CHAPTER 17

Economics

GOWRIE TO HELIDON ENVIRONMENTAL IMPACT STATEMENT

IR_1536

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17.1 Scope of chapter

The purpose of this chapter is to:

- Establish the existing economic environment and local context, to understand the local economic context and form the basis to measure the economic impacts
- Identify potential economic benefits and impacts on affected local and regional communities and businesses
- Assess the projected economic benefits of the Project, including the basis for their estimation through a detailed economic benefits assessment
- Assess the economic significance of the Project on the regional, state and national economies
- Evaluate the potential cumulative impacts on local and regional economies resulting from the construction and operation of related projects, including adjacent Inland Rail projects
- Outline ARTC's commitments to enhance economic benefits and to avoid, mitigate or manage adverse economic impacts.

17.2 Terms of Reference requirements

The Terms of Reference (ToR) describe the matters the proponent must address in the Environmental Impact Statement (EIS) for the Project. The matters related to economic impact assessment (EIA) are contained in ToR items 5.1, 11.146, 11.149 and 11.21 (Table 17.1:).

TABLE 17.1: COMPLIANCE WITH EIS TERMS OF REFERENCE REQUIREMENTS

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.		
Economics Terms of Reference requirements		**Where addressed in the EIS**
11.1.49	Identify the economic impacts of the project on the local and regional area and the State.	Sections 17.5, 17.6, 17.7 Appendix R: Economic Impact Assessment, Sections 4 to 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 17.6 Appendix R: Economic Impact Assessment, Sections 5.4 and 5.5

TABLE 17.2: OTHER RELEVANT TOR INFORMATION REQUIREMENTS

Economics Terms of Reference requirements		Where addressed in the EIS
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.	Sections 17.5, 17.6, 17.7 Appendix R: Economic Impact Assessment, Sections 4 to 7
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 17.6 Appendix R: Economic Impact Assessment, Section 5 (Other requirements addressed in Appendix Q: Social Impact Assessment)
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.	Sections 17.5, 17.6, 17.7 Appendix R: Economic Impact Assessment, Sections 4 to 6

17.3 Legislation, policy, standards and guidelines

The relevant legislation, policies standards and guidelines that regulate and manage EIAs are outlined in Table 17.3. Further information on relevant Commonwealth, state and local approvals and legislation relevant to the Project are outlined in Chapter 3: Project Approvals.

TABLE 17.3 ECONOMIC REGULATORY CONTEXT

Legislation, policy or guideline	Relevance to the Project
Commonwealth	
Australian Infrastructure Plan: Priorities and reforms for our nation's future , (Infrastructure Australia, 2016)	▸ 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.
State	
Economic Impact Assessment Guideline (Department of State Development, 2017)	▸ Defines the Coordinator-General's requirements for EIA as part of an EIS process under the *State Development and Public Works Organisation Act 1971* (Qld) (SDPWO Act). ▸ Applies to all coordinated projects and provides direction on how a project can achieve adequacy against the ToR. ▸ The EIA for the Project has been prepared in accordance with this guideline.

Legislation, policy or guideline	Relevance to the Project
Queensland Freight Strategy—Advancing Freight in Queensland, (Department of Transport and Main Roads, 2019a).	▸ The *Queensland Freight 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 (ShapingSEQ), (Department of Infrastructure, Local Government and Planning, 2017)	▸ S*hapingSEQ* is the Queensland Government's plan to guide the future development of the South East Queensland (SEQ) region. ▸ S*hapingSEQ* highlights the importance of 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. ▸ *ShapingSEQ* recognises the role of Inland Rail in improving national freight network connections. Inland Rail will support efficient freight movements, and contribute to economic development throughout SEQ. ▸ *ShapingSEQ* 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, (Department of State Development, Infrastructure and Planning, 2013a)	▸ 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 a 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 through the Toowoomba Range, which has been identified as a major constraint, promoting this mode shift.
Draft South East Queensland Regional Transport Plan, (Department of Transport and Main Roads, 2018).	▸ The *Draft SEQ Regional Transport Plan* (SEQ RTP) outlines a shared direction for shaping the region's transport system over the next 15 years. The SEQ RTP details the economic importance of the relationship between infrastructure, transport and land use. ▸ The SEQ RTP recognises the vital role of SEQ's freight network in supporting the future growth of SEQ's export-orientated industries to support a globalised economy. ▸ Inland Rail has been identified as an opportunity to improve the efficiency of SEQ's east–west freight link, by improving the availability of rail freight. 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 Transport, 2007)	▸ The *SEQ Regional Freight 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.

Legislation, policy or guideline	Relevance to the Project
Draft Darling Downs Regional Transport Plan (Department of Transport and Main Roads, 2019b)	▸ 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. ▸ 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.
Local Government	
Lockyer Economic Development Plan 2018—2023, (Stafford Strategy, 2018)	▸ The *Lockyer Economic Development Plan 2018–2023* 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, 2017a)	▸ *Lockyer—Our Valley, Our Vision' Community Plan 2027* 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, (Toowoomba Regional Council, 2014a)	▸ The *Toowoomba Region Sustainable Transport 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.
Bold Ambitions 2038 Toowoomba Region Economic Development Strategy—(Toowoomba Regional Council, 2018b)	▸ The *Toowoomba Region Economic Development 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 region's 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 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.

17.4 Methodology

17.4.1 Study area

The Project traverses two Local Government Areas (LGA)—Toowoomba and 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 (refer Figure 17.1).

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 (refer Figure 17.1). The Project is located within the Toowoomba labour market region, which is defined as the regional economic catchment area (i.e. Toowoomba Statistical Area 4 as per the ABS).

FIGURE 17.1: PROJECT STUDY AREA AND REGIONAL ECONOMIC CATCHMENT

17.4.2 Methodology

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

TABLE 17.4: METHODOLOGY

Assessment	Methodology
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 ▸ 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.
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 Social Impact Assessment (refer Chapter 16: Social) process to identify local and regional business capacity, aspirations and initiatives ▸ The outcomes of the land use and tenure assessment (refer Chapter 8: Land Use and Tenure) to identify local and regional impacts on industry resulting from land use changes.
Economic benefits assessment	An incremental Cost Benefit Analysis (CBA) approach assessing each segment 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 on completion of the Inland Rail Program. It is expected that the benefits of Inland Rail will outweigh the sum of the individual segments/projects. For the purposes of the EIA, there are two components of the CBA: 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 Programme Business Case* (ARTC, 2015a)). The approach to the economic benefits assessment draws from the existing literature and guidelines surrounding the use of CBA in the economic appraisal of infrastructure projects, including, but not limited to: ▸ Infrastructure Australia's (IA) *Assessment Framework* (Infrastructure Australia, 2018) ▸ Queensland Government's *Project Assessment Framework (PAF) guidance material* (Queensland Treasury, 2019) ▸ Transport for New South Wales' *Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives* (2018a) ▸ The *Australian Transport Assessment and Planning (ATAP) guidelines* (ATAP, 2019).
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. As part of this analysis a Computable General Equilibrium (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.^ The regional economy is represented by the Toowoomba labour market region.

Assessment	Methodology
Cumulative impact assessment	The cumulative economic impact assessment refers to the potential impact of cumulative stimulus to the economy resulting from the construction of 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. This cumulative impact assessment has two components: ▸ Quantitative regional impact analysis of the cumulative impact of the construction of the Queensland portion of the Inland Rail Program (New South Wales/Queensland Border (B2G) project, Gowrie to Helidon (the Project) project, Helidon to Calvert (H2C) project, Calvert to Kagaru (C2K) project and Kagaru to Acacia Ridge and Bromelton (K2ARB) project) on the regional, state and national economies using an equilibrium modelling framework (using KPMG-SD) ▸ Qualitative assessment of cumulative impact of the construction of other significant projects (that have been identified by ARTC as having a relationship to the Project) on labour markets, the supply chain and local businesses.

Table notes:

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

17.4.3 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 EIA 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 Programme Business Case* (ARTC, 2015a). 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 Gowrie to Helidon segment as an independent Project.
- The assessment assumes capital expenditure consistent with the *Inland Rail Programme Business Case* (ARTC, 2015a).
- 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 segment of the Inland Rail Program individually and in isolation of the whole Program, will not capture the full impact (positive or negative) that is expected to be delivered on 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 Programme Business Case* endorsed by the Australian Government is currently the most detailed assessment for the Inland Rail Program. For this reason, and in the interests of maintaining consistency, cost and demand profiles for the Inland Rail Program economic impact assessments have been based on the 2015 *Inland Rail Programme Business Case*.

17.5 Existing 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. Further details of the socio-demographics of the study area can be found in Chapter 16: Social and Appendix R: Economic Impact Assessment.

17.5.1 Labour market and employment characteristics

17.5.1.1 Employment by industry

As shown in Figure 17.2, the sectoral distribution of employment for local residents is diverse, reflecting the study area's land use and the geographic distribution of the population.

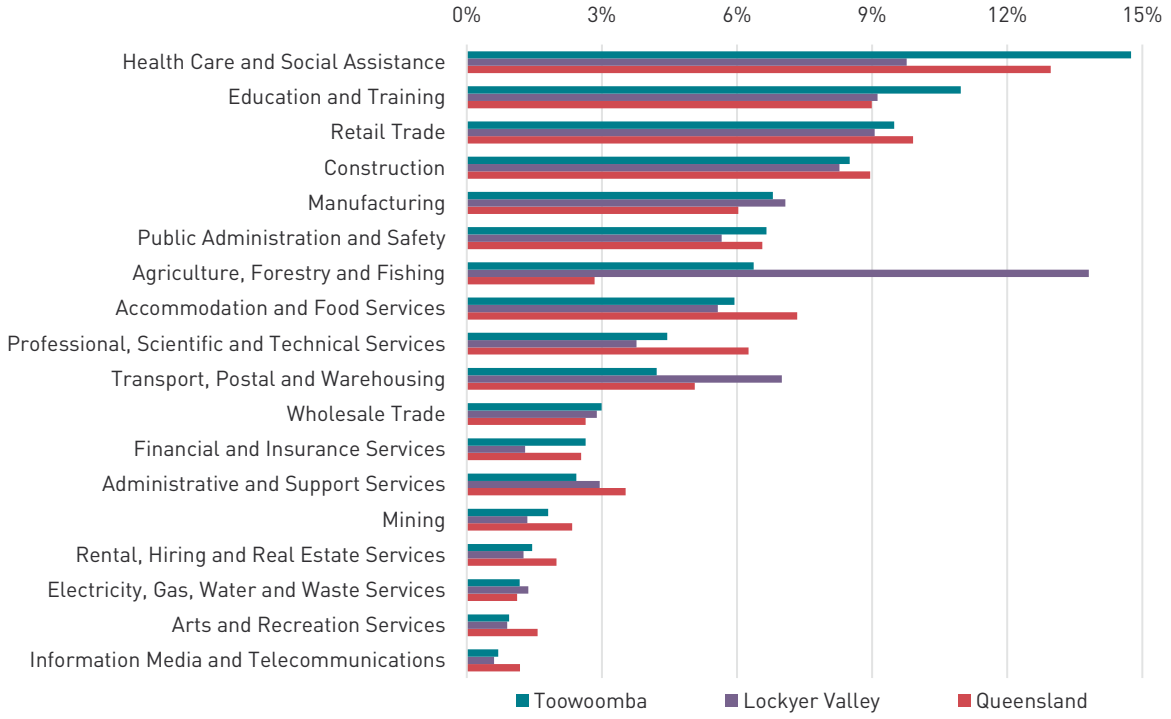

FIGURE 17.2: EMPLOYMENT BY INDUSTRY, STUDY AREA, 2016

Source: ABS 2016 Census of Population and Housing

In the Toowoomba LGA, the largest proportion of workers are employed in service-based industries such as Health Care and Social Assistance (14.7 per cent), Education and Training (11 per cent) and Retail Trade (9.5 per cent). A significant proportion of the population are also employed in secondary industries, with a further 15.3 per cent of residents employed in Construction (8.5 per cent) or Manufacturing (6.8 per cent).

In the Lockyer Valley LGA, 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 per cent) across a diverse range of activities including Sheep, Beef and Grain Farming and Vegetable Growing. Following this, Health Care and Social Assistance (9.8 per cent), Retail Trade (9.1 per cent) and Education and Training (9.1 per cent) 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 per cent of the total workforce are employed in the Construction industry (7,362 workers), with the largest proportion of workers residing in the Toowoomba LGA (6,053 workers). Within the Construction industry, 751 local workers are employed in Heavy and Civil Engineering Construction.

17.5.1.2 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 17.3). Within the Lockyer Valley LGA, the largest proportion of workers are employed as Labourers (18.1 per cent) of which 10.1 per cent work as Construction and Mining Labourers, and 28.5 per cent as Farm, Forestry and Garden Workers. In the Toowoomba LGA, most workers are employed as Professionals (18.6 per cent). There are also a number of workers employed as Technicians and Trades Workers (15.1 per cent), specifically as Construction Trades Workers (representing 19.4 per cent of all Technicians and Trade Workers).

FIGURE 17.3: LOCAL WORKERS OCCUPATION, STUDY AREA, 2016

Source: ABS 2016 Census of Population and Housing

17.5.1.3 Construction labour availability

A *Railway Skills Capability Study* was undertaken by the Australasian Railway Association in 2018 (ARA, 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, workforce gaps are present in rail infrastructure construction sectors, most severe among specialist managers and professionals (such as engineers). The analysis also found that there was a slight oversupply of labourers.

These trends are also reflected at a national level. The *Construction Outlook* (Australian Industry Group, 2018a) found that, at a national level, businesses are reporting widespread and increasing difficulties in sourcing skilled labour.[1]

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 per cent of respondents, up from 66.7 per cent 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 (Australian Industry Group, 2018a). It is most likely that these shortages in labour availability are for specific specialist trades.

1. 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.

17.5.1.4 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 per cent located in Toowoomba LGA) and 5,346 in the Toowoomba labour market region as shown in Table 17.5). Within the study area and regional economic catchment, the unemployment rate in the Lockyer Valley LGA was 7.5 per cent) and 6.7 per cent in the Toowoomba LGA. The unemployment rate in the Toowoomba labour market region (7.2 per cent) broadly reflected the unemployment rate for Queensland (7.3 per cent) 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 per cent compared to 65.5 per cent 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 17.5: SUMMARY OF LABOUR FORCE CHARACTERISTICS, SEPTEMBER 2020

	Labour force	Participation rate*	Unemployed persons	Unemployment rate	12 month AVERAGE unemployment rate
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 overall, based on current labour market trends. There may be latent capacity within the study area and regional economic catchment to support the construction and operation of the Project.

The Indigenous and youth labour market profiles described in the following section also indicate that there may be some latent capacity in the Indigenous and youth labour force, and current job seekers may have the skills, or ability to be up-skilled, to be engaged in the Project.

17.5.1.5 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 per cent, compared to 4.5 per cent for the population as a whole) and the labour force participation rate is low at 58.6 per cent (compared to 71.5 per cent for the population as a whole). This is consistent with the broader Toowoomba labour market region, where Indigenous unemployment is also high at 19 per cent and the labour force participation rate is low at 61.1 per cent.

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

17.5.1.6 Youth labour force

Youth (15 to 24 years) unemployment rates 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 per cent compared to 4.8 per cent).

Across the study area, youth unemployment is highest in the Lockyer Valley LGA at 15.6 per cent (compared to 5.8 per cent for the total labour market), followed by the Toowoomba LGA at 15 per cent (compared to 4.8 per cent for the Toowoomba 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 per cent).

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 per cent, closely followed by the Toowoomba labour market region at 65.6 per cent. This is compared to 64.4 per cent across Queensland and 57.6 per cent 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 per cent of young persons who are not in the labour force are studying full time (72.6 per cent in the Toowoomba LGA and 72.2 per cent in the Lockyer Valley LGA).

17.5.2 Business and industry

17.5.2.1 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). The sectorial distribution of jobs differs between Toowoomba and the Lockyer Valley LGAs as shown in Figure 17.4 below.

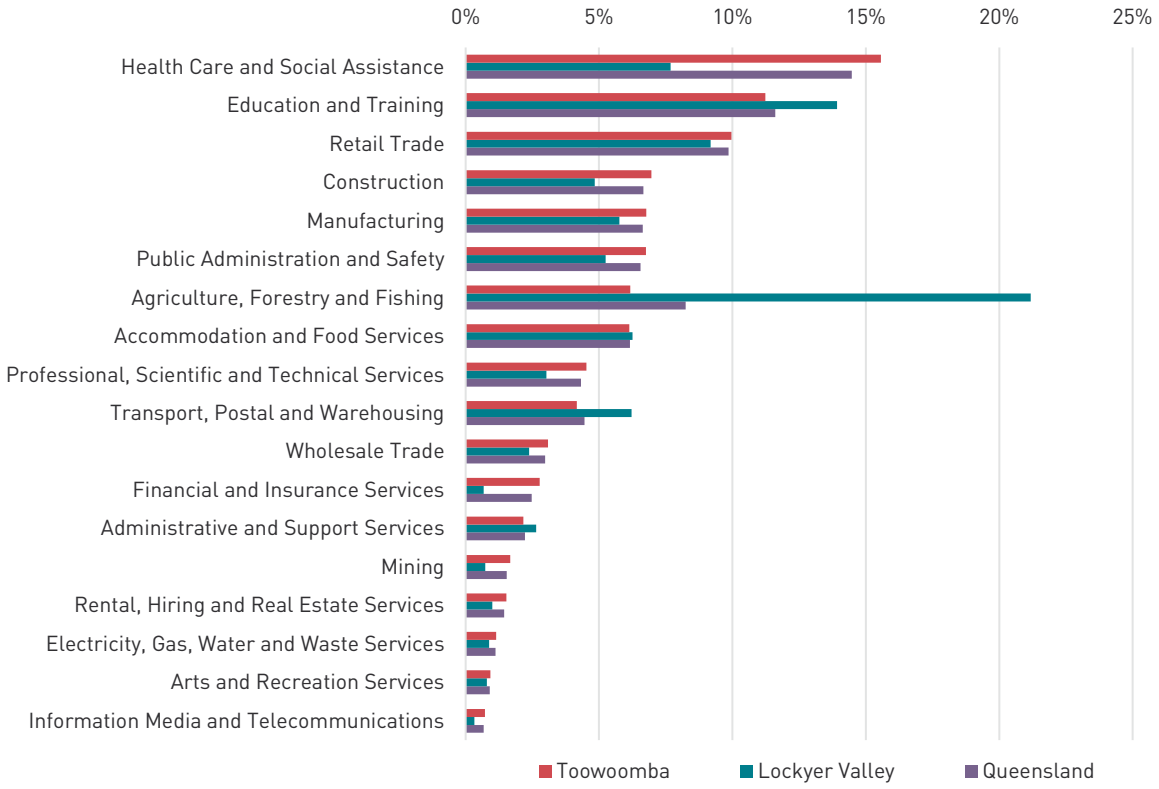

FIGURE 17.4: INDUSTRY BY EMPLOYMENT, STUDY AREA

Source: 2016 Census of Population and Housing

In the Toowoomba LGA, local jobs are concentrated in the Health Care and Social Assistance (15.6 per cent), Education and Training (11.2 per cent) and Retail (10 per cent) industries. These sectors are important in meeting the demand for local services from the population and reflect the 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 per cent), followed by Education and Training (14 per cent). 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 per cent), followed by the Sheep, Beef Cattle and Grain Farming Industries (22.5 per cent). This reflects the Lockyer Valley LGA's local business and industry profile below.

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

17.5.3 Local business and industry

17.5.3.1 Agriculture

According to the Queensland Agricultural Land Audit (Department of Agriculture and Fisheries (DAF), 2013 and 2017), the Project crosses both the Darling Downs and 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 focused 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 (DAF, 2017).

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 6647 were non employing), and 519 employing businesses in the Toowoomba LGA (2,845 non employing) (ABS, 2021a).

17.5.3.2 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.

According to Tourism Research Australia, there is a strong tourism industry in the local area. In recent years (2017–2019), Toowoomba has received close to 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 (Tourism Research Australia, 2019). 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 totaling 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 (Tourism Research Australia, 2019).

There are approximately 2,000 recorded tourism businesses within the study area: 269 located in the Lockyer Valley and 1,667 located in Toowoomba (Tourism Research Australia, 2019).

There are a number of natural attractions and recreations areas across the study area that support the local character and the area's attraction as a tourism destination. A number of these areas are within close proximity to the Project, supporting active outdoor recreation (e.g. bike riding, horse riding and trail walking) and ecotourism experiences. There are also a number of local business along the Project alignment that are supported by tourists and visitors. Details of these attractions and businesses can be found in Chapter 16: Social.

17.5.3.3 Mineral resources and extractive industries

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. within the Project 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. Further details are provided in Chapter 8: Land Use and Tenure.

Extractive industries:

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

Harlaxton Quarry , operated by Quarry Products Pty Ltd, is a commercial operation that produces road base materials, aggregates and crusher dust materials for use in the construction and building industries. The operating pit is located in the southern section of KRA 8.

Mineral resources interests

The Project is within 1 km of two exploration permits for minerals other than coal. These exploration permits are located to the north of Helidon and belong to Zeolite Environmental Global Solutions Pty Ltd and ChongHerr Investments Ltd.

Petroleum and gas resource interests

The Project intersects one petroleum pipeline licence (PP2, Roma Brisbane Gas Pipeline) belonging to Apt Petroleum Pipelines Pty Limited. There are no petroleum or gas leases that traverse or are 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 Project 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 (Department of Infrastructure, Local Government and Planning, 2016b) and are supported by the *State interest guidance material—Mining and extractive resources* (Department of Infrastructure, Local Government and Planning, 2016a). KRAs are designed to maintain adequate separation distances between sensitive uses and any future extractive industry.

As detailed in the 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 metres 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 not currently used 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 inhibits the potential expansion of the existing pit.

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

Chapter 8: Land Use and Tenure provides further details relating to the specific location of these mineral and petroleum permits and licences.

17.5.3.4 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 the Toowoomba LGA (ABS, 2021a). There are a further 421 employing businesses across the study area in the Transport, Postal and Warehousing industry, with 269 of these businesses located in the Toowoomba LGA (ABS, 2021a). 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
- A range of accommodation and retail businesses.

During consultation undertaken to inform the Social Impact Assessment (refer Chapter 16: Social), 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.

17.5.3.5 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 south-west of the Project, encompassing an internationally capable airport and a freight facility with more than 2,000 hectares (ha) of industrial land at the western outskirts of Toowoomba.

The Toowoomba Enterprise Hub is comprised of:

- 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.
- 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 km 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 (InterLinkSQ, 2021).

Gatton West Industrial Zone

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

17.6 Potential impacts

17.6.1 Inland Rail Program impacts

As per the requirements of the ToR, this EIA has focused 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 segments 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 Programme Business Case* (ARTC, 2015a), 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 per cent discount rate (2.62 at a 4 per cent 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 (GDP) 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 (due to reduced transport costs to warehousing, economies of scale and knowledge-sharing opportunities).

17.6.2 Workforce

17.6.2.1 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 and 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 2020, with the Project's workforce expected to build to a peak of approximately 596 full=time equivalent (FTE) personnel. The average annual workforce across the construction period would 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
- Signallers.

Local employment

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

Based on current labour market trends, and industries and occupations of the local workforce, there may be latent capacity and capability within the study 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 (refer Chapter 16: Social), the Regional Skills Investment Strategy (a funded four-year initiative of the Queensland Department of Small Business Employment 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 that may support local employment are summarised in the Social Impact Assessment (refer Chapter 16: Social). These include: Jobs Queensland, Skilling Queenslanders for Work, Queensland's Back to Work Regional Employment Package, and 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—the Western Wakka Wakka People and Yuggera Ugarapul People—who regarded the Project as an opportunity to improve Indigenous employment, were consulted by ARTC through the Cultural Heritage process.

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 Appendix Q: Social Impact Assessment).

17.6.2.2 Changes to housing and accommodation

Most of the workforce is 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.

Refer to the Social Impact Assessment (Chapter 16: Social) for further detail on the nature of changes to housing and accommodation.

17.6.2.3 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 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 will 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 (e.g. extractive industries).

17.6.3 Business and industry

The following business and industry impacts have been identified through local consultation and analysis of local businesses undertaken by ARTC.

17.6.3.1 Agriculture

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

- Loss of agricultural land
- Disruption to access and infrastructure
- Disruption to water resources, including groundwater
- Disruption to stock and product movement
- Flood inundation
- 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 Appendix D: Community Consultation.

Loss of agricultural land

As detailed in Chapter 8: Land Use and Tenure, the Project will result in the sterilisation of productive agricultural land within the Project's 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 and Class B land is suitable for a narrow range of current and potential crops but is highly suitable for pastures (DAF, 2013).

As detailed in Chapter 8: Land Use and Tenure, the scale of the total loss (within the Project footprint) of Class A agricultural land and important agricultural areas (IAA) is anticipated to be low, with some of these areas already sterilised, e.g. approximately 21 ha of the Project footprint that overlaps with the West Moreton System rail corridor is mapped as Class A land. Some of the landholders have also indicated that the land has been acquired as investment properties (future subdivision) and lifestyle blocks rather than agricultural lands.

At a local government level, within the 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 per cent 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 (DAF, 2019). Accordingly, it is estimated that the Project could result in a loss of approximately $78,296 (value foregone) in gross agricultural production per year.[2]

ARTC will continue its ongoing consultation with directly affected landholders during the detailed design phase to develop measures to mitigate impacts resulting from the loss of agricultural land. This will be undertaken in accordance with the land acquisition process, to be implemented by ARTC and the construction authority under the *Acquisition of Land Act 1967* (Qld). This process will also apply to other business and stakeholders directly impacted by the Project (including volumetric resumptions for the tunnel), with further details on the process provide in Chapter 8: Land Use and Tenure.

2. This value is an indicative estimate only—it does not consider the value of individual commodities produced per lot or the value-add activities that 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 detailed 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 does not use 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 landholders 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. In some instances, the only viable solution may be to also acquire the portions of the land parcel severed by the Project, which is determined to be no longer viable (e.g. too small to be economically viable) in consultation with the landholder.

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 Technical Report (refer Appendix L: Surface Water) and Hydrology Technical Report (refer Appendix M: Hydrology and Flooding) 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 Appendix N: Groundwater Technical Report, there are a number of registered groundwater bores that 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 that interface with the Project, 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 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 17.3). 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
- 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.

17.6.3.2 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, including following the Gowrie to Grandchester future state transport corridor. 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 the local area 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 (accessed via Helidon). This impact is anticipated to be small and will be temporary while construction activities are undertaken.

As detailed in the Social Impact Assessment (refer Chapter 16: Social), 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 Valley with the adjoining H2C project. The impact of the Project on the landscape and visual amenity has been assessed in Appendix H: Landscape and Visual Impact Assessment. 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.

17.6.3.3 Mineral resources and extractive industries

The Project generally follows the Gowrie to Grandchester future state transport corridor and does not traverse mineral or petroleum resource tenements, though there may be some disruptions to haulage routes northwest (e.g. Airforce Road) of Helidon.

As detailed in Section 17.5.3.3, the Project traverses KRA 8 (refer 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 will, however, 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 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 Chapter 8: Land Use and Tenure and is detailed within Appendix D: Community Consultation.

17.6.3.4 Local businesses

Construction businesses

The Project will have significant construction material and service requirements that may provide local businesses with the opportunity to supply the Project.

The Project will require a range of construction supplies, including 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 northern NSW, while rail will be delivered by the existing Queensland 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).

The Inland Rail Program is subject to the *Australian Jobs Act 2013* (Cth) 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.

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

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 LGAs where the majority 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.

17.6.3.5 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. 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, the QR network and the interstate rail network operated by ARTC, potentially serving to attract rail-dependent industries to the region.

17.6.4 Economic benefits assessment

17.6.4.1 Methodology

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

- **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
- **Identify benefits:** identification of relevant economic, social and environmental benefits associated with impact groups, which can be measured for the Project
- **Monetise benefits:** quantification, monetisation and assessment of benefits over the Project appraisal period.

Critically, the key difference between a complete cost–benefit analysis (CBA) approach and the economic benefits assessment approach adopted in this analysis is the exclusion of costs. As a result, 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.

17.6.4.2 Base Case and Project Case

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

- The **Base Case** adopted for this benefit assessment is a 'do nothing' scenario, where it is assumed that no other sections of 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 G2H. 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 17.6.

TABLE 17.6: ECONOMIC BENEFITS ASSESSMENT ASSUMPTIONS

Parameter	Value	Source
Discount rate	A 7% real discount rate is used for the central case with sensitivity tests conducted at 4% and 10%	*Assessment Framework—for initiatives and projects to be included in the Infrastructure Priority List* (Infrastructure Australia, 2018)
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)	*Australian Transport Assessment and Planning (ATAP) Guidelines* (Category 4, Section 2.4), (ATAP, 2019).
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 Programme Business Case* (ARTC, 2015a) 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 Programme Business Case* (ARTC, 2015a)

17.6.4.3 Freight demand

Demand inputs to the benefit assessment have been sourced from the freight demand projections developed by ACIL Allen for the *Inland Rail Programme Business Case* (ARTC, 2015a). The assumptions underpinning these demand projections are documented in Chapter 7 of the *Inland Rail Programme Business Case* (ARTC, 2015a).

Refer to Appendix R: Economic Impact Assessment for further detail on the demand inputs and assumptions that underpin this assessment.

17.6.4.4 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 per cent 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 per cent of the total benefits (at a 7 per cent discount rate). Freight benefits more broadly (including freight time travel savings, operating cost savings, as well as improved reliability and availability) represent ~76 per cent of the total projected benefits for the Project.

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

The full results of the economic benefits assessment are presented in Table 17.7: .

TABLE 17.7: RESULTS OF THE ECONOMIC BENEFITS ASSESSMENT, PRESENT VALUE TERMS ($2021)

	Discount Rate		
Benefits	**4%**	**7%**	**10%**
Total 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
Total 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

17.6.4.5 Cost–Benefit Analysis: Inland Rail Programme 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 on completion of the Inland Rail Program. Instead, the results of the economic analysis undertaken for the *Inland Rail Programme Business Case* (ARTC, 2015a) 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 Table 17.8.

TABLE 17.8: ECONOMIC APPRAISAL RESULTS FOR INLAND RAIL ($2015)

	Net Present Value	Benefit–Cost Ratio
PV at 4% discount rate	$13,928 million	2.62
PV at 7% discount rate	$116.1 million	1.02

Source: *Inland Rail Programme Business Case* (ARTC, 2015a)

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

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

17.6.5 Regional impact assessment

A regional impact analysis has been undertaken to highlight the impacts of the Project on the regional, state and national economies using a computable general equilibrium (CGE) modelling framework. 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 chapter, the regional economy is represented by the Toowoomba labour market region.

17.6.5.1 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) is completed.

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

- The first snapshot is the **baseline** representation of the economy. For the construction phase, the baseline is a representation of the size and structure of the economy before the CAPEX associated with the Project's 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 associated with the development of the Project.

The key modelling assumptions and inputs that underpin the regional economic assessment results are provided in Appendix R: Economic Impact Assessment. The analysis 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.

17.6.5.2 Limitations

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

Construction phase

The CAPEX program associated with the development and construction of the Project is modelled in KPMG-SD as a transitory expenditure shock to the economy. Accordingly, modelling the construction phases of the 13 individual project segments that comprise the Inland Rail Program in isolation is reasonable. If there is significant overlap in the timing of the construction phases of the other segments in the Inland Rail Program, modelling each segment 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 assessment models the construction phase of each segment under two labour market scenarios:

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

Operational phase

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

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

17.6.5.3 Regional economic impact analysis results

The headline impacts of the Project on the Toowoomba region during the construction phase are summarised in Table 17.9.[3]

TABLE 17.9: SUMMARY OF THE DIRECT AND INDIRECT ECONOMIC IMPACTS OF THE PROJECT ON THE TOOWOOMBA REGIONAL ECONOMIC CATCHMENT AREA

Measure	Slack labour markets	Tight labour markets
Additional real Gross Regional Product ($2018–19)	$595 million	$206 million
Average annual additional direct and indirect employment (persons)	1,027	225

Table note:
The average annual additional jobs listed in the table reflect jobs generated in the Toowoomba area. The Project will also generate jobs in adjacent labour markets (refer Figure 17.7).

Source: KPMG

During the construction phase, real Gross Regional Product (GRP) for the Toowoomba 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.[4] 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.

Figure 17.5 and Figure 17.6 summarise the macroeconomic results for the Toowoomba region in the context of the rest of the Queensland and Australian economies.

FIGURE 17.5: MACROECONOMIC RESULTS: THE PROJECT'S CONSTRUCTION PHASE, SLACK LABOUR MARKETS

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

3. 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.
4. To put this in context, the planned direct workforce requirements of the Project during the construction phase peak is approximately 596 FTE.

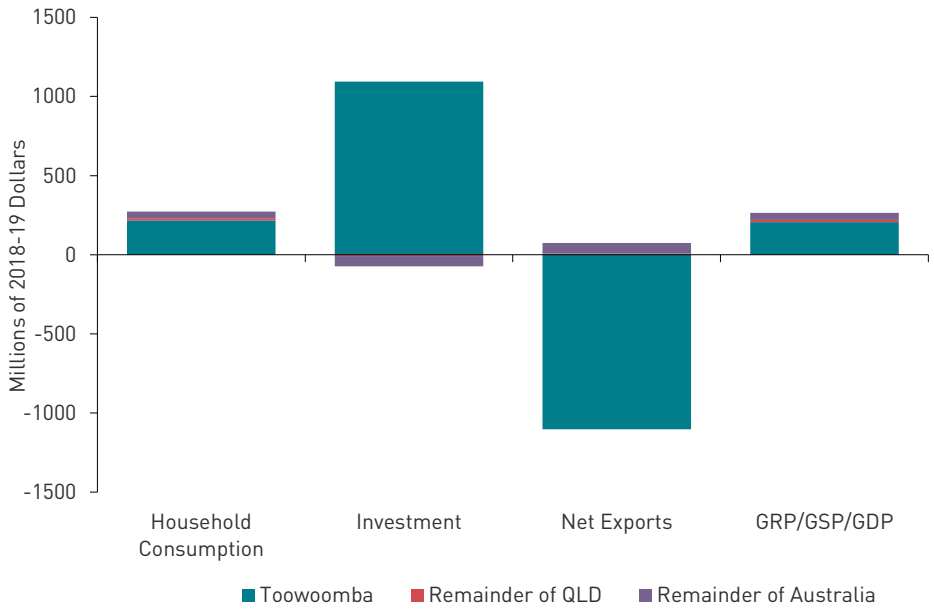

FIGURE 17.6: MACROECONOMIC RESULTS: THE PROJECT'S CONSTRUCTION PHASE, TIGHT LABOUR MARKETS

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

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.[5]

The modelled direct and indirect impacts of the Project on employment are presented in Figure 17.7.

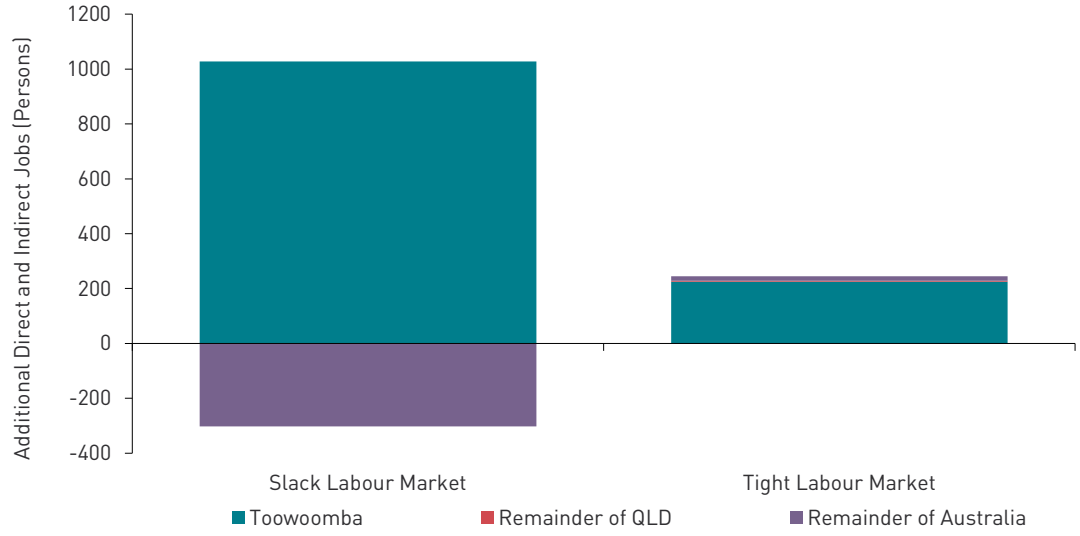

FIGURE 17.7: DIRECT AND INDIRECT EMPLOYMENT RESULTS

Source: KPMG

[5] The CAPEX associated with the Project 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 CAPEX was increased by 5 per cent (from $1,087 million to $1,141 million) then net exports for Toowoomba would fall by a further 5 per cent.

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 (Department of Education, Skills and Employment, 2021), and the participation rate averaged 77.8 per cent over the 12 months ending in September 2020 (ABS, 2021b). 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 authorities around the world are having 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 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 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. 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 (ABS, 2020). 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 per cent 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.[6]

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 (ABS, 2021c). 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.

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

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 17.8 and Figure 17.9. 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.

FIGURE 17.8: INDUSTRY EMPLOYMENT RESULTS: CONSTRUCTION PHASE, SLACK LABOUR MARKETS

Source: KPMG

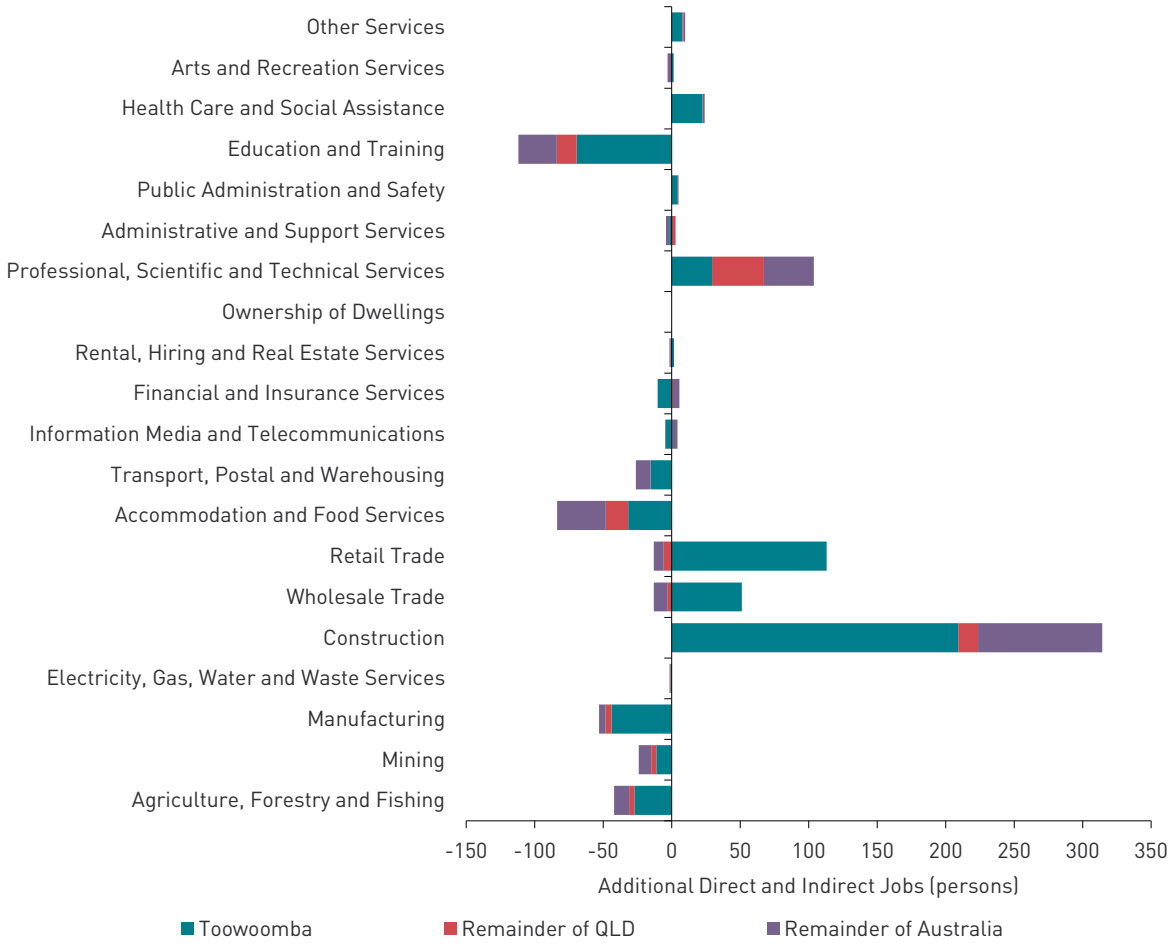

FIGURE 17.9: INDUSTRY EMPLOYMENT RESULTS: CONSTRUCTION PHASE, TIGHT LABOUR MARKETS

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.

17.7 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**
  - 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.
  - In addition to the Project, there are four other segments of the Inland Rail Program that fall in Queensland, including B2G, H2C, C2K and K2ARB.
- **Broader cumulative assessment**
  - A qualitative assessment of cumulative impact of 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. Fourteen were selected for economic cumulative assessment, with a description of the potential for cumulative impacts to arise provided in Table 17.10.

Further information on these projects is provided in Chapter 22: Cumulative Impact Assessment.

TABLE 17.10: PROJECTS WHERE BROADER CUMULATIVE IMPACTS MAY OCCUR AND DESCRIPTION OF THESE IMPACTS

Project	Potential for cumulative impacts
NSW/Queensland Border to Gowrie Project (Inland Rail)	▸ Potential labour draw from the study area and the (peak 950 FTE during construction period) ▸ Potential draw on construction materials from the regional economic catchment ▸ Businesses within the catchment area (e.g. in Gowrie Junction area) are likely to benefit from the Project as a result of increased local expenditure from construction personnel of the combined Inland Rail projects ▸ Employment opportunities and regional development in relation to the Toowoomba Enterprise Hub.
Helidon to Calvert Project (Inland Rail)	▸ Potential labour draw from the regional economic catchment (peak 410 FTE during construction period) ▸ Potential draw on construction materials from the regional economic catchment. ▸ Businesses within the catchment area (e.g. in Helidon area) are likely to benefit from the Project as a result of increased local expenditure from construction personnel of the combined Inland Rail projects.
Calvert to Kagaru Project (Inland Rail)	▸ Potential labour draw in SEQ may reduce labour availability for more specialised roles (peak 660 FTE during construction period) ▸ Potential regional development opportunities across SEQ's south-west industrial corridor and in the Western Gateway Regional Economic Cluster.
Kagaru to Acacia Ridge Project (Inland Rail)	▸ Potential labour draw in SEQ may reduce labour availability for more specialised roles.
InterLinkSQ—Global Logistics Centre and Industrial Park	▸ Design includes tie-ins between the projects allowing for movement of freight between the Inland Rail and the intermodal terminal ▸ Requirement for civil construction labour, resulting in cumulative demand for skilled trades and civil construction labour; however, development likely to be incremental over a longer period with relatively modest labour draw ▸ Potential regional development opportunities across SEQ's south-west industrial corridor and in the Western Gateway Regional Economic Cluster.
Wellcamp Business Park	▸ Requirement for civil construction labour, resulting in cumulative demand for skilled trades and civil construction labour; however, development likely to be incremental over a longer period with relatively modest labour draw ▸ Potential regional development opportunities across SEQ's south-west industrial corridor and in the Western Gateway Regional Economic Cluster.
Witmack Industry Park and Charlton Logistics Park	▸ Requirement for civil construction labour, resulting in cumulative demand for skilled trades and civil construction labour; however, development likely to be incremental over a longer period with relatively modest labour draw ▸ Potential regional development opportunities across SEQ's south-west industrial corridor and in the Western Gateway Regional Economic Cluster.

Project	Potential for cumulative impacts
Toowoomba Regional Council Waste Management Facility	▸ Where construction schedules overlap, potential labour draw from the regional economic catchment ▸ Potential draw on construction materials from the regional economic catchment.
Defence Housing Australia, Mount Lofty development	▸ Where construction schedules overlap, potential labour draw from the regional economic catchment.
Asterion Medicinal Cannabis Facility	▸ Where construction schedules overlap, potential labour draw from the regional economic catchment.
Gatton West Industrial Zone (WIZ)	▸ Where construction schedules overlap, potential labour draw from the regional economic catchment (peak 13.5 FTE during construction period).
Bromelton State Development Area	▸ Potential labour draw from the regional economic catchment.
Cross River Rail	▸ Potential labour draw in SEQ may reduce labour availability for more specialised roles (1,500 direct and indirect FTE each year during construction).
New Acland Mine—Stage 3	▸ Potential labour draw from the regional economic catchment.

17.7.1 Inland Rail Program in Queensland

The construction phases of the Queensland segments of the Inland Rail Program have been jointly simulated to analyse the cumulative economic impacts of these projects. Table 17.11 and Table 17.12 summarise the cumulative macroeconomic impacts of the Queensland segments of the Inland Rail Program.[7]

Under the assumption of slack labour markets, the incremental economic impacts of the Queensland segments include an increase in real Gross State Product (GSP) of $1.75 billion (measured in $2019) and an increase in the average number of jobs over the construction period of 2,059 jobs per year. If labour markets are tight, the incremental benefits are smaller with real GSP increasing by $0.83 billion and the average annual number of jobs increasing by 485 over the same period.

The segments of the Inland Rail Program that are located in the Toowoomba regional economic catchment are the Project and of the western portion of the H2C project. Construction activities related to these projects will directly impact the Toowoomba[8] economy. The remaining Queensland segments 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 slack labour market scenario and 225 under the tight labour market scenario. When all the Queensland projects are considered jointly, the analogous increment to jobs (direct and indirect) in Toowoomba increases to 1,071 (under the slack labour market scenario) and 258 (under the tight labour market scenario). In the joint scenario the increment to jobs in the Toowoomba 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 will generally be much closer to the slack than to the tight characterisation.

7 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 the EIA (refer Appendix R: Economic Impact Assessment)

8. SA4 Labour Market Region not LGA.

TABLE 17.11: SUMMARY OF QUEENSLAND-WIDE ECONOMIC IMPACTS—SLACK LABOUR MARKETS

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

Table notes:
GDP and average employment should add up to totals (with some leeway for rounding).
Peak employment does not necessarily add up. From the modelling, peak employment was the maximum employment reached in a regional labour market over the period 2020-2025—so there is likelihood that the peak period in one region does not coincide with the peak in another region.

Source: KPMG

TABLE 17.12: SUMMARY OF QUEENSLAND-WIDE ECONOMIC IMPACTS—TIGHT LABOUR MARKETS

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

Table Notes:
GDP and average employment should add up to totals (with some leeway for rounding).
Peak employment does not necessarily add up. From the modelling, peak employment was the maximum employment reached in a regional labour market over the period 2020-2025—so there is likelihood that the peak period in one region does not coincide with the peak in another region.

Source: KPMG

Further information on the economic benefits of the Inland Rail Program is provided in Chapter 2: Project Rationale.

Table 17.13 has been included to outline the CAPEX figures across the Queensland Inland Rail Projects.

TABLE 17.13: TOTAL CAPEX FOR QUEENSLAND INLAND RAIL PROJECTS

	$2015 [a, c]	$2019 [b, c]
NSW/Queensland Border to Gowrie	$1,042,245,408	$1,114,757,844
Gowrie to Helidon	$1,016,149,084	$1,086,845,913 [d]
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**

Source: KPMG

Table notes:

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

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

c. These figures reflect capital costs and do not include other provisions such as insurances, Advanced Train Management Systems, utilities and property and site remediation.

d. The EIS includes an estimated capital cost profile of approximately $1.087 billion (2019), consistent with the *Inland Rail Programme Business Case* (ARTC, 2015a) and is an estimate of direct construction costs—including, but not limited to: delivering environmental and heritage commitments; fencing and earthworks; tunnels and tunnel services; formation and roadworks; structures; track works (loops and crossings); delivery works (incidentals and utilities); and supply of track, sleepers and turnouts.

The Project is expected to represent an investment of up to $1.35 billion—this figure includes both direct construction costs and indirect costs. Indirect costs include items such as: design services, Contractor overhead and margins, contingency, and escalation.

The total investment figure also includes ARTC Program costs such as project management, train control systems, property requirements and insurances.

The total investment figure makes provision for expected Project contingency and risk.

17.7.2 Broader cumulative impacts

17.7.2.1 Cumulative regional 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 Queensland 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 interacting projects were modest and 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 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.

17.7.2.3 Cumulative impacts on local businesses

The expansion in construction activity and regional employment (with a subsequent increase in temporary and non-resident population) has the potential to increase demand for a range of local infrastructure and services, including housing, health care, childcare 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.

17.7.2.4 Cumulative supply chain impacts

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

Should the demand for material surpass supply, however, 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.

17.8 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 identified within the SIMP (refer Appendix Q: Social Impact Assessment). A summary of the impacts and benefits identified in this EIA and the relevant ARTC commitments is provided in the Table 17.14.

There are two action plans that are directly relevant to the economic impacts identified and assessed in this EIA—Workforce Management and Australian Business and Industry Participation. The details of these plans can be found in Chapter 16: Social and Appendix Q: Social Impact Assessment.

TABLE 17.14: ARTC COMMITMENTS—WORKFORCE MANAGEMENT AND LOCAL BUSINESS AND INDUSTRY PARTICIPATION 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 Indigenous 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 programs ▸ 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 material and service requirements that 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: Appendix Q: Social Impact Assessment

There are a number of economic impacts identified within the EIA that relate to the agricultural properties, mineral resources and extractive industries, and the tourism industry. Where these impacts cannot be avoided, a range of measures has been proposed by ARTC to carefully manage and mitigate these impacts. The measures summarised in Table 17.15 are not captured within the SIMP but represent commitments by ARTC. Further details are provided in Chapter 8: Land Use and Tenure and Chapter 16: Social.

TABLE 17.15: SUMMARY OF PROPOSED MANAGEMENT AND MITIGATION MEASURES

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 co-located with the existing West Moreton System rail corridor for approximately 5.6 km, minimising the need to develop land that has not previously been subject to disturbance for transport infrastructure purposes ▸ The Project generally follows the Gowrie to Grandchester future State transport corridor protected under the *Transport Planning and Coordination Act 1994* (Qld) ▸ The Project design has aimed to minimise impacts on the current and future operations at Withcott Seedlings—a major regional supplier of seedlings to the regional and national horticultural industry ▸ Any impacts on operational farm requirements will be managed and reinstated as soon as possible ▸ ARTC will work with individual landowners 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, groundwater bores 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 on 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.

Impact	Proposed mitigation/management measures
Mineral Resources and Extractive Industries	
Potential impacts on deposits within the KRA	▸ The Project avoids the existing quarry operations and is located below the area that is likely to the be the main deposit in the northern section of the KRA (a northwest trending spur) ▸ The Project traverses the resource processing area of the KRA, which may sterilise any underlying resources for the life of the Project. This land will be acquired, including a volumetric acquisition, under the process in the *Acquisition of Land Act 1967* (Qld). ▸ The Project may constrain future expansion, including the provision of vibration limits to protect the Toowoomba Range Tunnel and the eastern tunnel portal, which may impact on future blasting activities ▸ 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 future operations (and vice versa) and/or significant deposits within the KRA, appropriate mitigation will be agreed with the resource interest holders and relevant government agencies.
Tourism	
Potential reduction in tourist visitation and associated expenditure	▸ Consult with tourism associations and relevant 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; Chapter 16: Social

17.9 Conclusion

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. The EIA is provided in detail in Appendix R: Economic Impact Assessment.

Inland Rail Program impacts

As per the requirements of the ToR, the EIA has focused 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 segments, 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 Programme Business Case* (ARTC, 2015a), 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 per cent discount rate (2.62 at a 4 per cent 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 when 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 (due to 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 Project. The expansion in construction activity is also likely to support additional temporary flow-on demand and additional spending by the construction workforce in the local community.
- The Project offers opportunities 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.
- As a predominantly greenfield development, the Project comprises new dual-gauge track to create a more efficient and direct rail freight corridor for freight operators (current and future) through the Toowoomba Range. 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.[9] ARTC will work with individual landholders to develop suitable management solutions based on individual farm management practices to mitigate and manage these impacts.
- Changes to the amenity of, or connectivity to, local attractions. The Social Impact Assessment (refer Chapter 16: Social) concludes that a significant decrease in visitation as a result of this impact is unlikely. ARTC will work with tourism associations to ensure that generalised impacts on tourism values are reduced wherever possible.

Economic benefits assessment

The economic benefits assessment estimates that the Project is expected to provide a total of $81.54 million ($2019 present value terms) in incremental benefits (at a 7 per cent 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 a slack labour market scenario. Under this scenario, over the construction phase, real GRP is projected to be $595 million higher than the baseline level.

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9. This value is an indicative estimate only—it does not consider the value of individual commodities produced per lot or the value-add activities that 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 detailed design.

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

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 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 is committed to enhancing the economic benefits of the Project and the wider Inland Rail Program 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 the Project while enhancing benefits and opportunities. There are a number of economic impacts identified within this EIA that 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, 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.