy. KPMG-SD also provides estimates of employment supported through these investment shocks, noting that estimates of employment produced by the model reflect the direct and indirect jobs generated across the economy.

As described above, the regional economy is represented by the Toowoomba and Greater Brisbane labour market regions.

2.2.5 Cumulative impact assessment

The cumulative economic impact assessment refers to the potential impact of cumulative stimulus to the economy resulting from the construction of existing or planned projects within or adjacent to the study area. Cumulative impacts may result from the spatial and / or temporal interaction between these projects.

This cumulative impact assessment has two components:

1. Quantitative regional impact analysis of the cumulative impact of the QLD portion of Inland Rail on the regional, state and national economies using an equilibrium modelling framework (using KPMG-SD); and
2. Qualitative assessment of cumulative impact of state significant projects (that have been identified as having a relationship to the Project - refer Appendix A) on labour markets, the supply chain and local businesses.

2.2.6 Limitations of the assessment methodology

The findings of this EIA are subject to the following limitations:

- This assessment has not been prepared to inform financial or commercial decision-making processes. The sole purpose of the impact assessment is to meet the requirements of the Coordinator-General's ToR.
- Demand inputs to the economic benefits assessment have been sourced from the freight demand projections developed by ACIL Allen Consulting for the Inland Rail Business Case (2015). These values have been apportioned based on the information available to represent freight movements that would benefit from the improved rail connectivity provided by the Project, and represent those that are reasonably likely to make use of the Project as an independent project.
- The assessment assumes capital expenditure consistent with the Inland Rail Business Case (2015).
- A large proportion of the benefits of Inland Rail stem from improving the connection between producers and markets; through to both domestic markets in cities and international markets through ports. An incremental EIA approach assessing each link of Inland Rail individually and in isolation will not capture the full impact (positive or negative) that is expected to be delivered upon completion of the entire Melbourne to Brisbane connection.

Australian Rail Track Corporation Statement

Although further costs and other technical and economic data is expected as each project progresses through design development, the 2015 Inland Rail Business Case endorsed by the Australian Government is currently the most detailed assessment for the Inland Rail project. For this reason, and in the interests of maintaining consistency, cost and demand profiles for the Inland Rail project economic impact assessments have been based on the 2015 Inland Rail Business Case.

3 Project description

The Project is a rail corridor approximately 48 km in length, completing one of the key missing links of the Inland Rail Program. The rail corridor will connect the eastern end of the G2H Inland Rail project with the western end of the C2K Inland Rail project.

The Project utilises the existing West Moreton System rail corridor for approximately 50 percent of the length of the alignment. Approximately 18 percent of the total area of the permanent disturbance footprint²⁰ is located within the existing rail corridor.

The Project deviates from the West Moreton System rail corridor at Laidley North, continuing south east for approximately 4.9 km, predominately within the Gowrie to Grandchester rail corridor. Deviating from the Gowrie to Grandchester rail corridor, the Project enters a proposed western tunnel portal at Laidley and passes beneath the Little Liverpool Range. The Project exits the tunnel at a proposed eastern tunnel portal, the Project then traverses east for approximately 4.2 km. The Project re-joins the West Moreton System rail corridor east of Grantham, continuing within the existing corridor for approximately 5.9 km through to Calvert.

The preferred alignment is generally consistent with the alignment of the Gowrie to Grandchester future public passenger transport corridor protected under the *Transport Planning and Coordination Act 1994 (Qld)* (TPC Act) with a deviation at Helidon. At the request of the QLD Department of Transport and Main Roads (DTMR), the Project is being developed taking into account the potential for future rail transport infrastructure for passenger services to be delivered by DTMR.

The Project will initially accommodate double-stacked container freight trains of up to 1,800 metres (m) length, with potential for future accommodation of freight trains of 3,600 m length. ARTC estimates a gradual increase in the number of trains using Inland Rail from when the line becomes operational, with a forecast of approximately 46 - 47 train movements per day by 2040. Trains would operate 24 hours per day. Subject to approval, construction of the Project is planned to start in 2021, and be completed in 2026.

The key components of the Project are detailed in the table below.

Table 3: Key components of the Project

Key Component	
Start and finish point	Helidon to Calvert
Local government areas	<ul style="list-style-type: none"> Ipswich City Council Lockyer Valley Regional Council
Length of alignment	48 km total length
Train lengths	Up to 1,800 m in length, with potential for future accommodation of 3,600 m in length
Key features	<ul style="list-style-type: none"> An approximate 850 m Little Liverpool Range tunnel, bridges and viaducts to accommodate topography and Project crossings of waterways, roads and other infrastructure. Tie-ins to the existing QR West Moreton Railway Line at the Project boundary and other potential intermediate locations to be confirmed by operational modelling. Approximately 50 percent of the proposed rail corridor runs parallel with the existing West Moreton Railway Line. The construction of associated rail infrastructure, including maintenance sidings and signalling infrastructure. Ancillary works, including road and public utility crossings and realignments. Ancillary works would include works to level crossings,

²⁰ The permanent disturbance footprint is defined as the physical rail corridor including the rail tracks and associated infrastructure. It also includes other permanent works associated with the Project, such as where changes to the road network are required.

Key Component	
	<p>signalling and communications, signage and fencing, and services and utilities within the Project corridor.</p> <ul style="list-style-type: none"> • Construction laydowns, storage, workspace, access roads and compounds.
Construction	<p>Subject to approval of the Project, construction is planned to start in 2021, and is expected to be completed in 2026</p>
Employment	<p><i>Pre-construction:</i> A workforce of up to 50 personnel would be required for pre-construction activities.</p> <p><i>Construction:</i> Preliminary estimates indicate that the workforce on site for the Project will peak at 410 full time equivalents (FTE). The average number of FTE workforce on site across the full construction period is 190 personnel per year.</p> <p><i>Operational:</i> 15 to 20 personnel are estimated as required. Operational groups would include train drivers, signallers and maintenance staff.</p>

4 Existing economic environment

The following section describes the key demographic and socio-economic characteristics of the study area including the local population, and the existing regional and local economic environment. Unless otherwise stated, all information contained within this section has been drawn from the ABS 2016 Census of Population and Housing. This information may not reflect recent changes in demographic and employment outcomes resulting from the changes to market conditions during quarter 2 2020.

4.1 Population summary

4.1.1 Population

In June 2019, the study area had an estimated resident population of 264,038 persons. Between 2009 and 2019, the population increased by an average annual rate of 3.0 percent, with strong growth occurring in both Lockyer Valley (2.0 percent) and Ipswich (3.2 percent). In comparison, the population in QLD grew at an average annual rate of 1.6 percent over the 10 year period, close to half the rate of the study area. Strong population growth is projected to continue across the study area, with over 15,500 additional residents forecast to live in the area each year to 2026 (average annual rate of 5.1 percent).²¹ This is predominately driven by strong growth in Ipswich (5.6 percent), which offsets slowing growth in Lockyer Valley (1.9 percent). Growth in Ipswich can be partially attributed to the land development and residential growth opportunities offered by the Ripley Valley Priority Development Area (PDA).

Table 4: Estimated resident population and projections

	2009	2019	2026	% average annual growth 2009 – 2019	% average annual growth 2019 – 2026
Lockyer Valley LGA	34,333	41,731	47,697	2.0%	1.9%
Ipswich LGA	161,664	222,307	325,092	3.2%	5.6%
Study area	195,997	264,038	372,789	3.0%	5.1%
QLD	4,328,771	5,094,510	5,722,780	1.6%	1.7%

Source: ABS Regional Population Growth, 8-192018-19; QLD Government Statisticians Office 2018 edition population projections

4.1.2 Indigenous population

The proportion of the population that identify as Indigenous (Aboriginal, Torres Strait Islander, or both) within the study area is higher than the proportion across QLD as a whole (4.3 percent compared to 4.0 percent). Within the study area, a larger proportion of the population identify as Indigenous within Ipswich (4.4 percent) compared to Lockyer Valley (3.9 percent).

²¹ ABS Regional Population Growth, 2018-19; Queensland Government Statisticians Office 2018 edition population projections

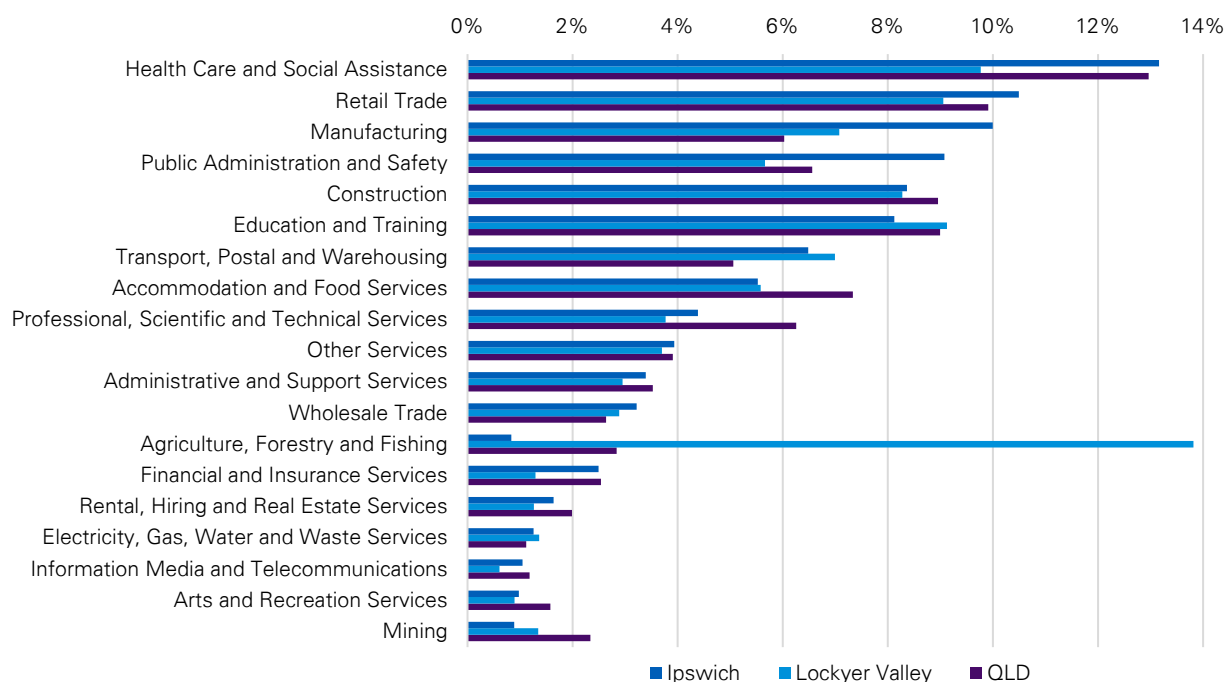
4.2 Description of the economy

4.2.1 Labour market and employment characteristics

Employment by industry

Figure 2 shows the sectoral distribution of employment for local residents (based on place of usual residence) is diverse, reflecting the study area's land use, comprised of rural and regional landscape and urban footprint.

Figure 2: Employment by industry, 2016²²



Source: ABS 2016 Census of Population and Housing

In the Lockyer Valley, employment by industry is diverse across primary, secondary and service based industries. The highest number of residents are employed in Agriculture, Forestry and Fishing (13.8 percent), followed by Health Care and Social Assistance (9.8 percent), Retail Trade (9.1 percent) and Education and Training (9.1 percent). A further 15.4 percent of residents were employed in the Construction and Manufacturing industries.

In Ipswich, the largest proportion of workers are employed in service based industries such as Health Care and Social Assistance (13.2 percent) and Retail Trade (10.5 percent). A significant proportion of the population are also employed in secondary industries, with a further 18.4 percent of residents employed in the Manufacturing (10.0 percent) or Construction (8.4 percent) industries.

As at June 2016, there were a number of residents within the study area employed in directly relevant industry sectors and occupations to support the construction of the Project. The largest proportion were employed in Construction Services (5,073 workers) and Heavy and Civil Engineering Construction (815 workers). Across the Toowoomba labour market region, 3,380 workers are employed in Construction Services and 556 workers in Heavy and Civil Engineering Construction. Given the location of the Project, workers may also be drawn from Greater Brisbane where 8.9 percent of total workers (92,559 workers) are employed in the Construction industry.

²² Employment by industry (and industry by employment) from the ABS Census is unable to discern the specific level of activity in the tourism or defence industries. This is because there are difficulties in trying to link a commodity classification with an Australian and New Zealand Standard Industrial Classification (ANZSIC) type industry classification; any one supplier category may overlap several product categories.

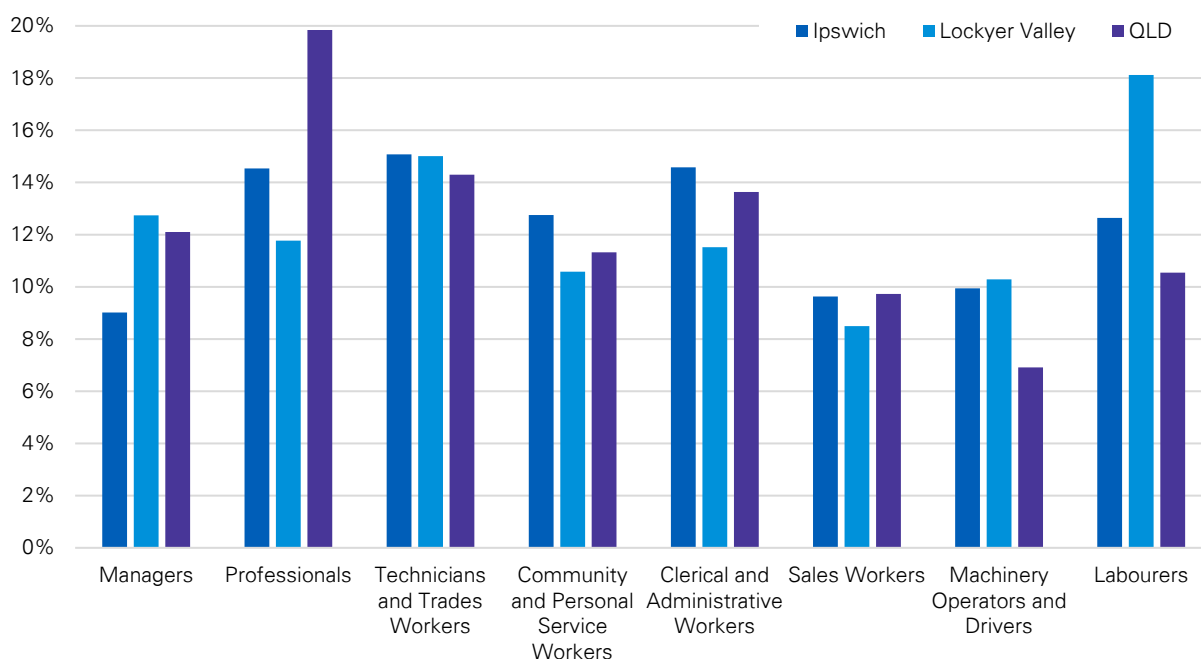
Occupation

The study area's primary occupations of employment reflect the region's industry profile and distribution of employment. At the broadest level, the area has a higher proportion of Technicians and Trade Workers (15.1 percent), Labourers (13.5 percent) and Machinery Operators and Drivers (10.0 percent), than the QLD average (14.3 percent, 10.5 percent and 6.9 percent respectively) (Figure 3).

In the Lockyer Valley, most residents are employed as Labourers (18.1 percent) and Technicians and Trades Workers (15.0 percent). Of those employed as Labourers, 813 are employed as Farm, Forestry and Garden Workers (28.5 percent of all Labourers) and a further 288 are employed as Construction and Mining Labourers.

In Ipswich, the leading occupations of employment are Technicians and Trades Workers (15.1 percent) and Professionals (14.5 percent). Within these occupations, the highest number of workers are employed as Mechanical Engineering Trades Workers (1,616 workers) and School Teachers (2,285 workers). 1,245 workers are employed as Construction and Mining Labourers.

Figure 3: Local workers occupation, 2016



Source: ABS 2016 Census of Population and Housing

Construction labour availability

A Railway Skills Capability Study was undertaken by the Australasian Railway Association in 2018 which evaluated workforce capability based on planned and forecast rail infrastructure development in Australia and New Zealand over the next 10 years. The results of the analysis found that in QLD, workforce gaps are present in rail infrastructure construction sectors, most severe among specialist managers and professionals (such as engineers). The analysis also found that there is currently a slight oversupply of labourers. These trends are also reflected at a national level.²³

The Australian Industry Group Construction Outlook (November 2018) found that, at a national level, businesses are reporting widespread and increasing difficulties in sourcing skilled labour.²⁴

According to the survey, construction companies are forecasting strong growth in major project work, led by a strong pipeline of transport infrastructure projects. The results indicate that 69.2 percent of respondents, up

²³ Australasian Railway Association, 2018, Skills Capability Study

²⁴ A national perspective of labour availability can be used to identify trends in skills shortages. According to the Productivity Commission, workers in the construction industry are likely to be more geographically mobile because of the inherent project-based or seasonal nature of the work; Productivity Commission, 2014, Geographic Labour Mobility.

from 66.7 percent six months prior, reported either ‘major’ or ‘moderate’ difficulty in recruiting skilled labour in the six months to September 2018. With workforce demand expected to continue at high levels in line with major project activity, labour sourcing difficulties are expected to remain.²⁵ It is most likely that these shortages in labour availability are for specific specialist trades.

Labour force

According to the Australian Government’s quarterly regional estimates of unemployment, as at December 2019 there were a total of 9,607 unemployed persons in the study area, and 85,172 across the Toowoomba and Greater Brisbane labour market regions. 88.7 percent of unemployed persons in the study area are located in Ipswich, which also has the highest unemployment rate at 7.5 percent. The unemployment rate across the regional economic catchment is 4.4 percent in Toowoomba and 6.1 percent in Greater Brisbane, this is compared to an unemployment rate of 6.1 percent across QLD.²⁶

For the December 2019 quarter, the labour force participation rate across the study area was lower than the QLD average (Table 5). The lowest rate of labour force participation was in Lockyer Valley at 65.9 percent, followed by Ipswich at 71.2 percent. The labour force participation rate for the regional economic catchment is comparable to the QLD rate of 78.7 percent.

Table 5: Summary of labour force characteristics, December 2019

	Labour force	Participation rate*	Unemployed persons	Unemployment rate
Lockyer Valley LGA	18,425	65.9%	1,084	5.9%
Ipswich LGA	113,863	71.2%	8,523	7.5%
Study area	9,607	70.3%	9,607	7.3%
Toowoomba Region	66,509	74.9%	2,936	4.4%
Greater Brisbane	1,355,270	78.6%	82,236	6.1%
QLD	2,717,291	78.7%	142,928	6.1%

Source: Australian Government’s Small Area Labour Markets publication, December 2019; ABS, *Labour Force Survey, Australia*, December 2019 (12-month moving average) – published 26 March 2020; ABS 2016 Census of Population and Housing. *Participation rate for working age population 15 to 64 years, LGA data from last available date - June 2016

Overall, based on current labour market trends, there may be latent capacity within the study area and regional economic catchment to support the construction and operation of the Project.

Indigenous labour force

According to the 2016 Census, Indigenous Australians are inadequately represented in the study area’s workforce, which is reflected in the high rates of Indigenous unemployment and low labour force participation. Across the study area, approximately one fifth of the Indigenous population is unemployed (19.5 percent) and the labour force participation rate is low at 56.6 percent (compared to 70.3 percent for the population as a whole). Across the regional economic catchment, Indigenous unemployment is high at 19.4 percent in Toowoomba and 16.8 percent in Greater Brisbane.

The labour force participation rate for the Indigenous population in the regional economic catchment was 57.8 percent in the Toowoomba region and 59.2 percent in Greater Brisbane, compared to the rate for the non-Indigenous population at 76.9 percent and 78.3 percent respectively. Across the study area, the labour force

²⁵ AiGroup, Construction Outlook November 2018

²⁶ Australian Government’s Small Area Labour Markets publication, December 2019; ABS, *Labour Force Survey, Australia*, December 2019 (12-month moving average) – published 26 March 2020; ABS 2016 Census of Population and Housing

participation rate for the Indigenous population is low at 56.6 percent (compared to a labour force participation rate of 70.3 percent for the total population).

Youth labour force

As shown in Table 6, the youth unemployment rate (persons aged 15 to 24 years) across the study area and regional economic catchment is significantly higher than the equivalent unemployment rates for the total labour force. This differential is greatest in the Toowoomba region, where the unemployment rate is more triple the total unemployment rate (15.1 percent compared to 4.4 percent). In absolute term, the youth unemployment rate is highest in Ipswich, where close to one fifth of the youth labour force are unemployed (19.3 percent).

Table 6: Youth labour force

	Youth Labour Market		Total Labour Force*	
	Unemployment rate	Participation rate	Unemployment rate	Participation rate
Lockyer Valley LGA	15.6%	57.6%	5.9%	65.9%
Ipswich LGA	19.3%	63.7%	7.5%	71.2%
Toowoomba Region	15.1%	65.6%	4.4%	74.9%
Greater Brisbane	16.2%	64.5%	6.1%	78.6%

Source: Australian Government's Small Area Labour Markets publication, December 2019; ABS; ABS 2016 Census of Population and Housing. Note: Participation rate for working age population 15 to 64 years, June 2016; Youth Labour Market data as per 2016 Census *December 2019

The youth labour force participation rate within the study area and across the regional economic catchment is lower than the total participation rate. Youth labour force participation is highest in the Toowoomba region at 65.6 percent (compared to 74.9 percent for the total labour force) and Greater Brisbane at 64.5 per cent (compared to 78.6 per cent for the total labour force). The youth labour force participation rate reported for Ipswich is 63.7 per cent (compared to 71.2 per cent for the total labour force) and Lockyer Valley at 57.6 per cent (compared to 65.9 per cent for the total labour force). Lower levels of labour force participation indicates that a high proportion of young people are either not able to work or are not actively looking for work (for example students, or those who are voluntarily inactive). Across the study area and regional economic catchment, over two thirds of young persons who are not in the labour force are studying full time (65.8 percent in Ipswich, and 72.2 percent in the Lockyer Valley).

Overall, the youth labour market profile (high unemployment and low labour force participation) indicates that there may be some latent capacity in the youth labour force, and current job seekers may have the skills, or ability to be up-skill, to be engaged in the Project. A number of local training and development opportunities have been identified to support youth employment, as described in Section 5.2 below.

Household income

The distribution of the population by total household income level in the study area and regional economic catchment are compared in Table 7 below. As reflected, the distribution of income within the study area is broadly consistent with QLD as a whole, with the highest proportion of households earning more than \$1,250.

As a measure of socio-economic disadvantage, household income levels reflect relative disadvantage in Lockyer Valley with a higher proportion of households earning less than \$500 per week (16.6 percent), compared the rest of the study area, regional economic catchment and QLD as a whole (14.6 percent).

These observations are reflected in the median weekly household income across the study area and regional economic catchment. The median weekly household income is highest in Greater Brisbane (\$1,562), followed by Ipswich (\$1,410), Toowoomba (\$1,298) and the Lockyer Valley (\$1,198). This is compared to the State, where the median household income is \$1,402.

Table 7: Distribution of population by weekly household income, 2016

	< \$500	\$500 - \$1,249	= OR > \$1,250	Median Income*
Lockyer Valley LGA	16.6%	35.7%	47.7%	\$1,198
Ipswich LGA	12.2%	31.6%	56.2%	\$1,410
Toowoomba Region	14.9%	33.5%	51.6%	\$1,298
Greater Brisbane	12.6%	27.5%	59.9%	\$1,562
QLD	14.6%	30.6%	54.8%	\$1,402

Source: ABS 2016 Census of Population and Housing. *QLD Government Statistician's Office Regional Profiles This excludes all the following responses: partial and incomplete income declaration.

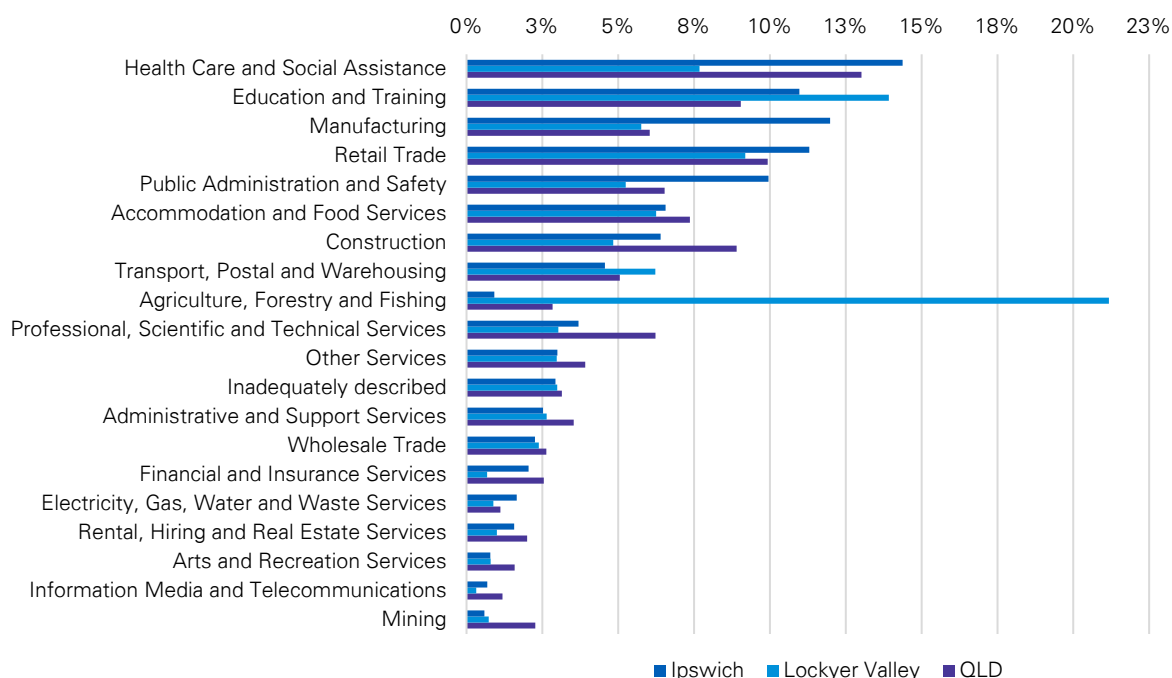
4.2.2 Business and industry

Industry by employment

Industry by employment is used to analyse the sectoral distribution of jobs located within a defined geographic area, it captures all jobs located within an area which may be occupied by residents or workers who travel to the area for employment.

The study area is a place of work for approximately 73,513 persons (who live both within and outside the catchment area) which reflects the number of occupied jobs located within the study area. Close to 85 percent of these jobs are located in Ipswich (84.8 percent). Industry by employment in the study area is shown in the figure below.

Figure 4: Industry by employment, 2016



Source: ABS 2016 Census of Population and Housing.

Consistent with the study area's employment by industry, the sectoral distribution of jobs differs between the Lockyer Valley and Ipswich.

Within the Lockyer Valley, Agriculture, Forestry and Fishing is the largest industry of employment, accounting for 21.2 percent of jobs in the area (2,372 jobs). Within this industry, most workers are employed in the Sheep, Beef Cattle and Grain Farming sector (532 jobs) which is reflected in the local business and industry profile below.

The strength of the Lockyer Valley's agricultural sector highlights the importance of supply chain efficiency in supporting the area's economy. There are opportunities offered by the Project to improve the productivity of the local industry by reducing the distance between dispersed agricultural activities to processing facilities and markets. These impacts are outlined in the economic benefits assessment (Section 5.4).

The sectoral distribution of employment in Ipswich is more diverse. The highest proportion of jobs are in service-based industries such as Health Care and Social Assistance (14.4 percent), Retail Trade (11.3 percent) and Education and Training (11.0 percent). These sectors are important in meeting the demand for local services from the local population. A further 12.0 percent of jobs are in the Manufacturing industry, making it the second largest industry by employment in Ipswich.

4.3 Local businesses and industry

4.3.1 Agriculture

As detailed above, agriculture is a significant industry for the Lockyer Valley, located within the Toowoomba agricultural region.

In 2017-18, the gross value of total agricultural production in the Toowoomba region was \$348 million, 3.0 percent of the total gross value of agricultural production in QLD (\$13 billion).²⁷ Measured as a proportion of total agricultural production, the region's main agricultural products are poultry (\$50 million), followed by sweet corn (\$44 million) and lettuce (\$36 million). The agriculture industry offers significant export opportunities for the region, particularly for agricultural and livestock products.

As at June 2018, there were a total of 173 employing businesses within the Agriculture, Forestry and Fishing industry in the Scenic Rim (a further 653 were non employing), and 33 employing businesses in Ipswich (318 non employing).²⁸

According to the QLD Agricultural Land Audit, the predominant industry within Lockyer Valley is horticulture production which contributes significantly to QLD's overall horticulture production. Vegetable production is dominant within Lockyer Valley, with the area containing major producers of many fruit and vegetables, as well as milk, beef and grain enterprises. This is representative of the primary commodities of production across the broader Toowoomba region.²⁹

The Lockyer Valley is identified to be the most significant groundwater area in South East QLD, supporting a wide range of agricultural produce and, for most of the valley, being the dominant source of water for irrigation.

As identified in EIS Chapter 8: Land use and tenure, there is one intensive livestock operation located in close proximity to the Project alignment - the Darwalla Milling Company poultry farming operation. Darwalla Milling Company is located within the study area at Laidley North.

4.3.2 Tourism

There is a strong focus on tourism in both the Lockyer Valley and Ipswich LGAs, recognised as a popular tourist destination for visitors seeking to explore SEQ's natural landscapes and scenic amenity.

²⁷ SA4 – Toowoomba region; Value of Agricultural Commodities Produced, Australia, 2017-18 cat.no. 7503.0

²⁸ ABS, 2019, Count of Australian Businesses, including Entries and Exits, June 2014 to June 2018, cat. no. 8165.0

²⁹ Queensland Department of Agriculture and Fisheries, 2017, *Queensland agricultural land audit*.

According to Tourism Research Australia, in recent years (2015-17) Ipswich has received an average 1.2 million visitors per year (925,000 domestic daytrip visitors), with tourism expenditure totalling approximately \$217 million annually. There are 1,211 recorded tourism businesses located in Ipswich.³⁰ Over the same period the Lockyer Valley received a further 347,100 visitors annually (average), with tourism expenditure totalling approximately \$94 million annually. 250,000 of those visitors are domestic daytrip visitors.³¹

Table 8: Tourism visitation and expenditure, 2017

	Domestic Overnight Visitors		International Overnight Visitors		Domestic Daytrip Visitors	
	Total Visitors	Expenditure	Total Visitors	Expenditure	Total Visitors	Expenditure
Ipswich LGA	293,000	\$109 m	19,000	\$24 m	925,000	\$84 m
Lockyer Valley LGA	90,000 [#]	\$57 m	7,100 [#]	\$13 m	250,000 [#]	\$24 m

Source: Tourism Research Australia, Local Government Area Profiles, 2017; Lockyer Valley Council, Tourism Destination Plan 2018 – 2023

[#] Average visitation over 2015 – 2017

There are a number of natural attractions and recreation areas across the study area which support the local character and the area’s attraction as a tourism destination. A number of these areas are within close proximity to the Project, including:

- Lockyer National Park; and
- Laidley Cultural Centre.

As identified in the Social Impact Assessment (EIS Appendix Q), there are a number of short-term accommodation options located in close proximity to the Project alignment.. Due to their proximity to the Project, these attractions and a number of these businesses may be impacted by the construction of the Project.

4.3.3 Mineral, petroleum and gas resource interests

The study area traverses land occupied by a number of existing mining leases and petroleum pipeline licenses.

Mineral Resource Interests

- Two Mining Lease Permits held by Perkins, Neville Williams (located over 500 meters offset to north of alignment).
- Three Mining Lease Permits (two granted, one application) held by Helidon Sandstone Industries Pty Ltd (located over 450 meters and one over 750 meters offset to north of alignment).
- Two Mining Lease Permits held by Stephens, Peter James (located over 900 meters offset to north of alignment).

These mining leases are predominately associated with established sandstone mining operations, and are not located within the disturbance footprint.

Pipeline Licenses

- Two gas pipeline permits held by Apt Petroleum Pipelines Pty Ltd (Helidon).
- One oil pipeline permit held by Moonie Pipeline Company Pty Ltd (Grandchester).

³⁰ Tourism Research Australia, Local Government Area Profiles 2017 – Ipswich.

³¹ Tourism Research Australia, 2017, International Visitor Survey and National Visitor Survey

There are no petroleum and gas exploration or production permits granted within the study area, and these pipelines are not located within the permanent disturbance footprint.

The EIS Chapter 8: Land use and tenure provides further details relating to the specific location of these mineral and petroleum permits and licences.

4.3.4 Local businesses

Construction

There are a number of construction businesses located within the study area, with a total of 1,024 employing businesses and a further 1,447 non-employing businesses across Ipswich and the Lockyer Valley. There are a further 458 employing businesses across the study area in the Transport, Postal and Warehousing industry, with 300 of these businesses located in Ipswich.³²

Local businesses are likely to be a significant source of services and equipment during the Project's construction and include:

- Civil construction companies
- Earthmoving services
- Diesel and petrol suppliers
- Plumbers, electricians, mechanics and building contractors
- Engineering and machining services
- Surveyors and landscapers
- Transport companies
- Steel fabrication companies
- Hardware and gardening service suppliers.
- Accommodation facilities
- Hotels and meeting venues
- Shops which may experience either direct
- Project demand or personnel expenditure.

³² ABS, 2019, Count of Australian Businesses, including Entries and Exits, June 2014 to June 2018, cat. no. 8165.0

5 Impact assessment

5.1 Inland Rail Program impacts

Consistent with the requirements of the ToR, this EIA has focussed on the specific economic impacts resulting from the construction and operation of the Project. However, the assessment acknowledges the role of the Project, and the remaining project links, in collectively delivering the benefits of Inland Rail. In its entirety, Inland Rail will enhance Australia's existing national rail network and serve the interstate freight market. Based on the Inland Rail Business Case (2015), the anticipated economic impacts of Inland Rail include:

- Lower prices for consumers as a result of lower intercapital freight transport costs, which reduces the cost of living for households.
- Positive direct net economic benefits, driven by improvements in freight productivity, reliability and availability, and benefits to the community from reduced environmental externalities, reduced road congestion and improved safety benefits. The Program is stated to be economically viable with a cost benefit ratio of 1.02 at a 7 percent discount rate (2.62 at a 4 percent discount rate).
- Economic growth as increased profits (for industries and producers where intercapital freight is an input or output) and incomes are multiplied through the economy. Inland Rail is anticipated to deliver a net positive impact of \$16 billion on Gross Domestic Product over its 10 year construction period and 50 years of operation.
- Nationally, Inland Rail is expected to deliver an additional 16,000 jobs at the peak of construction, and an average of 700 additional jobs per annum during operation(s).
- Enhanced competition between rail and road freight, by providing a credible transport alternative, which will drive further innovation and efficiency.
- Potential to promote the expansion and development of freight precincts around Inland Rail terminals as a result of the benefits from co-location and clustering of industries (as a result of reduced transport costs to warehousing, economies of scale and knowledge-sharing opportunities).

5.2 Workforce impacts

5.2.1 Direct employment

The Project will result in a number of direct employment opportunities across the pre-construction, construction and operational phases of the Project. These jobs have been estimated based on the indicative construction schedule and component activities.

Overall, the Project has a significant opportunity to support local employment, however this is dependent on a number of factors including labour market conditions, skills availability and the existence of local workforce participation programs to support Indigenous and youth employment. Based on current labour market trends, there may be latent capacity within the study area and regional economic catchment to support the construction and operation of the Project (in isolation of adjacent rail and other major transport infrastructure projects. The cumulative impact of these interacting projects on the labour market is detailed in Section 6).

Pre-construction

A workforce of between 20 to 50 personnel would be required for pre-construction activities in late 2020 (following completion of the Environmental Impact Statement process, detailed design, successful procurement of the construction contractor and subject to obtaining all relevant approvals). This is likely to provide employment for land surveyors, ground clearance crews, access track construction crews, cultural heritage surveyors, and contractors developing laydown areas, flashbutt welding facilities and administration facilities.

Construction

The size and composition of the construction workforce will vary depending on the construction activities being undertaken and the staging strategy adopted. Preliminary estimates indicate that the workforce on site for the Project will peak at 410 FTE. The average number of FTE workforce on site across the full construction period is 190 FTE personnel per year.

Construction employment opportunities would include:

- Earth moving and road works
- Skilled trades work including welding, electrical and drainage/plumbing trades
- Bridge construction
- Transport drivers (road and rail)
- Crane, excavator and bulldozer drivers
- Machine operators
- Concreters and pavers
- Trackwork laying
- Tunnel construction staff (e.g. road headers operators, tunnel lining installers, and ventilation specialists)
- Other professionals and technical specialists.

Operation

A workforce of up to 20 personnel is expected for the Project's operation. Occupational groups required will include:

- Train drivers
- Maintenance staff, including for the track, associated infrastructure, and maintenance of the tunnel ventilation and safety system
- Signallers.

Local employment

The Project has the potential to be a significant opportunity to support local, Indigenous and youth employment. This is dependent on a number of factors including labour market conditions, skills availability and the existence of local workforce training and participation programs to support Indigenous and youth employment.

Based on current labour market trends, and industries and occupations of the local workforce, there may be latent capacity and capability within the study and regional economic catchment to support the construction and operation of the Project. It is likely that labour will be sourced from communities within a safe daily driving distance (less than 1 hour) from the Project, including Ipswich and the Lockyer Valley, and from the broader region. It is likely that local employment will comprise a portion of the construction workforce.

The Project represents a source of potential training and career pathway development. As detailed in the Social Impact Assessment (EIS Appendix Q), consultation with local stakeholders highlighted an opportunity for training programs to facilitate access to the Project including opportunities through QLD Government-funded Regional Skills Investment Scheme (RSIS) initiatives being undertaken by local Councils.

ARTC is establishing the Inland Rail Academy which is a collection of projects and partnerships with the aim to facilitate local employment and procurement opportunities and build Inland Rail's social licence to operate Inland Rail.

ARTC will also establish a workforce development project to provide training for participants to meet the rail industry worker national competency management system for track workers. This will include implementation of the Inland Rail Indigenous Rail Worker program. Workforce development programs will be undertaken in partnership with the QLD Government (Department of Employment, Small Business and Training) and training and employment providers in the study area.

Indigenous participation

As identified in Social Impact Assessment (EIS Appendix Q), the Project offers the potential to increase Indigenous employment and business opportunities. ARTC has a strong commitment to training Indigenous people and commits to working with Indigenous communities to strengthen the capacity of the local workforce to participate in the Project. The Yuggera Ugarapul Aboriginal Party Cultural Heritage Management Plan (CLH017009, 5 June 2018) includes commitments to employment and business involvement.

Changes to housing and accommodation

Most of the workforce are anticipated to be drawn from the local region, within safe driving distance (typically within one hour) to the Project. It is anticipated that the workforce will return to their place of residence at night, minimising demands for local workforce accommodation. There is a possibility that some construction workers will be recruited from the broader region and will be required to locally whilst they are on roster. These numbers are likely to be small, and within the capacity of existing short-term accommodation facilities in the Ipswich, Scenic Rim and Logan LGAs.

Refer Social Impact Assessment (EIS Appendix Q) for further detail on the nature of changes to housing and accommodation.

5.2.2 Indirect employment

The industrial and consumption effects of the Project will result in the creation of indirect jobs both due to upstream and downstream linkages between the Project's activities and the rest of the economy, such as the stimulation of businesses further up the supply chain (e.g. manufacturers and suppliers of industry inputs), and the stimulation of activities downstream (e.g. through the provision of inputs to other sectors and the expenditure patterns of employees). The regional economic modelling results (Section 5.4) indicate that indirect employment will be generated in the Professional, Scientific and Technical Services and Wholesale Trade sectors, reflecting the importance of these two sectors in the construction sector's supply chain. The development of the Project will not only provide employment opportunities in local construction activities, but create indirect employment in occupations required to support the design and construction during project planning (e.g. civil engineering), and in the supply chain for construction materials during project construction.

5.3 Business and industry impacts

The following business and industry impacts have been identified through local consultation and analysis of local businesses undertaken by ARTC. Appropriate mitigation and management the identified impacts are detailed in Section 7.

5.3.1 Agriculture

The construction and operation of the Project has the potential to impact farming operations and general agricultural uses across the study area. These impacts include:

- Loss of agricultural land;
- Land fragmentation and disruption to access and infrastructure;
- Disruption to stock and product movement; and
- Improvements in supply chain efficiency.

These impacts may change the value of agricultural production in the region, due to changes in accessibility, connectivity and / or productivity. Consultation with landholders is ongoing to further determine potential impacts.

Loss of agricultural land

As detailed in EIS Chapter 8 of the EIS: Land use and tenure, the Project will result in the sterilisation of productive agricultural land within the permanent disturbance footprint. The Agricultural Land Class approach classifies a particular agricultural area based on land and soil information and is used for land audit purposes. The approach comprises a four tier hierarchy ranging from Class A (arable land) through to Class D (land that is unsuitable for agriculture). Class A land is suitable for a wide range of current and potential crops with little limitations to production. Class B land is suitable for a narrow range of current and potential crops but is highly suitable for pastures.³³

The scale of the total loss (within permanent disturbance footprint) of Class A and Class B agricultural land is anticipated to be low. At a local government level, within the Lockyer Valley, the permanent disturbance footprint traverses approximately 86.81 ha of Class A (0.1 percent) and 1.72 ha of Class B (less than 0.1 percent) land. Within Ipswich the permanent disturbance footprint traverses approximately 11.47 ha of Class A (0.1 percent) and 39.23 ha of Class B (0.9 percent) land. Overall, the permanent disturbance footprint will traverse 0.11 percent of the study area's productive agricultural land (269.42 ha impacted out of a total productive area of 220,446.60 ha). This proportion can be used to estimate, at a high level, the potential foregone value of agricultural production resulting from the Project.

In 2017-18, the gross value of agricultural production in the Lockyer Valley and Ipswich LGAs was \$15.8 million.³⁴ It is estimated that the Project could result in a loss of approximately \$17,274 (value foregone) in gross agricultural production per year.³⁵

The permanent disturbance footprint does not traverse the land use of the Darwalla Milling Company Poultry. As a result, local intensive livestock operations are unlikely to be impacted by land acquisition or sterilisation.

Land fragmentation and disruption to access and infrastructure

The Project may result in impacts to agricultural land outside of the permanent disturbance footprint. Where the Project alignment does not utilise existing rail corridors, the Project may sever or isolate parcels of agricultural land, limiting internal movements and reducing access to agricultural land.

The overall disturbance of construction areas has been limited where possible. Where agricultural land is required to be used temporarily during construction, disturbed areas will be rehabilitated as close as possible to pre-construction conditions in accordance with the Reinstatement and Rehabilitation Plan. Where soils may have been damaged, reinstatement will include appropriate amelioration measures such as fertilizer to restore soils to pre-construction productivity. It is also noted that construction will occur progressively along the rail corridor and the need (duration) for temporary laydown areas has been minimised at each location. Further details on construction mitigation measures relating to agricultural land is provided in Draft Outline Environmental Management Plan (EIS Chapter 23: Draft outline environmental management plan).

The specific impact on the economic viability of farming operations as a result of this potential disruption to access and infrastructure is not quantified in this assessment, and the extent of these impacts will be confirmed during detailed design. ARTC will work with individual land owners to develop suitable solutions based on individual farm management practices.

Disruption to stock and product movement

As the permanent disturbance footprint is likely to be fenced or constructed in a manner that prevents stock moving onto the rail line, the Project has the potential to alienate and isolate parcels used for traveling stock.

³³ Department of Agriculture and Fisheries, Agricultural Land Classes, 2010-2019

³⁴ Queensland Government, 2019, Queensland Spatial Catalogue: Gross Value of Agricultural Production (GVAP) per Local Government Area in Queensland.

³⁵ This value is an indicative estimate only - it does not consider the value of individual commodities produced per lot or the value-add activities which contribute to the gross value of agricultural production in the region. An assessment of the composition of agricultural production by lot and commodity may be undertaken following detail design once a more accurate depiction of the lot-specific impacts are able to be quantified.

The study area traverses one known travelling stock route reserve at Calvert. The permanent disturbance footprint will not sever or inhibit the use of this stock route reserve. It is understood that there may also be informal stock routes which may be used to transfer stock to various grazing paddocks and holding yards within or across the study area.

The nature and magnitude of the impact of the Project on these travelling stock routes and informal stock routes is currently unknown. Stock movements will be considered during detailed design and consultation will be undertaken with landholders who have grazing properties that may be affected by the Project (and will identify appropriate mitigation measures where impacts are identified).

Improvements in supply chain efficiency

Efficient supply chains support the regional and national capacity to enhance economic opportunities within local communities. The Project is a critical link for Inland Rail, offering a more efficient solution for intra and interstate freight operators who will be able to avoid inland and coastal road and rail networks. Specifically, the Project:

- Offers opportunities to improve the productivity of local export industries (such as agriculture); and
- Has the potential to unlock the construction of ancillary and complementary infrastructure, industrial development and logistics operations within the local area. Key activities will likely relate to rail dependent industries and support industries associated with transport, freight handling, warehousing and logistics. Specifically, the Project (alongside adjacent G2H and C2K projects) may act as a significant catalyst for development in the planned and existing industrial areas at the Ebenezer and Wellcamp.

5.3.2 Tourism

During construction, there is potential for intrusion (e.g. noise or dust), traffic disruption and changes in visual amenity to impact on local tourism businesses and the attractiveness of the region to tourists and visitors.

As detailed in the Social Impact Assessment (EIS Appendix Q), specific impacts may include:

- Changes in the amenity of the Lockyer Valley Hotel (Forest Hill) due to noise, dust and disruptions to property access.
- Changes in amenity of the Royal Hotel (Gatton) due to noise and changes to the visual amenity of the hotel's surroundings. The Royal Hotel is located 100 m from the alignment and 30 m from the nearest laydown area.
- Changes to the character views of the Laidley Cultural Centre, in addition to noise and disruptions to property access.
- Changes to amenity in some sections of the Lockyer National Park.
- Disruptions from noise and traffic may impact on the rural character of the Forest Hill and Gatton town centres, which contribute to tourism trade through businesses such as cafes and specialty shops.
- Disruption from road works, bridge construction and the visual impact of laydown areas during construction to affect tourists' experience and travel times.

These potential impacts will be temporary whilst construction works are undertaken; however some tourists may be deterred from visiting the area during these periods. A temporary decline in visitation may impact on tourism based businesses within the area, however the impact on tourism expenditure is likely to be small.

Consultation with hotel operators is ongoing to identify mitigations (such as communication mechanisms, dust controls, noise mitigation measures and options to manage amenity offsets) to reduce the impact of the Project on the adjacent commercial land uses and the general attractiveness of the Forest Hill and Gatton town centres to tourists and visitors during construction.

As detailed in Section 5.5, the construction workforce is likely to be largely drawn from the local region, a safe daily driving distance (typically within one hour) from the Project. There is likely to be minimal impact on the availability of local tourism accommodation as a result of the Project's construction workforce.

During operation, there is potential for diminished scenic amenity due to the Project's location within the regional landscape and proximity to rural townships. The impact of the Project on the landscape and visual amenity has been assessed in EIS Chapter 10: Landscape and visual amenity. The assessment identifies that some visitors will see the Project diminishing existing rural character while others will find interest in the Project structure. As a result, the assessment concludes that a significant decrease in visitation as a result of this impact is unlikely.

5.3.3 Mineral, petroleum and gas resource interests

Mineral Resource Interests

As detailed in Section 4.3 above, the permanent disturbance footprint does not cross any areas of mineral resource interest. No identified, inferred or implied, resources (as related to the activities currently carried out within the existing mining leases) are expected to be impacted by the Project.

Petroleum Interests

The permanent disturbance footprint crosses a gas pipeline and a high-pressure oil pipeline. While the oil pipeline has been decommissioned, the easement relating to the pipeline remains in place. Consultation with respective infrastructure providers and pipeline licensees has occurred and will continue throughout the detailed design phase of the Project.

5.3.4 Local businesses

Construction materials

The Project will require a range of construction supplies, including material (spoil, gravel or sand) and ballast material (crushed stone), pre-cast concrete, concrete sleepers and turnout panels, steel, fencing, electrical components, fuel and consumables. Precast concrete may be sourced from Ipswich and it is likely that ballast materials may be accessed from local quarries. Other major components such as fencing may be sourced within the study area (with several suppliers based at nearby Amberley and Ipswich). It is likely that concrete sleepers will be sourced from outside the study area.

The Project will have significant construction materials and services requirements which may provide local businesses with supply opportunities. ARTC has developed a Sustainable Procurement Policy which will ensure that local, regional and Indigenous businesses will have opportunities to supply the Project.

Overall, the Project's local supply arrangements will present an opportunity to develop and grow local and regional businesses. This opportunity will be supported by ARTC's Social Impact Management Plan (SIMP) which includes measures to promote local business and industry participation, as detailed in Section 7.

Transportation

The Project may provide opportunities for local transport or logistics businesses during construction to transport materials to laydown areas and remove waste materials and recyclables from construction compounds. These benefits have the potential to accrue over the long term, particularly if the Project acts as a catalyst for the development of freight and logistics operations within close proximity to the alignment.

During operation, the anticipated mode shift from road freight to rail freight is likely to reduce the number of heavy vehicles travelling on the road network with the potential to impact on levels of trade for local transportation businesses. These impacts may be partially offset by the aforementioned opportunities to increase investment and activity in freight / logistics operations adjacent to Inland Rail.

Local service and supply businesses

The Project is likely to offer opportunities in secondary service and supply industries (such as retail, hospitality and other support services) for businesses in close proximity to the construction footprint. The expansion in construction activity will support additional flow-on demand and additional spending by the construction workforce in the local community. Local retail businesses have the potential to benefit from increased trade.

ARTC will implement sustainable procurement strategies which will ensure that local, regional and Indigenous businesses will have opportunities to supply the Project and benefit from increased local demand.

5.4 Economic benefits assessment

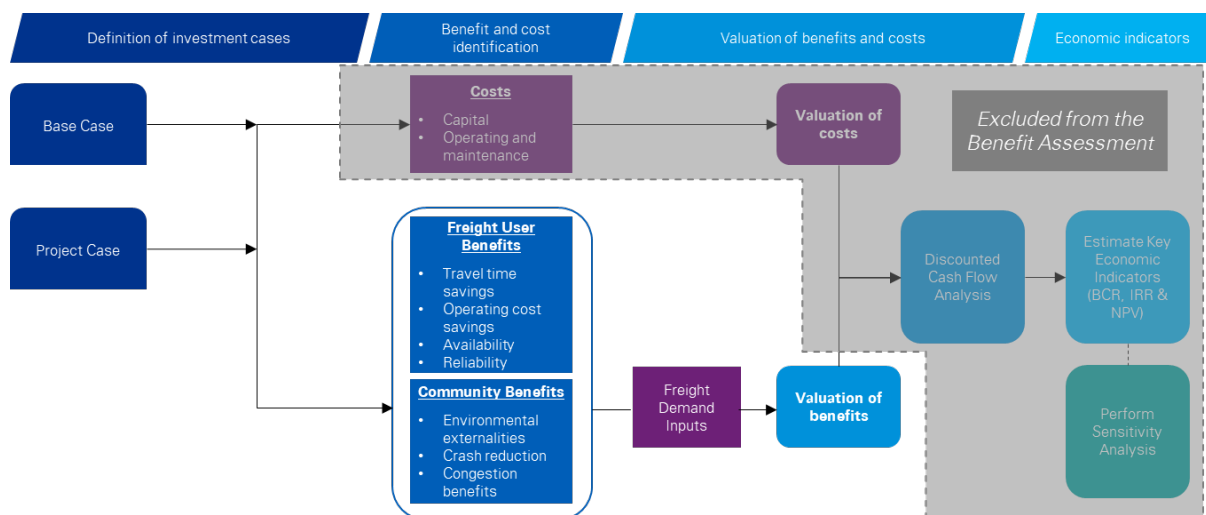
5.4.1 Methodology

The approach adopted for the EIA includes a three-step benefit assessment modelling process as follows:

1. **Define base and investment cases:** a clear articulation of the problem, investigation and definition of Base Case and Project Case option, and future demand drivers
2. **Identify benefits:** identification of relevant economic, social and environmental benefits associated impact groups which can be measured for the Project
3. **Monetise benefits:** quantification, monetisation and assessment of benefits over the Project appraisal period.

The figure below outlines a typical CBA approach and its application to the Project EIA.

Figure 5: CBA approach and the economic benefits assessment



Critically, the key difference between the complete CBA approach, and the economic benefits assessment approach adopted in this analysis, is the exclusion of costs.³⁶ As a consequence, the estimation of economic indicators is not applicable to this analysis, rather the focus is discounted present values of the benefits. Base Case and Project Case

The benefits assessment measures the incremental benefits derived by the Project, by defining two network performance scenarios:

- The **Base Case** adopted for this benefit assessment is a 'do nothing' scenario, where it is assumed that no other sections of Inland Rail are progressed, and freight continues to be moved via either coastal rail or the road network.
- The **Project Case** adopted for this benefit assessment is the Project. The economic benefits estimated as part of the analysis assess just those impacts that would be likely if freight operators were to respond to the completion of this individual Project.

³⁶ The economic benefits assessment has been undertaken prior to the refinements made to the construction program. The impact of this refinement would have a minor effect on the economic benefits identified. This change to program timing explains any inconsistencies between the construction program identified in the economic analysis and those identified within the body of this report.

Key assumptions and parameters adopted for use in the benefit assessment are presented in Table 9.

Table 9: Economic benefits assessment assumptions

Parameter	Value	Source
Discount rate	A 7% real discount rate is used for the Project Case with sensitivity tests conducted at 4% and 10%	Infrastructure Australia Business Case Assessment Template 2016
Price year	2019	
Discount reference year	2019	
Appraisal period	50 years from the year of opening. First year of measured benefits is 2024 (first full year of benefits) ³⁷	Australian Transport Assessment and Planning (ATAP) Guidelines (Category 4, Section 2.4)
Temporal treatment of benefits and costs	Demand model outputs for 2024, 2054 and 2074 were used as the basis for analysis. Linear interpolation has been undertaken to estimate benefits between these years	Inland Rail Business Case (2015) and KPMG analysis
Indexation	Unit costs and parameter values indexed to the price year by the appropriate price indices	Australian Bureau of Statistics
Annualisation	Demand projections are presented in annual terms	Inland Rail Business Case (2015)

5.4.2 Freight demand

At the request of ARTC, demand inputs to the benefit assessment have been sourced from the freight demand projections developed by ACIL Allen for the Inland Rail Business Case (2015). The assumptions underpinning these demand projections are documented in Chapter 7 of the Inland Rail Business Case (2015). This section outlines how these demand projections have been adopted for the Project EIA.

The demand projections developed by ACIL Allen are presented in terms of 66 different origin-destination (OD) pairs for both the Base Case and Project Case. These OD pairs span the entire Program length, and as discussed above, many represent freight movements that would not be impacted if the Project were to be constructed independently of the overarching Inland Rail Program.

To enable an incremental economic benefits assessment to be undertaken for the Project, selected OD pairs were chosen which represent freight movements that would benefit from the improved rail connectivity associated specifically with the Project. The selected OD pairs, which all depart south of Helidon and flow through to Brisbane, consist of:

- North Star to Brisbane
- Narrabri Cotton to Brisbane
- North Moree to Brisbane
- Toowoomba to Brisbane
- Goondiwindi Cotton to Brisbane
- South QLD/North NSW to Brisbane Port (cottonseed)
- South QLD/North NSW to Brisbane Port (on existing narrow gauge)
- Charlton-Wellcamp to Brisbane (containerised).

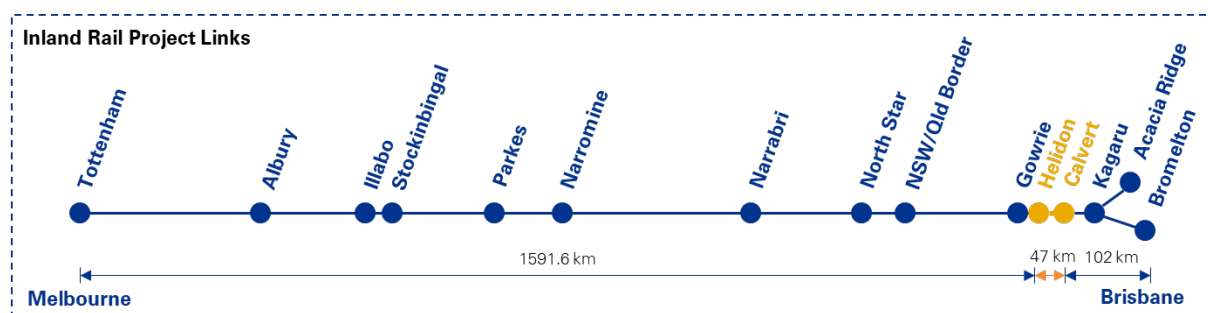
³⁷ While noting the operational life of the Project is 100 years, the benefits assessment has been conducted for a 50 year appraisal period in line with best practice methodologies, as specified in the ATAP guidelines.

The transport network impacted by these freight movements represent the Project area for the purposes of the economic benefits assessment. Benefits attributed to the Project area will accrue to users of the transport network and to non-users within the surrounding area who will be impacted by environmental externalities resulting from transportation.

As the projected travel time (both in terms of net tonne hours and hours travelled) for these OD pairs are dependent on downstream upgrades, the benefits associated with these freight movements have been apportioned. The factor used to scale these benefits is the ratio of the length of track upgrades that forms the Project, and the total length of proposed track upgrades from NSW Border to the program extent at Acacia Ridge (e.g. 47 km / 399 km).³⁸

Notably, some road freight movements are not presented in terms of OD pairs, and instead are presented by commodity (e.g. 'agriculture'). To account for these general freight movements, the proportion of freight movement associated with the Project has been estimated using the ratio of the length of track upgrades that forms the Project, and the total length of track upgrades as part of Inland Rail (e.g. 47 km / 1,740.6 km).

Figure 6: Inland Rail Program - Project extents



Source: ARTC Note: figure is not to scale, used for illustrative purposes only.

For the purposes of the economic benefit assessments contained within the Inland Rail EIA, freight movements from coal demand have been excluded. This is on this basis of the CBA results for the scenarios "No Western Line Upgrade" (refer Inland Rail Business Case (2015) Chapter 9. Economic Analysis), where coal benefits are equal to zero (0). Subsequently, in the absence of the Western Line upgrade to the existing QLD Rail network, no benefits are expected to accrue to coal movements as a result of the delivery of Inland Rail. These results imply that, under this scenario, there is no net benefit to coal trips traversing any of the new links to be delivered as part of the Inland Rail Program.

Further, the results of the Inland Rail Business Case (2015) CBA highlight that the identified benefits accruing to coal trips are a direct result of Inland Rail with complementary investment in Western Line Upgrades, which do not form part of the scope of Inland Rail as it stands currently, and are not funded. For a more detailed note on the treatment of coal in the EIA please refer to Appendix C.

5.4.3 Benefit categories

The economic benefits assessment considers a range of benefit types, which have been categorised into two broad benefit streams:

- **Freight benefits:** these benefits include the changes in cost to freight operators by switching mode from road to rail; and
- **Community benefits:** these benefits include the changes in costs to the community resulting from a reduction in delays on the road network, and other externalities such as crash reductions and reduced environmental impacts.

A description of each of the benefits included in the assessment are provided in Table 10.

³⁸The track length used in the economic benefits assessment is based off the Inland Rail alignment published in February 2017.

Table 10: Benefit category descriptions

Benefit Category	Description
Freight Benefits	
Travel time savings	<p>Freight travel time cost savings represent the value to the economy associated with freight arriving at its destination more efficiently as a result of improvements to the rail network than enable shorter distances, faster travel, and subsequently, increased capacity.</p> <p>Where freight demand is induced (either diverted from road to rail, or new generated freight travel) as a result of improvements to the rail network, the rule of half has been used to estimate the benefits to the new rail freight. Notably, there is no induced freight demand assumed for the Project.</p>
Operating cost savings	<p>Operating cost savings represent the reduction in costs associated with fuel, crew, maintenance and depreciation to both road and rail freight operators as a result of operators making use of the Project. Many of the benefits in this category are derived from the savings associated with shifting freight from road onto rail which has lower operating costs per net tonne kilometre.</p>
Improved service availability	<p>Improved service availability represents the increased flexibility in arrival and departure times afforded to the rail freight network as result of the Project. This is due to fewer restrictions on freight service times provided by the increased network capacity.</p> <p>Freight service availability benefits have been estimated based on the values presented in the Inland Rail Business Case (2015). These benefits were derived by ARTC in 2015, and have been apportioned to individual projects for the purposes of this incremental benefit assessment. The values calculated by ARTC have been escalated to a 2019 price year using PPI Rail Freight Transport (A2314067L).</p>
Improved service reliability	<p>Improved service reliability represents the certainty in transit time and subsequent economic efficiency gains to freight operators. This provides reduced wait times at points of loading/unloading along the network, allowing goods to reach their destinations in a timelier manner.</p> <p>As with availability benefits, reliability benefits have been estimated based on the values presented in the Inland Rail Business Case (2015). These benefits were derived by ARTC in 2015, and have been apportioned to individual projects for the purposes of this incremental benefit assessment. The values calculated by ARTC have been escalated to a 2019 price year using PPI Rail Freight Transport.</p>
Community Benefits	
Crash reduction	<p>Crash cost savings represent the reduced costs associated with fatal and serious injuries resulting from both road and rail incidents.</p>

Benefit Category	Description
Environmental externalities	Reduced environmental externality costs represent reductions in air pollution and greenhouse gas emissions due to the Project. The majority of these benefits can be attributed to the mode shift from road freight to rail freight.
Road decongestion benefits	As the Project encourages greater movement of freight by rail, the reduced truck movements that are projected upon completion of the Project result in reduced congestion in urban areas.

Freight Benefits

The freight benefits have been quantified and monetised using demand assumptions from the Inland Rail Business Case (2015) and the parameters set out in Table 11.

Value of freight per tonne hour unit rates have been derived from previous analysis completed for the Inland Rail Business Case (2015) and escalated to current year prices using appropriate producer price indices.

The analysis estimated a range of rail operating costs for both the Base Case and Project Case. The rates provided in the table demonstrate the efficiency improvements gained in rail operations through the completion of the Project, with higher capacity trains and improved transit times resulting in lower rail operating parameters (unit rates drop from \$0.040 – \$0.039 per NTK in the Base Case down to \$0.017 – \$0.016 NTK in the Project Case for agricultural freight, and \$0.106 – \$0.067 per NTK in the Base Case down to \$0.068 – \$0.039 NTK in the Project Case for containerised freight). These parameters have been estimated based on the outputs from the Inland Rail Business Case (2015) and TfNSW's Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives (2018).

The freight service improvements utilise the previous analysis completed for the Inland Rail Business Case (2015) and have been escalated to current year prices and apportioned to the Project.

Table 11: Freight benefit parameter values (\$2019)

Parameter Value	Variable/s	Source/s
Freight Travel Time		
Value of Freight (Rail)	\$1.69 tonne hour	ATAP, Inland Rail Business Case (2015), PPI Rail Freight Transport (A2314067L)
Value of Freight (Road)	\$1.45 tonne hour	ATAP, Inland Rail Business Case (2015), PPI Road Freight Transport (A2314058K)
Operating Cost		
Agricultural	Rail Operating Cost – Base Case	2024: 0.040 \$/ntk 2054: 0.034 \$/ntk 2074: 0.039 \$/ntk
	Rail Operating Cost – Project Case	2024: 0.017 \$/ntk 2054: 0.016 \$/ntk 2074: 0.017 \$/ntk

Parameter Value	Variable/s	Source/s	
Containerised	Rail Operating Cost – Base Case	2024: 0.106 \$/ntk 2054: 0.080 \$/ntk 2074: 0.067 \$/ntk	TfNSW (2018), Inland Rail Business Case (2015), PPI Rail Freight Transport (A2314067L)
	Rail Operating Cost – Project Case	2024: 0.068 \$/ntk 2054: 0.048 \$/ntk 2074: 0.039 \$/ntk	TfNSW (2018), Inland Rail Business Case (2015), PPI Rail Freight Transport (A2314067L)
Road Operating Costs	0.063 \$/ntk	ATAP, Inland Rail Business Case (2015), PPI Road Freight Transport (A2314058K)	
Road Driver Costs	29.95 \$/h	Austrroads, Inland Rail Business Case (2015), CPI	
Freight Service³⁹			
Freight Service Availability	2024: \$16.75 m 2054: \$182.69 m 2074: \$299.23 m	Inland Rail Business Case (2015), PPI Rail Freight Transport (A2314067L)	
Freight Service Reliability	2024: \$11.17 m 2054: \$45.35 m 2074: \$81.07 m	Inland Rail Business Case (2015), PPI Rail Freight Transport (A2314067L)	

The total freight demand for the Project consists of agricultural freight travelling from Northern NSW (including North Star, Narrabri and North Moree) and Southern QLD (including Goondiwindi and Toowoomba) regions through to Brisbane, and containerised freight from Charlton-Wellcamp to Brisbane Port. As within the Inland Rail Business Case (2015), induced freight demand has only been modelled for the entire extents of Inland Rail (e.g. Melbourne to Brisbane and Brisbane to Melbourne), as such no induced demand has been included in the analysis for the Project.⁴⁰

Consistent with the assumption contained within the Inland Rail Business Case (2015), the resulting freight demand from the Project is expected to see all future contestable freight carried by rail. Under these demand projections, freight users will benefit from a significant reduction in average travel times by rail in the Project Case (from 7.87 hours in the Base Case to 5.53 hours in the Project Case in 2054). This results in the shift of the total freight task from road freight to rail - the total tonnes carried is the same between the Base Case and the Project Case. Notably, as a result of the shift to rail freight and longer average trip distances, the total net tonne kilometres (NTK) travelled increases in the Project Case (in 2054 the Base Case 1,351 mNTK increases to 1,363 mNTK in the Project Case).

³⁹ For the freight service benefits, interpolation has been applied using years 2024, 2054, and 2074. These values are then apportioned based on the approach described in the Section 5.4.3 – Freight demand.

⁴⁰ It is noted that no new independent demand modelling has been undertaken to validate the assumptions contained within the Inland Rail Business Case (2015).

Table 12: Freight demand assumptions

	Base Case			Project Case		
	2024	2054	2074	2024	2054	2074
Trips						
Rail	768	1,066	1,327	1,786	1,907	2,373
Road	66,921	92,917	115,643	-	-	-
Total Tonnes ('000s)						
Rail	870	1,208	1,503	2,603	3,614	4,498
Road	1,733	2,406	2,995	-	-	-
Average Trip Time (hours)						
Rail	6.56	7.87	8.83	5.00	5.53	6.22
Road	6.33	6.72	6.99	-	-	-
Million Net Tonne Km (mNTK)						
Rail	285	396	493	982	1,363	1,696
Road	688	955	1,189	-	-	-
TOTAL mNTK	973	1,351	1,682	982	1,363	1,696

Source: Inland Rail Business Case 2015

Freight benefits have been estimated using the appropriate change in freight demand (such as mNTK) by mode type by the relevant parameter unit. The estimated freight benefits for the Project are provided over a 50 year analysis period in Table 13. Overall, the Project's freight benefits represent an incremental \$112.41 million in present value terms (7 percent discount rate) over the Base Case.

Table 13: Estimated freight benefits (\$2019)

Benefit	Undiscounted - \$m	Present Value (7%) - \$m
Freight Time Savings	47.93	7.91
Operating Cost Savings	405.03	72.36
Freight Service Availability	215.18	24.72
Freight Service Reliability	58.27	7.42
TOTAL	726.41	112.41

Operating cost savings represent 64 percent the of freight benefits with \$72.36 million in present value terms (at a 7 percent discount rate) as freight shifts from road to rail. This is representative of the significant efficiency benefits gained from lower transit times (the average rail freight journey time in 2054 drops from 7.87 hours in the Base Case to 5.53 hours in the Project Case) and higher capacity freight trains. In addition, each rail trip in the Project Case is expected to remove the equivalent of 49 road freight trips from the Project area in 2054.

Freight service availability and reliability represent a combined \$32.14 million in present value terms to freight benefits (~29 percent). This is apportioned to the Project on the basis of the combined service improvements from the broader Inland Rail Program and represent the expected benefit from improved freight service within the Project area.

Freight time savings provide the remaining \$7.91 million in present value terms to freight benefits (~7 percent). As with operating cost savings this is largely representative of the combined efficiency improvements and the resulting mode shift of road freight trips to rail.

Community Benefits

The community benefits have been quantified and monetised using demand assumptions from the Inland Rail Business Case (2015) and the parameters set out in Table 14.

The avoided crash cost saving per net tonne kilometre has adapted from the Bureau of Transport Economics (BTE) estimates. The parameters are consistent with typical transport appraisal methodologies used in business cases throughout Australia. The values presented in the table below have been escalated by CPI.

The environmental externalities cost saving per kilometre travelled parameters have been adapted from Austroads Guide to Project Evaluation Part 4 Section 5 (2012) and are consistent with the parameters applied within the Inland Rail Business Case (2015). The values presented in the table below have been escalated by CPI.

The marginal cost of congestion per vehicle kilometre travelled parameters have been adapted from TfNSW's Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives.⁴¹ This is consistent with the approach applied within the Inland Rail Business Case (2015). The value presented in the table below has been escalated using PPI for Road Freight Transport.

Table 14: Community benefit parameter values (\$2019)

Parameter Value	Variable/s	Source/s
Crash Cost Savings		
Road	0.0053 \$/ntk	BTE (1999), CPI
Rail	0.0005 \$/ntk	BTE (1999), CPI
Environmental Externalities		
Road (Urban)	37.87 \$/1000 km	Part 4 Section 5 Guide to Project Evaluation Austroads (2012), Inland Rail Business Case (2015), CPI
Road (Rural)	12.53 \$/1000 km	Part 4 Section 5 Guide to Project Evaluation Austroads (2012), Inland Rail Business Case (2015), CPI
Rail (Urban)	6.15 \$/1000 km	Part 4 Section 5 Guide to Project Evaluation Austroads (2012), Inland Rail Business Case (2015), CPI
Rail (Rural)	1.64 \$/1000 km	Part 4 Section 5 Guide to Project Evaluation Austroads (2012), Inland Rail Business Case (2015), CPI
Road Decongestion Benefits		
Marginal congestion cost	2.81 \$/vkt	TfNSW, Inland Rail Business Case (2015), CPI

⁴¹ Nationally recognised guidelines for transport appraisal

The shift of road freight to rail provides significant reduction in road freight demand by kilometres travelled. This frees up capacity on the road network, and reduces the level of interaction between heavy vehicles and cars. Table 15 below provides the assumed freight demand by kilometres travelled as per the modelling completed for the Inland Rail Business Case (2015).

Table 15: Freight demand by kilometres travelled ('000s)

Mode	2024	2054	2074
Base Case			
Rail	261	363	451
Road	26,569	36,890	45,913
Project Case			
Rail	714	818	1,018
Road	0	0	0

Source: Inland Rail Business Case 2015

Community benefits have been estimated using the appropriate change in freight demand (such as kilometres travelled) by mode type by the relevant parameter unit. The estimated community benefits for the Project are provided over a 50 year analysis period in the table below. Overall, the Project's community benefits represent an incremental \$34.99 million in present value terms over the Base Case.

Table 16: Estimated community benefits (\$2019)

Benefit	Undiscounted - \$m	Present Value (7%) - \$m
Crash Cost Savings	26.65	4.80
Environmental Externalities	77.50	13.96
Road Decongestion Benefits	90.15	16.23
TOTAL	194.30	34.99

Crash cost savings represent ~14 percent the of community benefits (\$4.80 million in present value terms) as freight traffic is removed from the road network.

The reduction in heavy freight traffic within the Project area will provide further cost savings from environmental externalities, such as air pollution, greenhouse gas emissions, noise and other environmental disruptions. The avoided environmental externality costs resulting from the Project has been estimated to provide \$13.96 million in benefits to the community (~40 percent of community benefits).

Road decongestion benefits provided the greatest share of community benefits (~46 percent), with an estimated \$16.23 million in present value terms. Relative to the Base Case, the Project Case is expected to remove all road freight traffic from the area allowing other commuters to travel more freely across the road network.

5.4.4 Economic benefits assessment results

The results of the economic benefits assessment estimate that the Project is expected to provide a total of \$147.40 million (\$2019) in incremental benefits to the Project area (at a 7 percent discount rate). This consists of \$112.41 million in freight benefits and \$34.99 million in community benefits (\$2019).

Observing the composition of benefits, the largest share of benefits for the Project is freight operating cost savings, representing approximately 49 percent of the total benefits (at a 7 percent discount rate). Freight benefits more broadly (including freight time travel savings, operating cost savings, as well as improved reliability and availability) represent approximately 76 percent of the total projected benefits for the Project.

Reductions in environmental externalities (i.e. air pollution and greenhouse gas emissions) and road decongestion benefits from reduced heavy vehicle kilometres travelled represents approximately 20 percent of the total benefits (at a 7 percent discount rate). Crash reductions represent a further approximately 3 percent of the total benefits (at a 7 percent discount rate).

The results of the economic benefits assessment are presented in the Table 17.

Table 17: Results of the economic benefits assessment, present value terms (\$2019)

Benefits	Discount Rate		
	4%	7%	10%
Freight Benefits	\$220.22 m	\$112.41 m	\$66.39 m
Travel Time Savings	\$15.16 m	\$7.91 m	\$4.74 m
Operating Cost Savings	\$133.68 m	\$72.36 m	\$44.76 m
Improved Availability	\$55.59 m	\$24.72 m	\$12.80 m
Improved Reliability	\$15.80 m	\$7.42 m	\$4.09 m
Community Benefits	\$64.47 m	\$34.99 m	\$21.69 m
Crash Reduction	\$8.84 m	\$4.80 m	\$2.97 m
Environmental Externalities	\$25.71 m	\$13.96 m	\$8.65 m
Road Decongestion Benefits	\$29.91 m	\$16.23 m	\$10.06 m
TOTAL BENEFITS	\$284.69 m	\$147.40 m	\$88.08 m

Source: KPMG

5.4.5 Cost Benefit Analysis: Inland Rail Business Case

Due to the nature of the incremental assessment approach adopted for this assessment, a Project-specific CBA has not been undertaken as the results will not capture the full impact that is expected to be delivered upon completion of Inland Rail. Instead, the results of the economic analysis undertaken for the Inland Rail Business Case (2015) are provided to illustrate the anticipated net economic impact of Inland Rail to the community as a whole.

The results of this analysis, as presented in the Business Case, are provided in the Table 18.

Table 18: Economic appraisal results for Inland Rail (\$2015)

	Net Present Value	Cost Benefit Ratio
PV at 4% Discount Rate	\$13,928 m	2.62
PV at 7% Discount Rate	\$116.1 m	1.02

Source: Inland Rail Business Case 2015

The CBA results indicate that Inland Rail is estimated to be economically viable, with a cost benefit ratio of 1.02 at a 7 percent discount rate (2.62 at a 4 percent discount rate). By beneficiary, intercapital freight users account for 68 percent of total benefits, followed by regional freight (16 percent). A further 13 percent of benefits accrue to the broader community.

5.5 Regional impact analysis

A regional impact analysis has been undertaken to highlight the economic impacts of the Project on the regional, state and national economy using an equilibrium modelling framework. The regional economy is represented by the Toowoomba and Greater Brisbane labour market regions.

5.5.1 Key considerations

The direct and indirect economic impacts of the Project during its construction phase are modelled using a comparative-static version of KPMG-SD. In comparative static mode, KPMG-SD does not trace out the dynamics of how the economy adjusts through time to accommodate the construction of the Project. Rather, in comparative static mode, KPMG-SD provides estimates of how the economy is impacted over the construction phase period, during which the Project's capital expenditure (CAPEX) program is completed.

Under this configuration, KPMG-SD provides two snapshots of the structure and size of the economy for the Project:

- The first snapshot is the **baseline** representation of the economy. For the construction phase, the baseline is a representation of the size and structure of the economy before the CAPEX associated with the Project's development commences.
- The second snapshot is a **revised** representation of the economy that includes the impacts of the Project. For the construction phase, this revised snapshot is a representation of the economy during the expenditure of the CAPEX associated Project development.

The key modelling assumptions and inputs that underpin the regional economic assessment results are provided in Appendix B. It is noted that the analysis in this report was largely completed before the economic shock associated with the 2020 quarter 2 market conditions. In particular, the baseline representation of the economy does not account for 2020 quarter 2 market conditions.

5.5.2 Limitations

It is important to note that the results of the CGE modelling are subject to the following limitations:

Construction phase

The capital expenditure program associated with the development and construction of the Project is modelled in KPMG-SD as a transitory expenditure shock to the economy. Accordingly, modelling each of the construction phases of the 13 projects of Inland Rail in isolation is reasonable. If there is significant overlap in the timing of the construction phases of the other links in the Inland Rail Program, modelling each link in isolation may result in an underestimation of the pressures on resource availability, particularly labour. This could also be exacerbated by other construction projects in the surrounding region. In recognition of this possibility the analysis models the construction phase of each link under two labour market scenarios:

- In the first scenario, it is assumed that labour markets are characterised by the availability of unemployed and under-employed workers with relevant skills (**'slack labour market'**) so that any increases in the demand for labour can be accommodated without increasing real wages.
- In the second scenario, it is assumed that real wages are sensitive to additional labour market demand (**'tight labour market'**).

Operational phase

Due to the nature of the Project, the operational economic impacts of the Project will only be fully realised once all components of Inland Rail are completed. As detailed above, assessing each link of Inland Rail individually and in isolation of the whole Program will not capture the full impact that is expected to be delivered upon completion of the entire Melbourne to Brisbane connection.

In the context of the regional impact analysis, the challenge in modelling the operational phase of the Project in isolation is that the investment made in developing the new infrastructure (during the construction phase) is disproportionate to the benefits directly attributable to that section of Inland Rail. An operational phase shock generates results consistent with a significant overinvestment in rail infrastructure for the Toowoomba and Greater Brisbane regions, with consequent distortionary effects on the local economy as the demand and supply of rail services is rebalanced. Accordingly, the operational phase modelling results are not included in this EIA.

5.5.3 Regional economic impact analysis results

The impacts of the Project on the Toowoomba and Greater Brisbane regions during the construction phase of the Project are summarised in Table 19.

Table 19: Summary of the direct and indirect economic impacts of the Project on the Toowoomba and Greater Brisbane regions over the construction phase

Measure	Toowoomba SA4		Greater Brisbane GCCSA	
	Slack Labour Markets	Tight Labour Markets	Slack Labour Markets	Tight Labour Markets
Additional Real GRP (\$2018-19)	\$235 m	\$81 m	\$81 m	\$29 m
Average Annual Additional Direct and Indirect Employment (persons)	337	73	108	21

Source: KPMG

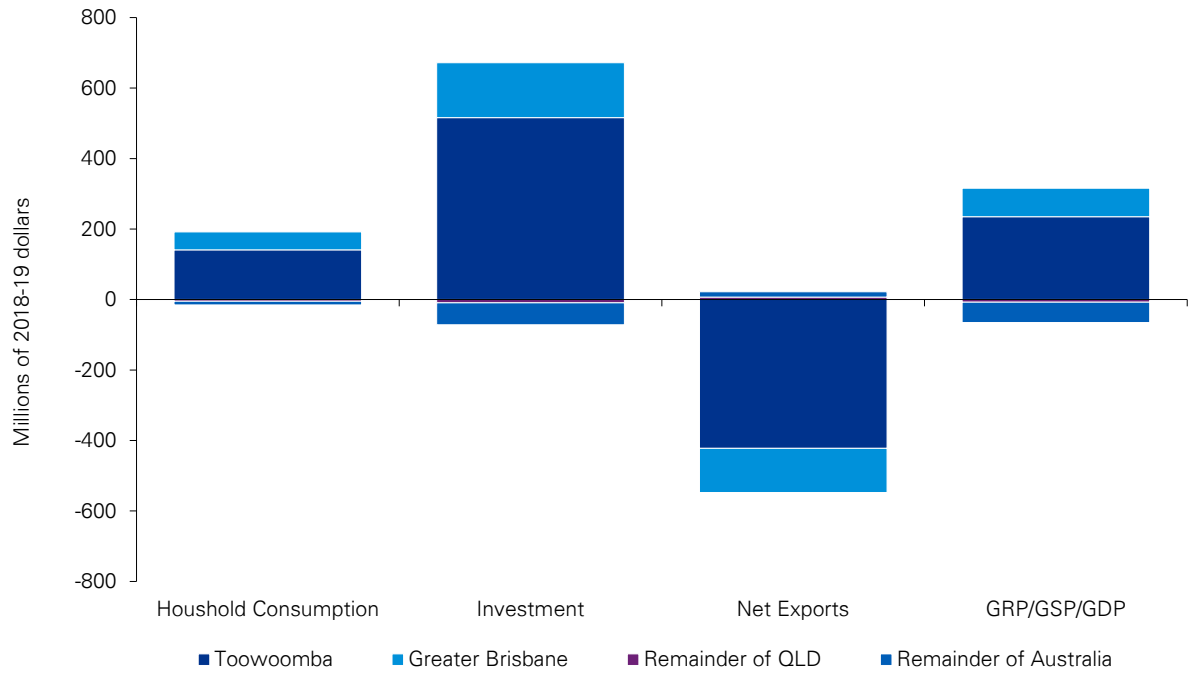
Over the construction phase, real GRP for the Toowoomba and Greater Brisbane regions are projected to be \$235 million and \$81 million higher than the baseline level respectively under the assumption of slack labour markets. This increase is more than halved if labour markets are assumed to be tight (\$81 million for Toowoomba and \$29 million for Greater Brisbane).

The importance of the labour market assumption is reflected in the employment results; in the scenario with slack labour markets, the construction phase of the Project generates an additional 337 jobs per annum in Toowoomba and 108 jobs per annum in Greater Brisbane (direct and indirect employment).⁴² With tight labour markets the increase in jobs is significantly less at 73 jobs per annum (Toowoomba) and 21 jobs per annum (Greater Brisbane). Under tight labour markets, wages are bid up to attract additional workers to the Project.. That is, the labour market response is dominated by workers moving from their current job to a higher paying job. With slack labour markets, there are sufficient unemployed and under-employed workers to accommodate the increase in demand for labour without increasing real wages.

The Figure 7 and Figure 8 summarise the macroeconomic results for the Toowoomba and Greater Brisbane regions in the context of the rest of the QLD and Australian economies.

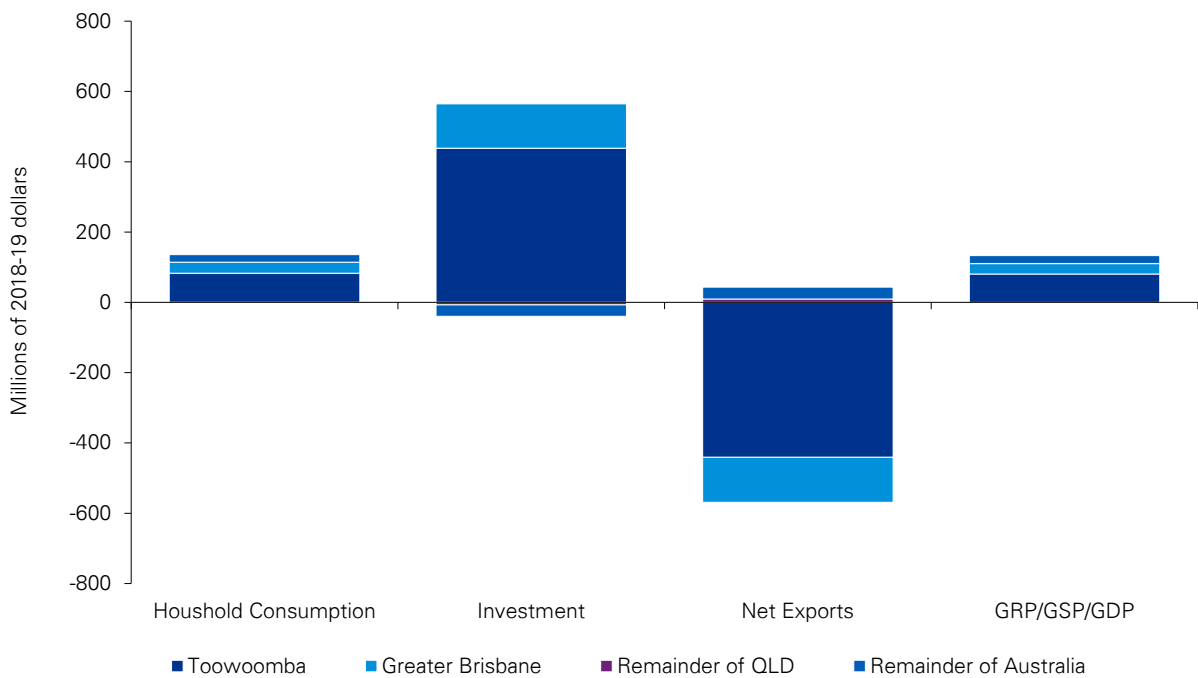
⁴² To put this in context, the planned workforce requirements of H2C during the construction phase peaks at approximately 410 FTEs. Just over 80 percent of the H2C CAPEX is expended in the period 2021 - 2023. KPMG estimate that the average annual number of additional jobs in those three years for Toowoomba and Greater Brisbane is about 550 and 180 in slack labour market conditions and 120 and 30 in tight labour market conditions.

Figure 7: Macroeconomic results: construction phase, slack labour markets



Source: KPMG

Figure 8: Macroeconomic results: construction phase, tight labour markets

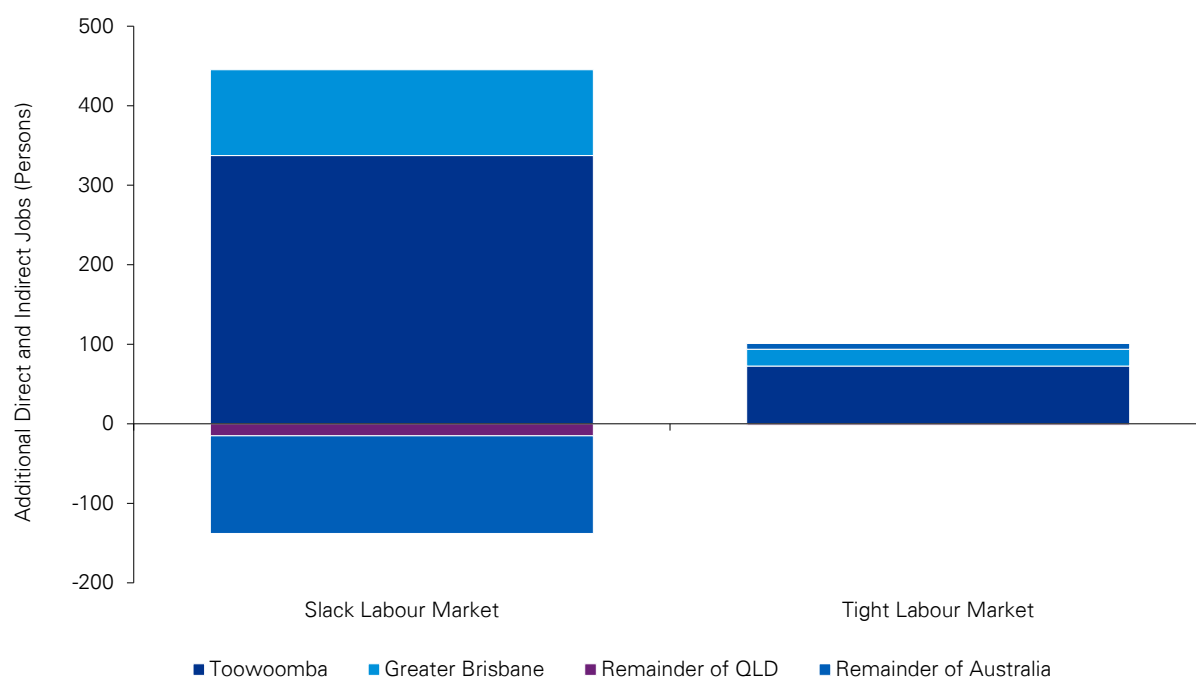


Source: KPMG

The simulation results indicate that the economic impacts of the Project during the construction phase are concentrated in the Toowoomba region. Net exports, which include inter-regional and international exports and imports, may be negatively impacted. The resources required to complete the construction of the Project are

sourced locally and from interstate and overseas suppliers. At the local level higher costs induce the cost-sensitive trade-exposed sectors to release resources to accommodate the investment demands of the Project.⁴³ The modelled direct and indirect impacts of the Project on employment are presented in Figure 9.

Figure 9: Direct and indirect employment results: construction phase



Source: KPMG

Recent labour market trends can be used to inform workforce capacity and capability within the local region. In Greater Brisbane, over the four quarters ending in the December quarter 2019, the unemployment rate averaged 6.1 percent⁴⁴, and the participation rate averaged 78.6 percent over the 12 months ending in December 2019.⁴⁵ Labour market conditions in Greater Brisbane appear to have been stable with the unemployment rate within the range of 6.0 percent – 6.2 percent since the December quarter 2018 and the participation rate staying above 78.2 percent since the start of 2019. Sustained high unemployment rates coupled with an upward trend in participation rates suggests that the labour market in the Greater Brisbane area is not stretched.

The labour market conditions in Toowoomba also suggest a degree of slackness based on data as at December 2019. Although the average annual unemployment rate declined from 5.5 percent in the December quarter of 2018 to 4.8 percent in the December quarter of 2019,⁴⁶ the total number of employed persons has fallen by 16.6 percent from the corresponding period in 2018.⁴⁷ The rolling 12-month average participation rate in Toowoomba has been declining since the start of 2019. As at December 2019, it was down from its peak in January 2019 of 78.5 percent to 74.9 percent.⁴⁸ The labour market indicators suggest that economic activity has been declining in the region and there has been a build-up of a potential pool of working-age people who are not currently in the labour force. The career and training opportunities offered by the Project can help re-skill or up-skill this group of

⁴³ The CAPEX program associated with H2C constitutes a temporary expenditure shock to the economy. Some of the goods and services purchased by customers in the Toowoomba and Greater Brisbane economies are imported from interstate and overseas. CAPEX, particularly at the regional level, is more import intensive than other types of expenditure. This means that a CAPEX shock will, other things equal, result in net exports contracting. In addition, it is assumed that businesses do not respond to the temporary shock by increasing their productive capacity through investment in fixed capital. Instead, businesses use more labour with their existing fixed assets (e.g. plant and equipment), which increases costs and reduces competitiveness. In addition, where it is profitable to do so, businesses switch some of their productive capacity towards accommodating the demands associated with H2C and away from sales to other customers (e.g. to interstate and overseas customers). The results reported are roughly linear for small deviations in the assumed CAPEX. For example, if H2C CAPEX was increased by 5 percent (from \$665 million to \$621 million) then net exports for Toowoomba and Greater Brisbane would fall by a further 5 percent.

⁴⁴ Based on Australian Government’s Small Area Labour Markets (SALM) publication, September 2019

⁴⁵ Participation rate of working-age population 15 – 64 years; ABS, Labour Force Survey 2020, cat. no. 6291.0. Released 27 February 2020.

⁴⁶ Based on Australian Government’s Small Area Labour Markets (SALM) publication, September 2019

⁴⁷ Based on ABS, Labour Force Survey 2020, cat. no. 6291.0. Released 27 February 2020.

⁴⁸ Participation rate of working-age population 15 – 64 years; ABS, Labour Force Survey 2020, cat. no. 6291.0. Released 27 February 2020.

potential workers. The official labour force data at this level of regional granularity is quite volatile and it is important to consider these statistics in a broader context, including with regard to labour market conditions at the state and national levels.

At the time of writing the latest available regional labour market statistics in the Small Area Labour Markets (SALM) publication contained data to December 2019. More recent macro-economic data suggest that labour market conditions may have deteriorated further and the economic shock associated with 2020 quarter 2 market conditions may add considerable downside risks to the broader economy in the short to medium term. The National Accounts data for Quarter 4, 2019 show domestic demand has remained soft, even before recent natural disaster events (i.e., bushfires and floods) and the global coronavirus outbreak. Economic conditions are anticipated to deteriorate markedly in the short to medium run, increasing the likelihood that the national and regional labour markets will be consistent with the 'slack' labour market scenario during the construction phase.

Looking specifically at skilled labour capacity, recent Labour Force Survey results indicate that a relatively high proportion of unemployed workers were last employed in the Construction sector.⁴⁹ In QLD, during the reference week in the quarter ended November 2019, 12,900 unemployed persons (approximately 8.5 percent) reported that their last job was in Construction, representing a 45.5 percent increase from the previous year corresponding quarter. Nationally, over the same period, 15.1 percent of unemployed persons who reported losing their job last worked in the Construction sector. The ABS estimates that job vacancies in the Construction sector have fallen sharply as at November 2019 (around 14.0 percent) from their peak in the quarter ended February 2019.⁵⁰ These indicators suggest a degree of softness in the Construction sector. The industry and occupational profile of the Toowoomba and Greater Brisbane workforce, together with evidence that the Construction sector is not currently stretched means that it is reasonable to assume that the regional labour market has the capacity to supply a significant portion of the workforce requirements of the Project without major disruption.⁵¹

The possibility of some tightness in the labour market cannot be completely dismissed. If health and economic policy responses to the 2020 quarter 2 market conditions are highly effective the economy may grow much faster than expected resulting in significantly more activity in the construction sector than anticipated. For example, the government may seek to bring forward projects to stimulate the economy. If this occurs then labour market conditions may tend towards somewhere between the 'slack' and 'tight' scenarios.

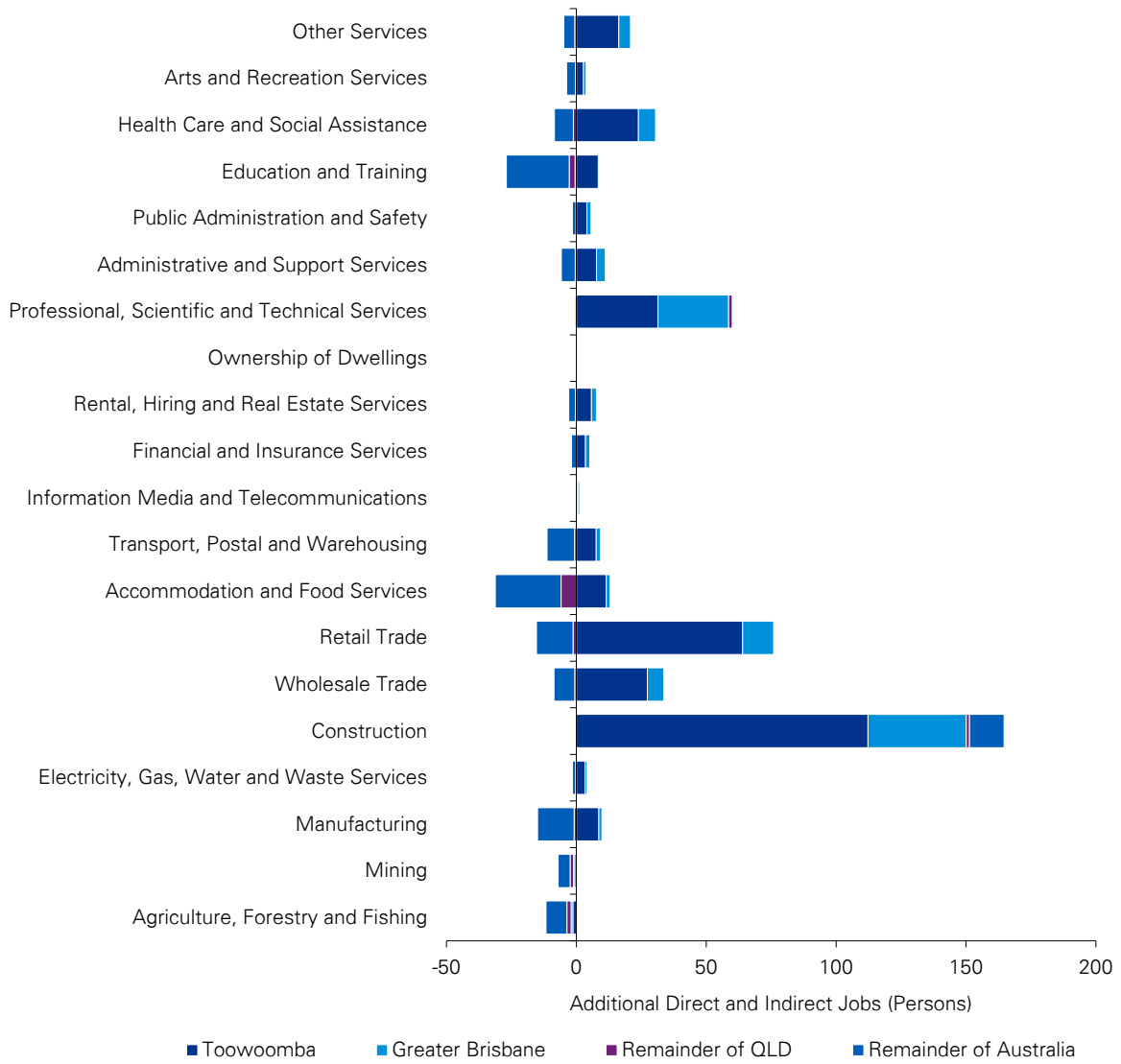
Employment results at the industry level (movement of workers between industries and regions) are presented in Figure and 10 Figure 11 . Although the patterns are the same under the two labour market scenarios, it is evident that under the tight labour market assumption there is greater displacement of workers.

⁴⁹ Based on ABS, Labour Force Survey, Quarterly, November 2019, cat no. 6291.0.55.003. Released 23 December 2019.

⁵⁰ Based on ABS, Job Vacancies, November 2019, cat no. 6354.0. Released 8 January 2020.

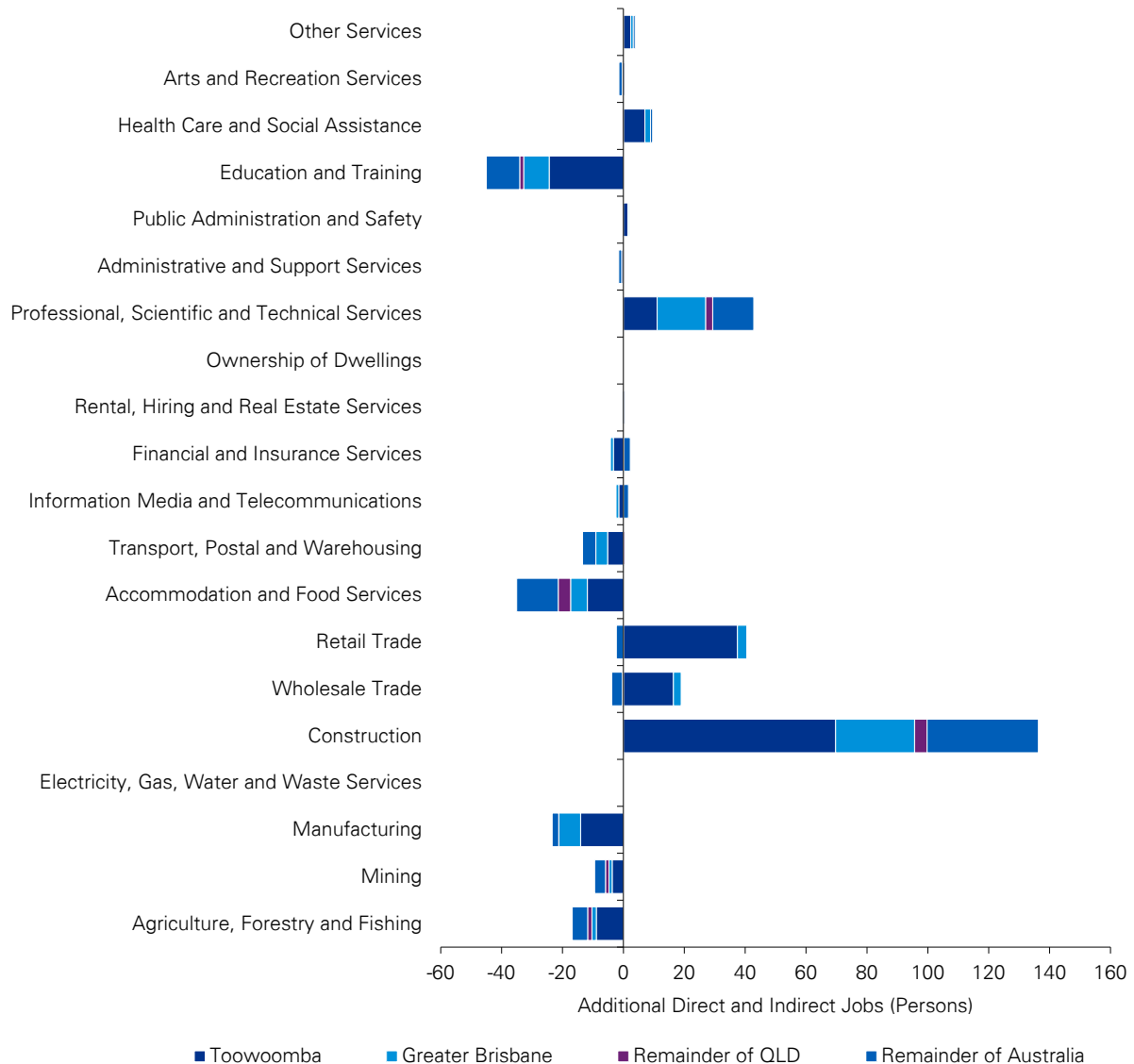
⁵¹ Workers with specialist skills may be sourced from outside of the local region.

Figure 10: Industry employment results: construction phase, slack labour markets



Source: KPMG

Figure 11: Industry employment results: construction phase, tight labour markets



Source: KPMG

The Construction sector, which benefits directly from the Project, is anticipated to expand employment by the greatest number of jobs. The results also indicate the expansion of employment in the Professional, Scientific and Technical Services and Wholesale Trade sectors. This reflects the importance of these two sectors in the Construction industry’s supply chain. The increase in demand for resources to complete the construction of the Project tends to increase resource costs. This has negative impacts on cost-sensitive trade-exposed sectors, such as Agriculture, Forestry and Fishing, Mining, and Manufacturing. As a result, these sectors contract and release resources to the construction-related sectors. Under slack labour market conditions the increase in the demand for workers can be partially accommodated by drawing from the ranks of the unemployed (or underemployed) and accordingly the net displacement of workers from existing jobs is less pronounced.⁵² Under tight labour markets, as businesses compete for workers that are already employed, the benefits from increased labour demand are primarily in the form of higher real wages resulting in greater displacement of workers. As indicated earlier the labour market conditions most likely to prevail during the construction phase of the Project are those represented by the slack labour market scenario.

⁵² In this context drawing on unemployed or underemployed resources to satisfy labour demands applies at the economy-wide level. Businesses directly engaged in the construction of H2C may hire workers already employed in other jobs or they may hire workers that are unemployed or underemployed. A vacancy created by a worker moving from their current job to a job with a business contracted to construct the Project may be filled by workers already employed in other jobs or by workers that are unemployed or underemployed and so on.

6 Cumulative impacts

The cumulative economic impact assessment refers to the potential impact of cumulative stimulus to the economy resulting from a set of existing or planned projects within or adjacent to the study area. Cumulative impacts may result from the spatial and / or temporal interaction between these projects.

For the purposes of this assessment, the cumulative impact assessment has two components:

- **Inland Rail in QLD (Section 6.1)**

A quantitative assessment of the cumulative macroeconomic impact of Inland Rail on the economy, resulting from the construction of the QLD sections of Inland Rail.⁵³

- There are five sections of Inland Rail which fall in QLD, including Border to Gowrie (B2G), Gowrie to Helidon (G2H), H2C, Calvert to Kagaru (C2K) and Kagaru to Acacia Ridge and Bromelton (K2ARB.).

- **Broader cumulative assessment (Section 0)**

A qualitative assessment of cumulative impact of state significant projects (that have been identified by ARTC as having a relationship to the Project - refer Appendix A) on local and regional labour markets, the supply chain and local businesses.

6.1 Inland Rail in QLD

The construction phases of the QLD sections of Inland Rail have been jointly simulated to analyse the cumulative economic impacts of these projects. Table 20 and Source: KPMG

Table 21 summarise the cumulative macroeconomic impacts of the QLD sections of the Inland Rail Program. Under the assumption of slack labour markets the incremental economic impacts of the QLD sections include an increase in real GSP of \$1.75 billion (\$2019) and an increase in the average number of jobs over the period 2020 to 2025 of 2,059 jobs per year. If labour markets are tight then the incremental benefits are smaller with real GSP increasing by \$0.83 billion and the average annual number of jobs increasing by 485 over the same period.

The Project traverses the Greater Brisbane and Toowoomba regions. The other sections of Inland Rail that are also located in the Greater Brisbane and Toowoomba regions include C2K (Greater Brisbane), K2ARB (Greater Brisbane), and G2H (Toowoomba). Construction activities related to these sections will directly impact the Greater Brisbane and Toowoomba economies. The remaining QLD section of Inland Rail – B2G - is located in the Darling Downs and Maranoa region, which will impact Greater Brisbane and Toowoomba indirectly.

The Project when considered in isolation is estimated to generate the direct and indirect increment to jobs in the Greater Brisbane and Toowoomba economies of 108 and 337 jobs per year respectively under the assumption of slack labour markets, and 21 and 73 jobs per year respectively under the assumption of tight labour markets. When all the QLD Inland Rail projects are considered jointly, the analogous increment to jobs (direct and indirect) in Greater Brisbane and Toowoomba increases to 703 and 1,071 per year respectively under the assumption of slack labour markets and 153 and 258 per year respectively under the assumption of tight labour markets.

The increment to jobs in Greater Brisbane peaks in 2022 at 1,610 and 370 jobs under slack and tight labour market conditions respectively; the jobs increment in Toowoomba also peaks in 2022 at 2,106 and 523 under the alternative labour market assumptions. As discussed in the regional economic analysis, the labour market conditions expected to prevail in the Greater Brisbane and Toowoomba economies over the period 2020 to 2025

⁵³ The economic benefits assessment has been undertaken prior to the refinements made to the construction program. The impact of this refinement would have a minor effect on the economic benefits identified. This change to program timing explains any inconsistencies between the construction program identified in the economic analysis and those identified within the body of this report.

will be most consistent with those assumed in the 'slack' labour market scenarios which have been simulated. The assessment of labour market conditions in other regional economies in QLD over the Inland Rail construction is that they will generally be much closer to the 'slack' than to the 'tight' characterisation.

Table 20: Summary of QLD – wide economic impacts – slack labour markets

	GRP/GDP (\$m 2019)	Jobs (persons)		
		Average Annual	Peak	Year of Peak
Greater Brisbane	\$595	703	1,610	2022
Darling Downs - Maranoa	\$314	290	722	2022
Toowoomba	\$821	1,071	2,106	2022
Remainder of QLD	\$24	-5	16	2022
Queensland	\$1,754	2,059	4,455	2022
Remainder of Australia	\$23	-335	-39	2020
Australia	\$1,777	1,724	3,835	2022

Source: KPMG

Table 21: Summary of QLD – wide economic impacts – tight labour markets

	GRP/GDP (\$m 2019)	Jobs (persons)		
		Average Annual	Peak	Year of Peak
Greater Brisbane	\$285	153	370	2022
Darling Downs - Maranoa	\$147	69	175	2022
Toowoomba	\$370	258	523	2022
Remainder of QLD	\$31	5	23	2022
Queensland	\$832	485	1,090	2022
Remainder of Australia	\$277	86	249	2022
Australia	\$1,109	572	1,339	2022

Source: KPMG

6.2 Broader cumulative impacts

6.2.1 Interacting projects

There are a range of projects, within or adjacent to the study area, that may contribute to local and regional economic impacts. These projects are detailed in Table 22 with the potential cumulative impacts on the local and regional labour market, local businesses and supply chain detailed below the table.

The details provided in Table 22 reflect known information as at the time of drafting this report.

Table 22: Projects with the potential to interact with the construction of the Project

Project	Location	Description	Construction Dates / Jobs
Gowrie to Helidon (ARTC)	Rail alignment from Gowrie to Helidon	26 km single-track dual-gauge freight railway as part of the ARTC Inland Rail Project.	2021-2026 Peak of 596 FTE Average of 264 FTE
Calvert to Kagaru (ARTC)	Rail alignment from Calvert to Kagaru	53 km single-track dual-gauge freight railway as part of the ARTC Inland Rail Project.	2021-2026 Peak of 620 FTE Average of 271 FTE
Bromelton State Development Area	Bromelton, Qld	Delivery of critical infrastructure within the Bromelton SDA will support future development and economic growth. This includes a trunk water main and the Beaudesert Town Centre Bypass. This infrastructure provides opportunities to build on the momentum of current development activities by major landowners in the SDA.	2016 – 2031
Ipswich Motorway Upgrade Rocklea to Darra (Remaining sections)	Western Brisbane, Qld	Addressing of congestion and extensive delays in the Ipswich Motorway corridor by a range of road upgrades along 7 km of Ipswich Motorway between Rocklea and Darra.	2017 to 2020-2021 Jobs TBA
RAAF Base Amberley future works	RAAF Base Amberley	White paper dedicated future upgrades to RAAF Base Amberley at a cost of 1 billion.	2016 – 2022 7,000 Jobs
Gatton West Industrial Zone (GWIZ)	3 km north west Gatton	Industrial development including a transport and logistics hub on the Warrego highway.	2019 – 2024 13.5 FTE Jobs

Project	Location	Description	Construction Dates / Jobs
InterlinkSQ	13 km west of Toowoomba	200 ha of new transport, logistics and business hubs. Located on the narrow gauge regional rail network and interstate network. Located at the junction of the Gore, Warrego and New England Highways.	2017 – 2037

Source: ARTC

6.2.2 Cumulative regional labour market impacts

The concurrent construction of interacting projects will increase the demand for labour in the local and regional economy, particularly for workers with trade and construction skills / knowledge. The demand for construction workers within a similar timeframe will lead to cumulative demands on construction labour, not only within the local and regional economy, but also across QLD, and potentially nationally.

The results of the regional economic impact assessment indicate that it is reasonable to assume that the regional labour market will have the capacity to supply a portion of the workforce requirements of the Project, without major disruption. However, these conditions may change in the context of cumulative labour market demand. Prior to the 2020 quarter 2 market conditions, the major infrastructure projects in the adjacent and surrounding areas, including those associated with Inland Rail, had the potential to put some pressure on labour markets if inopportune scheduling resulted in cumulative and competing demand for trades and construction labour. However, the overall labour demands of the various infrastructure projects expected to be constructed were modest and that scheduling could be optimised to minimise market impact. The prevailing trends in the Toowoomba and Greater Brisbane labour market, and the ability of workers to mobilise to project locations, suggested that the risks of labour market disruption were limited. In the current environment, this risk has now been further reduced.

There may be benefits from having additional infrastructure projects in the adjacent and surrounding areas being scheduled for construction around the same time as the Project. These benefits come in the form of lowered mobilisation costs and transfer of labour experience and skills across projects, particularly those constructed in the period leading up to, and the period following, the Project's construction phase.

6.2.3 Cumulative impacts on local businesses

The expansion in construction activity and regional employment (with a subsequent increase in temporary and non-resident population) has the potential to increase demand for a range of local infrastructure and services, including housing, health care, child care, and education. For construction activity occurring within the adjacent region (such as G2H and C2K), most of the workforce are anticipated to be drawn from the local region, within safe driving distance to the Project. It is anticipated that the workforce will return to their place of residence at night, minimising the demand for local infrastructure and services.

There is also the potential for an increase in spending on consumer orientated products by the cumulative construction workforce, which will benefit local businesses by increasing their trading levels.

6.2.4 Cumulative supply chain impacts

Cumulative supply chain impacts are likely to be realised where construction timeframes occur concurrently and comparable material is required, e.g. the adjacent Inland Rail projects. Opportunities to supply these projects may include supply of consumables (fuel), equipment, and materials. Where materials are sourced within the surrounding regions, increased local expenditure is likely to increase local and regional economic activity.

Notably however, should the demand for material surpass supply, resulting in a shortage of available material, input costs to the Project may increase (due to increased prices of materials) driving up the total construction cost, negatively impacting on the economic return of the Project.

7 Impact management

The Project will result in a number of economic impacts, with potential economic benefits realised at a local and regional level. To maximise the positive outcomes of the Project, a number of strategies to avoid, reduce or mitigate the negative economic impacts, and enhance and facilitate the capture of positive impacts have been proposed.

A SIMP has been developed which outlines the objectives, outcomes and performance measures required to manage the social and socio-economic impacts of the Project, and enhance Project benefits and opportunities.

There are two sub-plans which are directly relevant to the economic impacts identified and assessed in this EIA – Workforce Management Sub-plan and Local Business and Industry Participation Sub-plan. A summary of the impacts and benefits identified in this EIA and the relevant recommendations within the SIMP sub-plans is provided in the Table 23. Further details of these plans can be found in the Social Impact Assessment (EIS Appendix Q).

Table 23: Social Impact Management Sub-Plans

Impact / Benefit	ARTC Commitment
<p>Workforce Management - construction</p> <p>The Project has the potential to provide significant opportunity to support local employment, including Indigenous and youth employment opportunities.</p>	<p>Workforce management measures:</p> <ul style="list-style-type: none"> • Require contractors and operators to seek local and regional workers • Ensure people in potentially impacted communities have opportunities to access training related to Project requirements • Identify and communicate to training partners the skills required in construction, operation and maintenance of the Inland Rail Program • Endeavour to ensure that the construction contractor encourages employment, training and skills development opportunities by: <ul style="list-style-type: none"> – Identifying the skills required in the building, construction, equipment and services fabrication and supply, maintenance, operation and support to the Inland Rail Program, for its design, construction, operational and maintenance phases – Arranging timely training and qualification arrangements to meet the needs of skills development to support all phases of Inland Rail – Ensuring that training and qualification systems meet the requirements of the National Standards Framework • Work closely with local Indigenous communities, Department of State Development, Manufacturing, Infrastructure and Planning, Department of Employment, Small Business and Training and Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships (former Department of Aboriginal and Torres Strait Islander Partnerships) to strengthen community members’ capacity for employment, support the design and delivery of training and development programs and encourage applications for Project-related jobs from Indigenous people • Provide a clear and efficient process for people to seek information about employment opportunities and register their interest

Impact / Benefit	ARTC Commitment
	<ul style="list-style-type: none"> ● Work with key partners to link training and development programs with other projects and local industries to provide the greatest regional benefit ● Work with schools and local training providers to provide appropriate training including Science, Technology, Engineering and Mathematics initiatives and scholarship for students from potentially impacted communities ● Use of multiple platforms to advertise job opportunities and promote the availability of employment Expression of Interest forms through community forums, newsletters and Inland Rail websites. Work with QLD Government and Australian Government departments to provide long-term outcomes through training, mentoring and other support programs ● Provide a workplace that is inclusive and values the contributions of Aboriginal and Torres Strait Islander employees.
<p>Local Business and Industry Participation</p> <p>The Project will have significant construction materials and services requirements which may provide local businesses with the opportunity to supply the Project.</p>	<p>Local business and industry participation measures:</p> <ul style="list-style-type: none"> ● Inland Rail's Australian Industry Participation Plan and Sustainable Procurement Policy for the Project ● Support Indigenous businesses to ensure they are prepared for and provided with opportunities to participate ● Maintain access to services and businesses during construction. Where alternative access arrangements are required, these will be developed in consultation with relevant property owners/occupants ● Indigenous participation and local participation will be included as key elements of construction tender assessments and ARTC will work closely with contractors to achieve agreed outcomes ● Work with key partners to link training and development programs with other projects and local industries to provide the greatest regional benefit ● Work with Department of Employment, Small Business and Training and, Department of Infrastructure, Transport, Regional Development, and Communications, Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships (former Department of Aboriginal and Torres Strait Islander Partnerships) and local and Indigenous businesses to: <ul style="list-style-type: none"> – Build businesses' capacity to participate in the Project's supply chain through business development, mentoring and pre-qualification projects – Support Indigenous businesses to ensure they are prepared for and provided with opportunities to participate ● Provide a clear and efficient process for businesses to seek information about opportunities and register their interest ● Work with key partners to link training and development programs with other projects and local industries to provide the greatest regional benefit ● Work with key partners to link training and development programs with other projects and local industries to provide the greatest regional benefit ● Ensure local and Indigenous business participation is included as a key element of all tender assessments, include participation targets in

Impact / Benefit	ARTC Commitment
	construction contracts, and work closely with contractors to achieve agreed outcomes.

Source: EIS Appendix Q - Social Impact Assessment

There are a number of economic impacts identified within this EIA which are beyond the anticipated requirements of the SIMP. Where these impacts cannot be avoided, a range of measures have been proposed by ARTC to carefully manage and mitigate these impacts. These measures are summarised in Table 24 below with further details provided in EIS Chapter 8: Land Use and Tenure, and the Social Impact Assessment (EIS Appendix Q).

Table 24: Summary of proposed management and mitigation measures

Impact	Proposed Mitigation / Management Measures
Agriculture	
Loss of agricultural land	<p>Where loss of agricultural land is unable to be avoided the following have been considered to minimise impact:</p> <ul style="list-style-type: none"> • the horizontal alignment (amongst other environmental, social, cultural, economic and technical constraints); • placement of the rail corridor such that it traverses around or as close as possible to property boundaries to reduce potential fragmentation; and • sterilisation of productive land (where feasible); and • avoiding intensive livestock operations, including feedlots and poultry farms. <p>Where the disturbance footprint is unable to avoid the severance of agricultural land and enterprises due to the partial acquisition of a property, acquisition will be investigated in consultation with landowners. The consideration of partial or full acquisition of these properties will be determined on a case-by-case basis, with consultation occurring with individual landowners to determine if the agricultural enterprise can remain viable.</p>
Land fragmentation and disruption to access and infrastructure	<p>Where land is fragmented or isolated, any impacts on operational farm requirements such as impacts on access, infrastructure and services will be managed and reinstated as soon as practicable. Work with individual land owners will continue to develop suitable solutions based on individual farm management practices through the development of individual property management agreements. Solutions may include the provision of crossing points or underpasses for access to fragmented or isolated properties. Where disruption to water supply occurs, crossing points will be provided or the relocation of water supply or irrigation systems will be undertaken in consultation with landowners</p> <p>The overall disturbance of construction areas has been limited where possible. Where agricultural land is required to be used temporarily during construction, disturbed areas will be rehabilitated as close as possible to pre-construction conditions in accordance with the Reinstatement and Rehabilitation Plan.</p>
Alterations to stock routes	<p>The disturbance footprint does not traverse any known stock routes. Stock movements will be considered during detailed design and in consultation with landholders to identify stock routes across grazing properties that may be</p>

Impact	Proposed Mitigation / Management Measures
	<p>affected during construction or operation of the Project. If informal or private stock routes are identified through consultation with landholders, appropriate mitigation measures will be agreed upon with affected landholders. Mitigations measures may include the provision of alternative access arrangements developed in consultation with affected property owners/occupants.</p> <p>Where stock fencing is required, fencing will be constructed in accordance with the Inland Rail fencing standards. This will occur prior to the removal of existing fencing and prior to any works being carried out on the subject land, unless otherwise agreed with the landowner.</p>
Tourism	
<p>Disruption to local tourism businesses and industry from changes in amenity and rural character.</p>	<p>Where the Project disrupts local tourism businesses, consultation with tourism associations and Councils will be ongoing to ensure that generalised impacts on tourism values are reduced (wherever possible).</p> <p>Work will continue with councils, Chambers of Commerce, tourism associations and tourism service providers in potentially impacted communities to implement the initiatives identified in the detailed design phase.</p> <p>Work will be undertaken with the Lockyer Valley Tourism Association, and the Ipswich Tourist Association to support their promotional and marketing campaigns to minimise the impact of the Project on the tourism industry.</p> <p>Work will be undertaken with the Lockyer Valley Tourism Association, the Lockyer Valley Chamber of Commerce and interested businesses to develop and fund marketing or business capacity development strategies.</p>

Source: EIS Chapter 8: Land Use and Tenure; EIS Appendix Q: Social Impact Assessment

8 Conclusions

A detailed EIA has been undertaken for the Project in accordance with the requirements of the ToR.

Inland Rail Program impacts

To meet the requirements of the ToR, this EIA has focussed on the specific economic impacts resulting from the construction and operation of the Project. However, the assessment acknowledges the role of the Project, and the remaining project links, in collectively delivering the benefits of Inland Rail. In its entirety, Inland Rail will enhance Australia's existing national rail network and serve the interstate freight market. Based on the Inland Rail Business Case (2015), the anticipated key economic impacts of Inland Rail include:

- Lower prices for consumers as a result of lower intercapital freight transport costs, which reduces the cost of living for households.
- Positive direct net economic benefits, driven by improvements in freight productivity, reliability and availability, and benefits to the community from reduced environmental externalities, reduced road congestion and improved safety benefits. Inland Rail is stated to be economically viable with a cost benefit ratio of 1.02 at a 7 percent discount rate (2.62 at a 4 percent discount rate).
- Economic growth as increased profits (for industries and producers where intercapital freight is an input or output) and incomes are multiplied through the economy. The Program is anticipated to deliver a net positive impact of \$16 billion on Gross Domestic Product over its 10 year construction period and 50 years of operation.
- Nationally, Inland Rail is also expected to deliver an additional 16,000 jobs at the peak of construction, and an average of 700 additional jobs per annum during operation(s).
- Enhanced competition between rail and road freight, by providing a credible transport alternative, which will drive further innovation and efficiency.
- Potential to promote the expansion and development of freight precincts around Inland Rail terminals as a result of the benefits from co-location and clustering of industries (reduced transport costs to warehousing, economies of scale and knowledge-sharing opportunities).

Local and regional employment, business and industry impacts

At a local level, the Project will support regional economic development through opportunities for local and regional employment, businesses and industries:

- The Project offers opportunities to encourage, develop and grow Indigenous, local, and regional businesses through the supply of resources and materials for the construction and operation of the Project (e.g. materials, fencing, installation and instrumentation, rehabilitation and landscaping, and construction works support services).
- Opportunities in secondary service and supply industries (such as retail, hospitality and other support services) for businesses in close proximity to the construction footprint. The expansion in construction activity is also likely support additional flow-on demand and additional spending by the construction workforce in the local community.
- The Project is a critical link in Inland Rail. As both a greenfield and brownfield development, the Project comprises new dual gauge track to create a more direct rail freight corridor for freight operators. As a critical link of Inland Rail, the Project offers opportunities to support the local agricultural industry, by driving savings in freight costs, improving market access, and reducing the volume of freight vehicles on the region's road network.

The Project alignment has been designed to minimise impacts to local business and industry, however the Project may result in the disruption to the agricultural and tourism industries through:

- The loss of agricultural land (through disturbance, acquisition, or sterilisation by the permanent disturbance footprint), disruption to farm management, or changes in accessibility or connectivity to market. This may negatively impact on the productive capacity and total economic value add from the local agricultural industry. Based on the proportion of productive agricultural land lost, it is estimated that the Project could result in a loss of \$17,274 (value foregone) in gross agricultural production per year.⁵⁴ ARTC will work with individual land owners to develop suitable management solutions based on individual farm management practices to mitigate and manage these impacts; and
- Changes to the amenity of, or connectivity to, local attractions. The Social Impact Assessment (refer Appendix Q) assessment concludes that a significant decrease in visitation as a result of this impact is unlikely. Work will continue tourism associations to ensure that generalised impacts on tourism values are reduced wherever possible.

Economic benefits assessment

The economic benefits assessment estimates that the Project is expected to provide a total of \$147.4 million (\$2019) in incremental benefits (at a 7 percent discount rate). These benefits result from improvements in freight productivity, reliability and availability, and benefits to the community from crash reductions, reduced environmental externalities and road decongestion benefits.

Regional impact analysis

The Project will promote regional economic growth across the Toowoomba and Greater Brisbane regions. Using recent labour market trends and projected construction sector activity to inform workforce capacity and capability within the local region. It is likely that the labour market conditions that will prevail during the construction phase of the Project will most likely be closer to those characterised by the slack labour market scenario. Under this scenario, over the construction phase, real GRP is projected to be \$235 million higher than the baseline level in Toowoomba and \$81 million higher in Greater Brisbane.

Under a slack labour market scenario, the Project is expected to deliver an additional 445 jobs per year over the construction period (1,744 jobs for all QLD projects).

The possibility of some tightness in the labour market cannot be completely dismissed. Health and economic policy updates to address 2020 quarter 2 market conditions may result in accelerated economic growth, potentially resulting in increased construction sector activity. For example, the government may seek to bring forward projects to stimulate the economy. If this transpires then labour market conditions may tend towards somewhere between the 'slack' and 'tight' scenarios.

Cumulative regional impact analysis

Under the assumption of slack labour markets the incremental economic impacts of the QLD sections include an increase in real GRP of \$1.75 billion (measured in 2019 dollars) and an increase in the average number of jobs over the period 2020 to 2025 of 2,059 jobs per year. If labour markets are tight then the incremental benefits are smaller with real GRP increasing by \$0.83 billion and the average number of jobs increasing by 485 per year over the same period.

The results of the regional economic impact assessment indicate that the regional labour market will have the capacity to supply a portion of the workforce requirements of the Project, without major disruption. However, these conditions may change in the context of cumulative labour market demand. Prior to the change in 2020 quarter 2 market conditions, the major infrastructure projects in the adjacent and surrounding areas, including those associated with Inland Rail, had the potential to put some pressure on labour markets (if competing demand for trades and construction labour). However, the overall labour demands of the various infrastructure projects expected to be constructed were modest - and scheduling could be optimised to minimise potential market impact(s). The prevailing trends in the Toowoomba and Greater Brisbane labour market, and the ability of

⁵⁴ This value is an indicative estimate only - it does not consider the value of individual commodities produced per lot or the value-add activities which contribute to the gross value of agricultural production in the region. An assessment of the composition of agricultural production by lot and commodity may be undertaken following detail design.

workers to mobilise to project locations, suggested that the risks of labour market disruption will be limited. In the current environment, this risk has now been further reduced.

The expansion in construction activity and regional employment is also likely to increase demand for a range of local infrastructure and services, including in the construction supply chain and for local retail and hospitality businesses.

Impact management

The economic benefits of the Project will be enhanced while avoiding, mitigating or managing any adverse economic impacts. The SIMP outlines the objectives, outcomes and performance measures required to manage the social and socio-economic impacts of the Project, and enhance the Project benefits and opportunities. There are a number of economic impacts identified within this EIA which are not addressed within the SIMP.

Where potential impacts cannot be avoided, a range of measures have been proposed to manage and mitigate these impacts. For example, measures include working with individual land owners to develop suitable solutions based on individual farm management practices, rehabilitating land as close as possible to pre-construction conditions, and consulting with tourism associations to develop a strategy to ensure that generalised impacts on tourism values are reduced (wherever possible).

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Appendix A Interacting Projects' Conditions

HELIDON TO CALVERT ENVIRONMENTAL IMPACT STATEMENT

Appendix A: Interacting projects

conditions

The EIA considers the potential impacts of Inland Rail's adjacent Gowrie to Helidon (G2H) and Calvert to Kagaru (C2K) projects, and other state significant projects which have been deemed to have a relationship to the Project by the ARTC. This relationship has been determined by ARTC according to the following conditions - the cumulative project:

- a) is currently being assessed under Part 1 of the Chapter 3 of the *Environmental Protection Act 1994* (Qld) (EP Act) and, as a minimum, have an initial advice statement (IAS) available on the QLD Department of Environment and Science (DES) website;
- b) has been declared a 'coordinated project' by the Coordinator-General under the SDPWO Act and an EIS is currently being prepared or is complete, or an IAS is available on the QLD Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP) website;
- c) may use resources located within the region (including materials, groundwater, road networks or workforces) that are the same as those to be used by the Project.; or
- d) could potentially compound residual impacts that the Project may have on environmental or social values.

A search of publicly available information (i.e. Council websites) was also undertaken to identify any potential projects where there is the potential for a compound residual impact on environmental or social values.

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Appendix B Regional Economic Assessment—Assumptions

HELIDON TO CALVERT ENVIRONMENTAL IMPACT STATEMENT

Appendix B: Regional economic assessment - assumptions

Construction phase

The choice of exogenous variables determines the economic environment (or context) in which the construction of the Project will be assessed. The construction phase CAPEX required to construct the Project can be thought of as a temporary shock to the economy. That is, it is a one-off increase in investment expenditure.

The economic impacts of the construction phase of the Project are directly related to the stimulus that is provided to the economy through the boost to expenditure required to construct the Project. Analysis of the construction phase of the Project is best done in the context of a short run economic environment to recognise the temporary nature of the stimulus that this phase of the Project provides.

Our choice of exogenous variables for the construction phase simulation is designed to configure KPMG-SD so that it represents the behaviour of the economy in the shorter term. The key settings include:

- i. tax rates and government policy settings are held fixed at their baseline values with budget balances free to vary;
- ii. sector-specific capital stocks are held fixed at their baseline values;
- iii. a value for investment in the Toowoomba and Greater Brisbane *Rail Transport* sector is imposed to reflect the Project CAPEX assumptions whilst investment in the remaining sectors responds to sector-specific rates of return;
- iv. the labour market is assumed to have sufficient slackness in the short term that increases in demand do not impact real wages;
- v. the number of working-age people in the nation is held fixed at the number in the baseline;
- vi. the average propensity to consume out of household disposable income is held fixed at its baseline value; and
- vii. consumer preferences and technical change parameters are held fixed at their baseline values.

The default setting for the labour market listed under (iv) warrants further explanation. In comparative-static mode the labour market in KPMG-SD can be configured in one of two conventional ways. The first approach, consistent with (iv) above, is to assume that real wages are fixed at their baseline values and that labour demand is accommodated by supply responses that do not induce changes in real wages. This assumption is reasonable in environments where there is slack in labour markets and unemployed or under-employed workers and working-age people currently not in the labour force can be drafted into jobs. The second approach is to assume that labour markets are extremely tight and that increases in labour demand are accommodated by increases in real wages as businesses compete for workers that are already employed.

In this report the sensitivity of the labour market assumption is quantified by simulating the construction phase of the Project under the two approaches described above (i.e. slack or tight labour markets).

Model inputs

The numerical inputs (or shocks) imposed on KPMG-SD in the construction phase simulation are provided below.

Construction phase shocks

The shocks imposed on KPMG-SD are designed to capture the direct impacts of the construction phase of the Project on the economy. KPMG-SD then estimates the flow-on effects of these shocks on the economy.

The table below reports the projected CAPEX for the Project. Over the construction phase⁵⁵, total CAPEX is projected to be \$565 m (\$2018-19), with the majority of this expenditure occurring in 2021-2023. As stated in Section 2.2.6, the CAPEX included in this analysis reflects the estimated costs as at the time of drafting the Inland Rail Business Case (2015). Accordingly, there may be a variance between the costs outlined below and the final costs of the Project as at detailed design.

Modelling inputs - construction phase

Year	\$2015 ^{a, c}	\$2019 ^{b, c}
2020	\$27,735,854	\$29,665,529
2021	\$119,153,936	\$127,443,866
2022	\$174,733,430	\$186,890,209
2023	\$135,567,140	\$144,998,991
2024	\$57,776,213	\$61,795,894
2025	\$13,260,621	\$14,183,206
Total	\$528,227,194	\$564,977,695

Notes:

a) Derived from capital cost plan and construction programming provided to KPMG by ARTC.

b) Conversion to 2019 dollars based on the Producer Price Index growth from December 2015 to March 2019. The Producer Price Index used relates to output of the Heavy and Civil Engineering Construction industry specifically.

c) These figures reflect capital costs and do not include other provision (insurances, construction camps, ARTC train control system, utilities and property & site remediation).

As the Project link crosses through Toowoomba and Greater Brisbane regions, the projected CAPEX will be modelled to the two regions in proportion to the lengths of the link's segments in each region. The number of km of the Project in these regions are as follows:

- 36.759 km in Toowoomba SA4
- 10.683 in Greater Brisbane GCCSA

This means, 77 percent of the projected CAPEX will be modelled to Toowoomba SA4 and 23 percent to Greater Brisbane GCCSA.

⁵⁵ The assessment assumes a capital expenditure profile consistent with the Inland Rail Business Case (2015), using parameters and inputs based on the state of the economy projected for those years. Pre-construction costs prior to 2020 are not included because they are spent outside of the indicative construction period. Total spending in the construction phase (including pre-construction costs) is \$549,803,164 (\$2015) and \$588,054,776 (\$2019).

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Appendix C CAPEX for the Queensland Inland Rail Projects

HELIDON TO CALVERT ENVIRONMENTAL IMPACT STATEMENT

Appendix C: CAPEX for the Queensland Inland Rail Projects

This appendix has been included to outline the CAPEX figures across the Queensland Inland Rail Projects. The CAPEX for the five Queensland Inland Rail Projects are outlined in the table below.

Total CAPEX for Queensland Inland Rail Projects

Inland Rail Project	\$2015 ^{a, c}	\$2019 ^{b, c}
NSW/Qld Border to Gowrie	\$1,042,245,408	\$1,114,757,844
Gowrie to Helidon	\$1,016,149,084	\$1,086,845,913
Helidon to Calvert	\$528,227,194	\$564,977,695
Calvert to Kagaru	\$ 606,030,854	\$ 648,194,410
Kagaru to Acacia Ridge and Bromelton	\$47,751,792	\$51,074,041
Total	\$3,240,404,332	\$3,465,849,903

a) The CAPEX figures outlined are incurred over the construction phase which have been derived from the capital cost plan and construction programming provided to KPMG by ARTC. Pre-construction costs are not included because these are incurred outside of the indicative construction period (prior to 2020).

b) Conversion to 2019 dollars based on the Producer Price Index growth from Dec 2015 to Mar 2019. The Producer Price Index used relates to output of the Heavy and Civil Engineering Construction industry specifically.

c) These figures reflect capital costs and do not include other provisions (insurances, construction camps, ARTC train control system, utilities and property & site remediation).

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Appendix D Treatment of Coal Demand
for the Inland Rail EISs

HELIDON TO CALVERT ENVIRONMENTAL IMPACT STATEMENT

Appendix D: Treatment of coal demand for the Inland Rail EIS'

Note regarding the treatment of coal demand for the Inland Rail EIS'

This appendix has been developed to document KPMG's assumption relating to the treatment of coal demand within the benefits assessment developed for the Inland Rail Environmental Impact Statements (EIS).

For the purposes of the economic benefit assessments contained within the Inland Rail EIS', freight movements from coal demand have been excluded. This approach is consistent with the Cost Benefit Analysis (CBA) completed for the Inland Rail Business Case (2015). With specific reference to the CBA results for the scenarios **"No Western Line Upgrade"** (refer table below, extracted from the Inland Rail Business Case (2015) Chapter 9. Economic Analysis), where coal benefits are equal to zero (0).

Cost benefit analysis results for Inland Rail by beneficiary (incremental to the base case, discounted 2014-15 dollars)

BENEFICIARY (PV \$ MILLIONS)	INCLUDING WESTERN LINE UPGRADE*		NO WESTERN LINE UPGRADE	
	PV AT 4% DISCOUNT RATE (\$M)	PV AT 7% DISCOUNT RATE (\$M)	PV AT 4% DISCOUNT RATE (\$M)	PV AT 7% DISCOUNT RATE (\$M)
COSTS				
Capital costs	7650	6590	7607	6553.8
Operating costs	133	66	133	65.6
Maintenance costs	793	380	775	371.4
Total costs	8575	7036	8515	6991
BENEFITS				
1) Intercapital/intermodal freight	15 361	4666	15 862	4716
Melbourne to Brisbane	12 222	3697	12 621	3737
Brisbane to Adelaide	1278	389	1320	393
Brisbane to Perth	1860	579	1921	585
2) Regional freight	3524	1271	1995	693
Coal	1592	585	0	0
Agricultural products	1850	658	1910	665
Others (including steel, minerals, general freight, and other extra-corridor)	82	28	84	28
3) Community	2821	879	3126	962
4) Passengers	50	16	52	16
5) Rail network owners (ARTC & QR)	747	321	772	324
Total benefits	22 503	7152	21 806	6711
Net present value of costs and benefits	13 928	116	13 291	(280)
Benefit cost ratio	2.62	1.02	2.56	0.96

Source: Inland Rail Business Case 2015

On this basis, it is the understanding of KPMG that in the absence of the Western Line upgrade to the existing QLD Rail network⁵⁶, no benefits are expected to accrue to coal movements as a result of the delivery of Inland Rail. These results imply that, under this scenario, there is no net benefit to coal trips traversing any of the new links to be delivered as part of Inland Rail. For example, as a stand-alone project, the Project is not expected to generate net benefits to coal freight.

Further, the above table highlights that the identified benefits accruing to coal trips are a direct result of Inland Rail with complementary investment in Western Line Upgrades, which do not form part of the scope of Inland Rail as it stands currently, and are not funded.

On this basis, KPMG has ensured consistency with the assumptions contained within the Inland Rail Business Case (2015) which indicates there are no net benefits to coal freight movements under the "No Western Line Upgrade" scenario.

⁵⁶ Referred to as "complementary investment on the QR network (Western Line and Brisbane metropolitan network) to enable coal train lengths to increase from 650 m to 1,010 m")

Any further consideration of potential benefits that may be expected to accrue to coal movements as a result of the Project would require additional validation of the demand assessment undertaken as part of the business case.