APPENDIX R

Economic Impact Assessment

GOWRIE TO HELIDON ENVIRONMENTAL IMPACT STATEMENT

IR_1536

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

KPMG

Inland Rail

Gowrie to Helidon

Environmental Impact Statement

Economic Impact Assessment

Technical Report

2-0000-320-EAP-00-RP-0217

March 2021

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.

KPMG is under no obligation in any circumstance to update this report, in either oral or written form, for events occurring after the report has been issued in final form.

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.

This report has been prepared at the request of ARTC in accordance with the terms of KPMG's contract (9000-0013) dated 4 May 2018. Other than our responsibility to ARTC, neither KPMG, nor any member or employee of KPMG undertakes responsibility arising in any way from reliance placed by a third party on this report. Any reliance placed is that party's sole responsibility.

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1 Summary

Introduction

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

On 16 March 2017, the Queensland Coordinator-General declared the Project a coordinated project. The purpose of the EIA is to form part of an Environmental Impact Statement (EIS) being prepared by ARTC for approval from the Coordinator-General under Section 26(1)(a) of 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 Project is to be assessed under a bilateral agreement between the Queensland and Commonwealth governments, with the final Terms of Reference (ToR) issued on 9 August 2017. The following assessment addresses the economic specific information requirements of Section 5.1, 11.146, 11.149 and 11.21 of the ToR.

Specifically, 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 publicly available information, and the outputs from the Gowrie to Helidon Social Impact Assessment (refer EIS Appendix Q: 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 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 Program Business Case (PwC 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 (LGA) which have been used to establish and analyse the existing economic environment of the Project – Toowoomba and the Lockyer Valley. Combined, these LGA boundaries form 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 boundaries of the Australian Statistical Geography Standard that captures the integrated regional economy within which the Project is located. The Project is located within the Toowoomba labour market region which is defined as the regional economic catchment area for this EIA.

Baseline and impact assessment[1]

Existing labour market conditions

According to the Australian Government's quarterly regional estimates of unemployment, as at September 2020 there were a total of 6,871 unemployed persons in the study area (78.8 percent located in Toowoomba LGA) and 5,346 in the Toowoomba labour market region.[2] Within the study area and regional economic catchment, the unemployment rate in the Lockyer Valley LGA was 7.5 percent and 6.7 percent in the Toowoomba LGA. The unemployment rate in the Toowoomba labour market region (7.2 percent)[3] broadly reflected the unemployment rate for Queensland (7.3 percent)[4] in September 2020. Both unemployment rates increased in 2020 compared to the 12 month average as a result of the quarter 2 2020 market conditions.

For the September 2020 quarter, the labour force participation rate across the study area was higher than the state average, 71.5 percent[5] compared to 65.5 percent[6] for Queensland. This indicates that a relatively larger proportion of the working age population in the study area are working compared to those in Queensland. The Toowoomba labour market region had a participation rate of 74.9 percent.[7]

A significant proportion of the local labour force is located in close proximity to the Project alignment, particularly within the urban footprint of Toowoomba city. The remaining labour force is likely to be geographically distributed throughout the study area due to the diverse regional landscape outside of this main urban footprint. Population in the study area is separated by the Great Dividing Range and dispersed farmland.

According to the 2016 Census, the Indigenous population is inadequately represented in the impact assessment area's workforce, which is reflected in high rates of Indigenous unemployment and low labour force participation. Across the impact assessment area and regional economic catchment, approximately one fifth of the Indigenous population is unemployed, and the labour force participation rate is below 60 percent.

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

These labour market trends indicate that locally there is some latent capacity in the local and regional labour force.

Employment by industry

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

In Toowoomba, the largest proportion of workers are employed in service based industries such as Health Care and Social Assistance (14.7 percent), Education and Training (11.0 percent) and Retail Trade (9.5 percent).[8] A significant proportion of the population are also employed in secondary industries, with a further 15.3 percent of residents employed in Construction (8.5 percent) or Manufacturing (6.8 percent). [9]

[1] Since the completion of the economic modelling detailed in this report there have been 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.
[2] Australian Government's Small Area Labour Markets publication (12-month moving average), December 2019
[3] ibid
[4] ABS, Labour Force Survey, Australia, September 2020 – published February 2021
[5] ABS 2016 Census of Population and Housing
[6] ABS, *Labour Force Survey, Australia,* September 2020 – published February 2021.
[7] Australian Government's Small Area Labour Markets publication(12-month moving average), December 2019
[8] ABS 2016, Census of Population and Housing
[9] ibid

In the Lockyer Valley, employment is diverse across primary, secondary and service based industries. This reflects the land uses of the LGA, primarily being regional landscape and rural production, with a small urban footprint concentrated in the town of Gatton. The highest number of residents are employed in Agriculture, Forestry and Fishing (13.8 percent) across a diverse range of activities including Sheep, Beef and Grain Farming and Vegetable Growing. Following this, Health Care and Social Assistance (9.8 percent), Retail Trade (9.1 percent) and Education and Training (9.1 percent) are large industries of employment for residents.[10]

There are a number of residents within the study area employed in directly relevant industry sectors to support the construction of the Project. According to the 2016 Census, 8.5 percent of the total workforce are employed in the Construction industry (7,362 workers), with the largest proportion of workers residing in Toowoomba (6,053 workers).[11] Within the Construction industry, 751 local workers are employed in Heavy and Civil Engineering construction.[12]

Occupation

The study area's primary occupations of employment reflects the area's industry profile and distribution of employment across industries. Within the Lockyer Valley, the largest proportion of workers are employed as Labourers (18.1 percent) of which 10.1 percent work as Construction and Mining Labourers, and 28.5 percent as Farm, Forestry and Garden Workers. In Toowoomba, most workers are employed as Professionals (18.6 percent). There are also a number of workers employed as Technicians and Trades Workers (15.1 percent), specifically as Construction Trades Workers (representing 19.4 percent of all Technicians and Trade Workers).

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 Queensland, while there is an oversupply of labourers, there are workforce gaps present in rail infrastructure construction sectors, most severe among specialist managers and professionals (such as engineers).[13]

These trends are also reflected at a national level. The Australian Industry Group Construction Outlook (November 2018) found that Australian businesses are reporting widespread and increasing difficulties in sourcing skilled labour.[14]

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.[15] It is most likely that these shortages in labour availability are for specific specialist trades.

Workforce profile

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. During pre-construction, the Project will employ up to 50 workers. The Project is then anticipated to require an average workforce of 264 full time equivalents personnel per year during construction, and approximately 20 personnel during the Project's operation.

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

[10] ibid
[11] ABS 2016 Census of Population and Housing
[12] ibid
[13] Australasian Railway Association, 2018, *Skills Capability Study*
[14] 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.*
[15] AiGroup, Construction Outlook November 2018

the stimulation of activities downstream (e.g. through the provision of inputs to other sectors and the expenditure patterns of employees).

Overall, it seems reasonable to assume that the local labour market has the capacity and skills to supply a significant portion of the construction labour requirements of the Project. However, there may be shortages in a smaller number of specialist jobs.

Local employment

The Project represents a source of potential training and career pathway development for local workers and young people in the study area. As detailed in the Social Impact Assessment for the Project (EIS Appendix Q), the Regional Skills Investment Strategy (a funded four-year initiative of the Department of Small Business Employment and Training) will support regional communities to identify current and ensure local people are supported to develop the skills to meet this demand. Both the Toowoomba Regional Council and Lockyer Valley Regional Council are participating in the Regional Skills Investment Strategy.

A range of other Government strategies and programs which may support local employment are summarised in the Social Impact Assessment. These include: Jobs Queensland, Skilling Queenslanders for Work, Back to Work Regional Employment Package, and the Queensland Women's Strategy (2016-2021).

Inland Rail Skills Academy

ARTC has established and implemented the Inland Rail Skills Academy to help create opportunities for education, training, skills development and employment for communities along the Inland Rail Program alignment. The Inland Rail Skills Academy includes a number of partnerships and programs, including undergraduate scholarships, science, technology, engineering and maths (STEM) education, training programs, and a partnership between ARTC and the Australasian Railway Association.

Indigenous participation

The Project also offers the potential to increase Indigenous employment and create business opportunities. Traditional Owners were consulted by ARTC through the Cultural Heritage process – the Western Wakka Wakka People and Yuggera Ugarapul People – who regarded the Project as an opportunity to improve Indigenous employment.

The Social Impact Management Plan (SIMP) (specifically the health and wellbeing action plan) specifies that ARTC commits to ongoing engagement with Indigenous communities, families and Elders to support Indigenous employees, underpinned by a high level of coordination between contributing programs and agencies (refer Social Impact Assessment - EIS Appendix Q).

Local businesses and industry

Tourism

Tourism in Toowoomba and Lockyer Valley is largely generated by the region's scenic amenity, environmental values and rural character. The region is a popular destination for visitors seeking to explore the natural landscape and scenic amenity of the Great Dividing Range and its surrounds.

The Project alignment will not have a direct impact on tourism businesses (through property acquisition), however local businesses have raised concerns regarding the Project such as noise and vibration, dust and air quality and changes in property values. The Project has been designed to minimise these impacts where possible. ARTC will consult with individual stakeholders to better understand the nature of these concerns, including appropriate mitigation and management approaches.

During construction, there is potential for road works, bridge construction and the visual impact of laydown areas to affect tourists' experience and travel times. Some visitors may be deterred from visiting during the Project's construction which has the potential to impact on tourism based businesses within the area. Construction activities also have the potential to disrupt access to the Bicentennial National Heritage Trail and the Lockyer National Park. This impact is anticipated to be small and will be temporary whilst construction activities are undertaken.

As detailed in the Social Impact Assessment (EIS Appendix Q), the Project is not anticipated to result in the displacement of tourists from accommodation attributable to workforce housing demand.

During operation, there is potential for reduced scenic amenity due to the Project's location within the rural and regional landscape. According to the Gowrie to Helidon Landscape and Visual Impact Assessment Gowrie to Helidon Landscape and Visual Impact Assessment (EIS Appendix H), this is not expected to have a significant impact on tourism visitation.

Agriculture

The Darling Downs is renowned for some of the state's best agricultural land, with primary production activities being grazing (both sheep and cattle), dryland and irrigated cropping, and timber production. Dominant activities in the South East Queensland (SEQ) region are horticulture, poultry, cattle, dairy and cultivated turf. Production is predominantly focussed on the western side of the Great Dividing Range with a greater number of processing industries located in the SEQ region.

As at June 2020, there were a total of 164 employing businesses within the Agriculture, Forestry and Fishing Industry in the Lockyer Valley LGA (a further 6,647 were non employing), and 519 employing businesses in Toowoomba LGA (2,845 non employing).[16]

As detailed in the Land Use and Tenure chapter (EIS Chapter 8), these potential impacts include:

- Loss of agricultural land;
- Disruption to access and infrastructure;
- Disruption to access to water resources, including groundwater;
- Disruption to stock and product movement;
- Flood inundation; 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. Details on consultation undertaken for the Project is included within the EIS Appendix D: Community Consultation

Loss of agricultural land

Overall, the permanent disturbance footprint will traverse 0.01 percent of the study area's productive agricultural land. This proportion can be used to estimate, at a high level, the potential loss of agricultural production resulting from the Project. In 2017-18, the gross value of agricultural production in Toowoomba and Lockyer Valley LGAs was $792 million.[17] Accordingly, it is estimated that the Project could result in a loss of approximately $78,296 (value foregone) in gross agricultural production per year.[18]

Where the permanent disturbance footprint is unable to avoid 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 will be assessed on an individual case-by-case basis, with consultation occurring with landholders to determine if these enterprises can remain viable. The required land can be acquired by negotiation with the landholder or through a compulsory acquisition process, known as 'land resumption'. Land is usually not acquired more than one to two years prior to construction and generally following the approval of the Project.

Acquisition of land used for intensive livestock operations

The acquisition of intensive livestock operations, including feedlots, poultry farms and aquaculture and other notable land uses (such as Withcott Seedlings) have been avoided. Subsequently, the Project will not result in the acquisition of land used for local intensive livestock operations.

[16] ABS, 2021, Count of Australian Businesses, including Entries and Exits, June 2016 to June 2020, cat. no. 8165.0
[17] Queensland Government, 2019, Queensland Spatial Catalogue: Gross Value of Agricultural Production (GVAP) per Local Government Area in Queensland.
[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.

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 and road corridors, the Project may sever or isolate parcels of agricultural land, limiting internal movements and reducing access to agricultural land. Potential land severance may cause a disruption in farm operations through impacts to essential farming infrastructure (including access to water), services or access routes. These impacts will be discussed with individual landowners during detailed design.

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 possible. ARTC will work with individual landholders to develop suitable solutions based on individual farm management practices.

Disruption to water resources, including ground water

The Project has the potential to directly impact the water supply of farms and agribusinesses within and surrounding the Project. Across the broader study area, farms and agribusinesses rely on surface water and groundwater, primarily through water bores. Specifically, the Withcott Seedling Farm. Water supply is located to the west (potable water supply) and east (wastewater) of the Project. To minimise potential impacts of a loss in water supply and disruption to the internal access, the Project has been re-aligned to minimise any direct impacts on water infrastructure, and includes a proposed grade separation over the internal access tracks and water infrastructure between the water supplies.

According to the Surface Water Quality Technical Report (EIS Appendix L) and the Hydrology and Flooding Technical Report (EIS Appendix M) for the Project there may be small changes to the local hydrology during construction and operations (e.g. temporary waterway barriers). However, the potential impacts are considered low and changes to the base-flow and low-flow conditions are not expected to materially impede current surface water resource use or groundwater recharge. The Project has been designed to minimise any changes to flow, and any impacts to surface water users.

According to the Groundwater Technical Report for the Project (EIS Appendix N), there are a number of registered groundwater bores which will need to be decommissioned as part of the land acquisition process. The majority of the bores are either used for domestic purposes or irrigation.

Groundwater modelling has also predicted short-term and long-term impact to groundwater resources during construction and operation of the Toowoomba Range Tunnel. Affected bore owners within the relevant drawdown extents will be consulted and a bore assessment undertaken prior to construction.

ARTC plan to 'make good' impairments (e.g. water level decline impairing the bore's ability to provide a reasonable quantity or quality of water for the bore's authorised use or purpose) resulting from the construction and/or operation of the Project on a case by case basis. The 'make good' arrangements (e.g. reconditioning groundwater bores) will aim to ensure the bore owner has access to a reasonable quantity and quality of water for the water bore's authorised purpose or that the bore owner is compensated for the bore's impaired capacity.

Disruption to stock and product movement

The Project does not traverse any declared stock routes, although it is understood that there may be informal stock routes which interface with the Project alignment, used to transfer stock to various grazing paddocks and holding yards.

Informal stock movements will be considered during detailed design. ARTC is undertaking consultation with landholders to identify stock routes across grazing properties that may be affected during construction or operation of the Project. In the event that private stock routes are identified, appropriate mitigation measures will be developed in consultation with affected landholders.

Improvements in supply chain efficiency

Efficient supply chains support the regional and national capacity to enhance economic opportunities within local communities. As a predominantly greenfield development, the Project comprises new dual gauge rail track to create a more direct rail corridor through the Toowoomba Range which will benefit rail operators, along with the interoperability between the Inland Rail alignment and the Queensland Rail (QR) network and the interstate

network managed by ARTC.. As a critical section of the broader Inland Rail Program, the Project offers 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 support local export industries (such as agriculture), by driving savings in freight costs (by increasing the competition between road and rail freight modes);
- Improves freight transportation infrastructure between the eastern and western side of the Great Dividing Range; and
- Has the potential to unlock the construction of ancillary and complementary infrastructure, which will improve market access and expand local agricultural businesses and industry.

Mineral resources and extractive industries

The Project has been designed to minimise the potential sterilisation of mineral and petroleum resources, and to minimise the restriction of access to mineral resources or disruption to existing operations. The Project generally follows the Gowrie to Grandchester future State transport corridor and does not traverse mineral or petroleum resource tenements.

Consultation with resource interest holders, including operators of Harlaxton Quarry (KRA 8) will continue to be undertaken during detailed design. Where the Project may impact on likely significant deposits within the KRA, appropriate mitigation will be agreed with the resource interest holders.

Local construction businesses

Construction businesses

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

There are a number of construction businesses located within the study area, with a total of 1,334 employing businesses and a further 1,793 non employing businesses across the Lockyer Valley LGA and Toowoomba LGA.[19] There are a further 421employing businesses across the study area in the Transport, Postal and Warehousing industry, with 269 of these businesses located in Toowoomba LGA.[20] These businesses are likely to be a significant source of services and equipment during the Project's construction.

Specifically, precast concrete may be sourced from Ipswich, and other major components such as fencing may be sourced within the study area. It is likely that concrete sleepers will be sourced from outside the study area.

Ballast material will be sourced from local quarries. Seven operational quarries have been identified by ARTC as potentially suitable for use as material source locations during construction activities. The viability and feasibility of accessing material from these locations will be confirmed during the detailed design phased of the Project (post-EIS).

During consultation undertaken to inform the Social Impact Assessment (EIS Appendix Q), stakeholders noted that the capability and capacity of local businesses has been strengthened by the construction of the Toowoomba Bypass. The strength of the construction industry indicates potential capacity in this industry to support the Project's construction.

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, such as at the Toowoomba Enterprise Hub and Gatton West Industrial Zone.

[19] ABS, 2021, Count of Australian Businesses, including Entries and Exits, June 2016 to June 2020, cat. no. 8165.0
[20] ibid

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.

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 would support additional flow-on demand and additional spending by the construction workforce in the local community (such as in the Toowoomba and Lockyer Valley areas where a portion of the construction workforce are likely to be sourced). This may lead to increased trading levels for small businesses, such as food and beverage businesses in the study area.

Local industrial areas

As part of the Inland Rail Program, the Project has the potential to stimulate business and industry development at the Toowoomba Enterprise Hub in Wellcamp and Gatton West Industrial Zone. By providing efficient transport access to intrastate and interstate markets, the Project may act as a catalyst for further private sector investment in this area, particularly for freight and logistics operations. The further development of the Toowoomba Enterprise Hub has the potential to unlock greater economic activity in the region, such as through promoting greater international export opportunities via Wellcamp Airport. These opportunities may be further enhanced by the strategic link that would be provided between Inland Rail and the QR network, and the interstate rail network managed by ARTC, potentially serving to attract rail-dependent industries to the region.

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 Program Business Case (2015), key economic impacts of the Inland Rail Program are anticipated to 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 benefit cost 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 ($2015) over its 10 year construction period and 50 years of operation.
- At the peak of construction, Inland Rail will create more than 16,000 direct and indirect jobs. An additional 700 ongoing jobs will be created once Inland Rail is operational.
- 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

An economic benefits assessment has been undertaken to identify and assess the likely benefits of the Project, as a discrete project, to the community. These economic benefits have been estimated based on the impacts of the Project on the transport network, in particular freight operators, along with the benefits accrued by non-users

(the community). Where the Project improves the transport connectivity and efficiency between freight originators and destinations, these movements across road and rail have been assessed in the appraisal.

Accordingly, for the purposes of this EIA, there are two components to the CBA:

- 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 (in isolation of the whole Inland Rail Program). 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.
- Description of the economic performance measures calculated for the Inland Rail Program as a whole (as per the Inland Rail Program Business Case (2015).

Economic benefits assessment results

The results of the economic benefits assessment estimate that the Project is expected to provide a total of $101.62 million ($2021 present value terms) in incremental benefits to the project area (at a 7 percent discount rate). This consists of $77.11 million in freight benefits and $24.51 million in community benefits.

Observing the composition of benefits, the largest share of benefits for the Project 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 for the Project.

Reductions in environmental externalities (i.e. air pollution and greenhouse gas emissions) from reduced heavy vehicle kilometres travelled represents ~10 percent of the total benefits (at the 7 percent discount rate).

Results of the economic benefits assessment, present value terms ($2021)

Benefits	Discount Rate		
	4%	7%	10%
Freight Benefits	**$142.73 m**	**$77.11 m**	**$48.12 m**
Travel Time Savings	*$9.82 m*	*$5.43 m*	*$3.43 m*
Operating Cost Savings	*$86.54 m*	*$49.58 m*	*$32.41 m*
Improved Availability	*$36.11 m*	*$17.00 m*	*$9.30 m*
Improved Reliability	*$10.27 m*	*$5.10 m*	*$2.97 m*
Community Benefits	**$42.67 m**	**$24.51 m**	**$16.06 m**
Crash Reduction	*$5.85 m*	*$3.36 m*	*$2.20 m*
Environmental Externalities	*$17.02 m*	*$9.78 m*	*$6.40 m*
Road Decongestion Benefits	*$19.80 m*	*$11.37 m*	*$7.45 m*
TOTAL BENEFITS	**$185.40 m**	**$101.62 m**	**$64.18 m**

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 Program 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	Benefit Cost Ratio
PV at 4% Discount Rate	$13,928 m	2.62
PV at 7% Discount Rate	$116.1 m	1.02

Source: Inland Rail Program Business Case 2015 Note: Assumes complementary investment on the QR network (Western Moreton System 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 labour market region.

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.[21]

The key impacts of the Project on the Toowoomba labour market region during the construction phase are summarised in the table below.

Direct and indirect economic impacts of the Project on regional economic catchment over the construction period

	Toowoomba SA4	
Measure	**Slack Labour Markets**	**Tight Labour Markets**
Additional Real GRP ($2018-19)	$595 m	$206 m
Additional Average Direct and Indirect Jobs (persons)	1,027	225

Source: KPMG

At the end of the construction phase, real GRP for the Toowoomba labour market region is projected to be $595 million higher than the baseline level under the assumption of slack labour markets. This increase is more than halved if labour markets are assumed to be tight ($206 million).

The importance of the labour market assumption is reflected in the employment results. In the slack labour market scenario it is estimated that an additional 1,027 direct and indirect jobs are generated.[22] Note that this is the average number of jobs per annum during the construction period. With tight labour markets the increase in jobs is significantly less at 225 jobs. Under tight labour markets, wages are bid up to attract currently employed workers to the construction businesses contracted to construct 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.

[21] As compared to the direct jobs determined through the indicative construction schedule and component activities as described in the workforce profile.
[22] To put this in context the planned direct workforce requirements of the Project during the construction phase peak at approximately 596 FTE.

Recent labour market trends can be used to inform workforce capacity and capability within the local region. In the Toowoomba labour market region, over the four quarters ending in the September quarter 2020, the unemployment rate averaged 7.2 per cent[23], and the participation rate averaged 77.8 per cent over the 12 months ending in September 2020.[24] Labour market conditions in Toowoomba have deteriorated since the end of 2019 with the unemployment rate increasing from 4.3 per cent in the September quarter 2019 to 7.2 per cent in the September quarter 2020. At this stage it remains uncertain how much of the deterioration in the labour market is due to the impacts of the COVID pandemic and how quickly the economy will recover. Rising unemployment rates coupled with relatively strong participation rates suggests that the labour market in the Toowoomba area is not stretched. It is noted that 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 September 2020. More recent macro-economic data and continuing difficulties in managing the COVID-19 pandemic suggest that considerable downside risks are likely to persist in the short to medium term. The National Accounts data for the December quarter 2020 revealed that Gross Domestic Product (GDP) continued to advance (3.1 per cent quarter-on-quarter) after positive growth in the September quarter (3.4 per cent quarter-on-quarter) as states and territories began to relax their lockdown restrictions. However, GDP remains 1.1 per cent below the level recorded in the same period a year earlier. The recovery in economic conditions is anticipated to be modest and characterised by a high degree of uncertainty. In this environment, national and regional labour markets are unlikely to be stretched, supporting the proposition that labour market conditions expected to prevail during the Project's construction phase will be most consistent with the "slack" labour market scenario. This characterisation of the labour market does not preclude pressure being placed on specific construction skills during the construction phase. This possibility is discussed below.

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.[25] In Queensland, during the reference week in the quarter ended November 2020, 17,300 unemployed persons (approximately 9.2 percent) reported that their last job was in Construction, representing a 34.6 percent increase from the corresponding quarter in the previous year. Nationally, over the same period, 13.2 per cent of unemployed persons who reported losing their job last worked in the Construction industry. These indicators suggest a degree of spare capacity in the Construction sector. The industry and occupational profile of the Toowoomba 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. [26]

The possibility of some tightness in the labour market cannot be completely dismissed. More recently the ABS has estimated that as at November 2020, job vacancies in the Construction sector have risen from a trough in May 2020 to be about 7.8 per cent higher than in the same period in 2019.[27] If the government's health and economic policy responses to the pandemic are highly effective, the economy may grow much faster than is 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 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.

[23] Based on Australian Government's Small Area Labour Markets (SALM) publication, September 2020

[24] Participation rate of working-age population 15 – 64 years; ABS, Labour Force Survey 2020, cat. no. 6291.0.55.001. Released 25 February 2021.

[25] Based on ABS, Labour Force Survey, Quarterly, November 2020, cat no. 6291.0.55.003. Released 23 December 2020.

[26] Workers with specialist skills may be sourced from outside of the local region.

[27] Based on ABS, Job Vacancies, November 2020, cat no. 6354.0. Released 13 January 2021.

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

- **Inland Rail Program in Queensland**

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

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

- **Broader cumulative assessment**

  A qualitative assessment of the cumulative impact of state significant projects on local and regional labour markets, the supply chain and local businesses.

Inland Rail Program in Queensland[28]

Under the assumption of slack labour markets the incremental economic impacts of the construction 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 sections of the Inland Rail Program that are located in the Toowoomba Regional economic catchment are Gowrie to Helidon and part of the Helidon to Calvert section. Construction activities related to these sections will directly impact the Toowoomba[29] economy. The remaining Queensland sections of the Inland Rail Program, which are located in the Greater Brisbane and Darling Downs and Maranoa regions, will impact Toowoomba indirectly.

The previous section reported the results of simulations when the Project was considered in isolation. In that context, the direct and indirect increment to jobs in the Toowoomba economy was estimated to be 1,027 under the assumption of slack labour markets and 225 under the assumption of tight labour markets. When all the Queensland projects are considered jointly, the analogous increment to jobs (direct and indirect) in Toowoomba increases to 1,071 (under a slack labour market scenario) and 258 (under a tight labour market scenario). In the joint scenario the increment to jobs in Toowoomba peaks in 2022 at 2,106 and 523 jobs under slack and tight labour market conditions respectively. As discussed in the regional impact analysis, the labour market conditions expected to prevail in the Toowoomba economy over the period 2021 to 2025 will be most consistent with those assumed in the "slack" labour market scenarios that have been simulated. The labour market conditions in other regional economies in Queensland over the Inland Rail construction phase period will generally be much closer to the "slack" than to the "tight" characterisation.

Broader cumulative assessment

The concurrent construction of interacting projects has the potential to 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 COVID-19 shock, 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

[28] The cumulative impacts 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.
[29] SA4 Labour Market Region not LGA

modest and that scheduling could be optimised to minimise market impact. The prevailing trends in the Toowoomba 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 Project benefits and opportunities. There are two action plans which are directly relevant to the economic impacts identified and assessed in this EIA – Workforce Management and the Australian 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 landholders to develop suitable solutions based on individual farm management practices, rehabilitating land as close as possible to pre-construction conditions, and consulting with local business owners to ensure they are informed about the timing and scope of activities in their area.

Conclusions

A detailed EIA has been undertaken for the Project, in accordance with the requirements under Section 5.1, 11.146, 11.149 and 11.21 of the ToR.

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. fencing, electrical installation (excluding rail systems) and instrumentation, rehabilitation and landscaping, cleaning and maintenance of construction and accommodation facilities). ARTC has developed a Sustainable Procurement Policy which will ensure that local, regional and Indigenous businesses will have opportunities to supply the Project.
- The Project offers 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 temporary flow-on demand and additional spending by the construction workforce in the local community.
- The Project offers opportunities 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 the adjacent B2G and H2C projects) may act as a significant

catalyst for development in the planned and existing industrial areas at the Toowoomba Enterprise Hub and Gatton West Industrial Zone.

- As a predominantly greenfield development, the Project comprises new dual gauge track to create a more direct rail corridor through the Toowoomba Range which will benefit rail operators, along with the interoperability between the Inland Rail alignment and the QR network and the interstate network managed by ARTC.. As part 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 of the agriculture and tourism industries through:

- The loss of agricultural land (through disturbance, acquisition, or sterilisation), 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, it is estimated that the Project could result in a loss of approximately $78,296 (value foregone) in gross agricultural production per year.[30] ARTC will work with individual landholders 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) concludes that a significant decrease in visitation as a result of this impact is unlikely. ARTC will work will tourism associations to ensure that generalised impacts on tourism values are reduced wherever possible.

Economic benefits assessment

The economic benefits assessment estimate that the Project is expected to provide a total of $81.54 million ($2019 present value terms) 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 economic impact analysis

The Project will promote regional economic growth across the Toowoomba labour market region. 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 GRP is projected to be $595 million higher than the baseline level.

Under a "slack" labour market scenario, the Project is also expected to deliver an additional 1,027 jobs (direct and indirect) per year over the construction period.

The recovery in economic conditions is anticipated to be modest and characterised by a high degree of uncertainty. In this environment, national and regional labour markets are unlikely to be stretched, supporting our assessment that labour market conditions expected to prevail during the Project's construction phase will be most consistent with the "slack" labour market scenario. This characterisation of the labour market does not preclude pressure being placed on specific construction skills during the construction phase.

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

[30] 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.

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.

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 COVID-19 shock, the known 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. KPMG's assessment is that the overall labour demands of the various infrastructure projects expected to be constructed are modest and that scheduling could be optimised to minimise market impact. The prevailing trends in the Toowoomba and national labour markets, as well as the ability of workers to mobilise to project locations, suggest that the risks of labour market disruption are limited. This risk has now been further reduced by the uncertainty posed by the COVID-19 shock.

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 proposal while avoiding, mitigating or managing any adverse economic impacts. Accordingly, there are a range of actions that ARTC will undertake and / or require its contractor to undertake to manage the social and socio-economic impacts of G2H, and enhance proposal benefits and opportunities. There are a number of economic impacts identified within this EIA which are not addressed within the Social Impact Management Plan (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 landholders 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.

2 Introduction

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

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.

Since the completion of the economic modelling detailed in this report there have been 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. However, the economic shock associated with the 2020 quarter 2 market conditions is discussed qualitatively in relation to the economic modelling outputs.

2.1 Legislation

On 16 March 2017, the Queensland Coordinator-General declared the Project a coordinated project. The purpose of the EIA is to form part of an Environmental Impact Statement (EIS) being prepared by ARTC for approval from the Coordinator-General under Section 26(1)(a) of 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 ToR were issued on 9 August 2017. The following assessment addresses the economic specific information requirements of Section 5.1, 11.146, 11.149 and 11.21 of the ToR (refer Table 1 and Table 2).

Table 1: EIA ToR Information Requirements

Section 11.149: 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
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 4, Section 5, Section 6 and Section 7
Section 11.146 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 5 (Other requirements addressed through the Social Impact Assessment – EIS Appendix Q)
Section 11.21 The economic and social impacts of the action, both positive and negative, must be summarised. Matters of interest should include: (a) consideration at the local, regional and national levels (b) any public consultation activities undertaken, and their outcomes (c) any consultation with indigenous stakeholders (d) identification of affected parties and communities that may be affected and a description of the views of those parties and communities (e) project economic costs and benefits of the project and project alternatives, including the basis for their estimation through cost/benefit analysis or similar studies; and (f) employment and other opportunities expected to be generated by the project in each of the construction and operational phases.	Section 4, Section 5 and Section 6

2.2 Guidelines

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

The guidelines 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.

2.3 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. This alignment is outlined in Table 3.

Table 3: Alignment of the Project to local and regional policy and planning

Document	Alignment
Australian Infrastructure Plan 2016 *Infrastructure Australia*	• The Australian Infrastructure Plan (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 highlights the importance of the Melbourne to Brisbane freight corridor in supporting population, production and employment precincts along the east coast of Australia. Inland Rail will improve the efficiency, effectiveness and safety of freight movements travelling along this corridor. As a predominantly greenfield development, the Project will contribute to the realisation of these benefits.
Queensland Freight Strategy – Advancing Freight in Queensland *Queensland Government*	• The Queensland Freight Strategy (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 the broader 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 Queensland Regional Plan 2017 (ShapingSEQ) *Queensland Government*	• ShapingSEQ is the Queensland Government's plan to guide the future development of the South East Queensland (SEQ) region. • The Plan highlights the importance supporting economic opportunities and synergies within and between regional economic clusters, such as the Western Gateway and South West Industrial Corridor (including Ipswich). These regional economic clusters will be further enabled by Inland Rail. • The Plan recognises the role of Inland Rail in improving national freight network connections. This will support efficient freight movements, and contribute to economic development throughout SEQ.

Document	Alignment
	• The Plan also recognises the role of Inland Rail (and geographically, the Project alignment) in unlocking opportunities for the greater intensification and consolidation of industrial activities (and rail-dependent industries) within the western subregion.
Darling Downs Regional Plan 2013 *Queensland Government*	• The Darling Downs Regional Plan provides direction to guide land use planning and development to influence the economic, social and environmental characteristics of the Darling Downs region. • The Plan outlines the importance of inter-regional linkages to grow local economies, and service domestic and international markets. As a predominantly greenfield development, the Project will contribute to strengthening inter-regional linkages and facilitate the more efficient movement of commodities between Queensland's south-east and west. • The Plan also acknowledges opportunities to leverage rail infrastructure to boost economic development by promoting modal shift towards increased rail usage. As part of the broader Inland Rail program, the Project will improve the efficiency and effectiveness of rail freight, promoting this mode shift.
South East Queensland Regional Transport Plan 2021 *Queensland Government*	• The 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 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 eastwest freight link, by improving the availability of rail freight. The Project, as part of the broader Inland Rail Program, will increase the attractiveness and competitiveness of rail freight, consistent with the planning intent of the SEQ RTP.
SEQ Regional Freight Strategy 2007-2012 *Queensland Government*	• 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. • The Strategy acknowledges freight as an important issue for the region with the efficient movement of freight listed as crucial to industry and commercial productivity. As such, Inland Rail is noted as having the potential to influence future freight movements and the development of the SEQ freight network.
Darling Downs Regional Transport Plan 2019*Queensland Government*	• The draft Darling Downs Regional Transport Plan (Darling Downs RTP) outlines a shared direction for shaping the region's transport system over the next 15 years. The Darling Downs RTP details the economic importance of the relationship between infrastructure, transport and land use. • The Plan highlights the importance of Inland Rail, in the context of improvements in supply chains and freight productivity. The Project, as part of the broader Inland Rail Program, will enhance access to export gateways from the region.

Document	Alignment
	• Improving rail network efficiency is a key action within the Plan, aligning with its' objectives of providing safe, efficient and reliable freight movements, and providing a contestable freight system.
Lockyer Economic Development Plan 2018 – 2023 *Lockyer Valley Regional Council*	• The Lockyer Economic Development Plan (the Plan) outlines the key development and investment opportunities to advance economic development in the Lockyer Valley region. • The Plan highlights the Inland Rail Program as a major economic development initiative, and identifies Inland Rail as a catalyst for stronger intermodal freight options to promote freight efficiency. • Improved rail freight efficiency will continue to build the reputation of the Lockyer region as a centre for fresh produce distribution.
Lockyer – Our Valley, Our Vision Community Plan 2017 – 2027 *Lockyer Valley Regional Council*	• Lockyer – Our Valley, Our Vision' Community Plan 2027 (the Plan) details the community's vision for the Lockyer Valley. • The Lockyer Valley places a strong emphasis on agricultural development. The Project, as part of the broader Inland Rail Program, will enable the region's transport network to continue to facilitate the movement of agricultural goods between Queensland'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.
Toowoomba Region Sustainable Transport Strategy 2014 *Toowoomba Regional Council*	• The Toowoomba Region Sustainable Transport Strategy (the Strategy) is a plan for the future integrity and sustainability of the transport system in Toowoomba. • The Strategy provides the planning framework to improve the connectivity of the region, and has been developed to complement future infrastructure developments, including Inland Rail. Inland Rail is identified as a project that will significantly change how freight moves through the region. • Freight transport is identified as a major component of the Strategy, with a clear focus on supporting greater rail freight mode share (including mode shift from road freight). By supporting improved rail freight efficiency, the Project will encourage this mode shift, subsequently improving transport efficiency, road safety and local traffic operations.
Toowoomba Region Economic Development Strategy – Bold Ambitions 2038 *Toowoomba Regional Council*	• The Toowoomba Region Economic Development Strategy (the Strategy) describes an ambition for the future economic position of the region. • The development of Inland Rail is included in the Strategy as an opportunity to enhance the regions agricultural industry supply chain and increase the competitiveness of Toowoomba's agriculture in domestic and international markets. • The Strategy also mentions the opportunity for transport and logistics, freight, and warehousing development as a result of major road, rail and infrastructure investment in the region. The Project is located in close proximity to the

Document	Alignment
	Toowoomba Enterprise Hub, which includes the InterLinkSQ intermodal facility and Toowoomba Wellcamp Airport. • The Strategy highlights the opportunity for further growth and development of these facilities as a result of Inland Rail. The Project has the potential to assist in facilitating greater intermodal opportunities and freight movements, in addition to supporting investment into these adjacent freight and logistics businesses.

2.4 Study area

The Project traverses two Local Government Areas (LGA) – Toowoomba and Lockyer Valley (Figure 1). Combined, these LGA boundaries form 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 boundaries of the Australian Statistical Geography Standard that captures the integrated regional economy within which the Project is located (Figure 1). The Project is located within the Toowoomba labour market region which is defined as the regional economic catchment area for this EIA.

Area Definitions:

- **Study area:** Toowoomba and Lockyer Valley Local Government Areas
- **Regional economic catchment area:** Toowoomba Statistical Area 4

Figure 1: Project study area and regional economic catchment

Source: ARTC

There are a number of population centres (ABS defined State Suburbs) that are located within close proximity to the Project. The EIA specifically acknowledges any potential economic benefits and impacts of the Project on these stakeholders. In alignment with ARTC's local business and industry participation catchment, these population centres include Charlton, Gowrie Junction, Cranley, Mount Kynoch, Ballard, Mount Lofty, Withcott, Postmans Ridge, Lockyer, Helidon Spa and Helidon. As a result of their proximity to the Project, these communities may be impacted during the construction or operation of the Project.

Charlton

The Project commences in the rural locality of Charlton which is located 13 km west of the Toowoomba city centre and is bounded by Dry Creek to the south, the QR West Moreton System (Western Line) to the north. Charlton is dissected by the Warrego Highway and the Toowoomba Bypass. The land uses include cropping, irrigated cropping, grazing native vegetation, rural residential, industrial and services. The SEQ Regional Plan classifies the area east of Gowrie Mountain as a Priority Agricultural Area, while the plains to the west of Omara Road (south of the Warrego Highway) and the east of the Toowoomba Bypass are noted as Strategic Cropping Land under the Regional Planning Interests Act 2014 (RPI Act). The eastern side of Gowrie Mountain is considered to have regional biodiversity value as have some parcels adjacent to Krienkes Road.

A major land use designated in the Toowoomba Regional Planning Scheme for the locality is Medium Impact Industry, with the Wellcamp Enterprise Area located in Charlton, flanked by Rural zones, with some individual parcels for existing activities identified as Community Infrastructure including the Toowoomba Bypass corridor. A conservation precinct is adjacent to Dry Creek (Toowoomba Regional Council, 2018).

Gowrie Junction

Located within the Toowoomba LGA, Gowrie Junction is approximately 10 kilometres northwest of the Toowoomba city centre. Its main population centre is located 2 kilometres north of the Warrego Highway and immediately to the north of Gowrie Creek and Queensland Rails West Moreton System (Western Line). According to the 2017 SEQ Regional Plan[31], Gowrie Junction is zoned for urban footprint, regional landscape, and rural production. As of the 2016 Census, it had a population of approximately 2,120 persons.[32]

Cranley (in tunnel)

The Project would be in tunnel through the rural suburb of Cranley, with the Project's intermediate ventilation shaft and associated infrastructure located adjacent to light industrial uses (including a landfill site and water treatment plant). Cranley is located within the Toowoomba LGA and is around 6 kilometres northwest of Toowoomba's city centre. Cranley is entirely zoned for urban footprint with both industrial and residential land use. Most of its approximate 1,446 residential population live in the southern extremity of Cranley where it borders Toowoomba's northern suburbs.

Mount Kynoch (in tunnel)

The Project passes under Mount Kynoch, which lies to the east of Goombungee Road and north of the Toowoomba Bypass, with the New England Highway bisecting Mount Kynoch. Mount Kynoch is located within the Toowoomba LGA and is about 6 kilometres north of the Toowoomba city centre. According to the SEQ Regional Plan, most of Mount Kynoch is zoned for urban footprint with some small sections zoned for regional landscape towards the east and northwest. Mount Kynoch has a population of approximately 237 persons.[33]

Ballard (in tunnel)

The Project will largely be in tunnel through the locality of Ballard, located within the Lockyer Valley LGA. Ballard is approximately 5 kilometres north of the Toowoomba city centre and around 30 kilometres west of Gatton. The boundary between Mount Kynoch and Ballard is the existing West Moreton System (Main Line). Ballard is dissected by the Oakey and Rocky Creeks, and the Toowoomba Bypass (previously known as the Toowoomba

[31] ShapingSEQ, 2017, Regional Land Use Categories: Map SEQ.
[32] ABS 2016 Census of Population and Housing (ABS QuickStats)
[33] ibid.

Second Range Crossing). The SEQ Regional Plan categorises Ballard as a regional landscape area. Ballard has a population of approximately 151 people, with most living alongside Murphys Creek Road. [34]

Mt Lofty

The Project passes in tunnel to the north of the suburb of Mount Lofty, a locality on the edge of the suburban area of Toowoomba, sitting at the top of the Toowoomba Range. The suburb is bounded by Stuart Street to the west, Jones Road to the north, Jubilee Park to the east and Bridge Street to the south, and is located approximately 2.3 km north-east of the Toowoomba town centre. The Toowoomba Regional Planning Scheme designates the locality predominantly as Low Density Residential, Community Purposes and Open Space zones.

Withcott

Withcott is located within the Lockyer Valley LGA and is around 7 kilometres east of the Toowoomba city centre and around 25 kilometres west of Gatton. The Toowoomba Bypass passes through the northern part of Withcott, and Toowoomba Connection Road (previously Warrego Highway) passes through the main population centre in its southern section. According to the SEQ Regional Plan, Withcott is predominantly zoned as regional landscape in the north and as urban footprint in the south. There is also a small section zoned for rural production to the east. Withcott has a population of approximately 1,844 persons.[35]

Postmans Ridge

Postmans Ridge is located in the Lockyer Valley LGA, approximately 10 kilometres northeast of Toowoomba's city centre and 22 kilometres west of Gatton. It can be accessed by the Toowoomba Bypass and Toowoomba Connection Road. Within Postmans Ridge, there are areas zoned for both rural production and regional landscape with some industrial land usage. The area has a population of approximately 398 persons.

Lockyer

Lockyer is a regional community within the Lockyer Valley LGA which is approximately 12 kilometres northeast of Toowoomba and 20 kilometres west of Gatton. It can be accessed by the Toowoomba Bypass and the Warrego Highway Lockyer is zoned for regional landscape and has a small population of approximately 95 persons.

Helidon Spa

Helidon Spa is located within the Lockyer Valley LGA, and is around 15 kilometres east of Toowoomba and around 19 kilometres west of Gatton. It is divided by the Warrego Highway and lies to the south of Lockyer Creek. Helidon Spa is zoned for both rural production and regional landscape, with a population of approximately 538 persons.

Helidon

Helidon is a regional community located in the Lockyer Valley LGA. It is approximately 17 kilometres east of Toowoomba and around 15 kilometres west of Gatton. Helidon can be accessed by the Warrego Highway, Gatton Helidon Road, and by the Helidon railway station along the Main Line railway. The West Moreton System (Main Line) bisects this suburb. The main population centre along the Warrego Highway is zoned for urban footprint and there is a small section to the south that is zoned for rural production. The northern part of Helidon is zoned for regional landscape with several sandstone quarries and some industrial land use. Helidon has a population of approximately 1,059 persons.

[34] ibid.
[35] ibid.

2.5 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.

Specifically, 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 Gowrie to Helidon Social Impact Assessment (refer EIS Appendix Q: 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 Program Business Case (PwC 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.

2.5.1 Existing economic environment

The existing economic environment section describes the 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 2.3 above)
- ABS 2016 Census of Population and Housing
- ABS Regional Population Growth, 2018-19
- Queensland Government Statisticians Office 2018 edition population projections (2019 update)
- ABS, Labour Force Survey, Australia, September 2020
- Australian Government's Small Area Labour Markets publication, September 2020
- Consultation with local business and industry, government agencies, peak bodies and the community undertaken by ARTC.

2.5.2 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 undertaken by ARTC;

- the outcomes of the Gowrie to Helidon Social Impact Assessment (refer EIS Appendix Q: Social Impact Assessment) process to identify local and regional business capacity, aspirations and initiatives; and
- the outcomes of the land use and tenure assessment for the Project (EIS Chapter 8) to identify local and regional impacts on industry resulting from land use changes.

2.5.3 Economic benefits assessment

A large proportion of the benefits of the Inland Rail Program stem from improving the connection between regional producers and markets; through to both domestic markets in cities and international markets through ports. As such, an incremental CBA approach assessing each section of the Inland Rail Program 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. Put simply, the benefits of Inland Rail will outweigh the sum of the individual projects.

Accordingly, for the purposes of this EIA, 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 the Inland Rail Program as a whole (as per the Inland Rail Program Business Case (2015)).

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

- Infrastructure Australia's (IA) Assessment Framework;
- Queensland Government's Project Assessment Framework (PAF) 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 (ATAP) guidelines.

2.5.4 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.

KPMG-SD 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. For a more detailed methodology, including assumptions and limitations, refer Section 5.5.

As described above, the regional economy is represented by the Toowoomba labour market region.

2.5.5 Cumulative impact assessment

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 impact assessment area.

In considering the cumulative impacts of the Project it is necessary to identify the range of existing, planned and potential projects, within or adjacent to the impact assessment area, that may contribute to local and regional

economic impacts. Cumulative impacts may result from the spatial and / or temporal interaction between these projects.

This cumulative impact assessment has two components:

1. Quantitative assessment of the cumulative impact of the Inland Rail Program on the QLD economy (sections of Inland Rail in QLD); and
2. Qualitative assessment of cumulative impact of state significant projects (that have been identified by ARTC as having a relationship to the Project) on labour markets, the supply chain and local businesses.

2.5.6 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 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 Program 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 G2H as an independent project.
- The assessment assumes capital expenditure consistent with the Inland Rail Program Business Case (2015).
- A large proportion of the benefits of the Inland Rail Program stem from improving the connection between producers and markets; through to both domestic markets in cities and international markets through ports. As such, an incremental EIA approach assessing each section of the Inland Rail Program 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.

ARTC Statement

Although further costs and other technical and economic data is expected as each project progresses through design development, the 2015 Inland Rail Program 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 Program Business Case.

3 Project description

The Project is a rail corridor approximately 28 kilometres in length, completing one of the key missing links of the Inland Rail Program between Gowrie and Helidon. The Project connects with the eastern end of the Border to Gowrie (B2G) Inland Rail project, and western end of the Helidon to Calvert (H2C) Inland Rail project.

The Project is specifically for freight, though the Project does not preclude the use of the track at a future date by a passenger service with the current design (and EIS assessment) accommodating the existing narrow gauge train consists, including the Westlander, which operate on the Queensland Rail's (QR) West Moreton System.

The Project alignment runs parallel to the West Moreton System (Western Line) rail corridor just south of Gowrie, before diverging south east through the Toowoomba Range with an approximately 6.24 kilometres long tunnel. On the eastern side of the tunnel, the alignment continues down the Toowoomba Range, via a series of cuttings, embankments and viaducts crossing over through Ballard, Withcott, Lockyer, Postmans Ridge and Helidon Spa. The Project then crosses over Lockyer Creek, after which it runs parallel to the West Moreton System (Main Line) rail corridor to the northwest of Helidon.

The preferred Project alignment is generally consistent with that of the Gowrie to Grandchester future state transport corridor protected under the *Transport Planning and Coordination Act 1994* in 2005.

The Project is planned to operate for 100 years, from 2027 to 2127. The Project will initially accommodate double-stacked container freight trains of up to 1,800 metres length, with potential for future accommodation of freight trains of 3,600 metres length. ARTC estimates a gradual increase in the number of trains using Inland Rail from when the line becomes operational, from approximately 33 train movements per day in 2027 to 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 2022, and be completed in 2027 for planned commencement of operations.

The Project is specifically designed for freight, though the Project does not preclude the use of the track at a future date by a passenger service with the current design (and EIS assessment) accommodating the existing narrow gauge train consists, including the Westlander, which operate on the Queensland Rail's (QR) West Moreton System. The Project design also does not preclude the construction of a future passenger services within the Gowrie to Grandchester future State transport corridor, including co-location with this Project, by the Queensland Department of Transport and Main Roads at a future date.

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

Table 4: Key components of the Project

Key Component	
Start and finish point	Gowrie Junction and Helidon
Local government areas	• Toowoomba Regional Council • Lockyer Valley Regional Council
Length of alignment	28 kilometres total length
Key features	• 28 kilometres of single track dual gauge rail line with three crossing loops • Of the 28 kilometres track, approximately 22.4 kilometres of new 'greenfield' rail corridor will be established and approximately 5.6 kilometres of 'brownfield' rail corridor will be developed • Construction of an approximately 6.24 kilometre long tunnel through the Toowoomba Range including an expanded corridor to accommodate tunnel portal infrastructure (e.g. tunnel operations facilities and tunnel material stockpile at the western tunnel portal). An intermediate ventilation shaft and associated infrastructure will also be established at Cranley. • A series of bridge and viaduct structures, totalling 6.7 kilometres in length, to accommodate the topography, maintain operational grades and to facilitate the crossing of watercourses and other infrastructure. Tie-ins to the existing West Moreton System rail corridor at the eastern and western extents of the Project, along with a spur line allowing access between Toowoomba and Brisbane east of Gowrie. Connections and cross overs are also proposed with the InterLinkSQ project. • Embankments and cuttings will be required along the length of the alignment, this includes road and rail infrastructure within the alignment such as crossing loops and road of rail bridges. • The construction of associated rail infrastructure including maintenance sidings and signalling infrastructure to support the train control system.

Key Component	
	• Rail crossings including grade separations/road overbridges/road underbridge, occupational/private crossings, fauna crossing and drainage structures • Ancillary works include signalling and communications, signage and fencing, drainage works, establishment and/or reinstatement of access roads, and installation or modification of services and utilities. • Road closures and realignments; including closure of level crossings. • Construction workspace including laydowns, storage, tunnel portal construction areas (including tunnel boring machine (TBM) launching area and access roads).
Construction	Subject to approval of the Project, construction is planned to start in 2022, and is expected to be completed in 2027.
Employment	• Pre-construction: A workforce of 20 - 50 personnel would be required for pre-construction activities. • Construction: Preliminary estimates indicate that the workforce on site for the Project will peak at 596 full time equivalent (FTE) personnel. The average number of full time equivalent workforce on site across the full construction period is 264 FTE personnel per year. • Operation: Once operational, a workforce of approximately 15 - 20 personnel is expected for the Project's operation.

Source: ARTC

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 COVID-19 virus crisis.

4.1 Population summary

Population profile

As at June 2019, the study area had an estimated resident population of 210,739 people.[36] Between 2009 and 2019, the population grew at an average annual rate of 1.2 percent, with stronger growth observed in the Lockyer Valley (2.0 percent) (Table 5). In comparison, the population in Queensland grew at an average annual rate of 1.6 percent over the 10 year period. This growth trend is forecast to continue to 2026. The study area's population is projected to reach 226,727 people, growing at an average 1.1 percent per year throughout this period.[37] Consistent with historical trends, this will be primarily attributed to growth in the Lockyer Valley (1.9 percent) which will continue to outpace growth in Queensland over the same period (1.7 percent). Toowoomba LGA's average annual population growth is expected to slow slightly; decreasing from 1.0 percent (2009 to 2019) to 0.8 percent (2019 to 2026). This trend is also expected in the Lockyer Valley (from 2. percent to 1.9 percent), whilst Queensland growth rate is projected to increase slightly to a rate of 1.7 percent.

Table 5: Estimated resident population and projections, study area

	2009	2019	2026	% average annual growth 2009 – 2019	% average annual growth 2019 – 2026
Toowoomba LGA	152,525	169,008	179,030	1.0%	0.8%
Lockyer Valley LGA	34,333	41,731	47,697	2.0%	1.9%
Study Area	186,858	210,739	226,727	1.2%	1.1%
Queensland	4,328,771	5,094,510	5,722,780	1.6%	1.7%

Source: ABS Regional Population Growth, 2018-19; Queensland Government Statisticians Office 2018 edition population projections, reviewed February 2019

Indigenous population

The proportion of the population that identify as Indigenous (Aboriginal, Torres Strait Islander, or both) within the study area is on trend with Queensland as a whole (4.0 percent in Toowoomba LGA and 3.9 percent in Lockyer Valley LGA, compared to 4.0 percent across Queensland). In absolute terms, a total of 7,938 persons identify as Indigenous within the study area (6,435 in Toowoomba LGA and 1,503 in the Lockyer Valley LGA).

[36] ABS Regional Population Growth, 2018-19
[37] Queensland Government Statisticians Office 2018 edition population projections

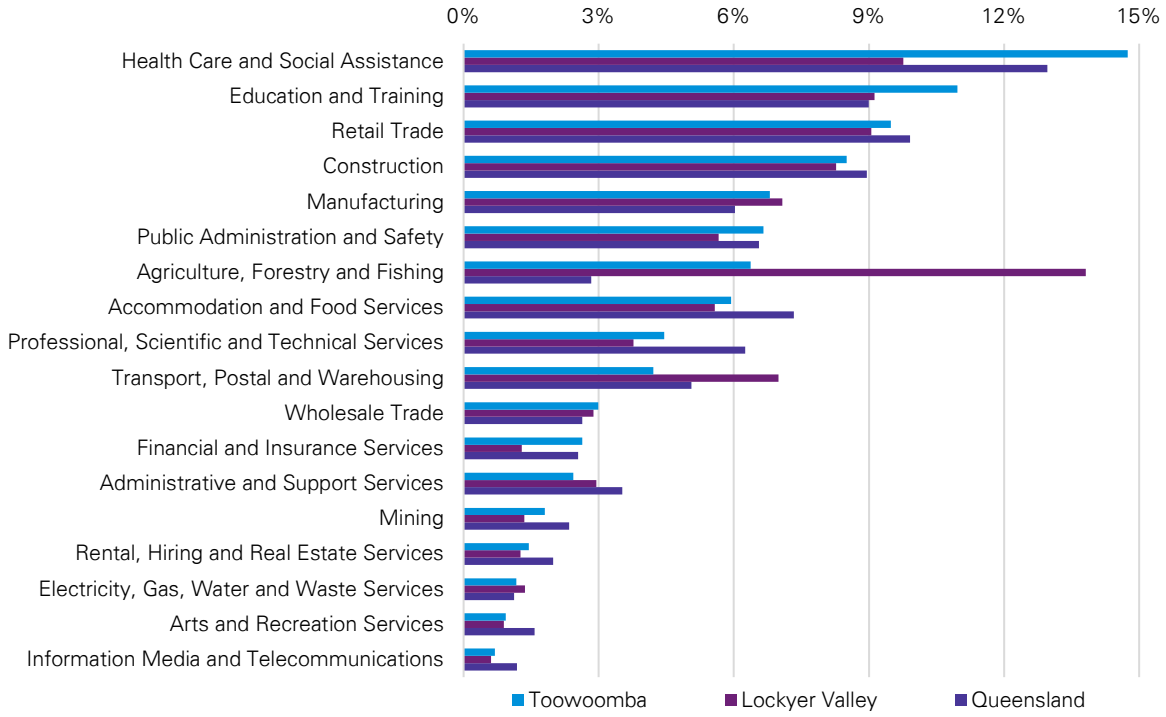
4.2 Description of the economy

4.2.1 Labour market and employment characteristics

Employment by industry

As shown in Figure 2 below, the sectorial distribution of employment for local residents is diverse, reflecting the study area's land use and the geographic distribution of the population.

Figure 2: Employment by industry, study area, 2016[38]



Source: ABS 2016 Census of Population and Housing

In Toowoomba LGA, the largest proportion of workers are employed in service based industries such as Health Care and Social Assistance (14.7 percent), Education and Training (11.0 percent) and Retail Trade (9.5 percent). A significant proportion of the population are also employed in secondary industries, with a further 15.3 percent of residents employed in Construction (8.5 percent) or Manufacturing (6.8 percent).

In the Lockyer Valley, employment is diverse across primary, secondary and service based industries. This reflects the land uses of the LGA, primarily being regional landscape and rural production, with a small urban footprint concentrated in the town of Gatton. The highest number of residents are employed in Agriculture, Forestry and Fishing (13.8 percent) across a diverse range of activities including Sheep, Beef and Grain Farming and Vegetable Growing. Following this, Health Care and Social Assistance (9.8 percent), Retail Trade (9.1 percent) and Education and Training (9.1 percent) are large industries of employment for residents.

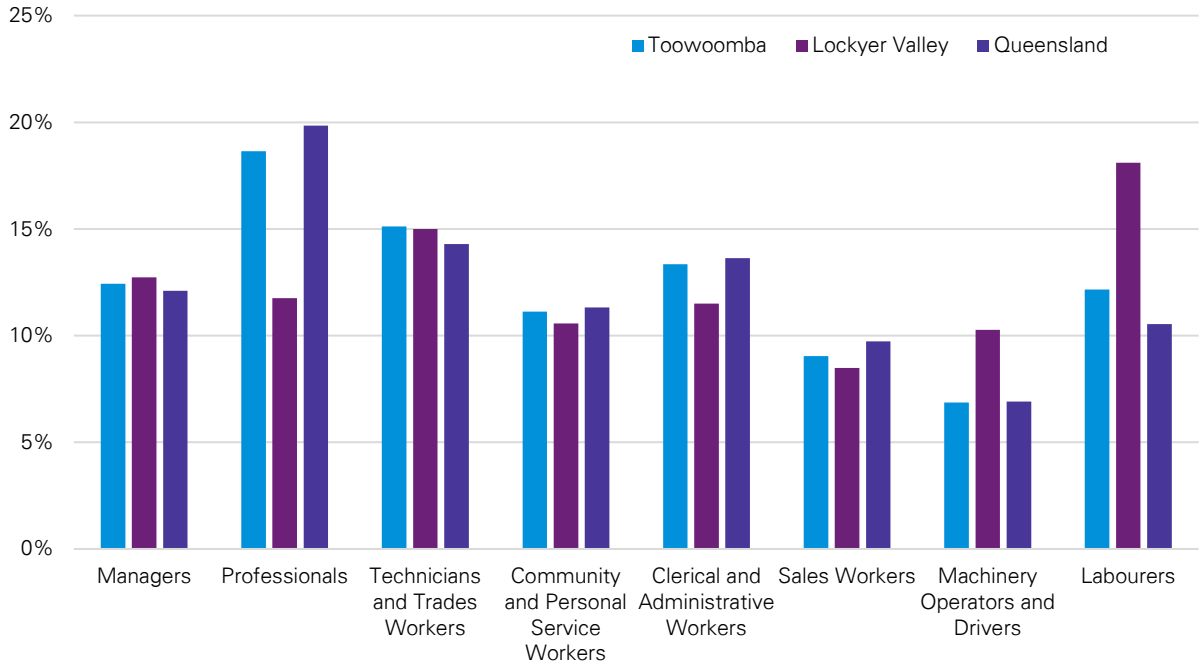
There are a number of residents within the study area employed in directly relevant industry sectors to support the construction of the Project. According to the 2016 Census, 8.5 percent of the total workforce are employed in the Construction industry (7,362 workers), with the largest proportion of workers residing in Toowoomba LGA (6,053 workers). Within the Construction industry, 751 local workers are employed in Heavy and Civil Engineering Construction.

[38] 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

To complement the identification of workers employed in directly relevant industry sectors, workers are employed in a range of occupations relevant to the construction of the Project (Figure 3). Within the Lockyer Valley, the largest proportion of workers are employed as Labourers (18.1 percent) of which 10.1 percent work as Construction and Mining Labourers, and 28.5 percent as Farm, Forestry and Garden Workers. In Toowoomba LGA, most workers are employed as Professionals (18.6 percent). There are also a number of workers employed as Technicians and Trades Workers (15.1 percent), specifically as Construction Trades Workers (representing 19.4 percent of all Technicians and Trade Workers).

Figure 3: Local workers occupation, study area, 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 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 Queensland, while there is an oversupply of labourers, there are workforce gaps present in rail infrastructure construction sectors, most severe among specialist managers and professionals (such as engineers).[39]

These trends are also reflected at a national level. The Australian Industry Group Construction Outlook (November 2018) found that Australian businesses are reporting widespread and increasing difficulties in sourcing skilled labour.[40]

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.[41] It is most likely that these shortages in labour availability are for specific specialist trades.

[39] Australasian Railway Association, 2018, *Skills Capability Study*
[40] 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.*
[41] AiGroup, Construction Outlook November 2018

Labour force

According to the Australian Government's quarterly regional estimates of unemployment, as at September 2020 there were a total of 6,871 unemployed persons in the study area (78.8 percent located in Toowoomba LGA) and 5,346 in the Toowoomba labour market region (Table 6). Within the study area and regional economic catchment, the unemployment rate in the Lockyer Valley LGA was 7.5 percent) and 6.7 percent in the Toowoomba LGA. The unemployment rate in the Toowoomba labour market region (7.2 percent) broadly reflected the unemployment rate for Queensland (7.3 percent) in September 2020. Both unemployment rates increased in 2020 compared to the 12 month average as a result of the quarter 2 2020 market conditions.

For the September 2020 quarter, the labour force participation rate across the study area was higher than the state average, 71.5 percent compared to 65.5 percent for Queensland. This indicates that a relatively larger proportion of the working age population in the study area are working compared to those in Queensland. The Toowoomba labour market region had a participation rate of 74.9 percent.

A significant proportion of the local labour force is located in close proximity to the Project alignment, particularly within the urban footprint of Toowoomba city. The remaining labour force is likely to be geographically distributed throughout the study area due to the diverse regional landscape outside of this main urban footprint. Population in the study area is separated by the Great Dividing Range and dispersed farmland.

Table 6: Summary of labour force characteristics, September 2020

	Labour force	Participation rate*	Unemployed persons	Unemployment rate	12 month unemployment rate average
Toowoomba LGA	80,883	72.9%	5,415	6.7%	5.4%
Lockyer Valley LGA	19,356	65.9%	1,456	7.5%	6.8%
Study Area	100,239	71.5%	6,871	6.9%	5.7%
Toowoomba Labour Market Region	73,949	74.9%	5,346	7.2%	5.9%
Queensland	2,731,800	65.5%	199,000	7.3%	6.8%

Source: LGA and SA4 data from Australian Government's Small Area Labour Markets publication(12-month moving average), December 2019; and ABS 2016 Census of Population and Housing; State data from ABS, *Labour Force Survey, Australia,* September 2020 – published February 2021. *Participation rate for working age population 15 to 64 years

Indigenous labour force

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 working population is unemployed (19.0 percent, compared to a 4.5 percent for the population as a whole) and the labour force participation rate is low at 58.6 percent (compared to 71.5 percent for the population as a whole). This is consistent with the broader Toowoomba labour market region, where Indigenous unemployment is also high at 19.0 percent and the labour force participation rate is low at 61.1 percent.

Within the study area, the highest level of Indigenous unemployment is recorded in the Lockyer Valley LGA (20.8 percent), with Toowoomba LGA's Indigenous unemployment rate slightly lower at 18.4 percent.

The Indigenous labour market profile indicates that there may be opportunities to engage local Indigenous workers in the Project. A number of local training and development opportunities have been identified to support Indigenous employment, as described in Section 5.2 below.

Youth labour force

As shown in Table 7, youth unemployment rates (persons aged 15 to 24 years) are significantly higher than the total unemployment rates across the study area and the Toowoomba labour market region. In the Toowoomba labour market region, the unemployment rate is more than triple the total unemployment rate (15.1 percent compared to 4.8 percent).

Across the study area, youth unemployment is highest in Lockyer Valley LGA at 15.6 percent (compared to 5.8 percent for the total labour market), followed by Toowoomba LGA at 15.0 percent (compared to 4.8 percent for the total labour market). Notably, the youth unemployment rate across the study area and the Toowoomba labour market region is lower than the youth unemployment rate for Queensland (15.8 percent).

The youth labour force participation rate within the study area and across the Toowoomba labour market region is lower than the total participation rate. Youth labour force participation is highest in the Toowoomba LGA at 66.1 percent, closely followed by the Toowoomba labour market region at 65.6 percent. This is compared to 64.4 percent across Queensland and 57.6 percent in the Lockyer Valley LGA. Lower levels of labour force participation (for youth compared to total population) indicates that a high proportion of young people are either not able to work or are not actively looking for work, such as students, or those who are voluntarily inactive. Across the study area, approximately 72.6 percent of young persons who are not in the labour force are studying full time (72.6 percent in Toowoomba LGA, and 72.2 percent in the Lockyer Valley LGA).

Table 7: Youth labour force, December 2019

	Youth Labour Market			Total Labour Market		
	Unemployment rate	Participation rate	No. of Unemployed	Unemployment rate*	Participation rate	No. of Unemployed
Toowoomba LGA	15.0%	66.1%	2,062	6.7%	72.9%	5,415
Lockyer Valley LGA	15.6%	57.6%	479	7.5%	65.9%	1,456
Study Area	15.1%	64.4%	2,535	6.9%	71.5%	6,871
Toowoomba Labour Market Region	15.1%	65.6%	2,010	7.2%	74.9%	5,346
Queensland	15.8%	64.4%	62,604	7.3%	78.7%	199,000

Source: Australian Government's Small Area Labour Markets publication, September 2020; 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. *12 month average.

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-skilled, 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 the Toowoomba labour market region area are compared in Table 8 below. As reflected, the distribution of income within the study area is broadly consistent with Queensland as a whole, with the highest proportion of households earning more than $1,250 per week.

As a measure of socio-economic disadvantage, household income levels reflect relative disadvantage in the Lockyer Valley with a higher proportion of households earning less than $500 per week (15.4 percent), compared to the Toowoomba LGA (14.4 percent), the Toowoomba labour market region (11.3 percent) and Queensland as a whole (13.2 percent).

These observations are further reflected in the median weekly household incomes across the study area and the Toowoomba labour market region, which is below the median for Queensland. The median weekly household income is highest in the Toowoomba labour market region at $1,298, followed by Toowoomba LGA at $1,269 and the Lockyer Valley at $1,198.

The Project may offer an opportunity for local residents to gain employment in higher paying jobs.

Table 8: Distribution of population by weekly household income, June 2016

	< $500	$500 - $1,249	$1,250 or greater	Median Income*
Toowoomba LGA	14.4%	34.4%	51.2%	$1,269
Lockyer Valley LGA	15.4%	36.2%	48.4%	$1,198
Toowoomba Labour Market Region	11.3%	28.0%	60.8%	$1,298
Queensland	13.2%	31.1%	55.7%	$1,402

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

4.2.2 Business and industry

Industry by employment

The study area is a place of work for approximately 80,550 persons (who live both within and outside the catchment area).[42] The sectorial distribution of jobs differs between Toowoomba LGA and the Lockyer Valley LGA, as shown in Figure 4.

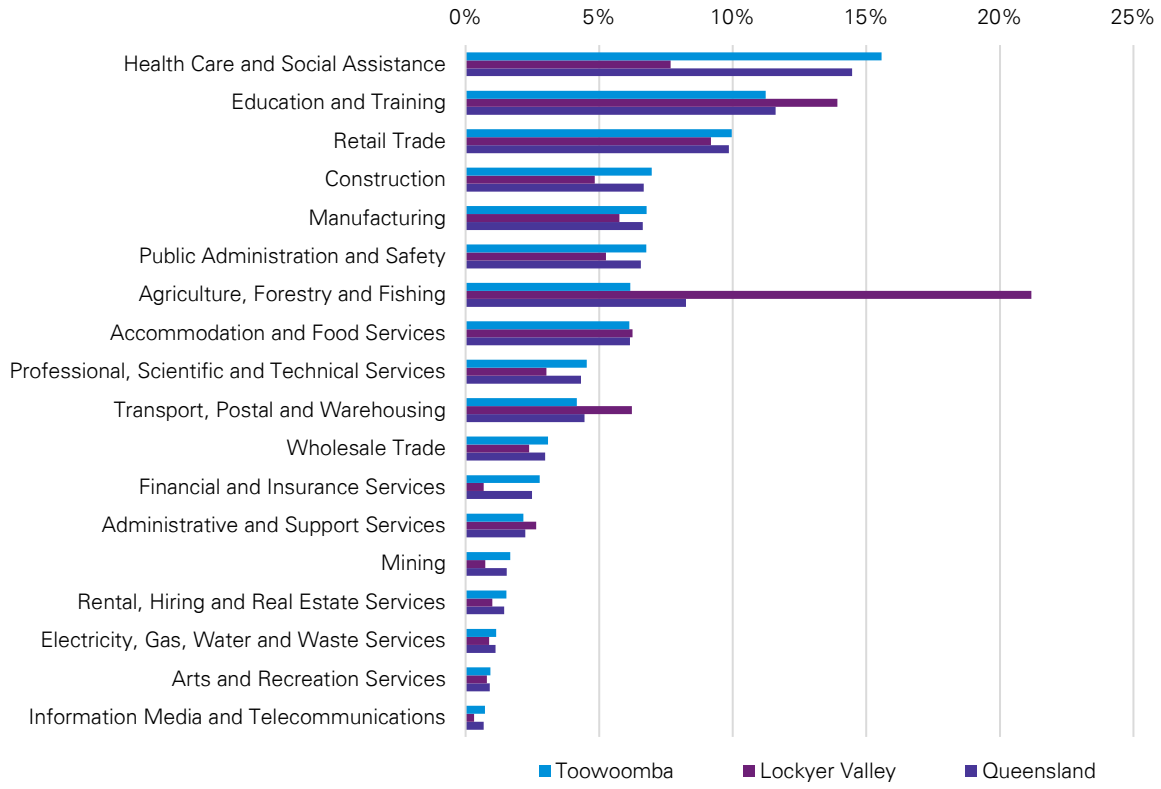
In Toowoomba LGA, local jobs are concentrated in the Health Care and Social Assistance (15.6 percent), Education and Training (11.2 percent) and Retail (10.0 percent) industries. These sectors are important in meeting the demand for local services from the population, and reflect Toowoomba LGA's regional importance as the main service area of the Northern and Western Darling Downs.

In the Lockyer Valley LGA, over one fifth of the jobs are focused in the Agriculture, Forestry and Fishing industry (21.2 percent), followed by Education and Training (14.0 percent). Notably, approximately half of the jobs in the Agriculture, Forestry and Fishing industry in the Lockyer Valley are in the Mushroom and Vegetable Growing Industry (43.0 percent), followed by the Sheep, Beef Cattle and Grain Farming Industries (22.5 percent). This reflects the Lockyer Valley LGA's local business and industry profile below (Section 5.3).

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 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).

[42] 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.

Figure 4: Industry by employment, study area



Source: 2016 Census of Population and Housing

4.3 Local businesses and industry

4.3.1 Agriculture

According to the Queensland Agricultural Land Audit, the Project crosses both the Darling Downs and South East Queensland (SEQ) agricultural land audit regions. The Darling Downs is renowned for some of the state's best agricultural land, with primary production activities being grazing (both sheep and cattle), dryland and irrigated cropping, and timber production. Dominant activities in the SEQ region are horticulture, poultry, cattle, dairy and cultivated turf. Production is predominantly focussed on the western side of the Great Dividing Range with a greater number of processing industries located in the SEQ region.

At a local government level, predominant agricultural industries within the Lockyer Valley include horticulture and vegetable production. The area contains major producers of many fruit and vegetables as well as milk, beef and grain enterprises. These industries are supported by significant groundwater catchments, a dominant source of water for irrigation in the region. In comparison, the south-eastern area of the Darling Downs is dominated by broadacre cropping.

The audit identifies significant issues surrounding the quality and capacity of transport networks to meet current and future requirements, with competition for access to rail freight a contributing factor to this trend. The Project has the potential to alleviate this bottleneck through more efficient and available rail freight transport for the agricultural industry. More specifically, the Project will enable an easier flow of goods from production in the Darling Downs agricultural region to processing in the SEQ agricultural region.[43]

[43] Queensland Department of Agriculture and Fisheries 2017, *Queensland agricultural land audit*

As at June 2020, there were a total of 164 employing businesses within the Agriculture, Forestry and Fishing Industry in the Lockyer Valley LGA (a further 6,647 were non employing), and 519 employing businesses in Toowoomba LGA (2,845 non employing).[44]

4.3.2 Tourism

Tourism in Toowoomba LGA and Lockyer Valley LGA is largely generated by the region's scenic amenity, environmental values and rural character. The region is a popular destination for visitors seeking to explore the natural landscape and scenic amenity of the Great Dividing Range and its surrounds.

According to Tourism Research Australia, there is a strong tourism industry in the local area. In recent years (2017-19), Toowoomba has received more than 3 million visitors per year, with tourists spending approximately $685 million annually. The majority of these visitors are domestic day visitors (approximately 2 million) with an additional 928,000 choosing to stay overnight.[45] Being the main service area for the Darling Downs, a high proportion of these domestic visitors visit the region to re-stock supplies and visit friends and family. Over this period, the Lockyer Valley received nearly 400,000 visitors annually, with tourism expenditure totalling approximately $74 million per year. The majority of these visitors (286,000) were domestic day trip visitors, with an additional 102,000 choosing to stay overnight.[46]

There are a total of approximately 2,000 recorded tourism businesses within the study area, 269 located in the Lockyer Valley LGA and 1,667 located in Toowoomba LGA.[47]

Table 9: Tourism visitation and expenditure, 2019

	Domestic Overnight Visitors		International Overnight Visitors		Domestic Daytrip Visitors	
	Total Visitors	**Expenditure**	**Total Visitors**	**Expenditure**	**Total Visitors**	**Expenditure**
Lockyer Valley LGA	102,000	$28m	8,000	$30m	286,000	$16m
Toowoomba LGA	928,000	$352m	28,000	$44m	2,109,000	$289m

Source: Tourism Research Australia, Local Government Area Profiles, 2019

There are a number of natural attractions and recreational areas across the study area which support the local character and the area's attraction as a tourist destination. A number of these areas are within close proximity to the Project, supporting self-drive tours, active outdoor recreation (e.g. hiking, trail walking, bike riding), and ecotourism experiences.

Within the Lockyer Valley region, attractions include:

- Laidley Valley
- Glen Rock Drive
- Spring Buff Drive
- Cobb ad Co Tourist Drive
- Helidon Natural Springs

Tourists and visitors also visit the region for events such as the Murphys Creek Fossil Downs Rodeo, Christmas in the Country Art and Craft Show and the Laidley Spring Festival.

[44] ABS, 2021, Count of Australian Businesses, including Entries and Exits, June 2016 to June 2020, cat. no. 8165.0
[45] Tourism Research Australia, Local Government Area Profiles 2019 – Toowoomba
[46] Tourism Research Australia, Local Government Area Profiles 2019 – Lockyer Valley
[47] Tourism Research Australia, Local Government Area Profiles 2019 – Lockyer Valley and Toowoomba

Within the Toowoomba region, attractions include:

- Highfields Falls;
- Mount Lofty Lookout;
- Heritage Centre;
- Cranley Escarpment;
- Cobb and Co. Museum; and
- Jondaryan Woolshed.

Tourists and visitors also visit the region for events such as the Carnival of Flowers.

4.3.3 Mineral resources and extractive industries

According to the Land Use and Tenure chapter (EIS Chapter 8), there are a number of operations in the mineral resources and extractive industries sector located within close proximity to the Project. These operations may be directly impacted by the construction of the Project (e.g. through the disturbance footprint) or may have capacity to engage with the Project's construction. The Project is also in close proximity to existing mineral resource permits, license and leases.

Definition – Disturbance Footprint

The disturbance footprint captures the permanent and temporary disturbance footprint of the Project.

- The permanent disturbance footprint is defined as the physical rail corridor of the Project, including the corridor, extent of earthworks, rail formation, tracks, and associated infrastructure as well as other permanent works associated with the Project.
- The temporary disturbance footprint is defined as the temporary laydown areas and construction site compound where rehabilitation of the land will occur following construction.

Extraction industries

Harlaxton Quarry (refer Key Resource Area below): a commercial operation that produces road base materials, aggregates and crusher dust materials for use in the construction and building industries. Operated by Quarry Products Pty Ltd.

Material, such as ballast material, may be sourced from these and other local quarries to supply the construction of the Project.

Mineral resources interests

The Project is within 1 kilometre of two exploration permits for minerals other than coal. These exploration permits belong to Zeolite Environmental Global Solutions Pty Ltd and Chongherr Investments Ltd.

Petroleum and gas resource interests

The Project intersects one petroleum pipeline license (PP2, Roma Brisbane Gas Pipeline) belonging to APT Petroleum Pipelines Pty Limited. There are no petroleum or gas leases traversed or near the Project.

Coal resource area

Coal resource areas depict the extent of identified coal resource estimates in Queensland as presented in the publication Queensland Coals - Physical and Chemical Properties Colliery and Company Information - 14th Edition (Mutton 2003).

There are no granted coal or mineral exploration permits within the disturbance footprint or near the Project. There are also no applications for mining permits.

Key Resource Area

Key Resource Areas (KRAs) are identified locations containing important extractive resources of State or regional significance, worthy of protection for future use. KRAs are included in the State Planning Policy 2017 and are

supported by the State interest guideline - Mining and extractive resources. KRAs are designed to maintain adequate separation distances between sensitive uses and any future extractive industry.

As detailed in the EIS Chapter 8: Land use and tenure, the Harlaxton KRA (KRA 8) is located on the northern fringe of the built-up area of Toowoomba. It comprises a thick basalt sequence with an active quarry (operating since the 1950s), located in the southern section of the KRA, approximately 800 south of the Project. The quarry, operated by Quarry Products Pty Ltd, yields a wide range of crushed rock products which may be used during the construction of the Project. The operator has the approval to extract and screen between 100,000 tonnes and 1,000,000 tonnes per annum.

The northern portion of the resource processing area is currently not utilised as an extractive resource site. The undeveloped area consists of uncleared native vegetation and is separated from the existing quarry pit by a deeply incised gully, which has the potential to inhibit the expansion of the quarrying operations.

The Project traverses both the separation and processing areas of the Harlaxton KRA, avoiding the main transport route to the site.

4.3.4 Local construction businesses

There are a number of construction businesses located within the study area, with a total of 1,334 employing businesses and a further 1,793 non employing businesses across the Lockyer Valley LGA and Toowoomba LGA.[48] There are a further 421employing businesses across the study area in the Transport, Postal and Warehousing industry, with 269 of these businesses located in Toowoomba LGA. [49] These businesses are likely to be a significant source of services and equipment during the Project's construction, including:

- Civil construction companies;
- Earthmoving services;
- Diesel and petrol suppliers;
- Plumbers, electricians, mechanics and building contractors;
- Engineering and machining services;
- Steel fabrication companies; and
- A range of accommodation and retail businesses.

During consultation undertaken to inform the Social Impact Assessment (EIS Appendix Q), stakeholders noted that the capability and capacity of local businesses has been strengthened by the construction of the Toowoomba Bypass. The strength of the construction industry indicates potential capacity in this industry to support the Project's construction.

4.3.5 Local industrial areas

There are a number of key industrial and logistic areas in close proximity to the Project, including:

Toowoomba Enterprise Hub

The Toowoomba Enterprise Hub is located southwest of the Project, encompassing an internationally capable airport and a freight facility with more than 2,000 hectares of industrial land at the western outskirts of Toowoomba.

The Toowoomba Enterprise Hub is comprised of:[50]

- Toowoomba Wellcamp Airport: Located approximately 8.5 km south-west of the Project. Wellcamp Airport supports interstate, intrastate and international connection for the Darling Downs, Granite Belt, Surat Basin and Southern Downs regions. Wellcamp Airport is passenger and freight airport.

[48] ABS, 2021, Count of Australian Businesses, including Entries and Exits, June 2016 to June 2020, cat. no. 8165.0
[49] ibid
[50] Toowoomba Enterprise Hub, 2019, www.toowoombaenterprisehub.com.au

- Wellcamp Business Park: Located approximately 7 km south-west of the Project alignment. An airport-centred precinct with an aviation, logistics, transport, corporate and mining services focus. The Park is located approximately 17 kilometres west of the Toowoomba city centre, and north of the Toowoomba Wellcamp Airport.
- The Witmack Industry Park: Located approximately 4 km south-west of the Project alignment. An industrial precinct offering large industrial land parcels, located in close proximity to transport infrastructure including Warrego Highway, the Toowoomba Bypass and Inland Rail (B2G section).
- The Charlton Logistics Park: An industrial precinct for transport and logistics operators, located on the Warrego Highway with easy access to the Toowoomba Bypass.
- InterLinkSQ: A proposed major intermodal (rail and road) freight and logistics centre, north of the Warrego Highway. InterLinkSQ includes an Inland Port, Intermodal Terminal and port rail shuttle. The Project interfaces with InterLinkSQ, with the design considering cross-overs between the two projects and the existing QR West Moreton System.

Gatton West Industrial Zone

The Gatton West Industrial Zone is a precinct located within Gatton, approximately 20 kilometres east of the Project. The precinct will focus on supporting key local industries including agriculture, horticulture, transport, manufacturing, food processing and education.

5 Impact assessment

The following section outlines the potential impacts of the Project on the economic environment. The broader potential impacts of the Inland Rail Program are described in Section 5.1. Program are described before, to provide context for the impacts of the Project itself.

5.1 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 Program Business Case (2015), key economic impacts of the Inland Rail Program are anticipated to 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 benefit cost 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.
- At the peak of construction, Inland Rail will create more than 16,000 direct and indirect jobs. An additional 700 ongoing jobs will be created once Inland Rail is operational.
- 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.

Pre-construction

Pre-construction activities will be undertaken approximately six months before construction commences, and are anticipated to require a small workforce of 20 - 50 personnel. Pre-construction activities will include detailed

design, land acquisition, obtaining environmental planning approvals, surveys and geotechnical investigations, establishment of access tracks, and utility and service relocations.

Construction

For the construction period, the size and composition of the workforce will vary depending on the construction activities being undertaken and the staging strategy adopted. The construction of the Project is scheduled for commencement in 2022, with the Project's workforce expected to build to a peak of approximately 596 FTE personnel. The average annual workforce across construction is expected to be approximately 264 FTE personnel.

The core construction workforce will consist of professional staff, skilled trade workers, earthworks crews, bridge structure teams, machine operators, and tunnel construction staff working at different periods through the construction phase.

Operations

Once operational, a workforce of 15 – 20 personnel is expected for the Project's operation. Occupational groups required will include

- Maintenance staff, including for the track, associated infrastructure, and maintenance of the tunnel ventilation and safety system;
- Tunnel control staff; and
- Signallers.

Local employment

Overall, the Project has the potential to be a significant opportunity to support local employment. However, the degree of local employment 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 area and the Toowoomba labour market region to support the construction and operation of the Project. Based on local workforce availability, it is likely that labour will be sourced from communities within a safe daily driving distance (less than 1 hour) from the Project.

The Project represents a source of potential training and career pathway development for local workers in the study area. As detailed in the Social Impact Assessment (EIS Appendix Q), the Regional Skills Investment Strategy (a funded four-year initiative of the Queensland Department of Employment, Small Business and Training) will support regional communities to identify current skills and ensure local people are supported to develop the skills to meet this demand. Both the Toowoomba Regional Council and Lockyer Valley Regional Council are participating in the Regional Skills Investment Strategy.

A range of other government strategies and programs which may support local employment are summarised in the Social Impact Assessment. These include: Jobs Queensland, Skilling Queenslanders for Work, Back to Work Regional Employment Package, and the Queensland Women's Strategy (2016-2021).

ARTC has established and implemented the Inland Rail Skills Academy to help create opportunities for education, training, skills development and employment for communities along the Inland Rail Program alignment. The Inland Rail Skills Academy includes a number of partnerships and programs, including undergraduate scholarships, science, technology, engineering and maths (STEM) education, training programs, and a partnership between ARTC and the Australasian Railway Association.

Indigenous participation

The Project also offers the potential to increase Indigenous employment and create business opportunities. Traditional Owners were consulted by ARTC through the Cultural Heritage process – the Western Wakka Wakka People and Yuggera Ugarapul People – who regarded the Project as an opportunity to improve Indigenous employment.

The Social Impact Management Plan (SIMP) (specifically the health and wellbeing action plan) specifies that ARTC commits to ongoing engagement with Indigenous communities, families and Elders to support Indigenous employees, underpinned by a high level of coordination between contributing programs and agencies (refer Social Impact Assessment - EIS Appendix Q).

Changes to housing and accommodation

Most of the workforce are anticipated to be drawn from the local region, within safe driving distance to the Project. Accordingly, 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 temporarily live locally (non-resident population). These numbers are likely to be small, and within the capacity of existing short-term accommodation facilities in Toowoomba, Gatton and Ipswich.

As reported in the Social Impact Assessment (EIS Appendix Q), impacts on housing affordability as a result of workforce demands or housing scarcities are not expected.

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 5.5) indicate that indirect employment will be generated in the Professional, Scientific and Technical Services and Wholesale Trade industries, reflecting the importance of these two industries 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 such as engineering and consulting (e.g. feasibility assessment) during Project planning, 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.

5.3.1 Agriculture

The construction and operation of the Project has the potential to impact high value farming operations and general agricultural uses across the study area. As detailed in the Land Use and Tenure chapter (EIS Chapter 8), these potential impacts include:

- Loss of agricultural land;
- Disruption to access and infrastructure;
- Disruption to water resources, including groundwater;
- Disruption to stock and product movement;
- Flood inundation; 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. Details on consultation undertaken for the Project is included within within the EIS Appendix D: Community Consultation

Loss of agricultural land

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. Important Agricultural Land (Important Agricultural Areas or IAA) is a separate category used in agricultural land auditing and is defined as land that is strategically significant to the region or the State.[51]

The scale of the total loss (within the Project footprint) of Class A agricultural land and IAA is anticipated to be low, with some of these areas already sterilized. For example, approximately 21 ha of the Project footprint which overlaps with the West Moreton System rail corridor is mapped as Class A land. Some of the landowners have also indicated that the land has been acquired as an investment properties (future subdivision) and lifestyle blocks rather than agricultural lands.

At a local government level, within Toowoomba LGA, the permanent disturbance footprint traverses approximately 47.03 ha of Class A (less than 0.1 percent), 0.02 ha of Class B (less than 0.1 percent), and 65.23 ha of IAA land (less than 0.1 percent). Within the Lockyer Valley LGA the permanent disturbance footprint traverses approximately 4.61 ha of Class A (less than 0.1 percent), 3.01 ha of Class B (less than 0.1 percent), and 33.58 ha of IAA land (less than 0.1 percent).

Overall, the permanent disturbance footprint will traverse 0.01 percent of the study area's productive agricultural land. This proportion can be used to estimate, at a high level, the potential loss of agricultural production resulting from the Project. In 2017-18, the gross value of agricultural production in Toowoomba and Lockyer Valley LGAs was $792 million.[52] Accordingly, it is estimated that the Project could result in a loss of approximately $78,296 (value foregone) in gross agricultural production per year.[53]

ARTC will continue its ongoing consultation with directly affected landowners during the detailed design phase to develop measures to mitigate impacts resulting from the loss of agricultural land.

Acquisition of land used for intensive livestock operations

The acquisition of intensive livestock operations, including feedlots, poultry farms and aquaculture and other notable land uses (such as Withcott Seedlings) have been avoided. Subsequently, the Project will not result in the acquisition of land used for local intensive livestock operations.

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 and road corridors, the Project may sever or isolate parcels of agricultural land, limiting internal movements and reducing access to agricultural land. Potential land severance may cause a disruption in farm operations through impacts to essential farming infrastructure (including access to water), services or access routes. These impacts will be discussed with individual landowners during detailed design.

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 possible. ARTC will work with individual landholders to develop suitable solutions based on individual farm management practices.

[51] Department of Agriculture and Fisheries, Agricultural Land Classes, 2010-2019
[52] Queensland Government, 2019, Queensland Spatial Catalogue: Gross Value of Agricultural Production (GVAP) per Local Government Area in Queensland.
[53] 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.

Disruption to water resources, including groundwater

The Project has the potential to directly impact the water supply of farms and agribusinesses within and surrounding the Project. Across the broader study area, farms and agribusinesses in the study area rely on surface water and groundwater, primarily through water bores. Specifically, the Withcott Seedling water supply is located to the west (potable water supply) and east (wastewater) of the Project. To minimise potential impacts of a loss in water supply and disruption to the internal access, the Project has been re-aligned to minimise any direct impacts on water infrastructure, and includes a proposed grade separation over the internal access tracks and water infrastructures between the water supplies.

According to the Surface Water Quality Technical Report (EIS Appendix L) and the Hydrology and Flooding Technical Report (EIS Appendix M) for the Project there may be small changes to the local hydrology during construction and operations (e.g. temporary waterway barriers). However, the potential impacts are considered low and changes to the base-flow and low-flow conditions are not expected to materially impede current surface water resource use or groundwater recharge. The Project has been designed to minimise any changes to flow, and any impacts to surface water users.

According to the Groundwater Technical Report for the Project (EIS Appendix N), there are a number of registered groundwater bores which will need to be decommissioned as part of the land acquisition process. The majority of the bores are either used for domestic purposes or irrigation.

Groundwater modelling has also predicted short-term and long-term impact to groundwater resources during construction and operation of the Toowoomba Range Tunnel. Affected bore owners within the relevant drawdown extents will be consulted and a bore assessment undertaken prior to construction.

ARTC plan to 'make good' impairments (e.g. water level decline impairing the bore's ability to provide a reasonable quantity or quality of water for the bore's authorised use or purpose) resulting from the construction and/or operation of the Project on a case by case basis. The 'make good' arrangements (e.g. reconditioning groundwater bores) will aim to ensure the bore owner has access to a reasonable quantity and quality of water for the water bore's authorised purpose or that the bore owner is compensated for the bore's impaired capacity.

Disruption to stock and product movement

The Project does not traverse any declared stock routes, although it is understood that there may be informal stock routes which interface with the Project alignment, used to transfer stock to various grazing paddocks and holding yards.

Informal stock movements will be considered during detailed design. ARTC is undertaking consultation with landholders to identify stock routes across grazing properties that may be affected during construction or operation of the Project. In the event that private stock routes are identified, appropriate mitigation measures will be developed in consultation with affected landholders.

Improvements in supply chain efficiency

Efficient supply chains support the regional and national capacity to enhance economic opportunities within local communities. As a predominantly greenfield development, the Project comprises new dual gauge rail track to create a more direct rail corridor through the Toowoomba Range which will benefit rail operators, along with the interoperability between the Inland Rail alignment and the QR network and the interstate network managed by ARTC. for freight operators. As a critical section of the broader Inland Rail Program, the Project offers a more efficient solution for intra and interstate freight operators who will be able to avoid inland and coastal road and rail networks (refer EIS Chapter 2: Project Rationale for further details). These improvements in supply chain efficiency align to the strategic objectives of regional, state and national infrastructure and economic development planning (refer Section 2.3). Specifically, the Project:

- Offers opportunities to improve the productivity of local export industries (such as agriculture);
- Improves freight transportation infrastructure between the eastern and western side of the Great Dividing Range; 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 the adjacent B2G and H2C projects) may act as a significant catalyst for development in the planned and existing industrial areas at the Toowoomba Enterprise Hub and Gatton West Industrial Zone.

5.3.2 Tourism

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

The Project will not have a direct impact on tourism businesses (through property acquisition), however local businesses have raised concerns regarding the Project such as noise and vibration, dust and air quality and changes in property values. The Project has been designed to minimise these impacts where possible. Individual stakeholders will be consulted to better understand the nature of these concerns, including appropriate mitigation and management approaches.

During construction, there is potential for road works, bridge construction and the visual impact of laydown areas to affect tourists' experience and travel times. Some visitors may be deterred from visiting during the Project's construction which has the potential to impact on tourism based businesses within the area. Construction activities also have the potential to disrupt access to the Bicentennial National Heritage Trail and the Lockyer National Park. This impact is anticipated to be small and will be temporary whilst construction activities are undertaken.

As detailed in the Social Impact Assessment (EIS Appendix Q), the Project is not anticipated to result in the displacement of tourists from accommodation attributable to workforce housing demand.

During operation, there is potential for reduced scenic amenity due to the Project's location within the rural and regional landscape. This is of concern with respect to the Project's elevated structures and embankments, and its cumulative impacts in the Lockyer region with the adjoining H2C Inland Rail project. The impact of the Project on the landscape and visual amenity has been assessed in the Gowrie to Helidon Landscape and Visual Impact Assessment (EIS Appendix H). The assessment identified that some visitors will see the Project as diminishing the 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 resources and extractive industries

The Project has been designed to minimise the potential sterilisation of mineral and petroleum resources, and to minimise the restriction of access to mineral resources or disruption to existing operations. The Project generally follows the Gowrie to Grandchester future State transport corridor and does not traverse mineral or petroleum resource tenements. As detailed in Section 4.3.2, the permanent disturbance footprint traverses KRA 8 (refer EIS Chapter 8: Land Use and Tenure for further details).

The Project will have no impact on the existing operations within the KRA. While the existing operations are also unlikely to impact on the construction and operation of the Project.

There however will be some sterilisation of the KRA resource processing area (4.24 ha, with an additional 1.2 ha severed) and as such the underlying resources. However, based on the local geology, geotechnical investigations for the Project and consultation with the operator, the main deposit of basalt is located on a north-west trending spur above and to the south of the Project. This deposit can be developed at a future date subject to the relevant approvals, though measures will need to be implemented to manage potential impacts from blasting on the Toowoomba Range Tunnel and the eastern tunnel portal areas, along with the train operations in these areas.

Consultation with resource interest holders, including operators of Harlaxton Quarry (KRA 8) will continue to be undertaken during detailed design. Where the Project may impact on likely significant deposits within the KRA, appropriate mitigation will be agreed with the resource interest holders.

In addition, consultation with APT Petroleum Pipelines Pty Ltd has commenced with respect to the Roma Brisbane Gas Pipeline and required treatments, including costs, timing and approval pathways. Further information is provided in EIS Chapter 8: Land use and tenure and is detailed within the EIS Appendix D: Community Consultation.

5.3.4 Local businesses

Construction materials

The Project will have significant construction materials and services requirements which may provide local businesses with the opportunity to supply the Project.

The Project will require a range of construction supplies, including borrow material, ballast material, pre-cast concrete, concrete sleepers and turnout panels, steel, fencing, electrical components, fuel and consumables. Precast concrete may be sourced from Ipswich, and other major components such as fencing may be sourced within the study area. It is likely that concrete sleepers will be sourced from outside northern NSW, while rail will be delivered by the existing QR rail network.

Ballast material will be sourced from local quarries. Seven operational quarries have been identified by ARTC as potentially suitable for use as material source locations during construction activities. The viability and feasibility of accessing material from these locations will be confirmed during the detailed design phase of the Project (post-EIS). There are no borrow pits proposed.

The Inland Rail Program is subject to the *Commonwealth Jobs Act 2013* requirement to develop an Australian Industry Participation (AIP) Plan. This plan identifies how ARTC and its supply chain will provide Australian entities with full, fair and reasonable opportunity to bid for the supply of key goods or services. Further, ARTC has developed the Inland Rail Sustainable Procurement Policy which will ensure that local, regional and Indigenous businesses will have opportunities to supply the Project. [54]

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, such as at the Toowoomba Enterprise Hub and Gatton West Industrial Zone (refer Section 5.3.5 below).

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 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 Project. The expansion in construction activity would support additional flow-on demand and additional spending by the construction workforce in the local community (such as in the Toowoomba and Lockyer Valley areas where a portion of the construction workforce are likely to be sourced). This may lead to increased trading levels for small businesses, such as food and beverage businesses in the study area.

5.3.5 Local industrial areas

As part of the Inland Rail Program, the Project has the potential to stimulate business and industry development at the Toowoomba Enterprise Hub and Gatton West Industrial Zone. By providing efficient transport access to intrastate and interstate markets, the Project may act as a catalyst for further private sector investment in this area, particularly for freight and logistics operations. The further development of the Toowoomba Enterprise Hub has the potential to unlock greater economic activity in the region, such as through promoting greater international export opportunities via Wellcamp Airport. These opportunities may be further enhanced by the

[54] This policy is included in EIS Appendix G: Corporate policies

strategic link that would be provided between Inland Rail, the QR network and the interstate rail network operated by ARTC, potentially serving to attract rail-dependent industries to the region.

5.4 Economic benefits assessment

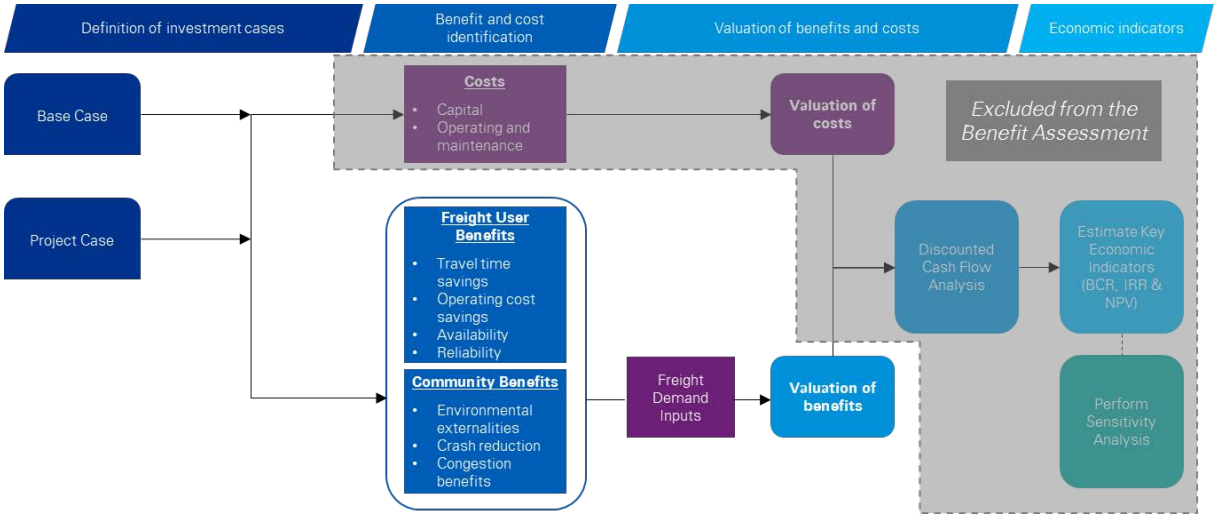
5.4.1 Methodology

The approach below reflects the three-step benefit assessment modelling process adopted for the purposes of the EIS:

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 assessment of the Project.

Figure 5: CBA approach and the economic benefits assessment



Source: KPMG

Critically, the key difference between the complete CBA approach, and the economic benefits assessment approach adopted in this analysis, is the exclusion of costs.[55] As a consequence, the estimation of economic indicators is not applicable to this analysis, rather the discounted present values of the benefits is the focus of the assessment.

5.4.2 Base Case and Project Case

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

[55] 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.

- The **Base Case** adopted for this benefit assessment is a 'do nothing' scenario, where it is assumed that no other sections of the Inland Rail Program 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.

Key assumptions and parameters adopted for use in the benefit assessment are presented in Table 10.

Table 10: 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	2021	
Discount reference year	2021	
Appraisal period	50 years from the year of opening. First year of measured benefits is 2024 (first full year of benefits)[56]	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 Program 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 Program Business Case (2015)

5.4.3 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 Program Business Case (2015). The assumptions underpinning these demand projections are documented in Chapter 7 of the Inland Rail Program Business Case (2015). This section outlines how these demand projections have been adopted for the Project EIS.

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 Gowrie and flow through to Brisbane, consist of:

- North Star to Brisbane
- Narrabri Cotton to Brisbane

[56] 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.

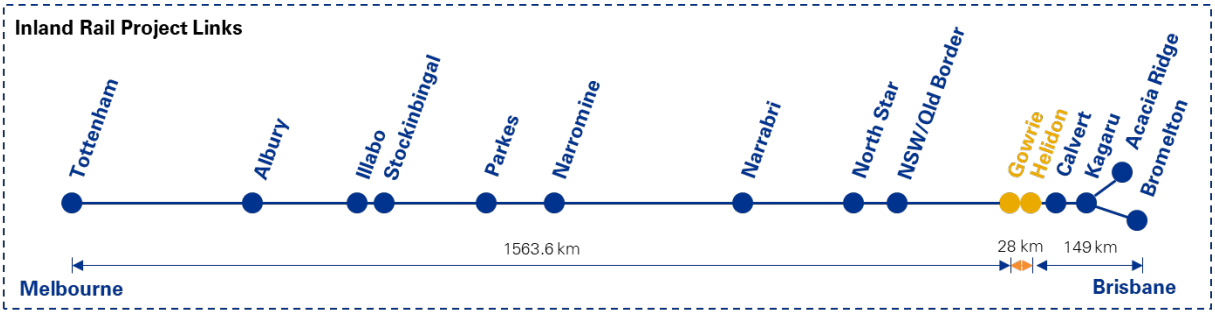
- North Moree to Brisbane
- Toowoomba to Brisbane
- Goondiwindi Cotton to Brisbane
- South Queensland/North NSW to Brisbane Port (cottonseed)
- South Queensland/North NSW to Brisbane Port (on existing narrow gauge)
- Charlton-Wellcamp to Brisbane (containerised).

The transport network and surrounding areas impacted by these freight movements represent the project area for the purposes of the economic benefits assessment.

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 the NSW Border to the program extent at Acacia Ridge (e.g. 28 kilometres / 399 kilometres).[57]

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. 28 kilometres / 1,740.6 kilometres).

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 EIS', 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 Program 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 Queensland 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 Program Business Case (2015) CBA highlight that the identified benefits accruing to coal trips are a direct result of the Inland Rail Program with complementary investment in Western Line Upgrades, which do not form part of the scope of the Inland Rail Program as it stands currently, and are not funded. For a more detailed note on the treatment of coal in the economic impact assessment refer to Appendix B.

5.4.4 Benefit categories

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

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

- **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 the following table (Table 11).

Table 11: Benefit category descriptions

Benefit Category	Description
Freight Benefits	
Travel time savings	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 that enable shorter distances, faster travel, and subsequently, increased capacity. 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[58] has been used to estimate the benefits to the new rail freight. Notably, there is no induced freight demand assumed for the Project.
Operating cost savings	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.
Improved service availability	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. Freight service availability benefits have been estimated based on the values presented in the Inland Rail Program 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 2021 price year using Producer Price Index (PPI) Rail Freight Transport (A2314067L).
Improved service reliability	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. As with availability benefits, reliability benefits have been estimated based on the values presented in the Inland Rail Program 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 2021 price year using PPI Rail Freight Transport.

[58] Economic theory suggests that when consumers change their travel mode in response to a financial incentive, the net consumer surplus averages half of their price change.

Benefit Category	Description
Community Benefits	
Crash reduction	Crash cost savings represent the reduced costs associated with fatal and serious injuries resulting from both road and rail incidents.
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 Program Business Case (2015) and the parameters set out in Table 12.

Value of freight per tonne hour unit rates have been derived from previous analysis completed for the Inland Rail Program 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 $0.042 – $0.034 per Net Tonne Kilometre (NTK) in the Base Case down to $0.018 – $0.017 NTK in the Project Case for agricultural freight, and $0.109 – $0.069 per NTK in the Base Case down to $0.070 – $0.040 NTK in the Project Case for containerised freight). These parameters have been estimated based on the outputs from the Inland Rail Program Business Case (2015) and Transport for NSW's (TfNSW) 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 Program Business Case (2015) and have been escalated to current year prices and apportioned to the Project.

Table 12: Freight benefit parameter values ($2021)

Parameter Value		Variable/s	Source/s
Freight Travel Time			
Value of Freight (Rail)		$1.71 tonne hour	ATAP, Inland Rail Program Business Case (2015), PPI Rail Freight Transport (A2314067L)
Value of Freight (Road)		$1.46 tonne hour	ATAP, Inland Rail Program Business Case (2015), PPI Road Freight Transport (A2314058K)
Operating Cost			
Agricultural	Rail Operating Cost – Base Case	2024: 0.042 $/ntk 2054: 0.035 $/ntk 2074: 0.040 $/ntk	TfNSW (2018), Inland Rail Program Business Case (2015), PPI Rail Freight Transport (A2314067L)
	Rail Operating Cost – Project Case	2024: 0.018 $/ntk 2054: 0.017 $/ntk 2074: 0.018 $/ntk	TfNSW (2018), Inland Rail Program Business Case (2015), PPI Rail Freight Transport (A2314067L)

Parameter Value		Variable/s	Source/s
Containerised	Rail Operating Cost – Base Case	2024: 0.109 $/ntk 2054: 0.082 $/ntk 2074: 0.069 $/ntk	TfNSW (2018), Inland Rail Program Business Case (2015), PPI Rail Freight Transport (A2314067L)
	Rail Operating Cost – Project Case	2024: 0.070 $/ntk 2054: 0.049 $/ntk 2074: 0.040 $/ntk	TfNSW (2018), Inland Rail Program Business Case (2015), PPI Rail Freight Transport (A2314067L)
Road Operating Costs		0.063 $/ntk	ATAP, Inland Rail Program Business Case (2015), PPI Road Freight Transport (A2314058K)
Road Driver Costs		30.76 $/h	Austroads, Inland Rail Program Business Case (2015), Consumer Price Index
Freight Service[59]			
Freight Service Availability		2024: $16.89 m 2054: $184.17 m 2074: $301.66 m	Inland Rail Program Business Case (2015), PPI Rail Freight Transport (A2314067L)
Freight Service Reliability		2024: $11.26 m 2054: $45.72 m 2074: $81.73 m	Inland Rail Program 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 Queensland (including Goondiwindi and Toowoomba) regions through to Brisbane, and containerised freight from Charlton-Wellcamp to Brisbane Port. As within the Inland Rail Program 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.[60]

Consistent with the assumption contained within the Inland Rail Program 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 (million NKT) increases to 1,363 mNTK in the Project Case).

Table 13: Freight demand assumptions – the Project

	Base Case			Project Case		
	2024	2054	2074	2024	2054	2074
Trips						
Rail	768	1,066	1,327	1,786	1,907	2,373

[59] 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 6.3.4 freight demand.
[60] It is noted that no new independent demand modelling has been undertaken to validate the assumptions contained within the Inland Rail Program Business Case (2015).

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 Program Business Case 2015

Freight benefits have been estimated using the appropriate change in freight demand (such as million NTK) by mode type by the relevant parameter unit. The estimated freight benefits for the Project are provided over a 50 year analysis period in the table below. Overall, the Project's freight benefits represent an incremental $77.11 million in present value terms over the Base Case.

Table 14: Estimated freight benefits ($2021)

Benefit	Undiscounted - $m	Present Value (7%) - $m
Freight Time Savings	28.71	5.43
Operating Cost Savings	242.47	49.58
Freight Service Availability	129.23	17.00
Freight Service Reliability	35.00	5.10
TOTAL	**435.41**	**77.11**

Operating cost savings represent 64 percent the of freight benefits with $9.58 million in present value terms 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 $22.10 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 $5.1 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 Program Business Case (2015) and the parameters set out in Table 15.

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 Program 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. This is consistent with the approach applied within the Inland Rail Program Business Case (2015). The value presented in the table below has been escalated using PPI for Road Freight Transport.

Table 15: Community benefit parameter values ($2021)

Parameter Value	Variable/s	Source/s
Crash Cost Savings		
Road	0.0055 $/ntk	BTE (1999), CPI
Rail	0.0005 $/ntk	BTE (1999), CPI
Environmental Externalities		
Road (Urban)	38.90 $/1000 km	Part 4 Section 5 Guide to Project Evaluation Austroads (2012), Inland Rail Program Business Case (2015), CPI
Road (Rural)	12.87 $/1000 km	Part 4 Section 5 Guide to Project Evaluation Austroads (2012), Inland Rail Program Business Case (2015), CPI
Rail (Urban)	6.31 $/1000 km	Part 4 Section 5 Guide to Project Evaluation Austroads (2012), Inland Rail Program Business Case (2015), CPI
Rail (Rural)	1.68 $/1000 km	Part 4 Section 5 Guide to Project Evaluation Austroads (2012), Inland Rail Program Business Case (2015), CPI
Road Decongestion Benefits		
Marginal congestion cost	2.89 $/vkt	TfNSW, Inland Rail Program Business Case (2015), CPI

The shift of road freight to rail provides significant reduction in freight demand by kilometres travelled. This frees up capacity on the road network, and reduces the level of interaction between heavy vehicles and cars. Subsequently, businesses and community members are able to move more freely through the local network. Table 16 provides the assumed freight demand by kilometres travelled as per the modelling completed for the Inland Rail Program Business Case (2015).

Table 16: Freight demand by kilometres travelled ('000s) - the Project

Mode	2024	2054	2074
Base Case			
Rail	261	363	451

Mode	2024	2054	2074
Road	26,569	36,890	45,913
Project Case			
Rail	714	818	1,018
Road	-	-	-

Source: Inland Rail Program 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 $24.51 million in present value terms over the Base Case.

Table 17: Estimated community benefits ($2021)

Benefit	Undiscounted - $m	Present Value (7%) - $m
Crash Cost Savings	16.31	3.36
Environmental Externalities	47.43	9.78
Road Decongestion Benefits	55.17	11.37
TOTAL	**118.90**	**24.51**

Crash cost savings represent ~14 percent the of community benefits ($3.36 million in present value terms) as freight traffic is removed from the road network.

The reduction in heavy freight road 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 $9.78 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 $11.37 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.

5.4.5 Economic benefits assessment results

The results of the economic benefits assessment estimate that the Project is expected to provide a total of $101.62 million ($2021 present value terms) in incremental benefits to the project area (at a 7 percent discount rate). This consists of $77.11 million in freight benefits and $24.51 million in community benefits.

Observing the composition of benefits, the largest share of benefits for the Project 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 for the Project.

Reductions in environmental externalities (i.e. air pollution and greenhouse gas emissions) from reduced heavy vehicle kilometres travelled represents ~10 percent of the total benefits (at the 7 percent discount rate).

The full results of the economic benefits assessment are presented in Table 18.

Table 18: Results of the economic benefits assessment, present value terms ($2021)

Benefits	Discount Rate		
	4%	7%	10%
Freight Benefits	**$142.73 m**	**$77.11 m**	**$48.12 m**
Travel Time Savings	*$9.82 m*	*$5.43 m*	*$3.43 m*
Operating Cost Savings	*$86.54 m*	*$49.58 m*	*$32.41 m*
Improved Availability	*$36.11 m*	*$17.00 m*	*$9.30 m*
Improved Reliability	*$10.27 m*	*$5.10 m*	*$2.97 m*
Community Benefits	**$42.67 m**	**$24.51 m**	**$16.06 m**
Crash Reduction	*$5.85 m*	*$3.36 m*	*$2.20 m*
Environmental Externalities	*$17.02 m*	*$9.78 m*	*$6.40 m*
Road Decongestion Benefits	*$19.80 m*	*$11.37 m*	*$7.45 m*
TOTAL BENEFITS	**$185.40 m**	**$101.62 m**	**$64.18 m**

5.4.6 Cost Benefit Analysis: Inland Rail Program Business Case

As detailed above, due to the nature of the incremental assessment approach adopted for this EIS, 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 the Inland Rail Program. Instead, the results of the economic analysis undertaken for the Inland Rail Program 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 below.

Table 19: Economic appraisal results for Inland Rail ($2015)

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

Source: Inland Rail Program Business Case 2015

The CBA results indicate that Inland Rail is estimated to be economically viable, with a benefit cost 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 economies using a general equilibrium modelling framework.[61] For the purposes of this analysis, a CGE model (KPMG-SD) has been applied to examine the flow-on effects arising from the Project on the broader economy.

As described throughout this report, the regional economy is represented by the Toowoomba labour market region.

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 program associated with the Project's rail 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 program associated with the development of the Project.

The key modelling assumptions and inputs that underpin the regional economic assessment results are provided in Appendix A. It is noted that the analysis in this report was largely completed before the COVID-19 crisis impacted the economy. In particular, the baseline representation of the economy does not account for the COVID-19 impacts.

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 as a transitory expenditure shock to the economy. Accordingly, modelling each of the construction phases of the 13 projects of the Inland Rail program in isolation is reasonable. If there is significant overlap in the timing of the construction phases of the other sections of the Inland Rail program, modelling each section 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 construction phase of each section is modelled under two labour market scenarios:

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

[61] The regional impact analysis 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 however explains any inconsistencies between the construction program identified in the economic analysis and those identified within the body of this report.

- 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 section of the Inland Rail Program individually and in isolation of the whole Program will not capture all the benefits expected to be generated upon completion of the entire Melbourne to Brisbane rail connection.

In the context of the regional impact analysis, when modelling each section of Inland Rail in isolation, the CAPEX is disproportionate to the benefits directly attributable to that particular link. If the Project was built but no other section was completed the benefits would be insufficient to justify the investment. From a modelling perspective it would appear as if there had been a significant overinvestment in rail infrastructure. That is, the supply of rail services is greater than the demand for these services. This excess supply of rail services can be eliminated by a combination of reducing the price of rail service (to stimulate demand), writing off the investment and subsidising the rail operations. Each of these mechanisms has a distortionary impact on the economy. These distortions are an artefact of the requirement to consider the benefits of the Project in isolation rather than a reflection of what will actually happen in the economy. For this reason the operational phase modelling results are not included in this EIA.

5.5.3 Regional economic impact analysis results

The headline impacts of the Project on the Toowoomba labour market region during the construction phase are summarised in Table 20.

Table 20: Summary of the direct and indirect economic impacts of the Project on regional economic catchment over the construction period

	Toowoomba labour market region (SA4)	
Measure	**Slack Labour Markets**	**Tight Labour Markets**
Additional Real GRP ($2018-19)	$595 m	$206 m
Additional Average Direct and Indirect Jobs (persons)	1,027	225

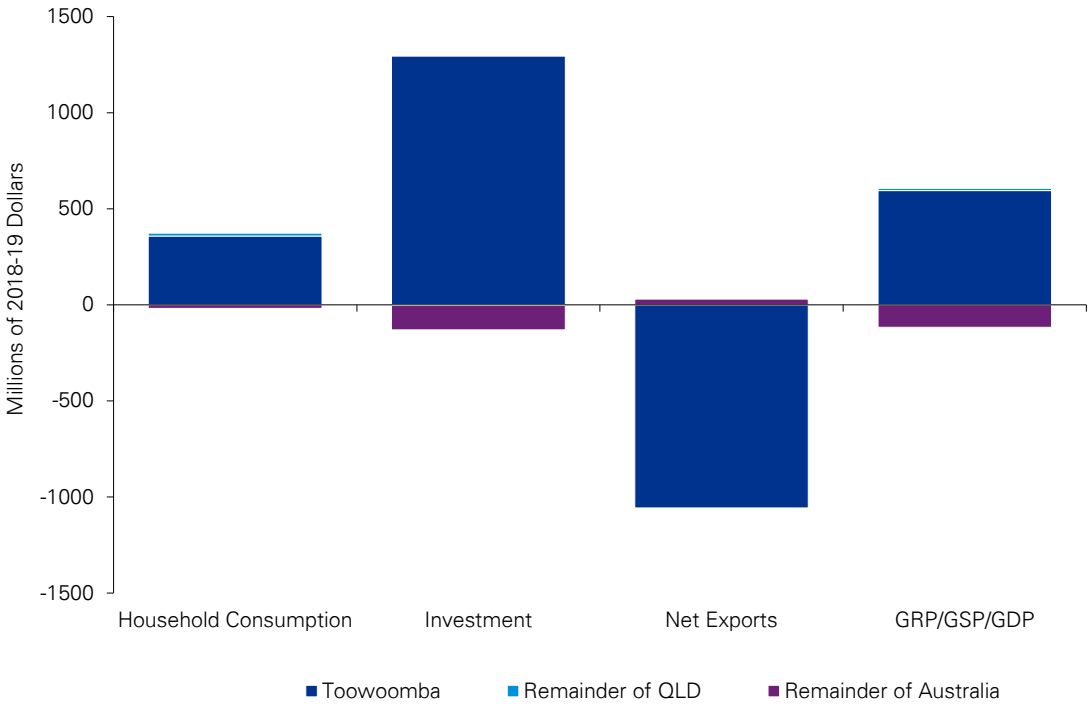
Source: KPMG

At the end of the construction phase, real GRP for the Toowoomba labour market region is projected to be $595 million higher than the baseline level under the assumption of slack labour markets. This increase is more than halved if labour markets are assumed to be tight ($206 million).

The importance of the labour market assumption is reflected in the employment results. In the slack labour market scenario it is estimated that an additional 1,027 direct and indirect jobs are generated.[62] Note that this is the average number of jobs per annum during the construction period. With tight labour markets the increase in jobs is significantly less at 225 jobs. Under tight labour markets, wages are bid up to attract currently employed workers to the construction businesses contracted to construct 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. Figures 7 and 8 summarise the macroeconomic results for the Toowoomba labour market region in the context of the rest of the Queensland and Australian economies. Employment results are presented in Figure 9.

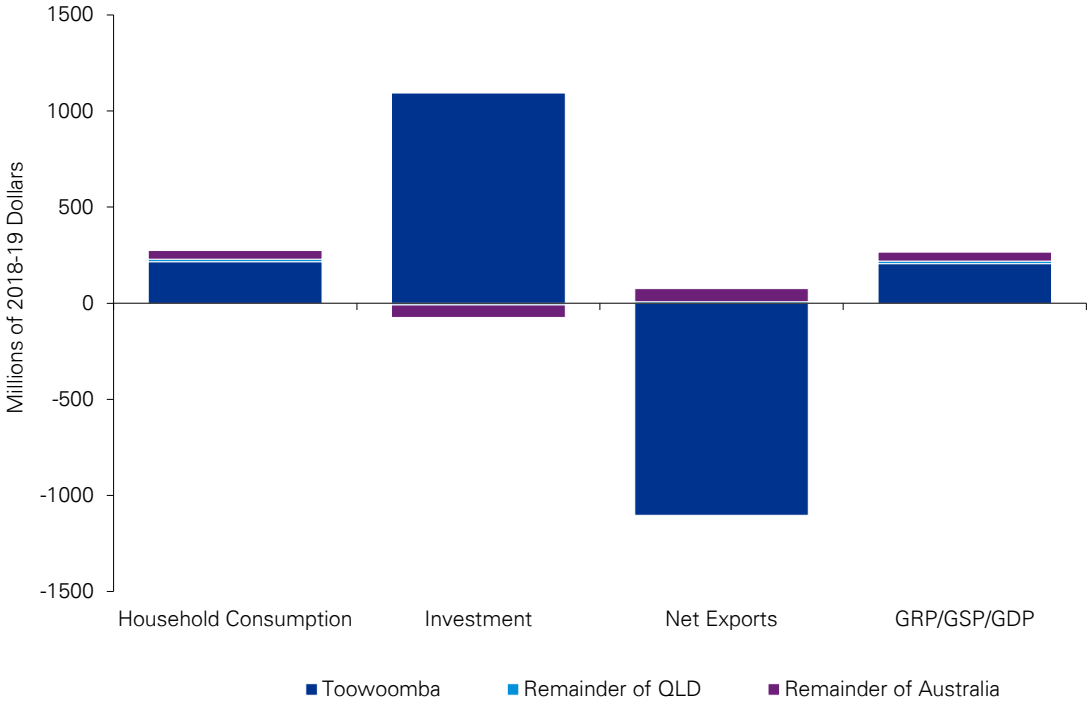
[62] To put this in context the planned direct workforce requirements of the Project during the construction phase peak at approximately 596 FTE.

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



Source: KPMG *Gross State Product (GSP), Gross Domestic Product (GDP).

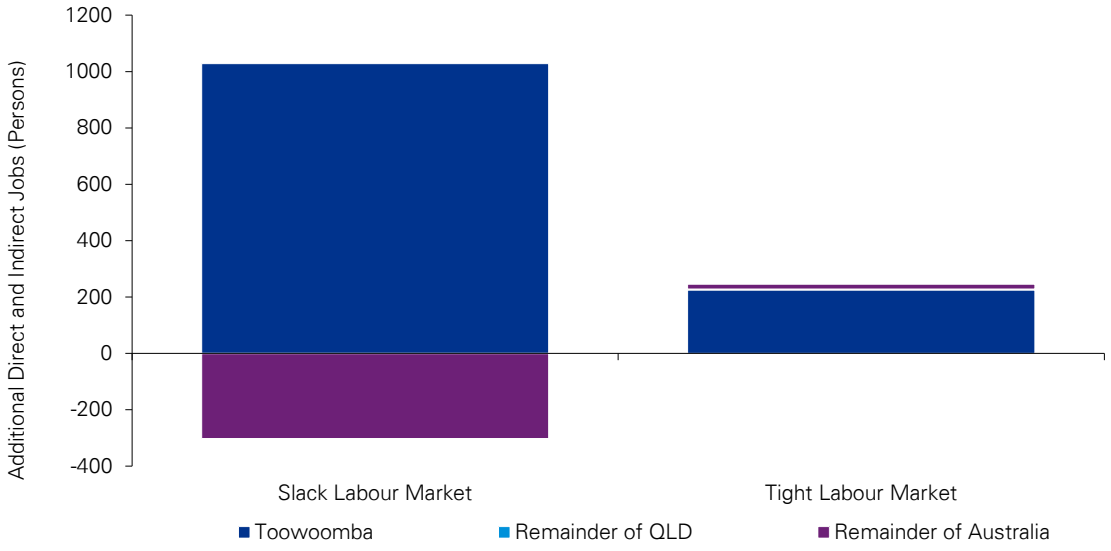
Figure 8: Macroeconomic results: construction phase, tight labour markets



Source: KPMG

The simulation results indicate that the economic impacts of the Project during the construction phase are concentrated in the Toowoomba labour market region. Net exports, which include inter-regional and international exports and imports, are 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.[63]

Figure 9: Direct and indirect employment results



Source: KPMG

The labour market conditions that are likely to prevail during the construction phase of the Project will be most consistent with the "slack" labour market scenario.

Recent labour market trends can be used to inform workforce capacity and capability within the local region. In the Toowoomba labour market region, over the four quarters ending in the September quarter 2020, the unemployment rate averaged 7.2 per cent[64], and the participation rate averaged 77.8 per cent over the 12 months ending in September 2020.[65] Labour market conditions in Toowoomba have deteriorated since the end of 2019 with the unemployment rate increasing from 4.3 per cent in the September quarter 2019 to 7.2 per cent in the September quarter 2020. At this stage it remains uncertain how much of the deterioration in the labour market is due to the impacts of the COVID pandemic and how quickly the economy will recover. Rising unemployment rates coupled with relatively strong participation rates suggests that the labour market in the Toowoomba area is not stretched. It is noted that 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 September 2020. More recent macro-economic data and continuing difficulties in managing the COVID-19 pandemic suggest that considerable downside risks are likely to persist in

[63] The G2H CAPEX program associated with G2H constitutes a temporary expenditure shock to the economy. Some of the goods and services purchased by customers in the Toowoomba economy 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 has been 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. Where it is profitable to do so, businesses switch some of their productive capacity towards accommodating the demands associated with the Project and away from sales to other customers (e.g., to interstate and overseas customers). The results reported in the figures above are roughly linear for small deviations in the assumed CAPEX. For example, if G2H CAPEX was increased by 5 percent (from $1,087 million to $1,141 million) then net exports for Toowoomba would fall by a further 5 percent.

[64] Based on Australian Government's Small Area Labour Markets (SALM) publication, September 2020

[65] Participation rate of working-age population 15 – 64 years; ABS, Labour Force Survey 2020, cat. no. 6291.0.55.001. Released 25 February 2021.

the short to medium term. The National Accounts data for the December quarter 2020 revealed that GDP continued to advance (3.1 per cent quarter-on-quarter) after positive growth in the September quarter (3.4 per cent quarter-on-quarter) as states and territories began to relax their lockdown restrictions. However, GDP remains 1.1 per cent below the level recorded in the same period a year earlier. The recovery in economic conditions is anticipated to be modest and characterised by a high degree of uncertainty. In this environment, national and regional labour markets are unlikely to be stretched, supporting the proposition that labour market conditions expected to prevail during the Project's construction phase will be most consistent with the "slack" labour market scenario. This characterisation of the labour market does not preclude pressure being placed on specific construction skills during the construction phase. This possibility is discussed below.

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[66] In Queensland, during the reference week in the quarter ended November 2020, 17,300 unemployed persons (approximately 9.2 percent) reported that their last job was in Construction, representing a 34.6 percent increase from the corresponding quarter in the previous year. Nationally, over the same period, 13.2 per cent of unemployed persons who reported losing their job last worked in the Construction industry. These indicators suggest a degree of spare capacity in the Construction sector. The industry and occupational profile of the Toowoomba 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. [67]

The possibility of some tightness in the labour market cannot be completely dismissed. More recently the ABS has estimated that as at November 2020, job vacancies in the Construction sector have risen from a trough in May 2020 to be about 7.8 per cent higher than in the same period in 2019.[68] If the government's health and economic policy responses to the pandemic are highly effective, the economy may grow much faster than is 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. Prior to the COVID-19 shock, the known 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. KPMG's assessment is that the overall labour demands of the various infrastructure projects expected to be constructed are modest and that scheduling could be optimised to minimise market impact. The prevailing trends in the Toowoomba and national labour markets, as well as the ability of workers to mobilise to project locations, suggest that the risks of labour market disruption are limited. This risk has now been further reduced by the uncertainty posed by the COVID-19 shock.

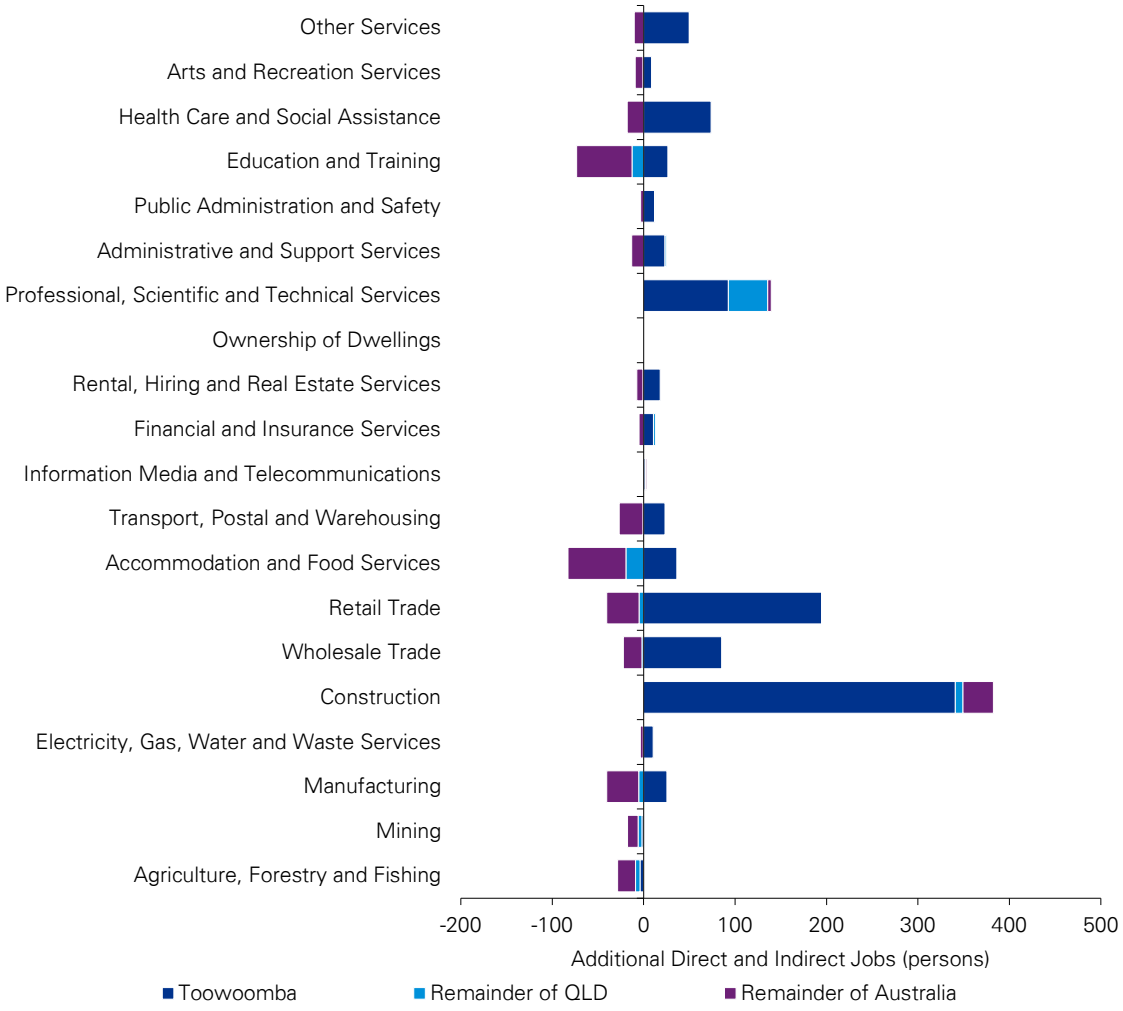
It is noted that there may be benefits from having additional infrastructure projects in the adjacent and surrounding areas around the same time as the Project. These benefits come in the form of lowered mobilisation costs and transfer of labour experience and skills to projects, particularly those constructed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

Due to the dynamic nature of local and regional labour markets, ARTC has identified that an analysis of the likely availability of construction labour from the region will be undertaken prior to construction, to enable the refinement of local and regional recruitment and training strategies to maximise employment opportunities within local economies.

Employment results at the industry level are presented in Figure 10 and 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.

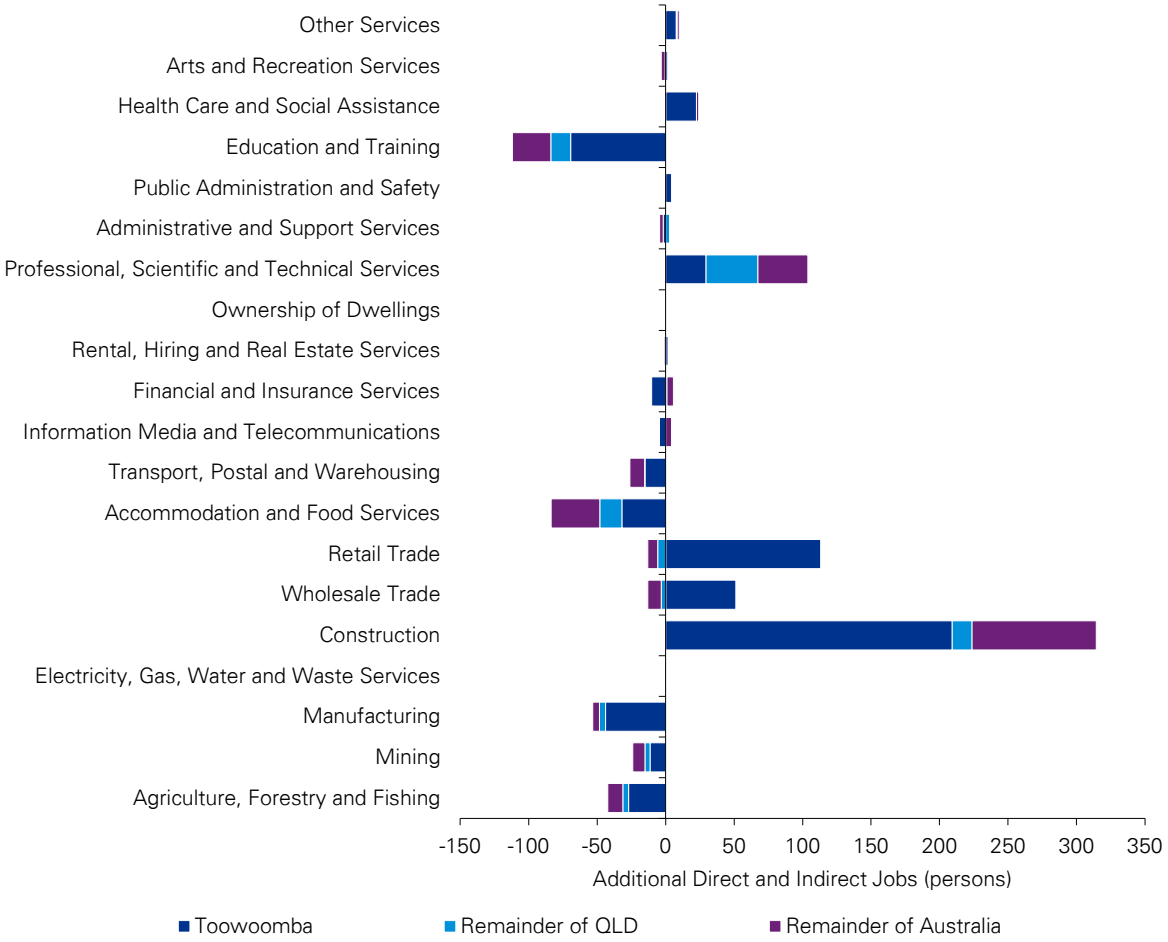
[66] Based on ABS, Labour Force Survey, Quarterly, November 2020, cat no. 6291.0.55.003. Released 23 December 2020.
[67] Workers with specialist skills may be sourced from outside of the local region.
[68] Based on ABS, Job Vacancies, November 2020, cat no. 6354.0. Released 13 January 2021.

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 construction of the Project, is anticipated to expand employment the most. 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 sector'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 traditional cost-sensitive trade-exposed sectors, such as Agriculture, Forestry and Fishing, Mining, and Manufacturing and on non-traditional trade-exposed sectors such as Accommodation and Food Services and Education and Training. 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 displacement of workers from existing jobs is less pronounced. With slack labour markets the benefits from increased labour demand are primarily in the form of additional jobs. 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 the displacement of workers from lower paying jobs to higher paying jobs.

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 report, the cumulative impact assessment has two components:

- **Inland Rail Program in Queensland (Section 6.1.1)**[69]

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

  There are five sections of the Inland Rail Program which fall in Queensland, including B2G, G2H, H2C, Calvert to Kagaru (C2K) and Kagaru to Acacia Ridge and Bromelton (K2ARB).

- **Broader cumulative assessment (Section 6.1.2)**

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

6.1.1 Inland Rail Program in Queensland

The construction phases of the Queensland sections of the Inland Rail Program have been jointly simulated to analyse the cumulative economic impacts of these projects. The tables below summarise the cumulative macroeconomic impacts of the Queensland sections of the Inland Rail Program. Under the assumption of slack labour markets the incremental economic impacts of the Queensland 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 construction period of 2,059.[70] 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.

The sections of the Inland Rail Program that are located in the Toowoomba regional economic catchment area are the Project and part of the H2C section. Construction activities related to these sections will directly impact the Toowoomba[71] economy. The remaining Queensland sections of the Inland Rail Program, which are located in the Greater Brisbane and Darling Downs and Maranoa regions, will impact Toowoomba labour market region indirectly.

The previous section reported the results of simulations when the Project was considered in isolation. In that context, the direct and indirect increment to jobs in the Toowoomba economy was estimated to be 1,027 under the assumption of slack labour markets and 225 under the assumption of tight labour markets. When all the Queensland projects are considered jointly, the analogous increment to jobs (direct and indirect) in Toowoomba labour market region increases to 1,071 (under a slack labour market scenario) and 258 (under a tight labour market scenario). In the joint scenario the increment to jobs in Toowoomba labour market region peaks in 2022 at 2,106 and 523 jobs under slack and tight labour market conditions respectively. As discussed in the regional impact analysis, the labour market conditions expected to prevail in the Toowoomba economy over the period 2021 to 2025 will be most consistent with those assumed in the "slack" labour market scenarios that have been simulated. The labour market conditions in other regional economies in Queensland over the Inland Rail construction phase period will generally be much closer to the "slack" than to the "tight" characterisation.

[69] The cumulative impacts 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.
[70] Gross State Product (GSP) for Queensland is an aggregate measure of the total economic production of goods and services, including international and interstate trade, during a quarterly period.
[71] SA4 Labour Market Region not LGA

Table 21: Summary of Queensland – 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 labour market region	**$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 22: Summary of Queensland – 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 labour market region	**$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

6.1.2 Broader cumulative assessment

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 23, 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 23 reflect known information as at the time of drafting this report. Further details on the cumulative social impacts of the Project can be found in EIS Appendix Q: Social Impact Assessment.

Table 23: Cumulative projects and nature of potential impacts

Project	Construction timeframe	Peak workforce (construction)
Inland Rail – NSW/Qld Border to Gowrie	2021-2026	950 FTE
Inland Rail – Helidon to Calvert	2021-2026	410 FTE
InterLinkSQ – Global Logistics Centre and Industrial Park	2017-2037	Unknown
Wellcamp Business Park	Ongoing	>20
Witmack Industry Park & Charlton Logistics Park	Ongoing	30
Toowoomba Regional Council Waste Management Facility	Not defined	Not defined
Defence Housing Australia, Mount Lofty development	Not defined	Not defined
Asterion Medicinal Cannabis Production Facility	Not defined	800 FTE
Gatton West Industrial Zone (WIZ)	2019-2024	13.5 FTE for construction and 36.3 FTE for operation
Bromelton SDA	2016-2031	Unknown
Cross River Rail	2019-2024	1,547
New Acland Mine expansion	2019-2030	225

Source: ARTC

Cumulative labour market impacts

The concurrent construction of interacting projects has the potential to 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 COVID-19 shock, 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 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 economic 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 G2H. 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.

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 fuels, equipment, borrow and quarried material. Where materials are sourced within the surrounding regions, increased local expenditure is likely to increase local and regional economic activity.

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.

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. Further, spending on consumer orientated products by the construction workforce has the potential to benefit local businesses by increasing their trading levels. Importantly, some businesses may need to scale up their current capacity to support cumulative demand, while also understanding the temporary nature of the construction period for the relevant projects and adjust capacity accordingly.

7 Impact Management

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 Project benefits and opportunities.

There are two action plans which are directly relevant to the economic impacts identified and assessed in this EIA – Workforce Management and the Australian Business and Industry Participation. A summary of the impacts and benefits identified in this EIA and the relevant ARTC commitments within the SIMP action plans is provided in the table below. A monitoring program is provided in the Social Impact Assessment (EIS Appendix Q) to support tracking of SIMP delivery and effectiveness and enable adaptive management if there are changes to the Project or social baseline values, and to address any emerging or unanticipated issues.

Table 24: Social Impact Management Action Plans

Impact / Benefit	ARTC Commitment
Project Employment The Project has the potential to be a significant opportunity to support local employment, including Indigenous and youth employment opportunities.	Workforce management measures: • Require contractors and operators to seek local workers. • Work closely with Aboriginal community to strengthen community members' capacity for employment, encourage applications and increase the number of Indigenous people applying for Project-related jobs. • Provide a clear and efficient process for people to seek information about employment opportunities and register their interest. • Work with Indigenous communities, industry and government agencies to support the design and delivery of training and development programs. • 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. • Work with the Australian Government to provide long term outcomes through training, mentoring and other support programmes. • Provide a workplace that is inclusive and values the contributions of Aboriginal and Torres Strait Islander employees.

Impact / Benefit	ARTC Commitment
Local Business and Industry Participation The Project will have significant construction materials and services requirements which may provide local businesses with the opportunity to supply the Project.	Local business and industry participation measures: • Implement Inland Rail's Sustainable Procurement Policy for the Project. • Maintain access to residences, 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 are included as a key element of all construction tender assessments. • Provide a clear and efficient process for businesses to seek information about opportunities and register their interest. • Work with Government stakeholders to build businesses' capacity through business development, mentoring and other support. • Work with local businesses (including Indigenous businesses) to strengthen the capacity of the local supply chain to participate • Support Indigenous businesses to ensure they are prepared for and provided with opportunities to participate. • 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 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 that relate to the agricultural properties and businesses. Where these impacts cannot be avoided, a range of measures have been proposed by ARTC to carefully manage and mitigate these impacts. The measures summarised in the table below are not captured within the SIMP, but represent commitments by ARTC. Further details are provided in EIS Chapter 8: Land Use and Tenure.

Table 25: Proposed management and mitigation measures for agricultural impacts

Impact	Proposed Mitigation / Management Measures
Agriculture	
Impacts on agricultural properties including loss of productive land, impacts on property infrastructure, and interruptions to stock and product movements.	• The Project has been aligned to be co-located with the existing West Moreton System rail corridor for approximately 5.6 kilometres, minimising the need to develop land that has not previously been subject to disturbance for transport infrastructure purposes. • Any impacts on operational farm requirements will be managed and reinstated as soon as possible. • ARTC will work with individual landholders to develop suitable solutions based on individual farm management practices. Solutions may include the provision of crossing points or underpasses for access to fragmented or isolated properties. Or where disruption to water supply occurs, crossing points will be provided or the relocation of dams or irrigated systems will be undertaken. • During the design process consideration will be given to the movement of stock across the rail line. In the event that private stock routes are identified through consultation with landholders, appropriate mitigation measures will be agreed upon with affected landholders. Mitigation measures may include the provision of alternative access arrangements developed in consultation with affected property owners/occupants. • Stock fencing must be in accordance with the Inland Rail fencing standards and be constructed prior to the removal of existing fencing or any works being carried out on the subject land, unless otherwise agreed with the landowner. • Detailed design aims to minimise the potential for impacts to the surrounding road and transport network, and property access.
Mineral resources and extractive industries	
Potential impacts on deposits within the KRA.	• Consultation with resource interest holders, including operators of Harlaxton Quarry (KRA 8) will continue to be undertaken during detailed design. Where the Project may impact on likely significant deposits within the KRA, appropriate mitigation will be agreed with the resource interest holders.
Tourism	
Potential reduction in tourist visitation and associated expenditure.	• Consult with tourism associations and Councils to develop a strategy, to ensure that generalised impacts on tourism values are reduced wherever possible. • Work with the Lockyer Valley Tourism Association and Toowoomba and Surat Basin Enterprise to support their tourism promotion and marketing campaigns.

Source: 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 under Section 5.1, 11.146, 11.149 and 11.21 of the ToR.

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 Inland Rail section, 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 Program Business Case (2015), key economic impacts of the Inland Rail Program are anticipated to 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 benefit cost 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.
- At the peak of construction, Inland Rail will create more than 16,000 direct and indirect jobs. An additional 700 ongoing jobs will be created once Inland Rail is operational.
- 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).

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. fencing, electrical installation (excluding rail systems) and instrumentation, rehabilitation and landscaping, cleaning and maintenance of construction and accommodation facilities). ARTC has developed a Sustainable Procurement Policy which will ensure that local, regional and Indigenous businesses will have opportunities to supply the Project.
- The Project offers 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 temporary flow-on demand and additional spending by the construction workforce in the local community.
- The Project offers opportunities 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 the adjacent B2G and H2C projects) may act as a significant catalyst for development in the planned and existing industrial areas at the Toowoomba Enterprise Hub and Gatton West Industrial Zone.

- As a predominantly greenfield development, the Project comprises new dual gauge track to create a more direct rail corridor through the Toowoomba Range which will benefit rail operators, along with the interoperability between the Inland Rail alignment and the QR Network and the interstate network managed by ARTC. As part 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 of the agriculture and tourism industries through:

- The loss of agricultural land (through disturbance, acquisition, or sterilisation), 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 approximately $78,296 (value foregone) in gross agricultural production per year.[72] ARTC will work with individual landholders 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) concludes that a significant decrease in visitation as a result of this impact is unlikely. ARTC will work will tourism associations to ensure that generalised impacts on tourism values are reduced wherever possible.

Economic benefits assessment

The results of the economic benefits assessment estimate that the Project is expected to provide a total of $101.62 million ($2021 present value terms) in incremental benefits to the project area (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 economic impact analysis

The Project will promote regional economic growth across the Toowoomba labour market region. 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 GRP is projected to be $595 million higher than the baseline level.

Under a "slack" labour market scenario, the Project is also expected to deliver an additional 1,027 jobs (direct and indirect) per year 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 pandemic are highly effective, the economy may grow much faster than is 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

[72] 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.

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 construction period 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.

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 COVID-19 shock, 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 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.

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, there are a range of actions that ARTC will undertake and / or require its contractor to undertake to manage the social and socio-economic impacts of G2H, and enhance proposal benefits and opportunities. There are a number of economic impacts identified within this EIA which are not addressed within the Social Impact Management Plan (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 landholders 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.

APPENDIX

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Economic Impact Assessment

Appendix A Regional economic assessment

GOWRIE TO HELIDON ENVIRONMENTAL IMPACT STATEMENT

Appendix A: Regional economic assessment

Assumptions

The choice of exogenous variables determines the economic environment 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.

The 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 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 (where unemployed, underemployed 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 calculated 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) that were 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 phase[73] total CAPEX is projected to be $1,087 million ($2019), with the majority of this expenditure occurring in the four years (i.e., 2021 – 2025).

Modelling inputs - Construction Phase

Year	$2015 [a, c]	$2019 [b, c]
2021	$241,918,597	$258,749,668
2022	$354,761,813	$379,443,757
2023	$275,242,375	$294,391,891
2024	$117,303,220	$125,464,391
2025	$26,923,079	$28,796,206
Total	**$1,016,149,084**	**$1,086,845,913**

Notes:
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).

[73] The assessment assumes a capital expenditure profile consistent with the Inland Rail Program Business Case, using parameters and inputs based on the state of the economy projected for those years. Pre-construction costs prior to 2021 are not included because they are spent outside of the indicative construction period. Total spending in the construction phase (including pre-construction costs) is $1,116,267,031 ($2015) and $1,193,929,394 ($2019).

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Economic Impact Assessment

Appendix B CAPEX for the Queensland Inland Rail projects

GOWRIE TO HELIDON ENVIRONMENTAL IMPACT STATEMENT

Appendix B: 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 tale 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, ATMS, utilities and property & site remediation).

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Economic Impact Assessment

Appendix C Treatment of coal demand for the Inland Rail EISs

GOWRIE TO HELIDON ENVIRONMENTAL IMPACT STATEMENT

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

This note has been developed to document KPMG's assumption relating to the treatment of coal demand within the benefits assessment developed for the Inland Rail 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 CBA completed for the Inland Rail Program 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 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 Program Business Case 2015

On this basis, it is the understanding of KPMG that in the absence of the Western Line upgrade to the existing Queensland Rail network[74], 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. For example, as a stand-alone project, the Gowrie to Helidon section 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 the Inland Rail Program with complementary investment in Western Line Upgrades, which do not form part of the scope of the Inland Rail Program as it stands currently, and are not funded.

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

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.

[74] Referred to as "complementary investment on the QR network (Western Line and Brisbane metropolitan network) to enable coal train lengths to increase from 650 metres to 1010 metres"