

CHAPTER

16

Economics

INLAND
RAIL 

INLAND RAIL—BORDER TO GOWRIE ENVIRONMENTAL IMPACT STATEMENT

**ARTC**

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

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16. Economics

16.1 Introduction

An economic impact assessment (EIA) has been prepared to identify potential economic impacts of the proposed Inland Rail—Border to Gowrie Project (the Project) of the Inland Rail Program (Inland Rail).

The purpose of this chapter is to:

- ▶ Establish the existing economic environment and local context to form the basis from which 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.

Since the completion of the economic modelling detailed in this report, there have been changes to the Project and the Project environment. These changes include alterations to the Inland Rail construction program and the economic shock associated with the 2020 quarter 2 market conditions, which are not reflected in the economic analysis or economic impact assessment in this report, at the request of the Australian Rail Track Corporation (ARTC); however, the economic shock associated with the 2020 quarter 2 market conditions is discussed qualitatively in relation to the economic modelling outputs.

16.2 Terms of Reference requirements

The following assessment addresses the economic-specific information requirements of Section 5.1 and 11.141 of the Terms of Reference (ToR):

TABLE 16.1 ECONOMIC IMPACT ASSESSMENT TERMS OF REFERENCE INFORMATION REQUIREMENTS

Section 11.141: EIS Economic Objectives

The construction and operation of the Project should aim to:

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

Information Requirements	EIA Section
Identify the economic impacts of the Project on the local and regional area and the State.	Section 16.7, 16.8, 16.9, 16.10, 16.11, 16.12, 16.13 and 16.14
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 16.11 and 16.12

TABLE 16.2 OTHER RELEVANT TOR INFORMATION REQUIREMENTS

Information Requirements	EIA Section
Section 5.1 The objectives of the EIS are to ensure that all relevant environmental, social and economic impacts of the Project are identified and assessed, and to recommend mitigation measures to avoid or minimise adverse impacts. The EIS should demonstrate that the Project is based on sound environmental principles and practices.	Section 16.7, 16.8, 16.9, 16.10, 16.11, 16.12, 16.13 and 16.14

16.3 Guidelines, local and regional policy and planning

16.3.1 Coordinator-General's Economic Impact Assessment Guideline (April 2017)

As identified in the ToR, the following Economic Impact Assessment (EIA) has been undertaken in accordance with the guidance provided by the Coordinator-General's *Economic Impact Assessment Guideline* (Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP), 2017).

The guideline states that the:

'... EIA must estimate the Project's economic impacts and identify measures to manage any negative impacts and capture the economic opportunities generated by the Project. It must: include both a description of the economic environment with and without the Project; use standardised methodologies and information; make all assumptions transparent; and propose targeted impact management measures'.

16.3.2 Local and regional policy and planning

There are a number of strategic planning and policy documents relevant to the Project EIA, including regional land use and economic development planning. These documents include:

▶ **Australian Infrastructure Plan 2016, Infrastructure Australia**

The *Australian Infrastructure Plan* (the Plan) (Infrastructure Australia, 2016a) was developed by Infrastructure Australia as a long-term plan for infrastructure reform and investment in Australia. The Plan is guided by four headline aspirations:

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

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

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

▶ **Queensland Freight Strategy—Advancing Freight in Queensland, Queensland Government (2019)**

The *Queensland Freight Strategy—Advancing Freight in Queensland* (the Strategy) (Department of Transport and Main Roads (DTMR), 2019b) sets a shared vision for the State's freight system through a series of commitments that have the aim of guiding policy, planning and investment decision-making over the next 10 years. The vision for Queensland is 'an integrated, resilient and safe freight system that supports the economy and community'.

The Strategy makes a commitment to optimise existing freight infrastructure and target investment towards creating economic opportunities. The Strategy also acknowledges the importance of smarter connectivity and access, identifying the role of competitive rail freight services in promoting the mode shift for freight from road to rail. The development of the Project supports the strategic intent and direction of the Strategy, by ensuring connectivity to existing operating lines (such as the South Western Line and the Millmerran Branch Line) to improve the efficiency of rail freight. The Project is projected to improve the productivity of regional and State supply chains and industry.

▶ **South East Queensland Regional Plan 2017 (ShapingSEQ), Queensland Government**

ShapingSEQ (Department of Infrastructure, Local Government and Planning (DILGP), 2017a) is the Queensland Government's plan to guide the future of the South East Queensland (SEQ) region. The Plan aims to *'set the direction for sustainability, global competitiveness and high-quality living'*. The planning framework for the next 25 years is based off five strategic goals: grow, prosper, connect, sustain and live.

In particular, the Plan addresses 'prosper' through a focus on regional economic clusters such as the Western Gateway, which will be further enabled by the development of Inland Rail (including the Project, which includes critical greenfield infrastructure within the Program). The Plan recognises the role of Inland Rail in unlocking opportunities for the greater intensification and consolidation of industrial activities (and rail-dependent industries) within the western sub-region.

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

▶ **SEQ Regional Freight Networks Strategy 2007–2012, Queensland Government**

The *South East Queensland (SEQ) Regional Freight Network Strategy 2007–2102* (the Strategy) (Queensland Transport, 2009) aims to, *'facilitate freight moving efficiently across the transport network'*, enhancing economic development, safety, quality of life and environmental sustainability.

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. Inland Rail is noted as having the potential to influence future freight movements and the development of the SEQ freight network.

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

▶ **Darling Downs Regional Transport Plan 2019, Queensland Government**

The *Darling Downs Regional Transport Plan* (Darling Downs RTP) (DTMR, 2019c) outlines a shared direction for shaping the region's transport system over the next 15 years. The Darling Downs RTP sets out regional transport priorities and actions for developing the transport system in a way that supports regional communities, growth and productivity. The Darling Downs RTP details the economic importance of the relationship between infrastructure, transport and land use.

The Darling Downs RTP recognises the vital role of the freight network (particularly rail freight) across Darling Downs in supporting future trade development and growth of the regions' export-orientated industries. The Plan highlights the potential for Inland Rail to enable improvements in supply chains and freight productivity. Specifically, Inland Rail has been identified as an opportunity to improve access to export gateways and affords the region the opportunity to be the gateway for southern Queensland and north-western New South Wales (NSW) to local, national and international markets.

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

▶ **Goondiwindi Community Plan 2012–2022, Goondiwindi Regional Council (GRC)**

The *Goondiwindi Community Plan 2012–2022* (the Plan) (GRC, 2012) describes a shared vision for the Goondiwindi community's future and economic growth. The Plan's economic priority is to develop *'a strong and sustainable regional economy that supports the growth of existing and new industry and business activities that enhance local lifestyle and provide long term employment opportunities'*.

As part of the broader Inland Rail, the Project 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 growth.

Through participation in the construction and ongoing operation of the Project, there are also opportunities to increase local business capacity and worker capability.

▶ **Toowoomba Regional Council Corporate Plan 2019–2024, Toowoomba Regional Council (TRC)**

The *Toowoomba Regional Council Corporate Plan* (the Plan) (TRC, 2019) sets a vision for a, '*vibrant, inclusive and liveable region where respect for tradition and diversity is embraced*'. This vision will be achieved through goals focusing on people, place, sustainability, prosperity and performance.

The region aspires to achieve its 'prosperity' goal by leveraging opportunities inherent in major regional, State and national infrastructure projects. Planning and investment in major infrastructure will support long-term economic growth, in addition to enhancing the identity of the region. 'Prosperity' has the potential to be achieved through the Project, as a major project with opportunities to promote employment and economic activity.

The Plan specifically highlights Inland Rail as a major development, with the potential to substantially elevate the Toowoomba region's economic role in Australia. Toowoomba's strong agricultural foundation has given the region a competitive advantage in the agriculture industry. Inland Rail is recognised as a project that has the ability to enhance economic activity in the region, and promote development of other established industries, such as freight and logistics.

▶ **Toowoomba Region Sustainable Transport Strategy 2014, Toowoomba Regional Council**

The *Toowoomba Region Sustainable Transport Strategy* (the Strategy) (TRC, 2014a) 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 upcoming 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 road safety and local traffic operations.

▶ **Toowoomba Region Economic Development Strategy —Bold Ambitions 2038, Toowoomba Regional Council**

The *Toowoomba Region Economic Development Strategy—Bold Ambitions 2038* (the Strategy) (TRC, 2018) describes an ambition for the future economic position of the region. The vision states that by 2038:

'...the Toowoomba region has an internationally competitive, vibrant, diverse and inclusive economy that provides opportunities for employment, entrepreneurship and investment that enhance the region's lifestyle and environment'.

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. This opportunity is especially important in maintaining the region's role as an agricultural hub and pivotal freight and logistics centre. Industries such as food product manufacturing, machine manufacturing, and freight and logistics have the ability to capitalise on the freight link provided by the Project and the broader Inland Rail.

- ▶ The Strategy also mentions the opportunity for transport and logistics, and freight and warehousing business development as a result of major road, rail and infrastructure investment in the region. The Project alignment is adjacent to the Toowoomba Enterprise Hub, which includes the InterlinkSQ intermodal facility and Toowoomba Wellcamp Airport. Connecting the Project to this hub will enable the region to further capitalise on its export potential to Asia and other global markets through international exports out of the Toowoomba Wellcamp Airport. In addition, the Economic Development 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.

▶ **Darling Downs Regional Plan, Queensland Government, 2013**

The *Darling Downs Regional Plan* (the Plan) (DSDMIP, 2013b) reflects the planning and development interests articulated in the *State Planning Policy* (SPP) (DILGP, 2017c) and sets the strategic direction for the Darling Downs region. The development of the Project is consistent with the intent of the Plan, which lists priority outcomes for the region's transport network as including:

- ▶ Prioritising transport programs to improve freight movement and reduce conflicts in urban areas and with other network users
- ▶ Facilitating the role and function of airports and associated infrastructure in supporting economic development in Queensland.

The Project will unlock opportunities to better leverage the region’s existing rail infrastructure, to increase economic development and support a modal shift towards increased rail freight. While the Project is not a complete greenfield link, there are sections along the alignment that will be enhancements of the existing line.

The Project is consistent with the Plan’s intent to maintain the eastern area of the Darling Downs region as the major transport and service hub of the region. The Project, as part of the broader Inland Rail, will enable the region’s transport network to continue to facilitate the movement of goods and resources between Queensland’s south-east and west, enabling access to domestic and international markets through strategic ports along the east coast.

16.4 Impact assessment area

The Project traverses two local government areas (LGAs): Goondiwindi and Toowoomba. Combined, these LGA boundaries form the impact assessment area for assessing the local economic impacts of the Project, reflecting a local catchment for workers and economic activity.

For the purposes of the regional impact analysis, the Project is located within the Darling Downs–Maranoa labour market region (Australian Bureau of Statistics (ABS) labour market boundaries of the Australian Statistical Geography Standard), which is defined as the regional economic catchment.

Importantly, this EIA acknowledges the potential impacts of the Project on local residents, businesses and industry within the impact assessment area and regional economic catchment, in addition to the surrounding areas, particularly at the Project extents. This EIA also acknowledges the proximity of the Project to regional communities in northern NSW, particularly within the Moree Plains and Gwydir LGAs at the southern extent of the Project alignment.

The Project impact assessment area and regional economic catchment is in Figure 16.1.

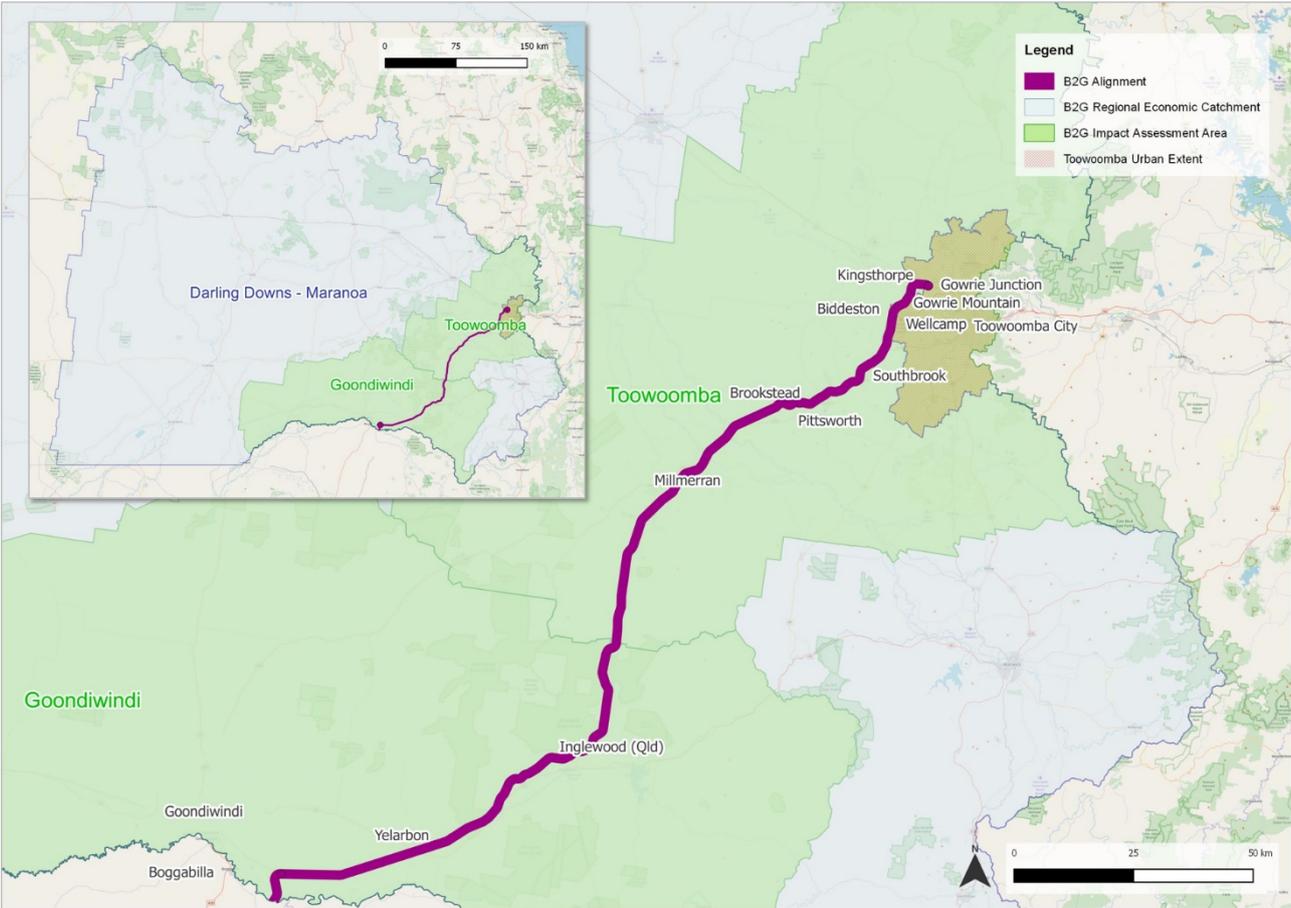


FIGURE 16.1 THE PROJECT IMPACT ASSESSMENT AREA AND REGIONAL ECONOMIC CATCHMENT

Note 1: From a spatial perspective, the geographic boundaries of the Darling Downs–Maranoa region do not capture the complete Toowoomba LGA (orange shaded area). These communities are captured in the impact assessment; however, this geographic constraint should be noted when interpreting local demographic and economic information.

16.5 Methodology

The EIA has been developed according to the ToR and Coordinator-General's EIA guideline. The approach adopted is consistent with recognised industry methods and 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.

16.5.1 Existing economic environment

The existing economic environment section describes the local context and existing economic profile of the impact assessment 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 impact assessment area.

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

- ▶ Strategic economic development, transport and community plans for the impact assessment area and regional economic catchment (refer 16.3.2)
- ▶ *2016 Census of Population and Housing* (ABS, 2016a)
- ▶ *Regional Population Growth, 2018–19* (ABS, 2017b)
- ▶ *Queensland Government population projections: 2018 edition* (Queensland Government Statistician's Office, 2019)
- ▶ *Labour Force Survey* (ABS, 2019a)
- ▶ *Small Area Labour Markets* (Department of Education, Skills and Employment, 2019a)
- ▶ Consultation with local business and industry, government agencies, peak bodies and the community undertaken by ARTC.

16.5.2 Economic benefits assessment

A large proportion of the benefits of Inland Rail stem from improving the connection between producers and markets, through to both domestic markets in cities and international markets through ports. As such, an incremental cost-benefit analysis (CBA) approach assessing each link of Inland Rail individually and in isolation of the whole Program will not capture the full impact that is expected to be delivered on completion of the entire Melbourne to Brisbane connection.

It is expected that the benefits of Inland Rail will outweigh the sum of the individual projects.

For the purposes of this EIA, there are two components to the assessment:

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

The approach to the economic benefits assessment taken in this Technical Report draws on the existing literature and guidelines surrounding the use of cost-benefit analysis (CBA) in the economic appraisal of infrastructure projects, including, but not limited to:

- ▶ *Assessment Framework* (Infrastructure Australia (IA), 2018)
- ▶ *Project Assessment Framework (PAF) guidance material* (Queensland Government, 2015)
- ▶ *Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives* (Transport for New South Wales, 2018)¹
- ▶ *The Australian Transport Assessment and Planning (ATAP) guidelines* (Australian Transport Assessment and Planning, 2019).

1. Nationally recognised guidelines for transport appraisal

16.5.3 Regional impact analysis

A regional impact analysis has been undertaken to highlight the economic impacts of the Project on the regional, State and national economies using an equilibrium modelling framework. For the purposes of this analysis, a 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.

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

KPMG-SD is 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.

Further details on the key modelling assumptions and inputs that underpin the regional economic assessment results are provided in Appendix V.

16.5.4 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 (refer EIS Appendix C: Stakeholder Engagement Report for details on community consultation)
- ▶ Outcomes of the Social Impact Assessment (Chapter 15) process to identify local and regional business capacity, aspirations and initiatives
- ▶ Outcomes of the Land Use and Tenure Assessment (Chapter 7) to identify local and regional impacts on industry resulting from land-use changes.

16.5.5 Cumulative impact assessment

The cumulative economic impact assessment refers to the potential impact of cumulative stimulus to the economy resulting from a set of existing or planned projects within or adjacent to the impact assessment area.

In considering the cumulative impacts of the Project, it is necessary to identify the range of existing, planned and potential projects, within or adjacent to the study area, that may contribute to local and regional economic impacts. Cumulative impacts may result from the spatial and/or temporal interaction between these projects.

This cumulative impact assessment has two components:

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

16.5.6 Limitations of the assessment methodology

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

- ▶ This assessment has not been prepared to inform financial or commercial decision-making processes. The sole purpose of the impact assessment is to meet the requirements of the Coordinator-General's ToR.
- ▶ Demand inputs to the economic benefits assessment have been sourced from the freight demand projections developed by ACIL Allen Consulting for the *Inland Rail 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 link 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 Inland Rail 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 link of Inland Rail 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 are expected as each project progresses through design development, the *Inland Rail Programme Business Case* (ARTC, 2015a) endorsed by the Australian Government is currently the most detailed assessment for the Inland Rail Project. For this reason, and in the interests of maintaining consistency, cost and demand profiles for the Inland Rail project, economic impact assessments have been based on the *2015 Inland Rail Programme Business Case*.

16.6 Existing environment

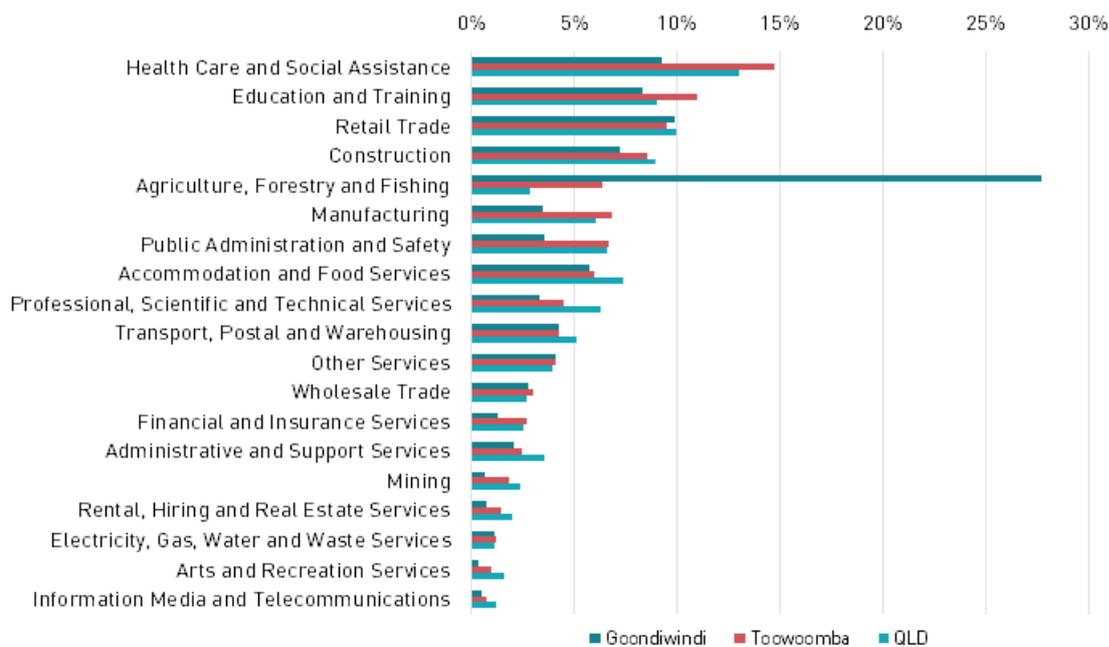
The following section describes the key demographic and socio-economic characteristics of the study area including the local population, and the existing regional and local economic environment. Unless otherwise stated, all information contained within this section has been drawn from the *ABS 2016 Census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

Further details of the socio-demographics of the study area are in Chapter 15: Social and EIS Appendix V: Economic Impact Assessment.

16.6.1 Labour market and employment

16.6.1.1 Employment by industry

As shown in Figure 16.2, the sectoral distribution of employment for local residents varies between the Goondiwindi and Toowoomba LGAs, reflecting the impact assessment area's diverse land use and the geographic distribution of the population.



Source: ABS 2016 Census of Population and Housing

FIGURE 16.2 EMPLOYMENT BY INDUSTRY, IMPACT ASSESSMENT AREA, 2016

In Goondiwindi, the Agriculture, Forestry and Fishing industry employs over a quarter of the working population (27.7 per cent). Within this industry, the primary source of employment is in Sheep, Beef and Grain Farming, employing 17.0 per cent of the working population.

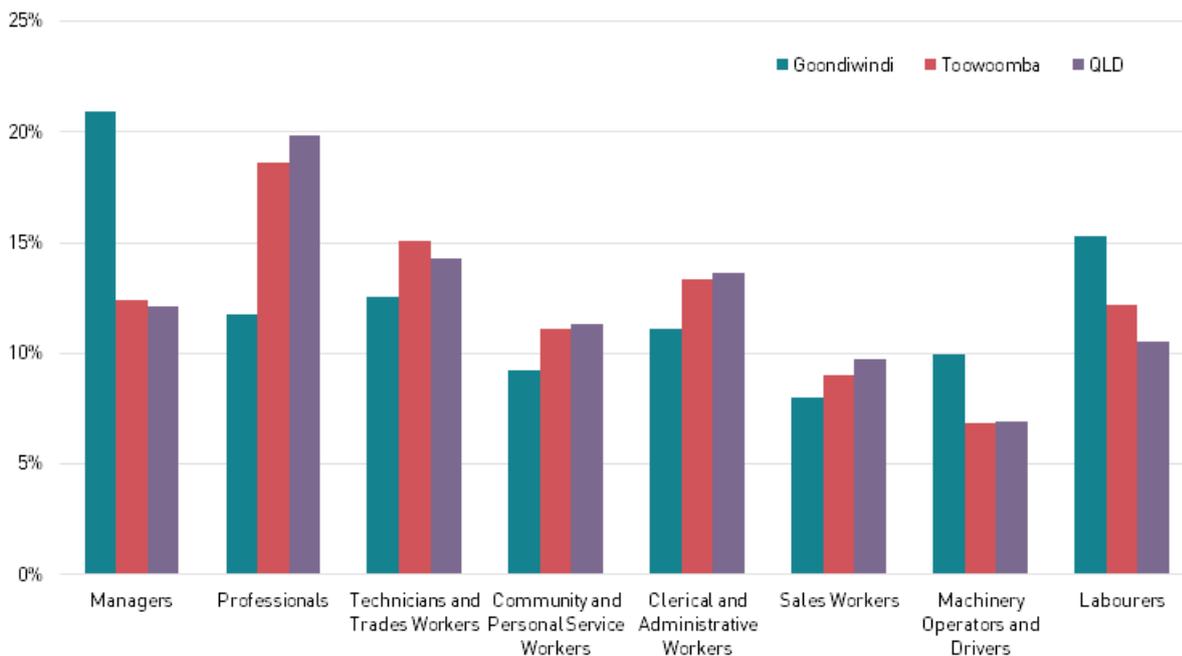
In Toowoomba, the largest proportion of workers are employed in service-based industries such as Health Care and Social Assistance (14.7 per cent), Education and Training (11.0 per cent) and Retail Trade (9.5 per cent).

Numerous residents within the impact assessment area are employed in directly relevant industry sectors and occupations to support the construction of the Project. According to the 2016 Census, 8.4 per cent of the total workforce are employed in the Construction industry (6,403 workers), with the largest proportion of workers residing in Toowoomba (6,053 workers). Within the Construction industry, 10.7 per cent of local workers are employed in Heavy and Civil Engineering construction (685 workers). Across the broader Darling Downs–Maranoa region, 4,216 workers are employed in the Construction industry, with 15.3 per cent of the region’s workers in Heavy and Civil Engineering construction (643 workers) and 58.1 per cent in Construction Services (2,448 workers).

16.6.1.2 Occupation

The impact assessment area’s primary occupations of employment reflects the area’s industry profile and distribution of employment across industries. At the broadest level, the area has a higher proportion of Managers, Machinery Operators and Drivers, and Labourers than the Queensland average (Figure 16.3).

More specifically, within Goondiwindi, the largest proportion of workers are employed as Farmers and Farm Managers (12.9 per cent), followed by Farm, Forestry and Garden Workers (6.4 per cent). This reflects the area’s industry strength in Agriculture, Forestry and Fishing. In Toowoomba, the largest proportion of workers are employed as Sales Assistants and Salespersons (6.6 per cent), School Teachers (4.0 per cent) and Farmers and Farm Managers (3.4 per cent). Across the impact assessment area 1,053 workers were employed as Construction or Mining Labourers (1.5 per cent). Figure 16.3 summarises the local workers occupations in the impact assessment area.



Source: ABS 2016 Census of Population and Housing

FIGURE 16.3 LOCAL WORKERS OCCUPATION, IMPACT ASSESSMENT AREA, 2016

16.6.1.3 Construction labour availability

A railway *Skills Capability Study* was undertaken by the Australasian Railway Association (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, and most severe among specialist managers and professionals (such as engineers). The analysis also found that there is currently a slight oversupply of labourers (ARA, 2018).

These trends are also reflected at a national level. The Australian Industry Group *Construction Outlook* (November 2018) found that, at a national level, businesses are reporting widespread and increasing difficulties in sourcing skilled labour (Productivity Commission, 2014).² 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 (AiGroup), 2018). It is most likely that these shortages in labour availability are for specific specialist trades.

16.6.1.4 Labour force

According to the Australian Government's quarterly regional estimates of unemployment, as at December 2019 there were a total of 3,259 unemployed persons in the impact assessment area and 2,324 in the Darling Downs–Maranoa region. For this period, the unemployment rate in the impact assessment area was 2.5 per cent Goondiwindi and 4.2 per cent in Toowoomba. This is compared to an average unemployment rate over the four quarters to December 2019 of 3.2 per cent and 4.8 per cent respectively. The regional economic catchment has an unemployment rate of 3.4 per cent, averaging 5.1 per cent over the past four quarters. The unemployment rate across the impact assessment area and regional economic catchment is below the Queensland average of 6.1 per cent.

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

TABLE 16.3 SUMMARY OF LABOUR FORCE CHARACTERISTICS, MARCH QUARTER 2019

Area	Labour force	Participation Rate (Note 2)	Unemployed persons	Unemployment rate	12-month Δ
Goondiwindi LGA	6,033	72.1%#	265	4.4%	+1.3
Toowoomba LGA	21,411	72.9%#	5,058	5.5%	+0.3
Impact assessment area	4,794	72.8%#	5,291	5.4%	+0.3
Darling Downs–Maranoa region ³	68,512	79.9%	4,271	6.2%	+1.9
Queensland	2,679,831	78.2%	178,667	6.1%	0.0

Source: Australian Government's *Small Area Labour Markets* publication, March 2019; ABS *Labour Force Survey*, Australia, March 2019 (12-month moving average); ABS *2016 Census of Population and Housing*.

Note 2: Participation rate for working age population 15 to 64 years, June 2016

For the December 2019 quarter, the labour force participation rate across the impact assessment area was lower than the average for the regional economic catchment and Queensland (Table 16.3)—72.1 per cent in Goondiwindi and 72.9 per cent in Toowoomba, compared to 77.6 per cent and 78.7 per cent, respectively.

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

16.6.1.5 Indigenous labour force

According to the *2016 Census of Population and Housing* (ABS, 2016a), the Indigenous population is inadequately represented in the impact assessment area's workforce, which is reflected in the high rates of Indigenous unemployment and low labour force participation rate.

Across the impact assessment area and regional economic catchment, approximately one-fifth of the Indigenous population is unemployed (18.6 per cent in the impact assessment area and 18.0 per cent in Darling Downs–Maranoa). Within the impact assessment area, the Indigenous unemployment rate is highest in Toowoomba at 19.0 per cent.

The labour force participation rate for the Indigenous population in the impact assessment area was 57.2 per cent, compared to a total rate of 72.8 per cent. Within the regional economic catchment, participation was marginally lower at 54.2 per cent, compared to a total labour participation rate of 79.7 per cent.

16.6.1.6 Youth labour force

Table 16.4 show that youth unemployment rates (persons aged 15 to 24 years) are significantly higher than the total unemployment rates across the impact assessment area and regional economic catchment. In Toowoomba, the youth unemployment rate is more than three times the total unemployment rate (15.0 per cent compared to a total unemployment rate of 4.8 per cent). In Darling Downs–Maranoa, the youth unemployment rate is 11.6 per cent, compared to a total unemployment rate of 5.1 per cent.

TABLE 16.4 YOUTH LABOUR FORCE, 2016

	Youth labour market (Note 5)			Total labour market		
	Unemployment rate	Unemployed persons	Participation rate	Unemployment rate (Note 3)	Unemployed persons	Participation rate (Note 4)
Goondiwindi	7.9%	57	62.7%	3.2%	146	72.1%
Toowoomba	15.0%	2,062	66.1%	4.8%	3,113	72.9%
Darling Downs–Maranoa region	11.6%	1,046	63.7%	5.1%	2,324	77.6%

Source: Australian Government's *Small Area Labour Markets* publication, December 2019; ABS *2016 Census of Population and Housing*.

Note 3: 12-month average.

Note 4: Participation rate for working age population 15 to 64 years, June 2016

Note 5 Youth Labour Market data as per *2016 Census of Population and Housing*.

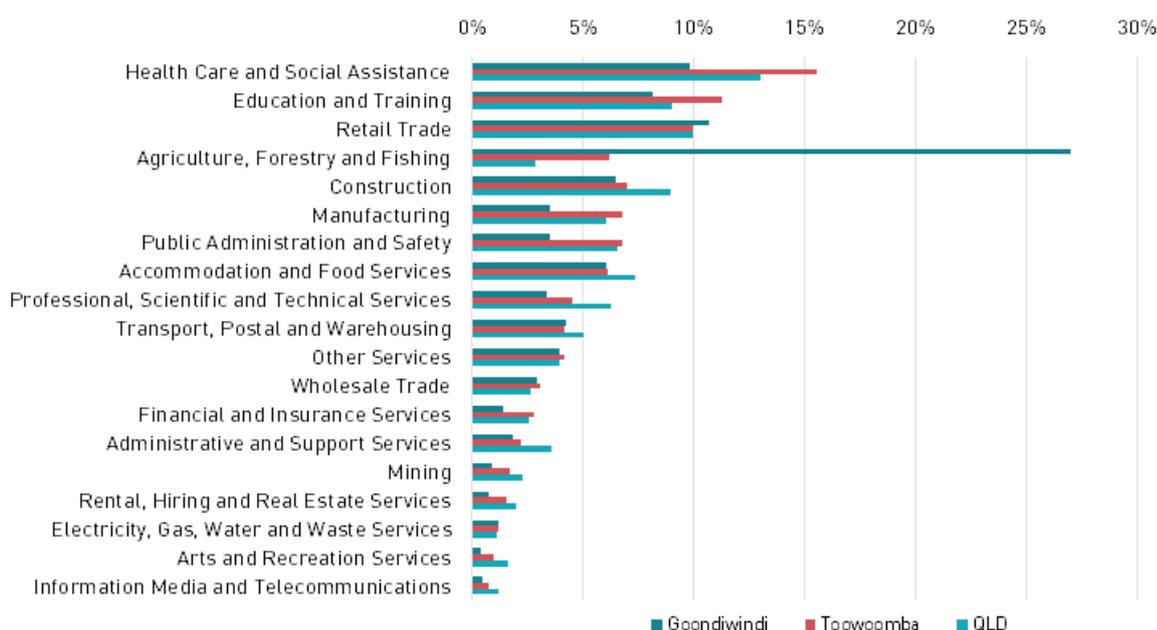
3. Notably, the Darling Downs–Maranoa labour market region does not capture the entire Toowoomba LGA, as shown in Figure 16.1.

The youth labour force participation rate within the impact assessment area and across the regional economic catchment is lower than the total participation rate. Youth labour force participation is highest in Toowoomba at 66.1 per cent, compared to 62.7 per cent in Goondiwindi and 63.7 per cent in the Darling Downs–Maranoa region. Lower levels of labour force participation indicate that a high proportion of young people are either not able to work or are not actively looking for work (for example students, or those who are voluntarily inactive). Across the impact assessment area and regional economic catchment, approximately one-fifth of young persons who are not in the labour force are studying full time (19.7 per cent in Goondiwindi, 20.0 per cent in Toowoomba and 19.0 per cent in Darling Downs–Maranoa). This indicates that, locally, there is latent capacity in the youth labour force, who may have the skills to be engaged in the Project. Local workforce participation programs may be required to support youth employment.

16.6.2 Business and industry

16.6.2.1 Industry by employment⁴

The impact assessment area is a place of work for approximately 74,139 persons (who live both within and outside the catchment area, which broadly reflects the number of jobs located within the impact assessment area. Industry by employment in the impact assessment area is shown in Figure 16.4.



Source: ABS 2016 Census of Population and Housing

FIGURE 16.4 INDUSTRY BY EMPLOYMENT, IMPACT ASSESSMENT AREA, 2016

Consistent with the impact assessment area’s employment by industry, the sectoral distribution of jobs differs between Goondiwindi and Toowoomba.

Within Goondiwindi, Agriculture, Forestry and Fishing is the largest industry of employment, accounting for nearly a third of all jobs in the area (1,286 jobs). Within this industry, most workers are employed in the Sheep, Beef Cattle and Grain Farming sector (807 persons), which is reflected in the local business and industry profile in Section 16.6.3.

The strength of the impact assessment area’s agricultural sector highlights the importance of supply chain efficiency in supporting the area’s economy. There are opportunities offered by the Project to improve the productivity of the local industry by reducing the distance between dispersed agricultural activities to processing facilities and markets. These impacts are outlined in the economic benefits assessment (Section 16.9).

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

The distribution of employment across industry in Toowoomba is more diverse. The highest proportion of jobs are in service-based industries such as Health Care and Social Assistance (15.6 per cent), Education and Training (11.2 per cent) and Retail Trade (10.0 per cent). These sectors are important in meeting the demand for local services from the local population.

While the Agriculture, Forestry and Fishing industry only represents 6.2 per cent of jobs in Toowoomba, the industry supports approximately 4,275 jobs, predominately in the Sheep, Beef Cattle and Grain Farming. A further 1,096 jobs are in Meat and Meat Product Manufacturing.

16.6.3 Local businesses and industry

16.6.3.1 Agriculture industry

The Darling Downs–Maranoa region is one of Queensland’s most fertile and productive agricultural areas, positioned on the western slopes of the Great Dividing Range and traversing the Condamine River catchment. The most common land use in the region is grazing modified pastures, which occupies 95,141 square km or 57 per cent of the Darling Downs–Maranoa region. Dry land and irrigated cropping, timber production and intensive horticulture and animal production are also common production activities in the region (Australian Bureau of Agricultural and Resource Economics (ABARES), 2018).⁵ Accordingly, the agriculture industry offers significant export opportunities for the region, particularly for agricultural and livestock products.

In 2017–18, the gross value of agricultural production in the Darling Downs–Maranoa region was \$3.3 billion, representing 25 per cent of the total gross value of agricultural production in Queensland (\$13 billion). The region’s agricultural sector is diverse, with the most valuable agricultural commodities being cattle and calves (~33.3 per cent), cotton (~18.2 per cent) and sorghum (~6.4 per cent). The region accounts for 100 per cent (\$51 million) of the total value of Queensland’s apple production.

The Darling Downs–Maranoa region contains a quarter of all farm businesses in Queensland (4,633 recorded farms). The highest proportion of businesses are in beef cattle farming (42.0 per cent), followed by grain-growing establishments (17.8 per cent) (ABARES, 2018).⁶

At a local level, the total value of agricultural production in Goondiwindi is approximately \$383.7 million. By value of production, livestock represents close to half of major agricultural commodities produced in the region (47.6 per cent) (Queensland Government, 2019a).⁷ The combination of biophysical attributes exhibited in this area (including slope and water-holding capacity) enables this region to support large areas of broadacre cropping, comprised mainly of cotton (refer Chapter 7: Land Use and Tenure).⁸ The cotton industry in Goondiwindi is worth over \$350 million (GRC, 2019b).⁹

The Toowoomba region produces a wide range of agricultural products, including grain, beef, poultry, eggs, fruit and vegetables. The region has long been an agricultural hub, with 96.4 per cent of its land area being used for agricultural production in 2018. The total value of agricultural production in the region in 2017–18 was \$894.7 million (Queensland Government, 2019a).¹⁰ In 2017, agricultural exports from the region were valued at \$831 million, and comprised 55.0 per cent of the region’s total agricultural output, highlighting the regions strong export focus. Accordingly, the Toowoomba region is well placed to leverage its strengths in agriculture, and benefit from exporting its products to interstate and overseas markets (TRC, 2016b).¹¹

Across the impact assessment area, the largest proportion of businesses are in the Agriculture, Forestry and Fishing industry. This reflects the area’s land use and inland location, with 879 businesses in Goondiwindi (45.3 per cent) and 3,378 businesses in Toowoomba (21.2 per cent) operating in this industry sector (ABS, 2014).¹²

5. ABARES, About My Region—Darling Downs–Maranoa Queensland, 2017–18

6. ABARES, About My Region—Darling Downs–Maranoa Queensland, 2017–18

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

8. Chapter 7: Land Use and Tenure

9. Goondiwindi Regional Council, *Rural Production*, 2019b

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

11. Toowoomba Regional Council, *Agriculture Profile*, 2016b. Most current data as at the time of drafting this report.

12. ABS, Counts of Australian Businesses, including Entries and Exits, Jun 2014 to Jun 2018, cat. no. 8165.0

Livestock operations and stock routes

As identified in Chapter 7: Land Use and Tenure, a number of current intensive livestock operations are traversed by the Project:

- ▶ Yarranbrook Farms Pty Ltd., Whetstone—Cattle Feedlot
- ▶ D M Fletcher, Bringalily—Cattle Feedlot
- ▶ Russel Sydney & Kim Maree Stevens, Millwood—Cattle Feedlot
- ▶ Cameron Pastoral Co. Pty Ltd., Yandilla—Piggery
- ▶ Doug Hall Poultry Pty Ltd., Yandilla—Poultry Farm.

The Project also interfaces with 12 stock routes. As described in Chapter 5: Project Description, two of these stock routes are classified as primary open stock routes, two are classified as secondary open stock routes, and five stock routes are classified as minor and unused.

The construction and operation of the Project has the potential to impact on these intensive livestock operations and on local stock routes.

16.6.3.2 Tourism industry

Tourism is a significant industry for the regional economic catchment. The Darling Downs is recognised as a popular tourist destination for visitors seeking to explore rural landscape and attractions.

According to Tourism Research Australia (TRA), total tourism expenditure in the Darling Downs region¹³ was \$1,485 million in 2018 and has been increasing year-on-year since 2015. The region received over 6.4 million visitors during 2018, comprised of approximately 2.2 million domestic overnight visitors and 0.06 million international visitors, with the remaining 4.2 million domestic day visitors (Tourism Research Australia, 2018).¹⁴

At a local level, Toowoomba received approximately 2.8 million visitors in 2017, the majority of which were domestic day visitors (2.0 million). The remaining were international visitors (23,000) and domestic overnight visitors (841,000). Expenditure by these visitors totalled \$589 million in 2017, including local spending at the region's 1,651 recorded tourism businesses (Tourism Research Australia, 2017).¹⁵

Goondiwindi received 174,000 visitors in 2017, the majority of which were domestic overnight visitors (172,000), with the remaining being international visitors (2,000). Expenditure by these visitors totalled \$42 million in 2017, through participation with 138 recorded tourism businesses. A high proportion of these visitors are travelling through the area on driving holidays (Tourism Research Australia, 2017).¹⁶

16.6.3.3 Mineral resource interests

There is one granted mining lease within the impact assessment area near the localities of Clontarf and Domville—this mining lease is associated with the open-cut Commodore Mine.

There are three exploration permits within the impact assessment area for coal at Canning Creek: Millwood, Biddeston and Wellcamp. There are also two mineral development licences for coal within the impact assessment area near Bringalily and Domville.

16.6.3.4 Local business

Construction

There are a number of construction businesses located within the impact assessment area, with a total of 1,181 employing businesses (87 in Goondiwindi and 1,094 in Toowoomba) and a further 1,559 non-employing businesses across the area. These businesses are likely to be a significant source of services and equipment during the Project's construction. The supply of labour from these local businesses may be limited, with only three businesses in Goondiwindi and 26 businesses in Toowoomba employing more than 20 persons.

13. Darling Downs region now known as Southern Queensland Country for TRA

14. Tourism Research Australia, National and International Visitor Survey, 2018

15. Tourism Research Australia, *Local Government Area Profiles*, 2017

16. Tourism Research Australia, *Local Government Area Profiles*, 2017

As detailed in the Social Impact Assessment (refer Chapter 15), seven nearby quarries have been identified with the potential to supply the Project, including:

- ▶ Inglewood Quarry
- ▶ Captains Mountain Quarry
- ▶ Bland Quarries, Pittsworth
- ▶ Quarry Road Quarry
- ▶ Toowoomba Quarry
- ▶ Wellcamp Downs Quarry
- ▶ Toowoomba Wellcamp Quarry.

The Project will also require material sourced from borrow pits. Sixteen potential borrow pit locations have been identified as possibly suitable for the sourcing of structural fill. Further feasibility assessment of each borrow pit location will be undertaken during detail design based on construction methodology to confirm material suitability, volumes and commercial arrangements.

Potential borrow pit locations have been located in the Yelarbon, Inglewood, Millmerran, and Pittsworth areas, between Inglewood and Millmerran, and between Southbrook and Gowrie Junction (refer Chapter 5: Project Description).

Transport

While transport is not a significant industry within the impact assessment area, there are several large transport companies based in the impact assessment area and regional economic catchment, which may have the capacity to support the construction of the Project, including:

- ▶ Marshall Group
- ▶ Frasers Livestock Transport
- ▶ Woods Transport.

Toowoomba Enterprise Hub

The Toowoomba Enterprise Hub is located south-east 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 15.5 km west of Toowoomba CBD, Wellcamp Airport supports interstate, intrastate and international connection for the Darling Downs, Granite Belt, Surat Basin and Southern Downs regions. Wellcamp Airport is a passenger and freight airport.
- ▶ Wellcamp Business Park: 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 CBA, and north of the Toowoomba Wellcamp Airport.
- ▶ The Witmack Industry Park: An industrial precinct offering large industrial land parcels, located in close proximity to transport infrastructure, including Warrego Highway, the Toowoomba Second Range Crossing and Inland Rail
- ▶ The Charlton Logistics Park: An industrial precinct for transport and logistics operators, located on the Warrego Highway with easy access to the Second Range Crossing
- ▶ 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.

16.7 Inland Rail impacts

This EIA has focused on the specific economic impacts resulting from the construction and operation of the Project in response to the EIS ToR; however, the assessment acknowledges the role of the Project, and the remaining project links, in collectively delivering the benefits of Inland Rail. In its entirety, Inland Rail will enhance Australia's existing national rail network and serve the interstate freight market. As per the *Inland Rail Programme Business Case* (ARTC, 2015a), the anticipated economic impacts of Inland Rail include:

- ▶ Lower prices for consumers as a result of lower inter-capital freight transport costs, which reduces the cost of living for households
- ▶ Positive direct net economic benefits, driven by improvements in freight productivity, reliability and availability, and benefits to the community from reduced environmental externalities, reduced road congestion and improved safety benefits. The Program is stated to be economically viable with a cost-benefit ratio of 1.02 at a 7 per cent discount rate (2.62 at a 4 per cent discount rate).
- ▶ Economic growth as increased profits (for industries and producers where inter-capital freight is an input or output) and incomes are multiplied through the economy. The Program is anticipated to deliver a net positive impact of \$16 billion on Gross Domestic Product (\$2015) over its 10-year construction period and 50 years of operation
- ▶ Nationally, the Program is also expected to deliver an additional 16,000 jobs at the peak of construction, and an average of 700 additional jobs per annum during operation
- ▶ Enhanced competition between rail and road freight, by providing a credible transport alternative, which will drive further innovation and efficiency
- ▶ Potential to promote the expansion and development of freight precincts around Inland Rail terminals as a result of the benefits from co-location and clustering of industries (as a result of reduced transport costs to warehousing, economies of scale and knowledge-sharing opportunities).

16.8 Workforce impacts

16.8.1 Direct employment

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

16.8.1.1 Pre-construction

Pre-construction activities will be undertaken during the six months before construction commences, and will include:

- ▶ Securing land access and undertaking land surveys
- ▶ Geological and geotechnical investigations
- ▶ Ecological investigations
- ▶ Cultural heritage surveys
- ▶ Securing access to borrow material (for construction of rail ballast and embankments)
- ▶ Establishment of site compounds, fencing and access tracks.

16.8.1.2 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. Pre-construction on the Project is scheduled for commencement in late 2021, with construction expected to be completed in 2026. For the majority of the construction period, the workforce is expected to average approximately 400 full-time equivalent (FTE) but is expected to peak at 950 FTE.

The core construction workforce will consist of professional staff, supervisors, trade workers and plant operators, with earthworks crews, bridge structure teams, capping and trackwork crews working at different periods through the construction phase.

16.8.1.3 Operation

Once operational, a workforce of approximately 10–15 FTE is expected for the Project's operation. These positions will be based in Queensland and comprise drivers and track maintenance personnel.

16.8.1.4 Local employment

Overall, the Project has a significant opportunity to support local employment. At the time of construction, local employment is dependent on a number of factors, including labour market conditions, skills availability, and the existence of workforce training and participation programs to support local, 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 impact assessment area and regional economic catchment to support the construction and operation of the Project. The ability for the local economy to supply labour to the Project, depends on the specific location of works along the alignment. At the northern extent, labour supply is likely to be sourced locally within the Toowoomba region. At the southern extent of the Project alignment, workers may be drawn from regional communities across the NSW state border. This reflects the local labour market conditions, with tighter labour market conditions in Goondiwindi compared to Toowoomba (refer Section 16.6.1). Along the alignment, labour supply may be sourced from the local or broader economy due to the implementation of non-resident workforce accommodation at Millmerran, Inglewood and Yelarbon.

The Project represents a source of potential training and career pathway development for local workers in the impact assessment area. As detailed in the Social Impact Assessment (refer Chapter 15), local training agencies have a strong interest in the potential for the Project to create employment for local residents. During consultation, these agencies have emphasised the need for construction contracts to require that training includes both certification and skill development, with recruitment closely following training. The need for early information regarding the nature of required skills was also raised, to allow them to customise their training with sufficient lead-time to ensure that trainees are 'job-ready'. There are also potential opportunities for ARTC to work with local secondary schools who have identified a strong focus on skills development and work experience.

ARTC is establishing the Inland Rail Skills Academy to help create opportunities for education, training, skills development and employment for communities along the Inland Rail 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.

16.8.1.5 Indigenous participation

The Project offers the potential to increase Indigenous employment and create business opportunities. Traditional Owners were consulted by ARTC through the cultural heritage process, including a meeting with the Bigambul Native Title Aboriginal Corporation Board, an interview with a Western Wakka Elder and an interview with another Aboriginal party (between Inglewood and Pampas). A number of opportunities and issues were raised with regard to Indigenous employment and training opportunities, including:

- ▶ There is interest in participating in the Project, including employment and business opportunities
- ▶ There is a need to ensure there are culturally appropriate job readiness programs and skills training for Indigenous persons
- ▶ Early engagement with the Indigenous community should be undertaken regarding employments and business opportunities so they have time to build capacity.

The Social Impact Management Plan (SIMP) (specifically the Health and Wellbeing Sub-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 Chapter 15).

16.8.1.6 Workforce housing

The construction workforce is expected to be drawn predominantly from SEQ, with some personnel sourced from nearby communities (including within northern NSW). As indicated earlier, a large proportion of the latent workforce located in close proximity to the Project is in the urban areas of Toowoomba at the northern extent of the Project. Due to travel distances, if engaged on the Project, these workers may be required to stay locally. Temporary non-resident workforce accommodation are to be established in the Millmerran, Inglewood and Yelarbon areas, each accommodating up to 400 workers.

16.8.1.7 Changes to property and housing

A number of changes to property and housing could occur as a result of the Project, including:

- ▶ Potential impacts to property prices due to noise, severance and visual amenity factors associated with the Project.
- ▶ Increase in housing demand, in Millmerran, Pittsworth and Goondiwindi, with potential to inflate rents and displace low-income rental households.
- ▶ The housing demand resulting from the Commodore Mine and Millmerran Power Station projects will compound, with potential impacts on rental housing availability and affordability in Millmerran and Pittsworth.

16.8.1.8 Impacts on employment in other industries

Construction activity may draw existing staff or tradespeople away from local businesses. The Social Impact Assessment (refer Chapter 15) states that this may be difficult to overcome with the relatively low level of unemployment in the impact assessment area (particularly towards the southern section of the Project alignment) and may cause temporary disruptions to business operations.

16.8.2 Indirect employment

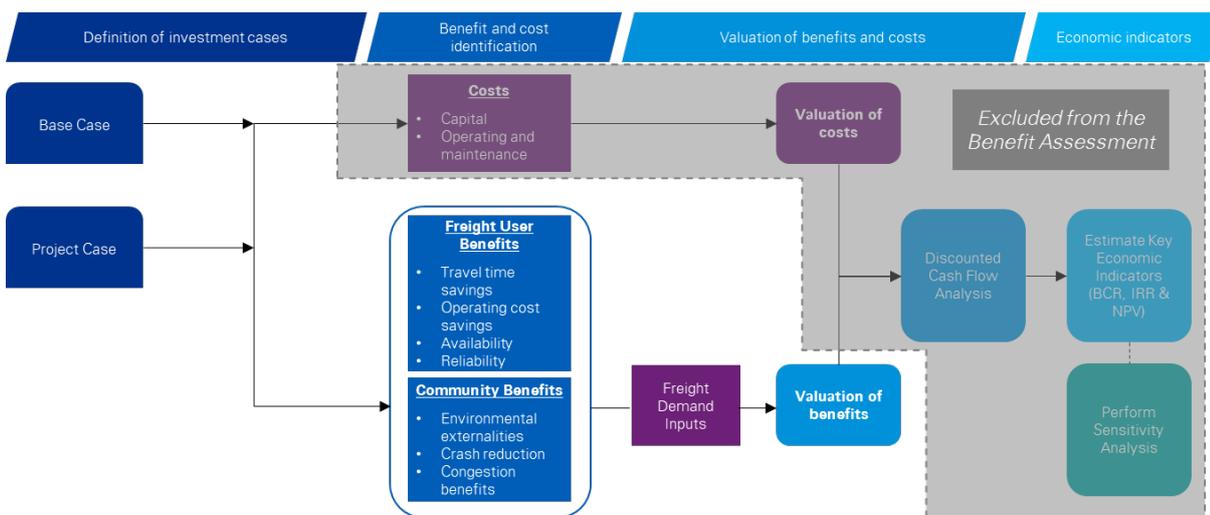
The industrial and consumption effects of the Project will result in the creation of indirect jobs both due to upstream and downstream linkages between the Project’s activities and the rest of the economy, such as the stimulation of businesses further up the supply chain (e.g. manufacturers and suppliers of industry inputs), and the stimulation of activities downstream (e.g. through the provision of inputs to other sectors and the expenditure patterns of employees). The regional economic modelling results (Section 16.10) indicate that indirect employment will be generated in the Professional, Scientific and Technical Services, and Wholesale Trade sectors, reflecting the importance of these two sectors in the construction sector’s supply chain.

16.9 Economic benefits assessment¹⁷

The approach below reflects the three-step benefit assessment modelling process adopted for this EIA:

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

Figure 16.5 outlines a typical CBA approach and its application to the assessment of the Project.



Source: KPMG

FIGURE 16.5 COST-BENEFIT ANALYSIS APPROACH AND THE ECONOMIC BENEFITS ASSESSMENT

17. The economic benefits assessment was undertaken before the refinements made to the construction program. The impact of this refinement would have a minor effect on the economic benefits identified but explains any inconsistencies between the construction program identified in the economic analysis and those identified within the body of this report.

The key difference between the complete 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 are the focus of the assessment.

16.9.1 Base case and project case

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

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

16.9.2 Benefit categories

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

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

Further details on the categories, inputs and assumptions of the economic benefits assessment are in Appendix V.

16.9.3 Economic benefits assessment results

The results of the economic benefits assessment estimate that the Project is expected to provide a total (\$2019 present value terms) of \$674.36 million in incremental benefits to the project area¹⁸ (at a 7 per cent discount rate). This consists of \$516.52 million in freight benefits and \$157.84 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 ~77 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 kilometres travelled represents ~9 per cent of the total benefits (at the 7 per cent discount rate).

The full results of the economic benefits assessment are in

Table 16.5.

TABLE 16.5 RESULTS OF THE ECONOMIC BENEFITS ASSESSMENT, PRESENT VALUE TERMS (\$2019)

Benefits	Discount rate		
	4%	7%	10%
Freight benefits	\$1,012.73 m	\$516.52 m	\$304.86 m
Travel time savings	\$64.32 m	\$33.61 m	\$20.14 m
Operating cost savings	\$608.18 m	\$329.71 m	\$204.22 m
Improved availability	\$264.92 m	\$117.82 m	\$61.02 m
Improved reliability	\$75.32 m	\$35.37 m	\$19.47 m
Community benefits	\$290.80 m	\$157.84 m	\$97.82 m
Crash reduction	\$39.89 m	\$21.65 m	\$13.42 m
Environmental externalities	\$115.99 m	\$62.96 m	\$39.02 m
Road decongestion benefits	\$134.92 m	\$73.23 m	\$45.39 m
Total benefits	\$1,303.53 m	\$674.36 m	\$402.68 m

18. The transport network (road and rail) impacted by these freight movements represent the Project area for the purposes of the economic benefits assessment.

Source: KPMG

16.9.4 Cost–benefit analysis: Inland Rail Program business case

As already detailed, 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 Inland Rail. 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 in Table 16.6 below.

TABLE 16.6 ECONOMIC APPRAISAL RESULTS FOR INLAND RAIL (\$2015)

	Net present value	Cost–benefit ratio
PV at 4% discount rate	\$13,928 m	2.62
PV at 7% discount rate	\$116.1 m	1.02

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

The CBA results indicate that Inland Rail is estimated to be economically viable, with a cost benefit ratio of 1.02 at a 7 per cent discount rate (2.62 at a 4 per cent discount rate). By beneficiary, inter-capital 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.

16.10 Regional economic impact analysis

A regional economic impact analysis has been undertaken to highlight the economic impacts of the Project on the regional, State and national economy using an equilibrium modelling framework. 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.¹⁹

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

16.10.1 Key considerations

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

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

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

The key modelling assumptions and inputs that underpin the regional economic assessment results are provided in Appendix V.

16.10.2 Regional economic impact analysis results

Potential impacts of the Project on the Darling Downs–Maranoa region during the construction phase are summarised in Table 16.7.

19. The regional impact analysis was undertaken before the refinements made to the construction program. The impact of this refinement would have a minor effect on the economic benefits identified but explains any inconsistencies between the construction program identified in the economic analysis and those identified within the body of this report.

TABLE 16.7 SUMMARY OF THE DIRECT AND INDIRECT ECONOMIC IMPACTS OF THE PROJECT

Measure	Darling Downs–Maranoa SA4	
	Slack labour markets	Tight labour markets
Additional real gross regional product (\$2018–19)	\$344 m	\$149 m
Average annual additional direct and indirect employment (persons)	344	78

Source: KPMG

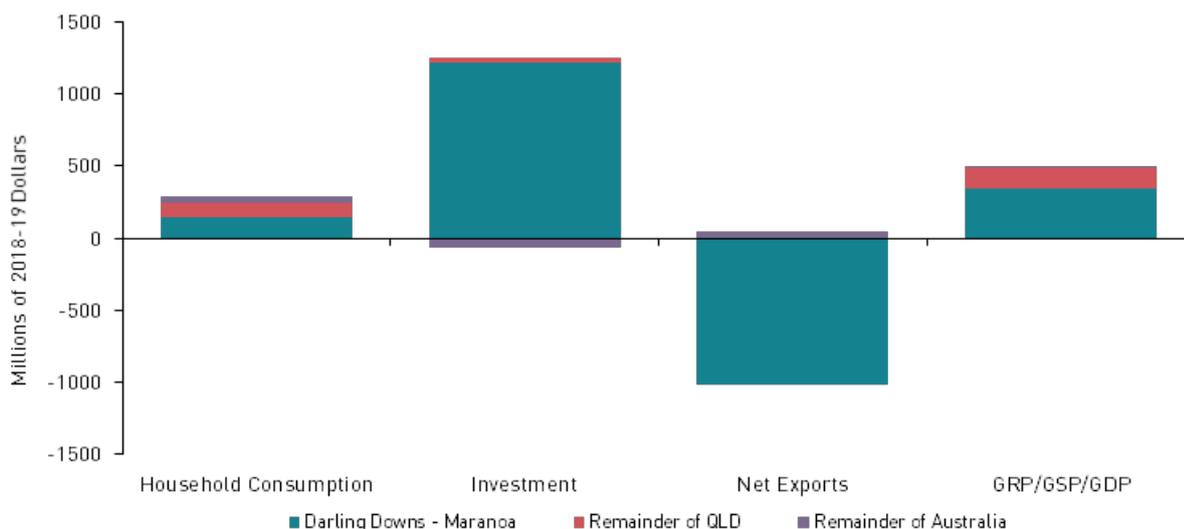
Note:

The average annual additional jobs listed in the table reflect jobs generated in the Darling Downs–Maranoa area, the Project will also generate jobs in adjacent labour markets (refer Figure 16.8).

During the construction phase, real gross regional product (GRP) for the Darling Downs–Maranoa region is projected to be \$344 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 (\$149 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 344 direct and indirect jobs are generated.²⁰ 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 78 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.

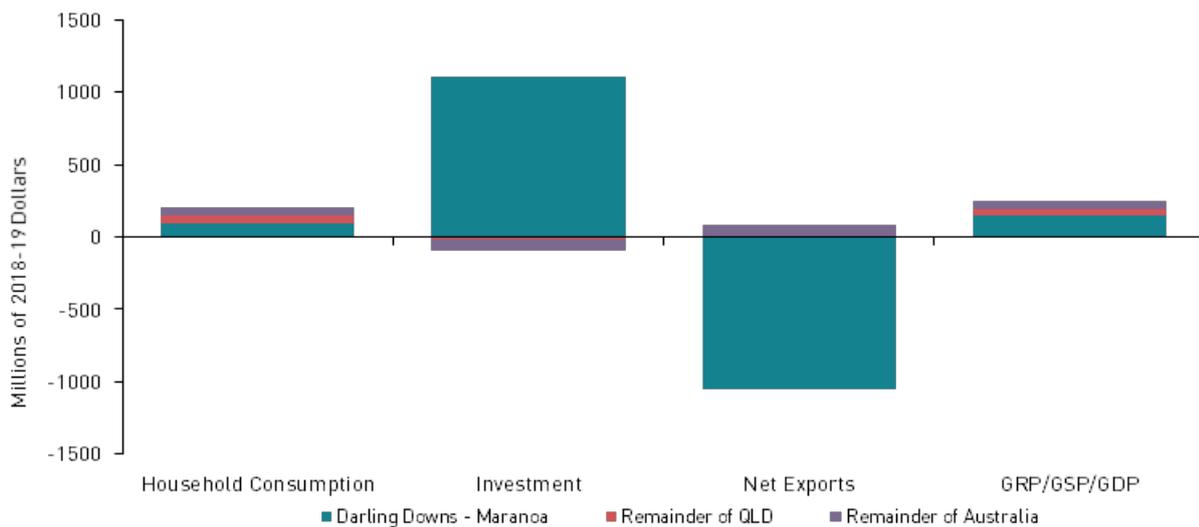
Figure 16.6 and Figure 16.7 summarise the macroeconomic results for the Darling Downs–Maranoa region in the context of the rest of the Queensland and Australian economies.



Source: KPMG

FIGURE 16.6 MACROECONOMIC RESULTS: CONSTRUCTION PHASE, SLACK LABOUR MARKETS

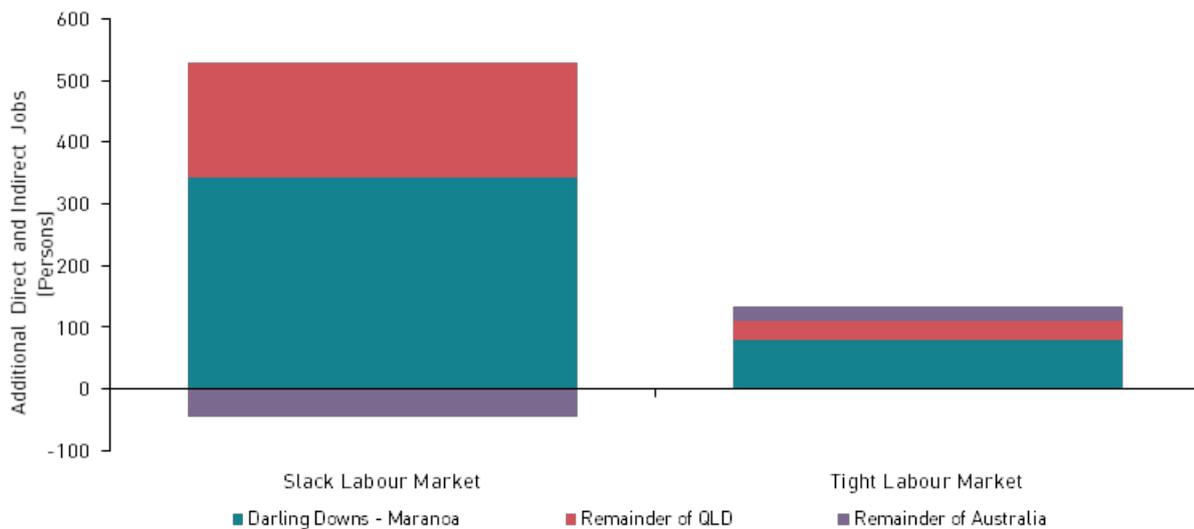
20. To put this in context, the planned direct workforce requirements of the Project during the construction phase peak at approximately 950 FTE. About 70 per cent of the Project CAPEX is incurred in 2022 and 2023. KPMG estimate that the average annual number of jobs in those two years for Darling Downs–Maranoa is about 950 in slack labour market conditions and 150 in tight labour market conditions.



Source: KPMG

FIGURE 16.7 MACROECONOMIC RESULTS: CONSTRUCTION PHASE, TIGHT LABOUR MARKETS

The simulation results indicate that the economic impacts of the Project during the construction phase are concentrated in the Darling Downs–Maranoa 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.



Source: KPMG

FIGURE 16.8 DIRECT AND INDIRECT EMPLOYMENT RESULTS, CONSTRUCTION PHASE

Recent labour market trends can be used to inform workforce capacity and capability within the local region. In Darling Downs–Maranoa, over the four quarters ending in the December quarter 2019, the unemployment rate averaged 5.1 per cent²¹, and the participation rate averaged 77.6 per cent over the 12 months ending December 2019.²² In addition, labour market conditions in Darling Downs–Maranoa appear to have deteriorated marginally with the average annual unemployment rate increasing from 5 per cent in the December quarter of 2018 to 5.1 per cent in the December quarter of 2019. Similarly, the 12-month average participation rate has been on the decline since its peak in April 2019. 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.

21. Based on Australian Government's *Small Area Labour Markets* (SALM) publication

22. Based on population of working age: 15–64 years; ABS, *Labour Force Survey 2019*, cat. no. 6291.0. Released 27 February 2020.

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

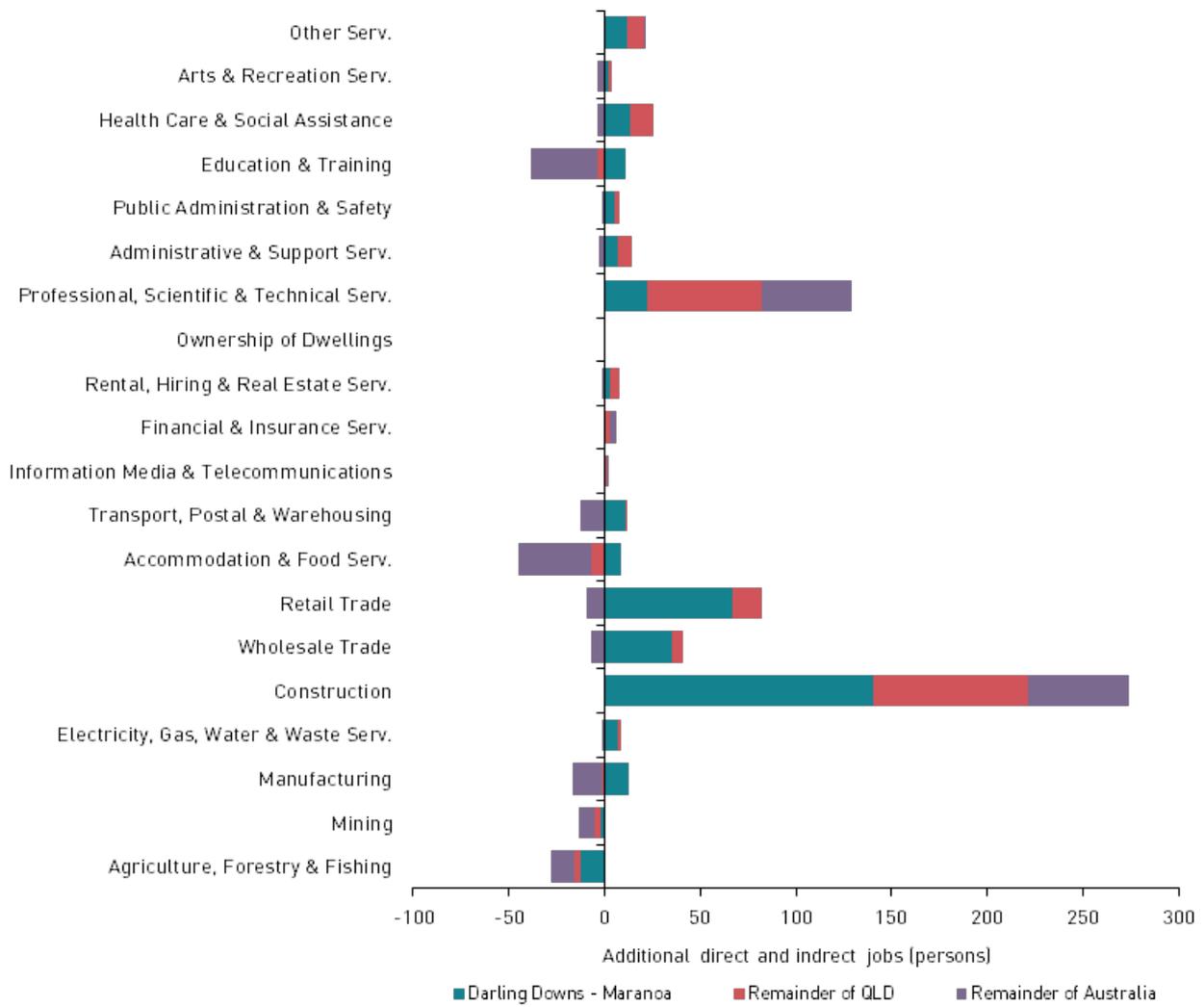
Looking specifically at skilled labour capacity, recent Labour Force Survey results indicate that a relatively high proportion of unemployed workers were last employed in the Construction sector.²³ In Queensland, during the reference week in the quarter ended November 2019, 12,900 unemployed persons (approximately 8.5 per cent) reported that their last job was in Construction, representing a 45.5 per cent increase from the corresponding quarter in the previous year. Nationally, over the same period, 15.1 per cent of unemployed persons who reported losing their job last worked in the Construction industry. The ABS estimates that job vacancies in the Construction sector have fallen sharply as at November 2019 (around 14.0 per cent) from their peak in the quarter ended February 2019.²⁴ These indicators suggest a degree of softness in the Construction sector. The industry and occupational profile of the Darling Downs–Maranoa 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.

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

Employment results at the industry level (movement of workers between industries and regions) are in Figure 16.9 and Figure 16.10. 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.

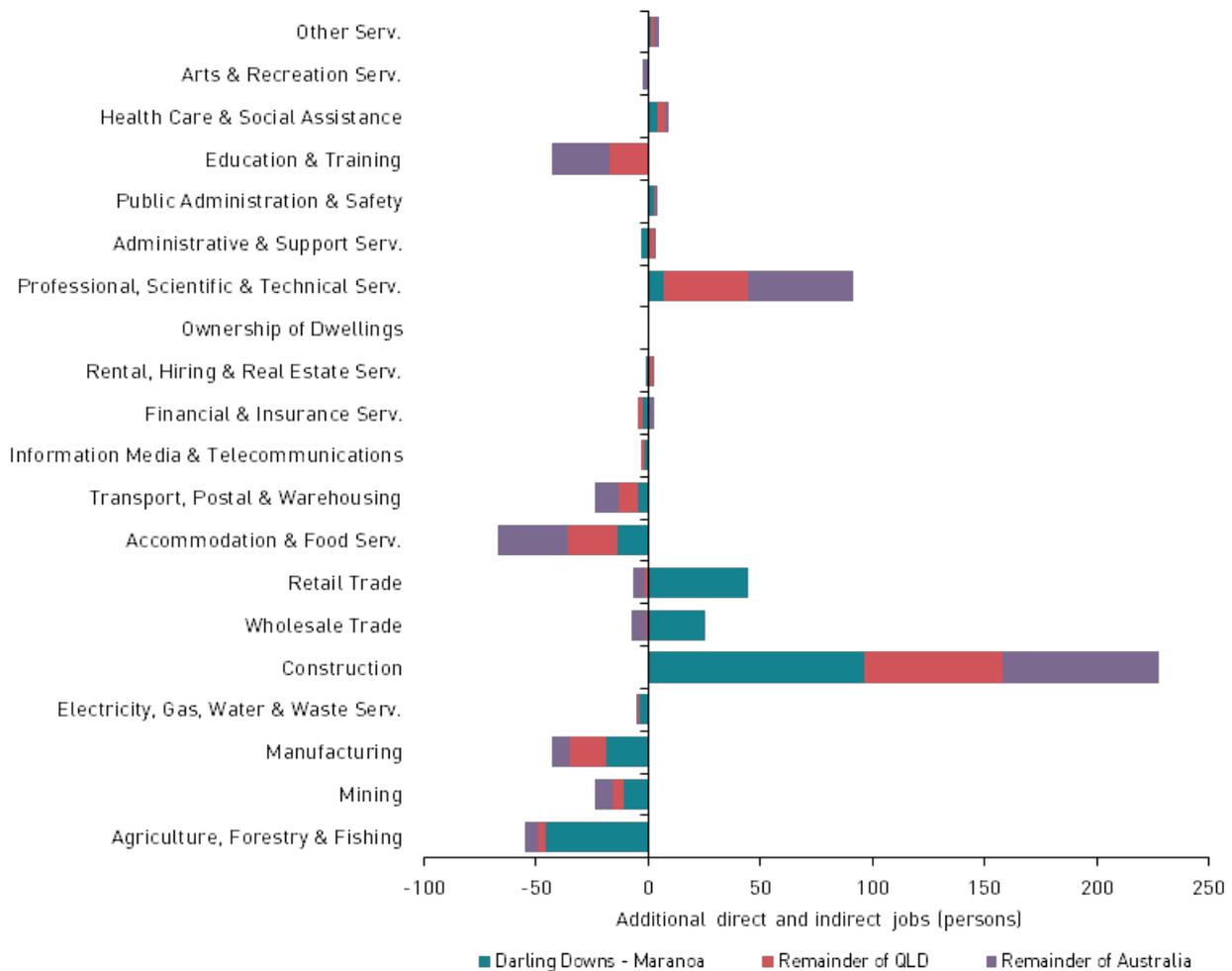
23. Based on ABS, *Labour Force Survey*, Quarterly, November 2019, cat no. 6291.0.55.003. Released 23 December 2019.

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



Source: KPMG analysis

FIGURE 16.9 INDUSTRY EMPLOYMENT RESULTS: CONSTRUCTION PHASE, SLACK LABOUR MARKETS



Source: KPMG analysis

FIGURE 16.10 INDUSTRY EMPLOYMENT RESULTS: CONSTRUCTION PHASE, TIGHT LABOUR MARKETS

16.11 Business and industry impacts

16.11.1 Agriculture industry

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

- ▶ Loss of agricultural land
- ▶ Acquisition of land used for intensive livestock operations
- ▶ Disruption to access and infrastructure
- ▶ 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 landowners is ongoing to further determine potential impacts. Details on consultation undertaken for the Project is included within Appendix C: Stakeholder Engagement Report.

16.11.1.1 Loss of agricultural land

The Project will result in the sterilisation of productive agricultural land within the permanent disturbance footprint. Productive land that is mapped within the existing South Western System and Millmerran Branch Line rail corridors has been previously sterilised and has therefore been excluded from the information below.

The scale of the total loss (within the permanent disturbance footprint) of productive agricultural land is anticipated to be low. At a local government level, within Goondiwindi, the permanent disturbance footprint traverses approximately 388 ha of Class A (less than 0.1 per cent of land of this type within Goondiwindi); 6 ha of Class B (less than 0.1 per cent); and 250 ha of Important Agricultural Area (IAA) land (less than 0.1 per cent). Within Toowoomba, the permanent disturbance footprint traverses approximately 1,434 ha of Class A (0.2 per cent), 74 ha of Class B (0.2 per cent) and 1,452 ha of IAA land (0.2 per cent). Of these areas, land is primarily used for grazing and cropping, as well as some irrigated cropping and irrigated perennial horticulture uses.

Overall, the permanent disturbance footprint will traverse 0.22 per cent of the impact assessment 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 Goondiwindi and Toowoomba LGAs was \$1.28 billion (Queensland Government, 2019a).²⁵ Accordingly, it is estimated that the Project could result in a loss of \$2.85 million (value foregone) in gross agricultural production per year.²⁶

16.11.1.2 Land acquisition

Land acquisition will be required for the Project, including the acquisition (partial and full) of 542 properties. Land uses across these properties include (but are not limited to) cropping, grazing, and intensive animal production. The Project's land requirements are detailed in Appendix F: Impacted Properties. The extent of these impacts will be confirmed during detail design.

The Project footprint will be limited, where possible, while providing the necessary land to safely construct, operate and maintain the rail corridor. The alignment of the Project will be further refined during detail design to ensure the permanent footprint traverses along, or as close as possible to, property boundaries to reduce potential fragmentation and sterilisation of agricultural land. Impacts such as severance or loss of land that may have the potential to impact operations of agricultural businesses will be considered by the Constructing Authority in the terms of the acquisition agreements.

16.11.1.3 Disruption to access and infrastructure

The Project may result in impacts to agricultural land outside of the permanent disturbance footprint. Where the Project alignment does not use existing rail corridors, the Project may sever or isolate parcels of agricultural land, limiting internal movements and reducing access to agricultural land. As detailed in Chapter 7: Land Use and Tenure, potential land severance may cause a disruption in farm operations through impacts to essential farming infrastructure, services or access routes.

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

Water access and infrastructure

The development of the Project may impede essential access to water, through impacts to drainage lines, diversions, and dams. The Project crosses a 12.5 km section of the Condamine River floodplain, which is heavily regulated in terms of water access, especially where the floodplain connects to the Murray-Darling Basin.

Landowners in this area have developed a land management system that maximises productivity through harvesting floodwaters to support the seasonal growth of crops. The Project has been designed to limit the disturbance to water access and infrastructure during both construction and operation.

Any disruption to water access has the potential to impact on the viability of farming operations. During detail design, complete a survey to identify all water assets in and in proximity to the Project footprint. Consult with relevant stakeholders (including landowners/occupants) prior to construction in support of appropriate approvals and agreements for the extraction of water.

Further details are provided in Chapter 12: Surface Water and Hydrology.

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

26. This value is an indicative estimate only—it does not consider the value of individual commodities produced per lot nor 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 detail design.

Transport access and infrastructure

During construction, broader accessibility impacts due to changes in the surrounding road network may also affect local agricultural businesses. Roadworks, re-alignments and changes to travel distances may affect farming businesses through increases in travel times, resulting in increased operating costs. Level crossings and road diversions have been proposed based on a number of factors, to ensure accessibility to surrounding road networks will be maintained. Where roads are permanently closed or re-routed, these impacts may continue once the Project is operational.

During the construction phase of the Project, a number of crossings and bridges will be constructed, posing potential constraints to road access and connectivity between properties. Stock and equipment movements will also be affected during this time; however, the impact will be temporary in nature.

Disruptions to access during construction will be addressed through temporary diversions and onsite traffic management in consultation with the local community. Roads will only be closed permanently where the impact of diversions or consolidation is considered acceptable, or where the existing location is not considered safe and cannot reasonably be made safe. In consultation with landowners, an appropriate level of access will be maintained for agricultural businesses across and between properties affected by the Project. During construction, regular Project updates will be provided that forecast road works, road realignments and closures, and explain alternative routes to enable agricultural and other business operators to plan their travel with minimal disruptions.

Further details are provided in Chapter 18: Traffic, Transport and Access.

16.11.1.4 Acquisition of land used for livestock operations

The Project traverses a number of large feedlots and piggeries. According to Chapter 7: Land Use and Tenure, this Project will result in the partial or full acquisitions of these properties. ARTC has worked, and will continue to work, with landowners to ensure there is minimal disruption to the ongoing operation of intensive animal husbandry.

Where acquisition is required, impacts such as severance of the land parcel and potential fragmentation of infrastructure and services may affect the operations of these businesses, potentially resulting in the loss of employment for farmworkers and reduced economic activity. The extent of these impacts will be confirmed during detail design.

ARTC will work with directly affected property owners to mitigate potential impacts on farm and business operations and develop cooperative strategies that will reduce impacts on productivity and connectivity, including the design of level crossings on private roads. In consultation with GRC and DNRME, temporary and permanent access will be provided for use as stock routes. Where relevant to pre-construction, property-specific measures will be implemented to address potential impacts on land use, property, access, water infrastructure or access.

16.11.1.5 Disruption to stock and product movement

The Project footprint crosses 12 stock routes, at Yelarbon–Kurumbul Road, Yelarbon, Lovells Crossing Road, Millmerran–Inglewood Road at Inglewood and at Canning Creek, Kooroongarra–Andersons Road, Millmerran Inglewood Road near Heckendorfs Road, and Millmerran–Kooroongarra Road near Commodore Mine.

Chapter 7: Land Use and Tenure identifies that there may be informal stock routes used to transfer stock to various grazing paddocks and holding yards. Consultation is ongoing with landowners to identify impacts, if any, to informal stock routes.

ARTC has worked with the Goondiwindi Regional Council and the Department of Natural Resources Mines and Energy to ensure planning of the proposed Project alignment maintains the connectivity of stock routes.

16.11.1.6 Hydrology and Periodic Inundation

The Project crosses 16 major waterways and 66 minor waterways, with key waterways being the Macintyre River, Macintyre Brook, Condamine River and Gowrie Creek. Other major creek crossings include Pariagara Creek, Cattle Creek, Native Dog Creek, Bringalily Creek, Nicol Creek, Back Creek and Westbrook Creek. The Macintyre Brook and Condamine River floodplains, and to a lesser extent the Gowrie Creek and Westbrook Creek floodplains. These floodplains contain productive agricultural land, including irrigated land in places.

The Border to Gowrie Project feasibility design includes cross-drainage structures in the form of bridges and culverts to maintain existing surface water flow paths and flood flow distributions. The Project's design criteria objectives include avoidance of unacceptable increases in peak water levels, velocities and time of submergence. The Project does not increase the existing extent (i.e. footprint) of flood inundation. Further details are provided in Chapter 12: Surface Water and Hydrology.

The Project may necessitate localised modification of land management practices, including cropping regime, in response to confined afflux and time of inundation impacts. The extent of these impacts will be confirmed during detail design. ARTC will work with landowners to develop suitable property-specific solutions based on land management practices.

16.11.1.7 Improvements in supply chain efficiency

Efficient supply chains support the regional and national capacity to enhance economic opportunities within local communities. The Project is a critical link in the broader Inland Rail, combining greenfield with brownfield development to create a more direct rail freight corridor, offering a more efficient solution for intra and interstate freight operators who will be able to avoid inland and coastal road and rail networks.

Specifically, the Project:

- ▶ Offers opportunities to improve the productivity of local export industries (such as agriculture)
- ▶ 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, which will improve market access and expand local agricultural businesses and industry (refer Transport Industry—Freight and Logistics in Section 16.11.4).

16.11.2 Tourism industry

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

During construction, there is potential for road works, the visual impact of laydown areas, and the accommodation of non-residential workers to affect tourists' experience and travel times. This impact is anticipated to be small and will be temporary while construction activities are undertaken in particular areas.

As required, the non-resident workforce accommodation (located near Millmerran, Inglewood and Yelarbon) will service the non-residential workforce for the duration of the Project's construction. Accordingly, the construction workforce will not impact on the availability of local tourism accommodation in the rural areas surrounding the non-resident workforce accommodation. For the larger communities along the alignment (and at the Project extents), the construction workforce is likely to be sourced locally (within driving distance); however, some employees may be required to relocate to the region. This may reduce the available supply of short-term accommodation for tourists; however, based on the scale of the region's tourism industry, the total impact is not anticipated to be material.

Following construction, the buildings and infrastructure established for the non-resident workforce accommodation may be left for community use. This may enhance access to local facilities, with the potential to support tourism, such as in Millmerran. During consultation undertaken by ARTC, the TRC identified the location of a non-resident workforce accommodation near Millmerran as having the potential to provide legacy benefits to support regional tourism. ARTC plans further consultation with TRC as potential non-resident workforce accommodation sites are identified.

During operation, there is potential for reduced scenic amenity due to the Project's location within the rural and regional landscape. It is likely that some visitors will see the proposal as diminishing rural character while others will find interest in the proposal structure. According to the Social Impact Assessment (Chapter 15), this is not expected to have a significant impact on tourism visitation.

16.11.3 Mineral resource interests

According to Chapter 7: Land Use and Tenure, reference design has been based on consultation with resource interest holders and location of the Project alignment has been determined to minimise the potential sterilisation of mineral and petroleum resources, and to minimise the restriction of access to mineral resources or disruption to existing worked mines. The extent of the impact of the Project on current mineral resource permits, licences and leases will be confirmed during detail design.

ARTC will undertake consultation with resource interest holders during detail design. Where the Project may impact on likely significant deposits within the area, appropriate mitigation will be agreed with the resource interest holders during detail design.

16.11.4 Local businesses

16.11.4.1 Construction materials

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

The Project will require a range of construction supplies, including borrow material (spoil, gravel or sand) and ballast material (crushed stone), pre-cast concrete, concrete sleepers, pre-built and panelled turnouts, steel, fencing, electrical components, fuel and consumables.

The impact of the Project on local businesses is likely to vary depending on the location along the Project alignment. Due to their scale and experience, businesses in Toowoomba are more likely to have the capacity and capability to support the construction of the Project compared to rural businesses along the Project alignment. Within Toowoomba, the recent completion of the Toowoomba Second Range Crossing may present an opportunity for skills transfer to meet the needs of the Project. Where required, it is likely that small businesses will need to develop their current capacity to ensure that they can competitively participate in the Project's supply chain.

ARTC has confirmed that pre-cast concrete may be sourced from Toowoomba, ballast material will be sourced from local quarries and borrow pits, and other components such as rehabilitation supplies and fencing may also be sourced within the impact assessment area. Concrete sleepers are likely to be sourced from outside the impact assessment area.

Inland Rail 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* (ARTC, 2020a), which will ensure that local, regional and Indigenous businesses will have opportunities to supply the Project.

The Project's SIMP (refer Chapter 15) further specifies that construction contractors are required to liaise with Regional Skills Initiative Strategy officers in Goondiwindi and Toowoomba to identify potential cooperation or partnerships for the development of employment and business capacity in the region.

16.11.4.2 Transportation

The Project may provide opportunities for transport or logistics businesses in Goondiwindi and Toowoomba during construction, to transport materials to laydown areas and remove waste materials and recyclables from construction compounds and non-resident workforce accommodation.

Following construction, these opportunities for transport or logistics businesses have the potential to expand over the long term, particularly if a regional rail distribution point, rail-based warehousing or associated freight precincts are established on the Project alignment.

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

Freight and Logistics

As part of Inland Rail, the Project has the potential to stimulate business and industry development at the Toowoomba Enterprise Hub in Wellcamp. 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.

16.11.4.3 Local service and supply businesses

The Project is likely to offer opportunities in secondary service and supply industries (such as retail, hospitality and other support services) for businesses in close proximity to the construction footprint and non-resident workforce accommodation. The expansion in construction activity has the potential to support additional temporary flow-on demand and additional spending by the construction workforce in the local community—this may lead to increased trading levels for small businesses, such as food and beverage businesses in the impact assessment area.

Retail businesses in Millmerran, Inglewood and Goondiwindi have the potential to benefit from opportunities to supply materials and services to the Project's non-resident workforce accommodation. Some local retail businesses may also benefit from increased trade from workers residing in these non-resident workforce accommodation facilities.

As identified in the Social Impact Assessment (refer Chapter 15), it is likely that some small businesses will need to scale up their current capacity to participate in the Project, particularly for businesses in rural areas along the alignment.

Following Project approval, ARTC will liaise with Regional Skills Initiative Strategy officers in Goondiwindi and Toowoomba to identify potential cooperation or partnerships for the development of employment and business capacity in the impact assessment area (refer SIMP, Chapter 15).

Telecommunications

The Project is planning telecommunications systems as part of construction requirements and ongoing safe rail operations. ARTC is working with telecommunications carrier network operators to provide services for construction site offices, non-resident workforce accommodation and the railway corridor. While the focus will mainly be for the provision of voice and high-speed data services around the rail track vicinity, it is envisaged that the extended wireless telecommunications network coverage and optical fibre systems will add benefit to the local communities (such as businesses) in those areas where previously such services did not exist.

16.12 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.²⁷ 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 in Queensland

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

There are five sections of Inland Rail that fall in Queensland, including the Project, Gowrie to Helidon (G2H), Helidon to Calvert (H2C), Calvert to Kagaru (C2K) and Kagaru to Acacia Ridge and Bromelton (K2ARB).

► Broader cumulative assessment

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

16.12.1 Inland Rail in Queensland

The construction phases of the Queensland sections of Inland Rail have been jointly simulated to analyse the cumulative economic impacts of these projects. Figure 16.9 and Figure 16.10 summarise the cumulative macroeconomic impacts of the Queensland sections of Inland Rail. Under the assumption of slack labour markets, the incremental economic impacts of the Queensland sections include an increase in real gross state product (GSP) of \$1.75 billion (measured in 2019 dollars) and an increase in the average number of jobs over the period 2020 to 2025 of 2,059 jobs per year. If labour markets are tight then the incremental benefits are smaller with real GSP increasing by \$0.83 billion and the average number of jobs increasing by 485 per year.

27. The cumulative economic impact 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; however, explains any inconsistencies between the construction program identified in the economic analysis and those identified within the body of this report.

The Project is the only section of Inland Rail that is located within the Darling Downs–Maranoa region. Construction activities related to this section will directly impact the Darling Downs–Maranoa economy. The remaining Queensland sections of Inland Rail, which are located in the Greater Brisbane and Toowoomba regions, will impact Darling Downs–Maranoa indirectly.

The regional impact analysis reported the results of simulations when the Project was considered in isolation. In that context, the direct and indirect increment to jobs in the Darling Downs–Maranoa economy was estimated to be 344 jobs per year under the assumption of slack labour markets and 78 jobs per year under the assumption of tight labour markets. When all the Queensland projects are considered jointly, the analogous increment to jobs (direct and indirect) in Darling Downs–Maranoa decreases to 290 jobs per year, assuming slack labour markets and 69 jobs per year assuming tight labour markets. The increment to jobs in Darling Downs–Maranoa peaks in 2022 at 722 and 175 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 Darling Downs–Maranoa economy over the period 2020 to 2025 will be most consistent with those assumed in the slack labour market scenarios that have been simulated. Further, the assessment indicates that the labour market conditions in other regional economies in Queensland, over the construction phase period, will generally be much closer to the slack than to the tight characterisation.

TABLE 16.8 SUMMARY OF QUEENSLAND—WIDE ECONOMIC IMPACTS—SLACK LABOUR MARKETS

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

Source: KPMG

TABLE 16.9 SUMMARY OF QUEENSLAND—WIDE ECONOMIC IMPACTS—TIGHT LABOUR MARKETS

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

Source: KPMG

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

TABLE 16.10 TOTAL CAPEX FOR QUEENSLAND INLAND RAIL PROJECTS

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

Source: KPMG

Note:

- a) The CAPEX figures outlined are incurred over the construction phase, which have been derived from the capital cost plan and construction programming provided to KPMG by ARTC. Pre-construction costs are not included because these are incurred outside of the indicative construction period (prior to 2020).
- b) Conversion to 2019 dollars based on the Producer Price Index growth from Dec 2015 to Mar 2019. The Producer Price Index used relates to output of the Heavy and Civil Engineering Construction industry specifically.
- c) These figures reflect capital costs and do not include other provisions (insurances, construction facilities, ATMS, utilities and property & site remediation).
- d) The EIS includes an estimated capital cost profile of approximately \$1.1 billion, 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 \$1.4 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.
Further detail on the economic impact assessment is located in Chapter 16: Economics and Appendix V: Economic Impact Assessment Technical Report.

16.12.2 Broader cumulative assessment

16.12.2.1 Cumulative labour market impacts

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

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

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

16.12.2.2 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.

16.12.2.3 Cumulative supply chain impacts

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

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

16.13 Impact management

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

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

There are two sub-plans that are directly relevant to the economic impacts identified and assessed in this EIA—Workforce Management and Local Business and Industry Participation. A summary of the impacts and benefits identified in this EIA and the relevant ARTC commitments within the SIMP sub-plans is provided in the table below. Further details of these plans can be found in the Social Impact Assessment (refer Chapter 15).

TABLE 16.11 SOCIAL IMPACT MANAGEMENT SUB-PLANS

Impact / Benefit	ARTC Commitment
<p>Project Employment</p> <p>The Project has the potential to be a significant opportunity to support local employment, including Indigenous and youth employment opportunities.</p>	<p>Workforce management measures:</p> <ul style="list-style-type: none"> ▶ Development of a workforce management plan that includes a comprehensive employee induction program addressing, among other matters, a code of conduct for employees and contractors regarding behaviour, alcohol and drug use, cultural awareness and safety ▶ The Project’s recruitment strategy would provide equitable access to employment opportunities and prioritise recruitment from Goondiwindi and Toowoomba Regional Councils ▶ The Project will not consist of 100% fly-in-fly workforce ▶ Access and evacuation maps for Emergency Services will be provided to the temporary non-resident workforce accommodation and construction compounds ▶ An annual review of the emergency response procedures will be undertaken during construction and the first three years of operation ▶ Minimum local employment targets will be negotiated and agreed between ARTC and the Principal Contractor ▶ Contractors will seek to encourage employment, training and skills development opportunities by: <ul style="list-style-type: none"> ▶ Identifying the skills required for the building, construction, equipment and services fabrication and supply, maintenance, operation and support to the Inland Rail Program ▶ Arranging timely training and qualification arrangements to meet the needs of skills development to support all phases of the Project ▶ Ensuring that training and qualification systems meet the requirements of the National Standards Framework. ▶ Work with key partners to link training and development programs with other projects and local industries to provide the greatest regional benefit.
<p>Local Business and Industry Participation</p> <p>The Project will have significant construction materials and services requirements that may provide local businesses with the opportunity to supply the Project.</p>	<p>Local business and industry participation measures:</p> <ul style="list-style-type: none"> ▶ Disturbance/loss of agricultural activities, limited, or disrupted access to important infrastructure (e.g. groundwater bores or irrigation infrastructure), and options to access areas within properties are to be investigated in consultation with impacted landowners during detail design ▶ Prior to construction occurring, alternative measures for stock access to watering points are to be finalised with the landowner and implemented ▶ Promote the business registration process on the ARTC website ▶ Development and implementation of an Australian Industry Plan (AIP) focusing on opportunities for involvement by local business in construction and operation of the Project that involves: <ul style="list-style-type: none"> ▶ Identifying businesses within 125 km of the Project with potential capacity to supply the construction phase ▶ Engagement with local business to identify opportunities to develop and promote local business participation ▶ Engagement with DESBT and DSDTI to develop business capacity building strategies. ▶ Continue to engage with TSBE, chambers of commerce and local business groups/ associations ▶ Consider providing the Local Content Report to the Australian Industry and Skills Committee, when developed ▶ Implementation of ARTC’s Sustainable Procurement Policy ▶ Indigenous participation and local participation are included as key elements of construction tender assessments ▶ ARTC will work with government stakeholders and local and Indigenous businesses to: <ul style="list-style-type: none"> ▶ Build businesses’ capacity to participate in the Project’s supply chain through business development, mentoring and pre-qualification projects ▶ Support Indigenous businesses to ensure they are prepared for and provided with opportunities to participate ▶ Link training and development programs with other projects and local industries to provide the greatest regional benefit.

Source: Chapter 15—Social Impact Assessment

There are a number of economic impacts identified within this EIA that relate to the agricultural properties and businesses. Where these impacts cannot be avoided, a range of measures have been proposed by ARTC to carefully manage and mitigate these impacts. The measures summarised in the table below are not captured within the SIMP but represent commitments by ARTC. Further details are provided in Chapter 7: Land Use and Tenure.

TABLE 16.12 SUMMARY OF PROPOSED MANAGEMENT AND MITIGATION MEASURES FOR AGRICULTURAL IMPACTS

Impact	Proposed Mitigation and Management Measures
Impacts on agricultural properties including loss of productive land, impacts on property infrastructure, and interruptions to stock and product movements	ARTC will continue to consult with farmers, graziers and owners of agricultural businesses that are directly affected or adjacent to the Project footprint during detail design to develop measures to mitigate impacts, including: <ul style="list-style-type: none"> ▶ Direct impacts on properties, e.g., severance and loss of productive land ▶ Impacts on property accesses and connectivity, including the location of level crossings on private roads ▶ Impacts on the movement of stock, water, produce and equipment.
Sterilisation or disruption of access for mineral resources or disruption to existing worked mines	Consultation with resource interest holders will be undertaken during detail design. Where the Project may impact on likely significant deposits within the area, appropriate mitigation will be agreed with the resource interest holders.

Source: Chapter 7: Land Use and Tenure

16.14 Conclusions

A detailed EIA has been undertaken for the Project link of Inland Rail, in accordance with the requirements under Section 5.1 and 11.141 of the ToR.

Inland Rail impacts

This EIA has focused on the specific economic impacts resulting from the construction and operation of the Project in response to the EIS ToR; however, the assessment acknowledges the role of the Project, and the remaining project links, in collectively delivering the benefits of Inland Rail. In its entirety, Inland Rail will enhance Australia's existing national rail network and serve the interstate freight market. As per the *Inland Rail Programme Business Case* (ARTC, 2015a), key economic impacts of Inland Rail include:

- ▶ Lower prices for consumers as a result of lower inter-capital freight transport costs, which reduces the cost of living for households
- ▶ Positive direct net economic benefits, driven by improvements in freight productivity, reliability and availability, and benefits to the community from reduced environmental externalities, reduced road congestion and improved safety benefits. Inland Rail is stated to be economically viable with a 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 inter-capital freight is an input or output) and incomes are multiplied through the economy. The Program is anticipated to deliver a net positive impact of \$16 billion on Gross Domestic Product (\$2015) over its 10-year construction period and 50 years of operation.
- ▶ Nationally, the Program is also expected to deliver an additional 16,000 jobs at the peak of construction, and an average of 700 additional jobs per annum during operation
- ▶ Enhanced competition between rail and road freight, by providing a credible transport alternative, which will drive further innovation and efficiency
- ▶ Potential to promote the expansion and development of freight precincts around Inland Rail terminals as a result of the benefits from co-location and clustering of industries (as a result of reduced transport costs to warehousing, economies of scale and knowledge-sharing opportunities).

Economic benefits assessment

The economic benefits assessment estimates that the Project is expected to provide a total (\$2019 present value terms) of \$674.36 million 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 assessment

The Project will promote regional economic growth across the Darling Downs–Maranoa region. Using recent labour market trends and projected construction sector activity to inform workforce capacity and capability within the local region, it has been concluded that it is likely that the labour market conditions that will prevail during the construction phase of the Project will most likely be closer to those characterised by the slack labour market scenario. Under this scenario, over the construction phase, real gross regional product is projected to be \$344 million higher than the baseline level.

Under a slack labour market scenario, the Project is also expected to deliver an additional 344 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 2020 quarter 2 market conditions are highly effective, the economy may grow much faster than expected, resulting in significantly more activity in the construction sector than anticipated. If this transpires, 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 period 2020 to 2025 of 2,059 jobs per year. If labour markets are tight then the incremental benefits are smaller, with real GSP increasing by \$0.83 billion and the average number of jobs increasing by 485 per year.

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

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.

Local and regional employment, business and industry impacts

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

- ▶ The Project offers opportunities to encourage, develop and grow Indigenous, local, and regional businesses through the supply of resources and materials for the construction and operation of the Project (e.g., borrow and ballast materials, fencing, electrical installation (excluding rail systems) and instrumentation, rehabilitation and landscaping, cleaning and maintenance of construction and accommodation facilities).
- ▶ The Project offers opportunities in secondary service and supply industries (such as retail, hospitality and other support services) for businesses in close proximity to the construction footprint (including opportunities to supply the three proposed non-resident workforce accommodation in at Millmerran, Inglewood and Yelarbon). The expansion in construction activity is also likely support additional temporary flow-on demand and additional spending by the construction workforce in the local community.
- ▶ As part of Inland Rail, the Project has the potential to stimulate business and industry development at the Toowoomba Enterprise Hub in Wellcamp. 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.

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 by the permanent disturbance footprint), disruption to farm management, or changes in accessibility or connectivity to market. This may negatively impact on the productive capacity and total economic value-add from the local agricultural industry. Based on the proportion of productive agricultural land lost, it is estimated that the Project could result in a loss of \$2.85 million (value foregone) in gross agricultural production per year²⁸. ARTC will work with individual landowners 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 landscape attractions. The Social Impact Assessment (Chapter 15) 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.

Impact management

ARTC is committed to enhancing the economic benefits of the proposal while avoiding, mitigating or managing any adverse economic impacts. Accordingly, there are a range of actions that ARTC will undertake and/or require its contractor to undertake to manage the social and socio-economic impacts of the Project and enhance proposal benefits and opportunities.

28. 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 detail design.