

CHAPTER

17

Economics

INLAND
RAIL 

HELIDON TO CALVERT ENVIRONMENTAL IMPACT STATEMENT

**ARTC**

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

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17. Economics

17.1 Summary

An economic impact assessment (EIA) (refer Appendix R: Economics Technical Report) has been prepared to identify potential economic impacts of the proposed Helidon to Calvert (H2C) Project (the Project) of the Inland Rail Program (Inland Rail).

Based on the outcome of the economic impact assessment, the Project is expected to provide a total of \$147.40 million (2019) 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 and reduced environmental externalities.

The Project will also promote regional economic growth across the region. Over the period of construction, real gross regional product (GRP) for the Toowoomba and Greater Brisbane regions are projected to be \$235 million and \$814 million higher than the baseline level, respectively, under the assumption of slack labour markets.

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.

The Social Impact Management Plan (SIMP) will be implemented to manage the social and socio-economic impacts of the Project and enhance Project benefits and opportunities.

17.2 Scope of chapter

The purpose of this chapter is to assess the economic impacts of the Project. The purpose of this chapter is to:

- ▶ Establish the existing economic environment and local context, to understand the local economic context and form the basis to measure the economic impacts
- ▶ Identify potential economic benefits and impacts on affected local and regional communities and businesses
- ▶ Assess the projected economic benefits of the Project, including the basis for their estimation through a detailed economic benefits assessment

- ▶ Assess the economic significance of the Project on the regional, state and national economies
- ▶ Evaluate the potential cumulative impacts on local and regional economies resulting from the construction and operation of related projects, including adjacent Inland Rail projects
- ▶ Outline the approach to enhance economic benefits and to avoid, mitigate or manage adverse economic impacts.

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 Terms of Reference (ToR) and the Environmental Impact Statement (EIS).

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

A detailed economic assessment is provided in Appendix R: Economics Technical Report.

17.3 Terms of Reference requirements

The ToR describes the matters the proponent must address in the EIS for the Project. The economic-specific information requirements of the ToR are provided in . Appendix B: Terms of Reference Compliance Table provides a cross-reference for each ToR against relevant sections in this EIS.

TABLE 17.1: TERMS OF REFERENCE—ECONOMICS

| Terms of Reference requirements | Where addressed |
|--|---|
| 11.153. Identify the economic impacts of the project on the local and regional area and the State. 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). | Sections 17.8 to 17.12 Appendix R: Economics Technical Report, Sections 5 and 6 Benefit assessment and regional economic impact analysis is provided in Sections 17.10 and 17.11 and Appendix R: Economics Technical Report, Sections 5.4 and 5.5 |

TABLE 17.2: OTHER RELEVANT TERMS OF REFERENCE INFORMATION REQUIREMENTS

| Terms of Reference requirements | Where addressed |
|---|--|
| 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 on measures to avoid or minimise adverse impacts. The EIS should demonstrate that the project is based on sound environmental principles and practices. | Sections 17.8 and 17.9 Appendix R: Economics Technical Report, Section 5. Mitigation measures are discussed in Section 17.13, and Appendix R: Economics Technical Report, Section 7 Social impacts are discussed in Chapter 16: Social, Section 16.12, and Appendix Q: Social Impact Assessment Technical Report, Section 7 and 9. Mitigation measures are discussed In Chapter 16: Social, Section 16.11, and Appendix Q: Social Impact Assessment Technical Report, Section 8 Chapter 23: Draft Outline Environment Management Plan lists the mitigation measures for the Project |
| 11.150 The impact assessment should also evaluate and discuss the potential cumulative social impacts resulting from the proposed project in combination with other existing major projects and/or developments and those which are progressing through planning and approval processes (where public information is available) within the SIA study area. Key issues assessed should include: a) population b) workforce (construction and operation) c) workforce accommodation d) local and regional housing markets e) use of and access to community infrastructure, services and facilities (including social and health services and facilities). | b) addressed in Section 17.12 (other requirements addressed in Chapter 16: Social) Chapter 22: Cumulative impacts provides a summary of the cumulative impact assessment for the Project |

17.4 Guidelines, local and regional policy and planning

17.4.1 Coordinator-General’s Economic Impact Assessment Guideline

The EIA has been undertaken in accordance with the guidance provided by the Coordinator-General’s *Economic Impact Assessment Guideline* (Queensland Government, 2017). The guideline states:

‘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.’

17.4.2 Local and regional policy and planning

The relevant legislation, policies standards and guidelines that regulate and manage EIAs are outlined in Table 17.3.

TABLE 17.3: ECONOMIC REGULATORY CONTEXT

| Legislation, policy or guideline | Description |
|---|---|
| Commonwealth | |
| <i>Australian Infrastructure Plan</i> , Infrastructure Australia | <ul style="list-style-type: none"> ▶ The <i>Australian Infrastructure Plan</i> (the Plan) was developed by Infrastructure Australia as a long-term plan for infrastructure reform and investment in Australia. ▶ The Plan recognises that, at a national level, the efficient movement of freight into, out of and across Australia is critical to the nation’s ongoing productivity growth and competitiveness. The Plan identifies a number of challenges facing the freight network and supply chains, including constraints such as missing links, pinch points, operational restrictions, and first and last mile access challenges. ▶ The Plan highlights the importance of the Melbourne to Brisbane freight corridor in supporting population, production and employment precincts. Inland Rail will improve the efficiency, effectiveness and safety of freight movements travelling along this corridor. As both a greenfield and brownfield development, the Project is a critical link within Inland Rail and will contribute to benefits being realised, including improvements to the productivity and competitiveness of Australia’s freight sector. |
| State | |
| <i>Queensland Freight Strategy—Advancing Freight in Queensland</i> , Queensland Government (2019) | <ul style="list-style-type: none"> ▶ The <i>Queensland Freight Strategy</i> (the Strategy) sets a shared vision for the State’s freight system through a series of commitments that have the aim of guiding policy, planning and investment decision-making over the next 10 years. The vision for Queensland (QLD) is ‘<i>an integrated, resilient and safe freight system that supports the economy and community</i>’. ▶ The Strategy makes a commitment to optimise existing freight infrastructure and target investment towards creating economic opportunities. The Strategy also acknowledges the importance of smarter connectivity and access, identifying the role of competitive rail freight services in promoting the mode shift for freight from road to rail. As part of Inland Rail, the development of the Project supports the strategic intent and direction of the Strategy, by improving the efficiency of rail freight and subsequently increasing the productivity of regional and state supply chains and industry. |
| <i>South East Queensland Regional Plan 2017 (Shaping SEQ)</i> , Queensland Government | <ul style="list-style-type: none"> ▶ Shaping SEQ (South East Queensland Regional Plan, or the Plan) is the QLD Government’s plan to guide the future development of the South East QLD (SEQ) region. The Plan aims to ‘<i>set the direction for sustainability, global competitiveness and high-quality living</i>’. The planning framework for the next 25 years is based off five strategic goals: grow, prosper, connect, sustain and live. ▶ In particular, the Plan addresses ‘prosper’ through a focus on regional economic clusters, such as the Western Gateway and South West Industrial Corridor (including Ipswich), which will be further enabled by the development of Inland Rail (including the Project, which is a critical link within Inland Rail). The Plan recognises the role of Inland Rail in unlocking opportunities for the greater intensification and consolidation of industrial activities (and rail-dependent industries) within the western subregion. ▶ Additionally, the Plan recognises the role of Inland Rail in improving national freight network connections, including links to the Port of Brisbane. This will support efficient freight movements, align with the Plan’s goal of ‘connection’ and contribute to economic development throughout SEQ. |

Legislation, policy or guideline

Description

| | |
|--|--|
| <i>DRAFT South East QLD Regional Transport Plan 2018</i> , Queensland Government | <ul style="list-style-type: none">▶ The draft <i>SEQ Regional Transport Plan</i> (SEQ RTP) outlines a shared direction for shaping the region's transport system over the next 15 years. The SEQ RTP sets out regional transport priorities and actions for developing the transport system in a way that supports regional communities, growth and productivity. The SEQ RTP details the economic importance of the relationship between infrastructure, transport and land use.▶ The SEQ RTP recognises the vital role of SEQ's freight network in supporting the future growth of SEQ's export orientated industries to support a globalised economy. Inland Rail has been identified as an opportunity to improve the efficiency of SEQ's east-west freight link, by improving the availability of rail freight. Specifically, the Plan highlights the potential for Inland Rail to provide convenient access for freight to the Bromelton State Development Area and intermodal terminal. The Project is a critical link in supporting greater access through for Inland Rail through QLD.▶ Overall, the Project, as part of Inland Rail, will increase the attractiveness and competitiveness of rail freight, consistent with the planning intent of the SEQ RTP. |
| <i>SEQ Regional Freight Strategy 2007-2012</i> , Queensland Government | <ul style="list-style-type: none">▶ The <i>SEQ Regional Freight Strategy</i> (the Strategy) aims to '<i>facilitate freight moving efficiently across the transport network</i>', enhancing economic development, safety, quality of life and environmental sustainability. While the Strategy is no longer current, the document has not been superseded at the date of writing.▶ The Strategy acknowledges freight as an important issue for the region. The efficient movement of freight listed as crucial to industry and commercial productivity. Inland Rail is noted as having the potential to influence future freight movements and the development of the SEQ freight network.▶ The Strategy acknowledges the potential for Inland Rail to encourage mode shift from road freight to rail freight, in addition to opening up interstate rail freight movements entering SEQ from the west. The Project will play an important role in moving freight into SEQ from the west and is consistent with the Strategy's intent. |
| <i>Advance Ipswich</i> (2015), Ipswich City Council | <ul style="list-style-type: none">▶ <i>Advance Ipswich</i> (the Plan) provides a shared vision for the future of Ipswich, covering the social, economic and environmental priorities for the area. There are five key themes included in the Plan, two which align to the outcomes of the Project and Inland Rail—'<i>Strengthening our [Ipswich's] Local Economy and Building Prosperity (Jobs)</i>' and '<i>Managing Growth and Delivering Key Infrastructure</i>'.▶ From an economic development perspective, the region is focused on promoting economic activity and employment within the regionally significant business and industry areas at Swanbank/New Chum and Ebenezer/Willowbank. By offering opportunities to better link the rail freight network and the proposed intermodal freight terminal and industrial areas at Ebenezer, the development of Inland Rail is consistent with the Plan's intent to support the region's transport, logistics and manufacturing industries within these areas. In line with the Plan's key themes, improved transport accessibility has the potential to increase the productive output of local industries and business, increasing opportunities for local employment and economic growth. |
| <i>Ipswich and West Moreton Regional Committee—Regional Roadmap 2016-2020</i> , Regional Development Australia | <ul style="list-style-type: none">▶ The Australian Government, along with Regional Development Australia, established a network of committees to support and broker economic development opportunities for specific regions. One of the committees established was for the Ipswich and West Moreton Region. The committee's vision is that by '<i>2024, the Ipswich and West Moreton Region has been able to successfully negotiate a balance between protection of natural assets and facilitating economic growth</i>'.▶ There are five economic development themes under the Regional Roadmap, which will support various projects and initiatives. Investing in critical infrastructure needed to support growth in a large region of rural through to urban areas has been identified as one key theme. The Regional Roadmap recognises that the development of an inland freight rail line will increase the importance of the region with its distribution channels, which will help to attract new businesses to the area on a long-term basis. Subsequently, a key nominated project for growth in the region identified by the committee is Inland Rail. |

Legislation, policy or guideline

Description

| | |
|---|---|
| <i>City of Ipswich Transport Plan (iGo) (2015), Ipswich City Council</i> | <ul style="list-style-type: none">▶ The <i>City of Ipswich Transport Plan (iGo)</i> outlines the Ipswich City Council's aspirations to advance Ipswich's transport system, and guide future investment decision making. iGo highlights the importance of efficient and effective freight movements in supporting industry development and sustainable economic growth. Specifically, iGo outlines the potential for improved freight movements to unlock industrial development in Ipswich within areas such as Carole Park, Wulkuraka, Redbank, Dinmore, Bundamba, Swanbank and Ebenezer.▶ iGo recognises the importance of Inland Rail, and 'continuing the planning and development of Inland Rail', which is listed as one of the key actions of iGo. Specifically, the Project (as part of Inland Rail) has the potential to increase the accessibility and efficiency of rail freight. Inland Rail may unlock opportunities for potential connections to the proposed logistics hubs and industrial developments at Ebenezer (Ipswich) and Bromelton (Scenic Rim) via intermodal freight terminals. Overall, the Project has the potential to support economic development and jobs growth in Ipswich. |
| <i>Lockyer Economic Development Plan 2018–2022, Lockyer Valley Regional Council</i> | <ul style="list-style-type: none">▶ The <i>Lockyer Economic Development Plan (the Plan)</i> outlines the key development and investment opportunities to advance economic development in the Lockyer Valley region. Opportunities listed that are partly or fully fulfilled by Inland Rail include opportunities for major economic development initiatives and industry growth.▶ The Plan hopes to continue growing Lockyer Valley as a major packaging, distribution, logistics and freight distribution centre, for not only local producers but those from throughout QLD and northern NSW. Additionally, the Plan recognises the potential for stronger intermodal freight options that can be fulfilled by Inland Rail and aims to investigate the need for supporting infrastructure. |
| <i>Lockyer—Our Valley, Our Vision Community Plan 2017–2027, Lockyer Valley Regional Council</i> | <ul style="list-style-type: none">▶ <i>Lockyer—Our Valley, Our Vision Community Plan 2017–2027 (the Plan)</i> details the community's vision for the Lockyer Valley to the year 2027. The Plan outlines the region's proposed future direction across seven themes and details a number of strategic objectives, which underpin this direction.▶ As one of the top 10 most fertile farming areas in the world, the Lockyer Valley places a strong emphasis on agricultural development. The Project, as part of Inland Rail, will enable the region's transport network to continue to facilitate the movement of agricultural goods between QLD's south-east and west, enabling access to domestic and international markets through strategic ports along the east coast. The Project also has the potential to provide supply chain benefits and cost savings for freight companies and producers. Improvements to freight efficiency will improve the productivity of local industry and businesses, promoting employment and economic development. |

17.5 Study area

The Project traverses three local government areas (LGAs): Lockyer Valley Council and Ipswich City Council (ICC). Together, these LGA boundaries form the economic study area for assessing the local economic impacts of the Project, reflecting a local catchment for workers and economic activity.

For the purposes of the regional impact analysis, the regional economic catchment area is defined as the Australian Bureau of Statistics' (ABS) labour market region boundaries of the Australian Statistical Geography Standard that captures the integrated regional economy within which the Project is located. The Project crosses to labour market regions, the Toowoomba region (77 per cent) and the Greater Brisbane region (23 per cent).

Figure 17.1 shows the economic study area and the regional economic catchment.

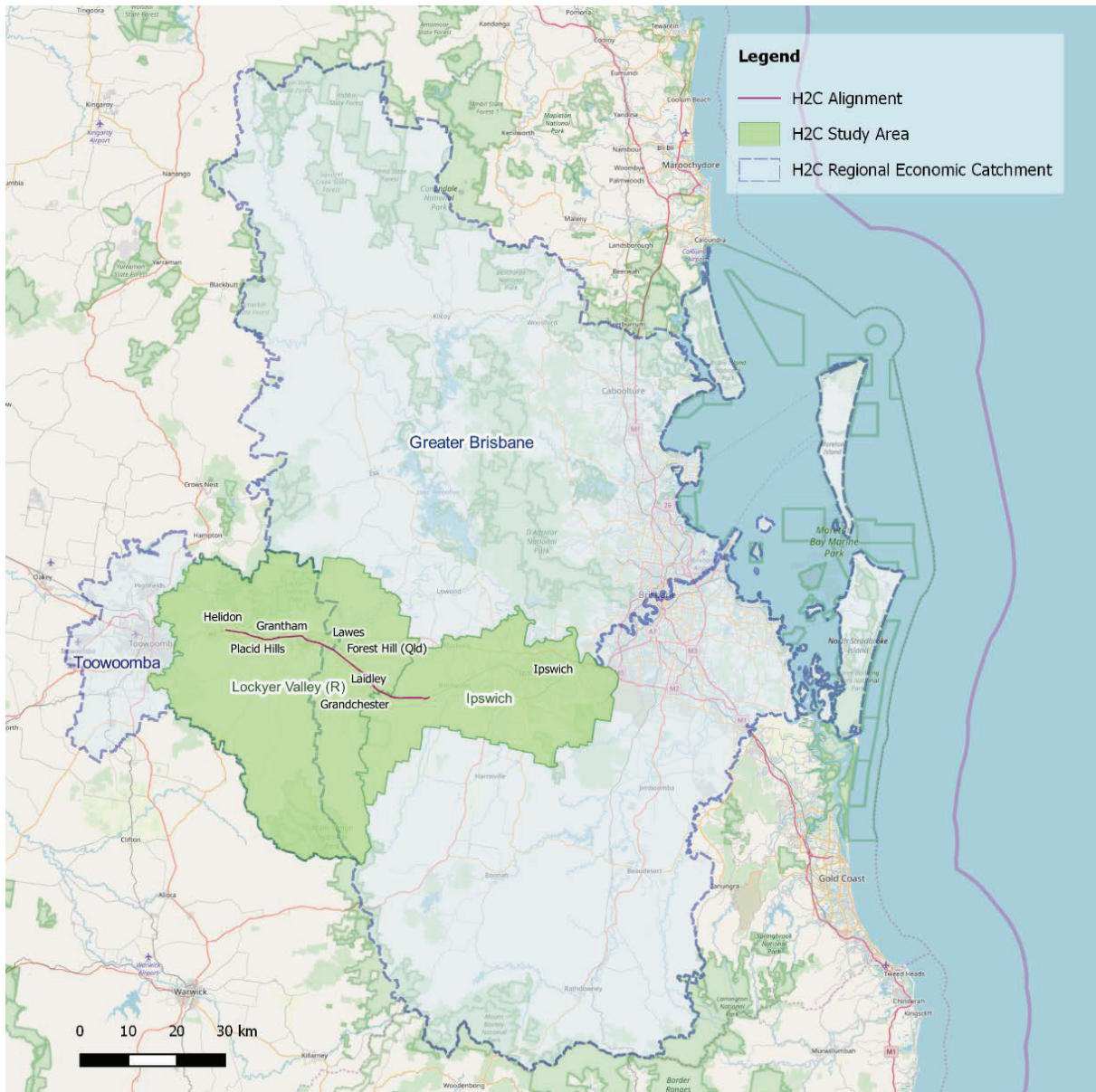


FIGURE 17.1: ECONOMIC STUDY AREA AND REGIONAL ECONOMIC CATCHMENT

17.6 Methodology

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

17.6.1 Existing economic environment

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

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

- ▶ Strategic economic development, transport and community plans for the study area and regional economic catchment (refer Section 17.4)
- ▶ Data from ABS (ABS, 2016a; ABS, 2016b; ABS, 2016c; ABS, 2016d; ABS, 2017a; ABS, 2017b; ABS, 2019a; ABS, 2019b; ABS, 2019c; ABS, 2020)
- ▶ Queensland Government Statisticians Office (QGSO) Queensland Regional Profiles—Local Government Area. Population Projections (QGSO, 2019), 2018 edition (last reviewed 2019) (QGSO, 2019)
- ▶ Australian Government's LGA Data tables—Small Area Labour Markets—March quarter 2019 (Department of Employment, Skills, Small and Family Business, 2019a) and Small Area Labour Markets publication (Department of Employment, Skills, Small and Family Business, 2019b).

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

17.6.2 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. An incremental cost-benefit analysis (CBA) approach assessing each link of Inland Rail individually and in isolation 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 for the EIA draws from the existing literature and guidelines surrounding the use of CBA in the economic appraisal of infrastructure projects, including, but not limited to:

- ▶ Infrastructure Australia's (IA) *Assessment Framework* (Infrastructure Australia, 2018)
- ▶ QLD Government's *Project Assessment Framework* (PAF) guidance material (Queensland Treasury, 2019)
- ▶ Transport for NSW's *Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives* (Transport for New South Wales, 2018b)—nationally recognised guidelines for transport appraisal
- ▶ The Australian Transport Assessment and Planning (ATAP) guidelines (ATAP, 2019)

17.6.3 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 was developed to examine the flow-on impacts from the Project on the broader economy. These impacts have been modelled using KPMG-SD, a proprietary regional CGE model of the Australian economy developed and maintained by KPMG.

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

The regional economy is represented by the Toowoomba and Greater Brisbane labour market regions.

17.6.4 Cumulative impact assessment

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

This cumulative impact assessment has two components:

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

17.6.5 Limitations of the assessment methodology

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

- ▶ This assessment has not been prepared to inform financial or commercial decision-making processes. The sole purpose of the impact assessment is to meet the requirements of the Coordinator-General's ToR
- ▶ Demand inputs to the economic benefits assessment have been sourced from the freight demand projections developed by ACIL Allen Consulting for the Inland Rail Business Case (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.
- ▶ Due to the Project's overall length, and the significant infrastructure elements, it is expected to represent an investment of up to \$1 billion (ARTC, 2017a)—this includes both direct construction costs and indirect costs. Indirect costs include items such as: 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.

- ▶ The assessment assumes capital expenditure profile of approximately \$565 million, based on 2019 dollars, generally consistent with the *Inland Rail Programme Business Case* (ARTC, 2015a). The assessment capital cost profile 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.
- ▶ A large proportion of the benefits of Inland Rail stem from improving the connection between producers and markets; through to both domestic markets in cities and international markets through ports. An incremental EIA approach assessing each link of Inland Rail individually and in isolation will not capture the full impact (positive or negative) that is expected to be delivered upon completion of the entire Melbourne to Brisbane connection.

Australian Rail Track Corporation (ARTC) Statement

Although further costs and other technical and economic data is expected as each project progresses through design development, the 2015 Inland Rail Business Case endorsed by the Australian Government is currently the most detailed assessment for Inland Rail. 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 *Inland Rail Business Case* (ARTC, 2015).

17.7 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 *2016 Census of Population and Housing* (ABS, 2016b; ABS, 2016c). This information may not reflect recent changes in demographic and employment outcomes resulting from the changes to market conditions during Quarter 2, 2020. Further details of the socio-demographics of the study area can be found in Chapter 16: Social and Appendix R: Economics Technical Report.

17.7.1 Labour market and employment

17.7.1.1 Employment by industry

Figure 17.2 shows that the sectoral distribution of employment for local residents (based on place of usual residence) is diverse, reflecting the study area's land use, comprised of rural and regional landscape and urban footprint.

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

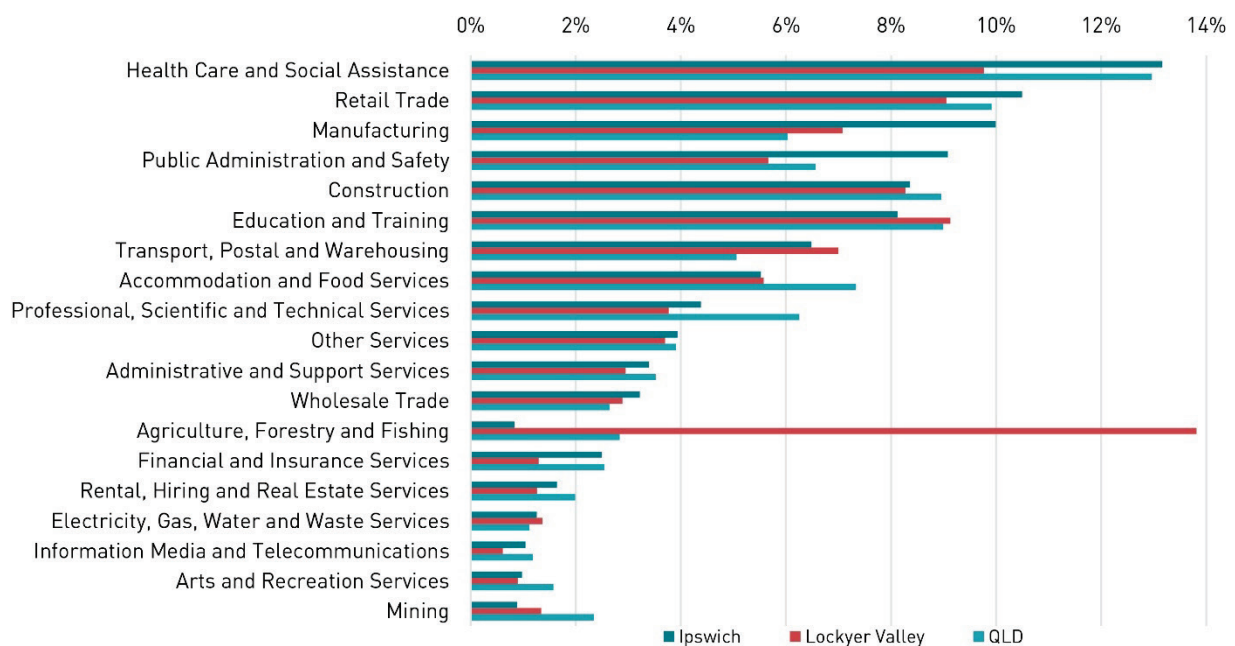


FIGURE 17.2: EMPLOYMENT BY INDUSTRY, STUDY AREA
Source: ABS, 2016b

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

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

17.7.1.2 Occupation

The study area's primary occupations of employment reflect the region's industry profile and distribution of employment. At the broadest level, the area has a higher proportion of Technicians and Trade Workers (15.1 per cent), Labourers (13.5 per cent) and Machinery Operators and Drivers (10.0 per cent), than the QLD average (14.3 per cent, 10.5 per cent and 6.9 per cent, respectively). Figure 17.3 outlines the local workers occupations in the study area.

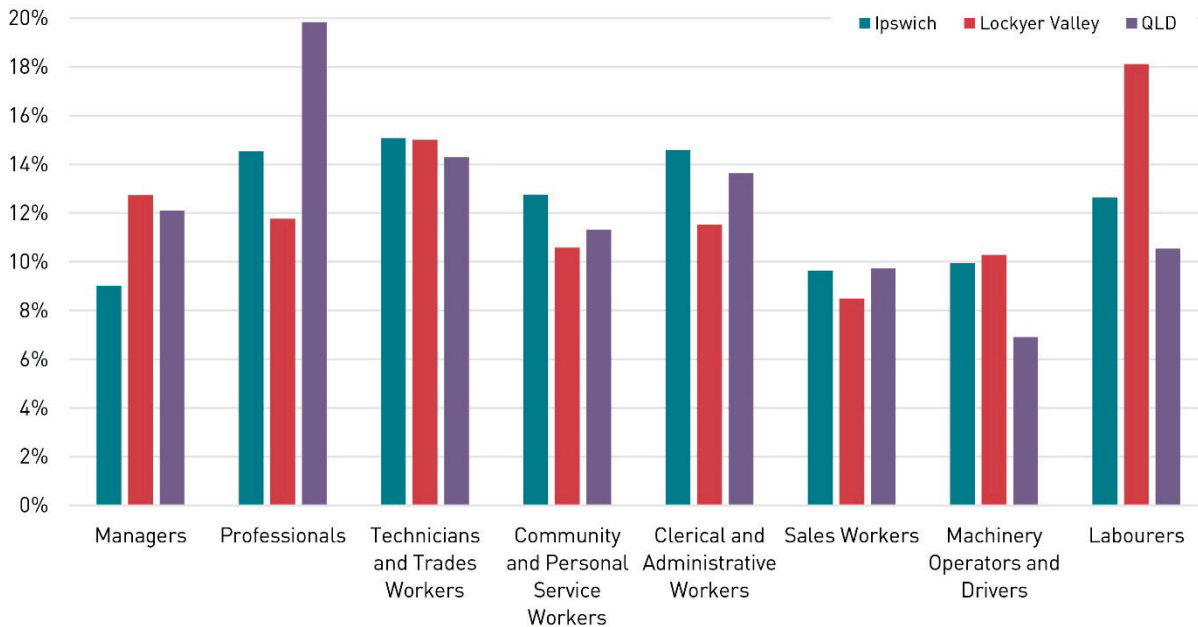


FIGURE 17.3: LOCAL WORKERS OCCUPATION, STUDY AREA

Source: ABS, 2016b

17.7.1.3 Construction labour availability

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

The Australian Industry Group (AiGroup) *Construction Outlook* (2018a) found that, at a national level, businesses are reporting widespread and increasing difficulties in sourcing skilled labour. A national perspective of labour availability can be used to identify trends in skills shortages. According to the Productivity Commission (2014), workers in the construction industry are likely to be more geographically mobile because of the inherent project-based or seasonal nature of the work.

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 (AiGroup, 2018a). It is most likely that these shortages in labour availability are for specific specialist trades.

17.7.1.4 Labour force

According to the Australian Government’s quarterly regional estimates of unemployment, as at December 2019, there were a total of 9,607 unemployed persons in the study area, and 85,172 across the Toowoomba and Greater Brisbane labour market regions. 88.7 per cent of unemployed persons in the study area are located in Ipswich, which also has the highest unemployment rate, at 7.5 per cent. The unemployment rate across the regional economic catchment is 6.1 per cent in Toowoomba and 4.4 per cent in Greater Brisbane; this is compared to an unemployment rate of 6.1 per cent across QLD (ABS, 2016b).

For the December 2019 quarter, the labour force participation rate across the study area was lower than the QLD average (Table 17.4). The lowest rate of labour force participation was in Lockyer Valley at 65.9 per cent, followed by Ipswich at 71.2 per cent. The regional economic catchment labour force participation rate is comparable to the QLD rate of 78.7 per cent.

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

TABLE 17.4: SUMMARY OF LABOUR FORCE CHARACTERISTICS, DECEMBER 2019

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

Source: Department of Employment, Skills, Small and Family Business, 2019b; ABS, 2019b (12-month moving average); ABS 2016b

Table note: Participation rate for working age population 15 to 64 years.

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

17.7.1.5 Indigenous labour force

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

The labour force participation rate for the Indigenous population in the regional economic catchment was 57.8 per cent in the Toowoomba region and 59.2 per cent in Greater Brisbane, compared to the rate for the non-Indigenous population at 76.9 per cent and 78.3 per cent respectively. Across the study area, the labour force participation rate for the Indigenous population is low at 56.6 per cent (compared to a labour force participation rate of 70.3 per cent for the total population).

17.7.1.6 Youth labour force

As outlined in Table 17.5, the youth unemployment rate (persons aged 15 to 24 years), across the study area and regional economic catchment, is significantly higher than the equivalent unemployment rates for the total labour force. This differential is greatest in the Toowoomba region, where the unemployment rate is more than triple the total unemployment rate (15.1 per cent compared to 4.4 per cent). In absolute terms, the youth unemployment rate is highest in Ipswich, where close to one fifth of the youth labour force are unemployed (19.3 per cent).

TABLE 17.5: YOUTH LABOUR FORCE, 2016

| Area | Youth labour market | | Total labour force | |
|------------------|---------------------|---------------|--------------------|---------------|
| | Unemployment | Participation | Unemployment | Participation |
| Lockyer Valley | 15.6% | 57.6% | 5.9% | 65.9% |
| Ipswich | 19.3% | 63.7% | 7.5% | 71.2% |
| Toowoomba | 15.1% | 65.6% | 4.4% | 74.9% |
| Greater Brisbane | 16.2% | 64.5% | 6.1% | 78.6% |

Source: Department of Employment, Skills, Small and Family Business, 2019b; ABS 2016b

Table note: Participation rate for working age population 15 to 64 years.

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

17.7.1.7 Industry by employment

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

The study area is a place of work for approximately 73,513 persons (who live both within and outside the catchment area), which reflects the number of occupied jobs located within the study area. Close to 85 per cent of these jobs are located in Ipswich. Industry by employment in the study area is shown in Figure 17.4.

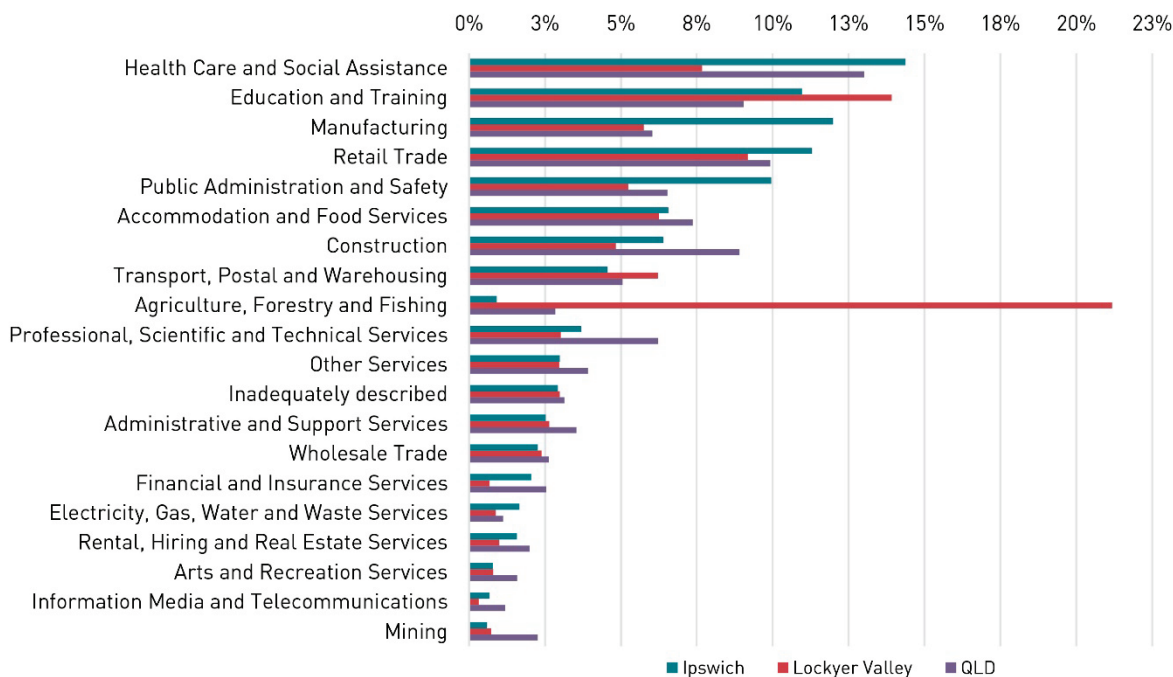


FIGURE 17.4: INDUSTRY BY EMPLOYMENT, STUDY AREA

Source: ABS, 2016b

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

Within the Lockyer Valley, Agriculture, Forestry and Fishing is the largest industry of employment, accounting for 21.2 per cent of jobs in the area (2,372 jobs). Within this industry, most workers are employed in the Sheep, Beef Cattle and Grain Farming sector (532 jobs), which is reflected in the local business and industry profile (Section 17.7.2).

The strength of the Lockyer Valley's agricultural sector highlights the importance of supply chain efficiency in supporting the area's economy. There are opportunities offered by the Project to improve the productivity of the local industry by reducing the distance between dispersed agricultural activities to processing facilities and markets. These impacts are outlined in the economic benefits assessment (Section 17.10).

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

17.7.2 Local businesses and industry

17.7.2.1 Agriculture industry

Agriculture is a significant industry for Lockyer Valley, and offers export opportunities for the region, particularly for agricultural and livestock products. Lockyer Valley is located within the Toowoomba agricultural region.

In 2017–18, the gross value of total agricultural production in the Toowoomba region was \$348 million, 3.0 per cent of the total gross value of agricultural production in QLD (\$13 billion) (ABS, 2016a). Measured as a proportion of total agricultural production, the region's main agricultural products are poultry (\$50 million), followed by sweet corn (\$44 million) and lettuce (\$36 million). The agriculture industry offers significant export opportunities for the region, particularly for agricultural and livestock products.

According to the *Queensland Agricultural Land Audit* (DAFF, 2013), the predominant industry within Lockyer Valley is horticulture production, which contributes significantly to QLD's overall horticulture production. Vegetable production is dominant within Lockyer Valley, with the area containing major producers of many fruit and vegetables, as well as milk, beef and grain enterprises. This is representative of the primary commodities of production across the broader Toowoomba region.

As at June 2018, there were a total of 173 employing businesses within the Agriculture, Forestry and Fishing industry in the Scenic Rim (a further 653 were non employing), and 33 employing businesses in Ipswich (318 non- employing) (ABS, 2019a).

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

17.7.2.2 Tourism industry

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

According to Tourism Research Australia, Ipswich receives an average 1.2 million visitors per year (925,000 domestic daytrip visitors), with tourism expenditure total of approximately \$217 million annually. There are 1,211 recorded tourism businesses located in Ipswich (Tourism Research Australia, 2017a). The Lockyer Valley receives a further 347,100 visitors annually (average), with tourism expenditure total of approximately \$94 million annually. 250,000 of those visitors are domestic daytrip visitors (Tourism Research Australia, 2017b).

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

- ▶ Lockyer National Park
- ▶ Laidley Cultural Centre.

As identified in Chapter 16: Social, there are a number of short-term accommodation options located in close proximity to the Project alignment.

17.7.2.3 Mineral, petroleum and gas resource interests

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

Mineral resource interests

- ▶ Two mining lease permits held by Neville Williams Perkins (located over 500 metres (m) offset to north of alignment)
- ▶ Three mining lease permits (two granted, one application) held by Helidon Sandstone Industries Pty Ltd (located over 450 m and one over 750 m offset to north of alignment)
- ▶ Two mining lease permits held by Peter James Stephens (located over 900 m offset to north of alignment)

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

Pipeline licences

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

There are no petroleum and gas exploration or production permits granted within the study area.

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

17.7.2.4 Local construction business

There are a number of construction businesses located within the study area, with a total of 1,024 employing businesses and a further 1,447 non-employing businesses across Ipswich and the Lockyer Valley. There are a further 458 employing businesses across the study area in the Transport, Postal and Warehousing industry, with 300 of these businesses located in Ipswich (ABS, 2019a).

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

- ▶ Civil construction companies
- ▶ Earthmoving services
- ▶ Diesel and petrol suppliers
- ▶ Plumbers, electricians, mechanics and building contractors
- ▶ Engineering and machining services
- ▶ Surveyors and landscapers
- ▶ Transport companies
- ▶ Steel fabrication companies

- ▶ Hardware and gardening service suppliers
- ▶ Accommodation facilities
- ▶ Hotels and meeting venues
- ▶ Shops which may experience either direct Project demand or personnel expenditure.

17.8 Potential impacts

17.8.1 Inland Rail impacts

Consistent with the requirements of the ToR, this EIA has focused on the specific economic impacts resulting from the construction and operation of the Project. However, the assessment acknowledges the role of the Project, and the remaining project links, in collectively delivering the benefits of Inland Rail. In its entirety, Inland Rail will enhance Australia's existing national rail network and serve the interstate freight market. Based on the *Inland Rail 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. Inland Rail 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. Inland Rail is anticipated to deliver a net positive impact of \$16 billion on gross domestic product (GDP) over its 10-year construction period and 50 years of operation
- ▶ Nationally, Inland Rail is expected to deliver an additional 16,000 jobs at the peak of construction, and an average of 700 additional jobs per annum during operations
- ▶ 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).

17.8.2 Project impacts

17.8.2.1 Direct employment

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

- ▶ **Pre-construction:** A workforce of between 20 to 50 personnel would be required for pre-construction activities in late 2021 (following completion of the EIS process, detailed design, successful procurement of the construction contractor and subject to obtaining all relevant approvals). This is likely to provide employment for land surveyors, ground clearance crews, access track construction crews, cultural heritage surveyors, and contractors developing laydown areas, flash-butt welding facilities and administration facilities.

Construction: The size and composition of the construction workforce will vary depending on the construction activities being undertaken and the staging strategy adopted. The IAS (ARTC, 2017b) for the Project estimated the workforce to be 1,800 FTEs, which was a proportional figure based on the overall capital cost for a 10-year program-wide delivery period. As a result of further detailed assessment and design advancement, the Project currently estimates that an onsite construction workforce will peak at 410 FTEs (expected between weeks 56–57). An annual average of 190 FTEs may be required onsite across the full construction period. Over the estimated construction period of 200–205 weeks, this equates to approximately 730–750 FTEs. The Project construction workforce estimate excludes project planning delivery personnel, Inland Rail support function, pre-construction design personnel, technical support services and review/verification labour effort.

Operation: A workforce of 15 to 20 personnel is expected for the Project's operation.

17.8.2.2 Local employment

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

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

The Project represents a source of potential training and career pathway development. As detailed in the Social Impact Assessment (refer Chapter 16: Social), consultation with local stakeholders highlighted an opportunity for training programs to facilitate access to the Project including opportunities through QLD Government-funded Regional Skills Investment Scheme (RSIS) initiatives being undertaken by local governments.

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

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

17.8.2.3 Indigenous participation

The Project offers the potential to increase Indigenous employment and business opportunities. ARTC has a strong commitment to training Indigenous people and commits to working with Indigenous communities to strengthen the capacity of the local workforce to participate in the Project. The Yuggera Ugarapul Aboriginal Party Cultural Heritage Management Plan (CLH017009) includes commitments to employment and business involvement.

17.8.2.4 Changes to housing and accommodation

Most of the workforce are anticipated to be drawn from the local region, within safe driving distance (typically within one hour) to the Project. It is anticipated that the workforce will return to their place of residence at night, minimising demands for local workforce accommodation. There is a possibility that some construction workers will be recruited from the broader region and will be required to live locally while they are on roster. These numbers are likely to be small, and within the capacity of existing short-term accommodation facilities in the Ipswich, Scenic Rim and Logan LGAs. Refer to the Social Impact Assessment (Chapter 16: Social) for further detail on the nature of changes to housing and accommodation.

17.8.2.5 Indirect employment

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

17.9 Business and industry impacts

The following business and industry impacts have been identified through engagement and analysis of local businesses.

17.9.1 Agriculture industry

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

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

17.9.2 Loss of agricultural land

As detailed in Chapter 8: Land use and tenure, the Project will result in the sterilisation of productive agricultural land within the permanent disturbance footprint. The agricultural land class approach classifies a particular agricultural area based on land and soil information and is used for land audit purposes. 'Class A' land is suitable for a wide range of current and potential crops with little limitations to production and 'Class B' land is suitable for a narrow range of current and potential crops but is highly suitable for pastures.

The scale of the total loss (within permanent disturbance footprint) of Class A and Class B agricultural land is anticipated to be low. At a local government level, within the Lockyer Valley, the permanent disturbance footprint traverses approximately 86.81 ha of Class A (0.1 per cent) and 1.72 ha of Class B (less than 0.1 per cent) land. Within Ipswich, the permanent disturbance footprint traverses approximately 11.47 ha of Class A (0.1 per cent) and 39.23 ha of Class B (0.9 per cent) land.

Overall, the permanent disturbance footprint will traverse 0.11 per cent of the study area's productive agricultural land (269.42 ha impacted out of a total productive area of 220,446.60 ha). This proportion can be used to estimate, at a high level, the potential foregone value of agricultural production resulting from the Project.

In 2017–18, the gross value of agricultural production in the Lockyer Valley and Ipswich LGAs was \$15.8 million (Queensland Government, 2019c). It is estimated that the Project could result in a loss of approximately \$17,274 (value foregone) in gross agricultural production per year.¹

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

17.9.2.1 Land fragmentation and disruption to access and infrastructure

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

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

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

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

17.9.2.2 Disruption to stock and product movement

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

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

Stock movements will be considered during detailed design and consultation will be undertaken with landholders who have grazing properties that may be affected by the Project (and will identify appropriate mitigation measures where impacts are identified).

17.9.2.3 Improvements in supply chain efficiency

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

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

17.9.3 Tourism industry

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

As detailed in Chapter 16: Social, specific impacts may include changes and/or disruptions:

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

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

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

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

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

17.9.4 Mineral, petroleum and gas resource interests

17.9.4.1 Mineral resource interests

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

17.9.4.2 Petroleum interests

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

17.9.5 Local businesses

17.9.5.1 Construction materials

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

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

Overall, the Project's local supply arrangements will present an opportunity to develop and grow local and regional businesses. This will be supported by the SIMP, which includes measures to promote local business and industry participation.

17.9.5.2 Transportation

During construction, there will be opportunities for local transportation businesses to bring construction materials to laydown areas and remove waste materials and recyclables from construction compounds. During operation, the Project will improve the competitiveness of rail freight, decreasing the demand for heavy road transport. This may impact on trading levels for local transportation businesses.

17.9.5.3 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. The increases activity will support additional flow-on demand and additional spending by the construction workforce in the local community. Local retail businesses have the potential to benefit from increased trade. Sustainability procurement strategies will be implemented to ensure that local, regional and Indigenous businesses have opportunities to supply the Project and benefit from increased local demand.

17.10 Economic benefits assessment

17.10.1 Methodology

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

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

Figure 17.5 outlines a typical CBA approach and its application to the Project EIA.

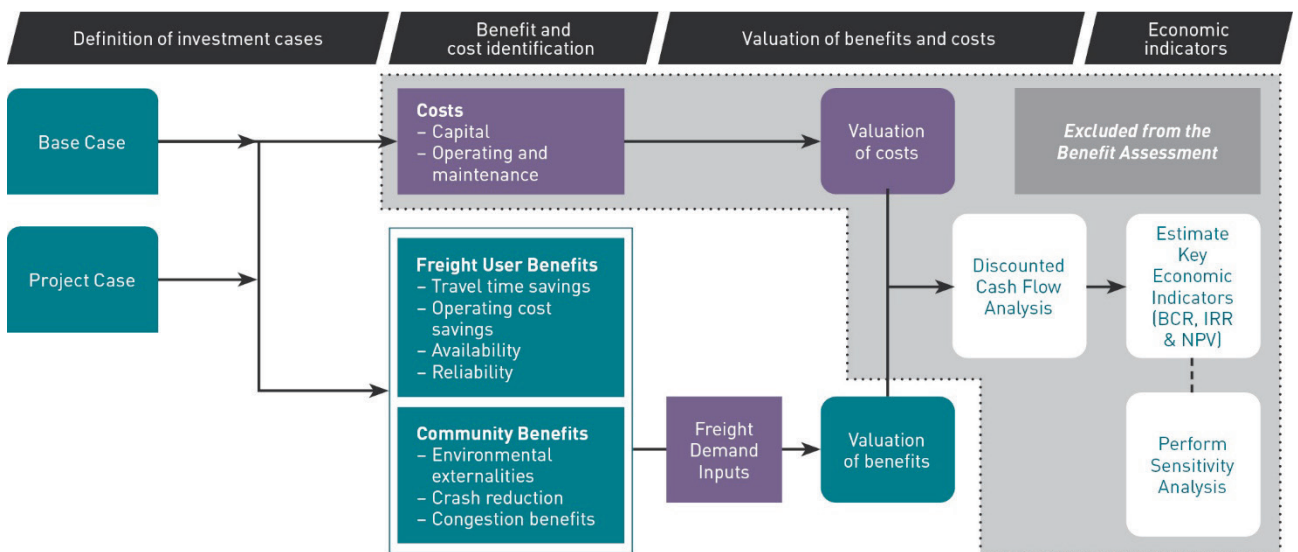


FIGURE 17.5: COST-BENEFIT ANALYSIS APPROACH AND THE ECONOMIC BENEFITS ASSESSMENT

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 consequence, the estimation of economic indicators is not applicable to this analysis, rather the focus is discounted present values of the benefits.

17.10.2 Base Case and Project Case

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

- ▶ The **Base Case** adopted for this benefit assessment is a 'do nothing' scenario, where it is assumed that no other sections of 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 H2C. The economic benefits estimated as part of the analysis assess just those impacts that would be likely if freight operators were to respond to the completion of this individual Project.

Key assumptions and parameters adopted for use in the benefit assessment are in Table 17.6.

Freight demand inputs to the benefit assessment have been sourced from the freight demand projections developed by ACIL Allen for the *Inland Rail Programme Business Case* (ARTC, 2015a). The assumptions underpinning these demand projections are documented in Chapter 7 of the *Inland Rail Programme Business Case* (ARTC, 2015a). Refer EIS Appendix R: Economics Technical Report for further detail on the demand inputs and assumptions that underpin this assessment.

TABLE 17.6: ECONOMICS BENEFITS ASSUMPTIONS

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

Table note

* While noting the operational life of the Project is 100 years, the benefits assessment has been conducted for a 50-year appraisal period in line with best practice methodologies, as specified in the ATAP guidelines (ATAP, 2019).

17.10.3 Benefit categories

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

- ▶ **Freight benefits:** these benefits include the changes in cost to freight operators by switching mode from road to rail
- ▶ **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 can be found in Appendix R: Economics Technical Report.

17.10.4 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 \$147.40 million

in incremental benefits to the project area² (at a 7 per cent discount rate). This consists of \$112.41 million in freight benefits and \$34.99 million in community benefits.

Observing the composition of benefits, the largest share of benefits for the Project is freight operating cost savings, representing approximately 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 approximately 76 per cent of the total projected benefits for the Project.

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

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

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

TABLE 17.7: RESULTS OF THE ECONOMIC BENEFITS ASSESSMENT, PRESENT VALUE TERMS (\$2019)

| Benefits | Discount rate | | |
|-----------------------------|-------------------|-------------------|------------------|
| | 4% | 7% | 10% |
| Freight benefits | \$220.22 m | \$112.41 m | \$66.39 m |
| Travel time savings | \$15.16 m | \$7.91 m | \$4.74 m |
| Operating cost savings | \$133.68 m | \$72.36 m | \$44.76 m |
| Improved availability | \$55.59 m | \$24.72 m | \$12.80 m |
| Improved reliability | \$15.80 m | \$7.42 m | \$4.09 m |
| Community benefits | \$64.47 m | \$34.99 m | \$21.69 m |
| Crash reduction | \$8.84 m | \$4.80 m | \$2.97 m |
| Environmental externalities | \$25.71 m | \$13.96 m | \$8.65 m |
| Road decongestion benefits | \$29.91 m | \$16.23 m | \$10.06 m |
| Total benefits | \$284.69 m | \$147.40 m | \$88.08 m |

17.10.5 Cost–benefit analysis: Inland Rail Business Case

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.

Although further costs and other technical and economic data are expected to be refined 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 Program. For this reason, and in the interests of maintaining consistency, cost and demand profiles for the Inland Rail Program’s economic impact assessments have been based on the *Inland Rail Programme Business Case* (ARTC, 2015a).

The results of this analysis, as presented in the business case, are provided in Table 17.8.

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

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

Source: 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.

Chapter 2: Project rationale provides further discussion on general long-term benefits of the Project and Inland Rail.

17.11 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.

The regional economy is represented by the Toowoomba and Greater Brisbane labour market regions.

17.11.1 Key considerations

The direct and indirect economic impacts during Project construction 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, during which the Project's capital expenditure (CAPEX) program is completed.

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

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

The key modelling assumptions and inputs that underpin the regional economic assessment results are provided in Appendix R: Economics Technical Report.

It is noted that the analysis was largely completed before the economic shock associated with the 2020 Quarter 2 market conditions. In particular, the baseline representation of the economy does not account for 2020 Quarter 2 market conditions. It is important to note that the results of the CGE modelling are subject to the following limitations.

Construction phase

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

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

Operational phase

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

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

17.11.2 Regional economic impact analysis results

Potential impacts of the Project on the Toowoomba and Greater Brisbane regions during construction are summarised in Table 17.9.

TABLE 17.9: SUMMARY OF THE DIRECT AND INDIRECT ECONOMIC IMPACTS OF THE PROJECT CONSTRUCTION

| Measure | Toowoomba SA4 ¹ | | Greater Brisbane GCCSA ² | |
|--|----------------------------|----------------------|-------------------------------------|----------------------|
| | Slack labour markets | Tight labour markets | Slack labour markets | Tight labour markets |
| Additional real GRP (\$2018–19) | \$235 m | \$81 m | \$81 m | \$29 m |
| Average annual additional direct and indirect employment (persons) | 337 | 73 | 108 | 21 |

Table notes:

1. Queensland Statistical Area Level 4 (SA4)
2. Greater Capital City Statistical Area

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

The importance of the labour market assumption is reflected in the employment results; in the scenario with slack labour markets, the construction of the Project generates an additional 337 jobs per annum in Toowoomba and 108 jobs per annum in Greater Brisbane (direct and indirect employment).³

With tight labour markets the increase in jobs is significantly less, at 73 jobs per annum (Toowoomba) and 21 jobs per annum (Greater Brisbane). Under tight labour markets, wages are bid up to attract additional workers. That is, the labour market response is dominated by workers moving from their current job to a higher paying job. With slack labour markets, there are sufficient unemployed and under-employed workers to accommodate the increase in demand for labour without increasing real wages.

Figure 17.6 and Figure 17.7 summarise the macroeconomic results for the Toowoomba and Greater Brisbane regions in the context of the rest of the QLD and Australian economies.

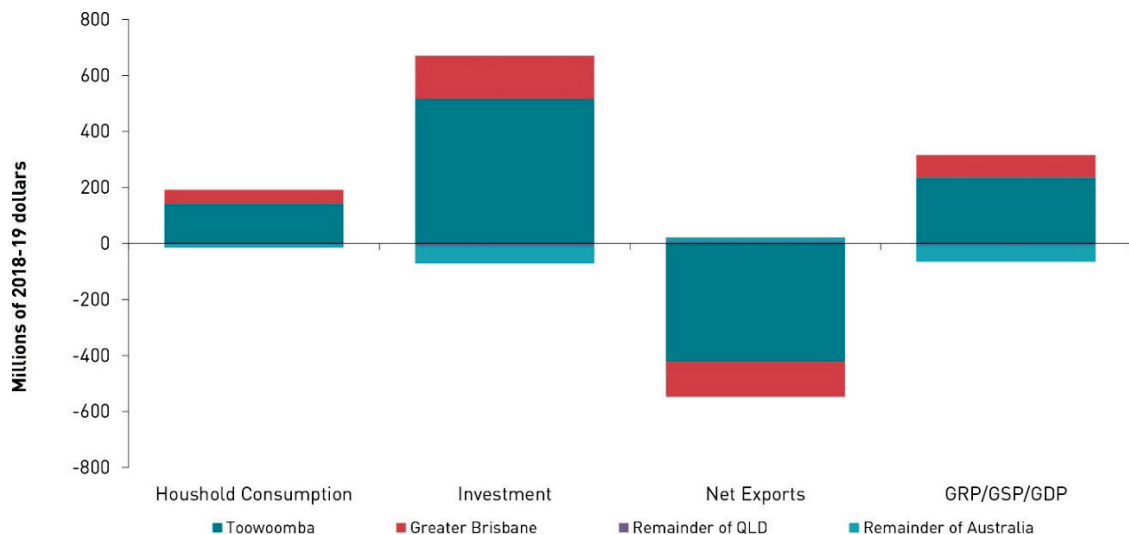


FIGURE 17.6: MACROECONOMIC RESULTS: CONSTRUCTION PHASE, SLACK LABOUR MARKETS

Note: GRP/GSP/GDP: gross regional product/gross state product/gross domestic product

3. To put this in context, the planned workforce requirements of the Project during the construction phase is expected to peak at approximately 410 FTEs. Just over 80 per cent of the Project CAPEX is expended in the period 2021–2023. The average annual number of additional jobs in those three years for Toowoomba and Greater Brisbane is about 550 and 180 in slack labour market conditions and 120 and 30 in tight labour market conditions.

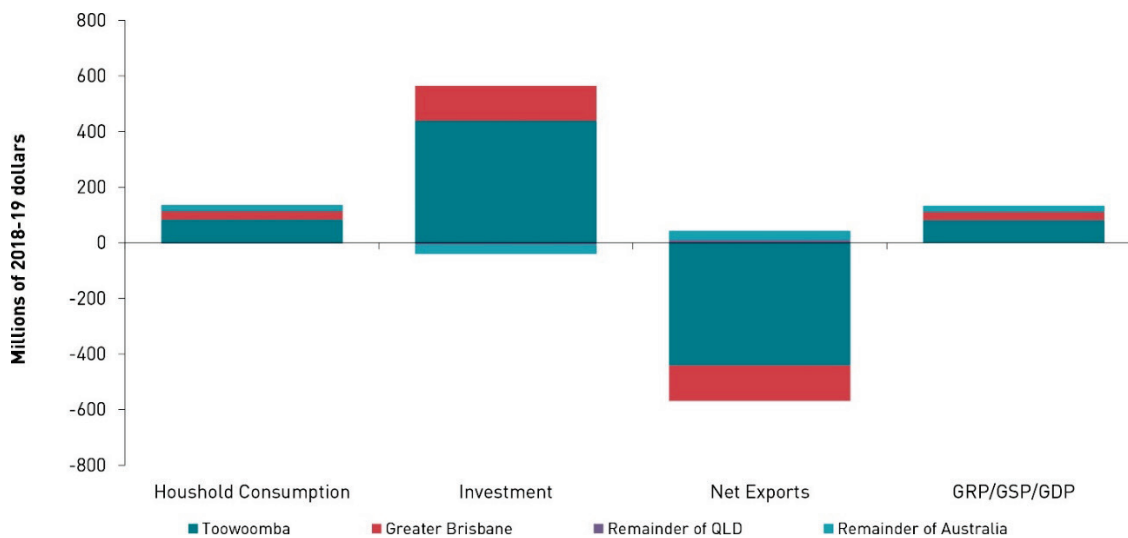


FIGURE 17.7: MACROECONOMIC RESULTS: CONSTRUCTION PHASE, TIGHT LABOUR MARKETS

Note: GRP/GSP/GDP: gross regional product/gross state product/gross domestic product

The simulation results indicate that the economic impacts of the Project during construction are concentrated in the Toowoomba region. Net exports, which include inter-regional and international exports and imports, may potentially be negatively impacted. The resources required to complete the construction of the Project are sourced locally and from interstate and overseas suppliers. At the local level, higher costs induce the cost-sensitive trade-exposed sectors to release resources to accommodate the investment demands of the Project.⁴

The modelled direct and indirect impacts of the Project on employment are presented in Figure 17.8.

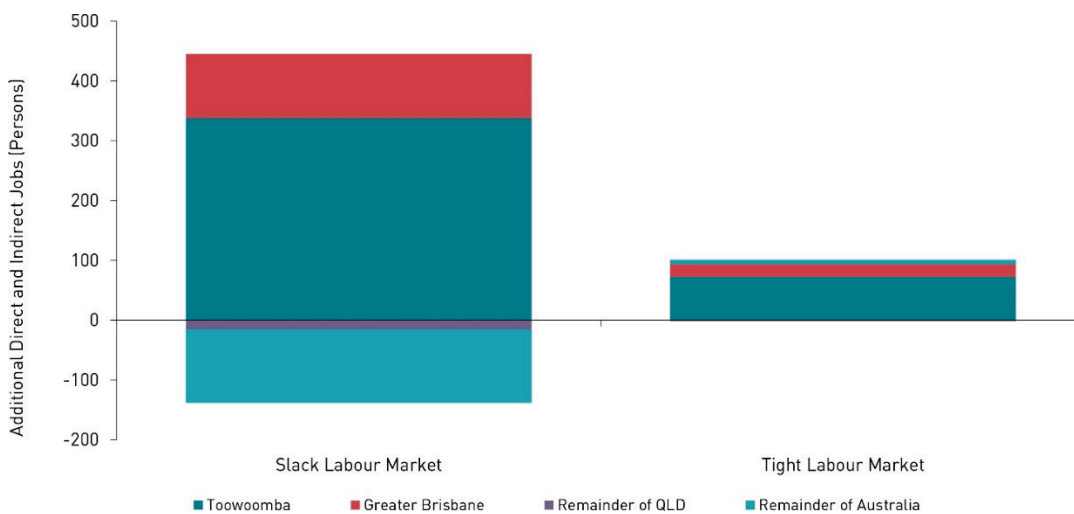


FIGURE 17.8: DIRECT AND INDIRECT EMPLOYMENT RESULTS: CONSTRUCTION PHASE

4. The CAPEX program associated with the Project constitutes a temporary expenditure shock to the economy. Some of the goods and services purchased by customers in the Toowoomba and Greater Brisbane economies are imported from interstate and overseas. CAPEX, particularly at the regional level, is more import than other types of expenditure. This means that a CAPEX shock will, other things equal, result in net exports contracting. In addition, it is assumed that businesses do not respond to the temporary shock by increasing their productive capacity through investment in fixed capital. Instead, businesses use more labour with their existing fixed assets (e.g. plant and equipment), which increases costs and reduces competitiveness. In addition, where it is profitable to do so, businesses switch some of their productive capacity towards accommodating the demands associated with the Project and away from sales to other customers (e.g. to interstate and overseas customers). The results reported are roughly linear for small deviations in the assumed CAPEX. For example, if the Project CAPEX was increased by 5 per cent (from \$565 million to \$621 million) then net exports for Toowoomba and Greater Brisbane would fall by a further 5 per cent.

Recent labour market trends can be used to inform workforce capacity and capability within the local region. In Greater Brisbane, over the four quarters ending in the December quarter 2019, the unemployment rate averaged 6.1 per cent (Department of Education, Skills and Employment, 2019), and the participation rate averaged 78.6 per cent over the 12 months ending in December 2019 (ABS, 2020). Labour market conditions in Greater Brisbane appear to have been stable, with the unemployment rate within the range of 6.0–6.2 per cent since the December quarter 2018 and the participation rate staying above 78.2 per cent since the start of 2019. Sustained high unemployment rates coupled with an upward trend in participation rates suggests that the labour market in the Greater Brisbane area is not stretched. The labour market conditions in Toowoomba also suggest a degree of slackness based on data as at December 2019. Although the average annual unemployment rate declined from 5.5 per cent in the December quarter of 2018 to 4.8 per cent in the December quarter of 2019 (Department of Education, Skills and Employment, 2019), the total number of employed persons has fallen by 16.6 per cent from the corresponding period in 2018 (ABS, 2020). The rolling 12-month average participation rate in Toowoomba has been declining since the start of 2019. As at December 2019, it was down from its peak in January 2019 of 78.5 per cent to 74.9 per cent (ABS, 2020). The labour market indicators suggest that economic activity has been declining in the region and there has been a build-up of a potential pool of working-age people who are not currently in the labour force. The career and training opportunities offered by the Project can help re-skill or up-skill this group of potential workers. The official labour force data at this level of regional granularity is quite volatile and it is important to consider these statistics in a broader context, including with regard to labour market conditions at the State and national levels.

At the time of writing, the latest available regional labour market statistics in the *Small Area Labour Markets* (SALM) (Australian Government, 2019) contained data to December 2019. More recent macro-economic data suggest that labour market conditions may have deteriorated further and the economic shock associated with 2020 Quarter 2 market conditions may add considerable downside risks to the broader economy in the short-to-medium term. The National Accounts data for Quarter 4, 2019 show domestic demand has remained soft, even before recent natural disaster events (i.e. bushfires and floods) and the global coronavirus outbreak.

Economic conditions are anticipated to deteriorate markedly in the short-to-medium term, increasing the likelihood that the national and regional labour markets will be consistent with the 'slack' labour market scenario during construction.

Looking specifically at skilled labour capacity, recent Labour Force Survey results indicate that a relatively high proportion of unemployed workers were last employed in the Construction sector (ABS, 2019b). In QLD, 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 previous year corresponding quarter. Nationally, over the same period, 15.1 per cent of unemployed persons who reported losing their job last worked in the Construction sector. The ABS estimate 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 (ABS, 2020). These indicators suggest a degree of softness in the Construction sector. The industry and occupational profile of the Toowoomba and Greater Brisbane workforce, together with evidence that the Construction sector is not currently stretched means that it is reasonable to assume that the regional labour market has the capacity to supply a significant portion of the workforce requirements of the Project without major disruption.⁵

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

Employment results at the industry level (movement of workers between industries and regions) are presented in Figure 17.9 and Figure 17.10. 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.

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

The Construction sector, which benefits directly from the Project, is anticipated to expand employment by the greatest number of jobs. The results also indicate the expansion of employment in the Professional, Scientific, and Technical Services and Wholesale Trade sectors. This reflects the importance of these two sectors in the construction industry's supply chain. The increase in demand for resources to complete the construction of the Project tends to increase resource costs. This has negative impacts on cost-sensitive, trade-exposed sectors, such as Agriculture, Forestry and Fishing, Mining, and Manufacturing. As a result, these sectors contract and release resources to the construction-related sectors.

Under slack labour market conditions, the increase in the demand for workers can be partially accommodated by drawing from the ranks of the unemployed (or under-employed) and accordingly, the net displacement of workers from existing jobs is less pronounced.⁶ Under tight labour markets, as businesses compete for workers that are already employed, the benefits from increased labour demand are primarily in the form of higher real wages, resulting in greater displacement of workers. As indicated earlier, the labour market conditions most likely to prevail during construction of the Project are those represented by the slack labour market scenario.

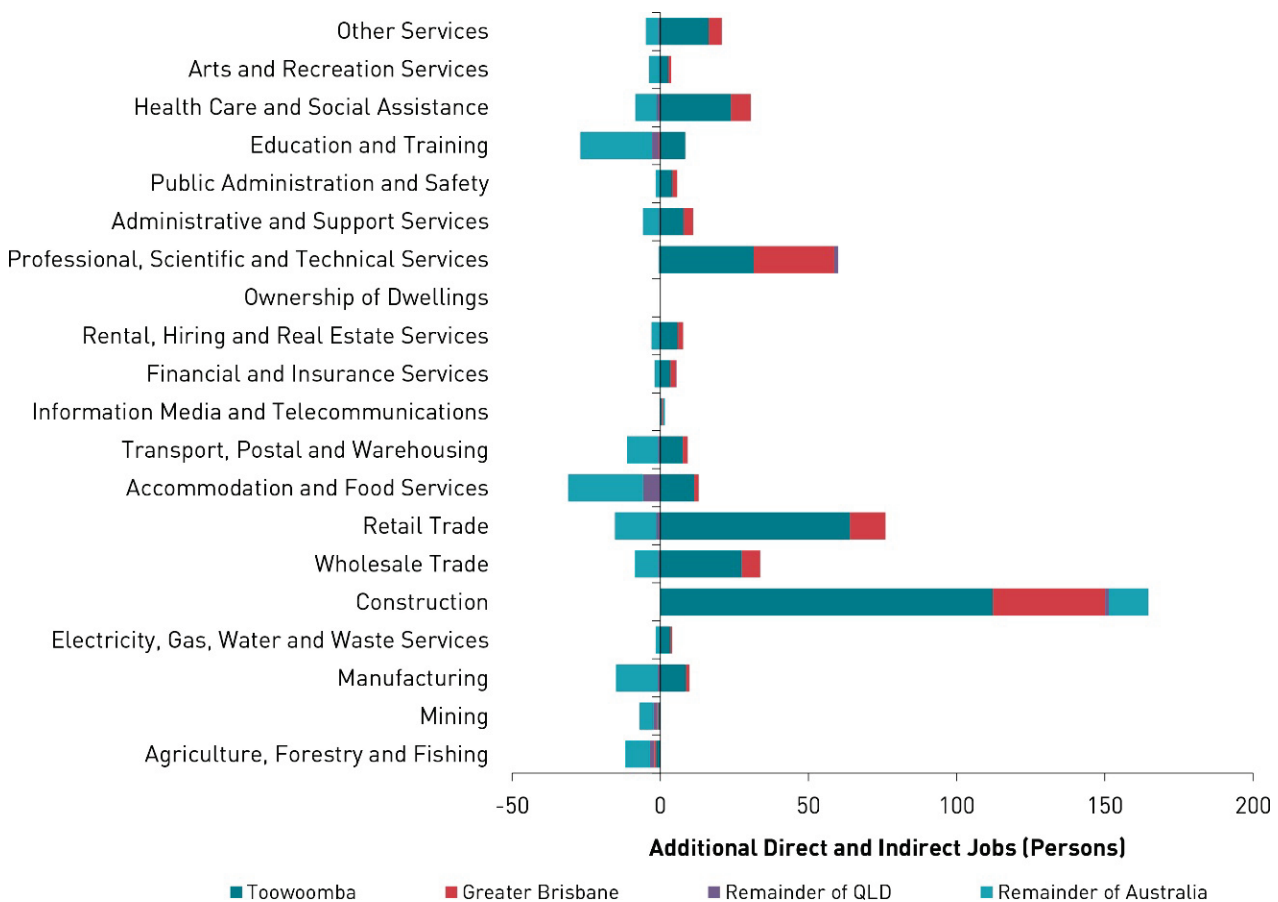


FIGURE 17.9: INDUSTRY EMPLOYMENT RESULTS: CONSTRUCTION PHASE, SLACK LABOUR MARKETS

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



FIGURE 17.10: INDUSTRY EMPLOYMENT RESULTS: CONSTRUCTION PHASE, TIGHT LABOUR MARKETS

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

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

► Inland Rail in QLD

- A quantitative assessment of the cumulative macroeconomic impacts of Inland Rail on the economy, resulting from the construction of the QLD sections of Inland Rail
- There are five sections of Inland Rail that fall in QLD: B2G, G2H, H2C, C2K, and Kagaru to Acacia Ridge and Bromelton (K2ARB).

► Broader cumulative assessment

- A qualitative assessment of cumulative impact of projects within or adjacent to the study area on local and regional labour markets, the supply chain and local businesses (refer Appendix R: Economics Technical Report for the list of interacting projects).

17.12.1 Inland Rail in QLD

The construction phases of the QLD sections of Inland Rail have been jointly simulated to analyse the cumulative economic impacts of these projects.

Table 17.10 and Table 17.11 summarise the cumulative macroeconomic impacts of the QLD sections of Inland Rail. Under the assumption of slack labour markets, the incremental economic impacts of the QLD sections include an increase in real GRP of \$1.75 billion (\$2019) and an increase in the average number of jobs over the economic analysis period, of 2,059 jobs per year. If labour markets are tight then the incremental benefits are smaller with real GRP, increasing by \$0.83 billion, and the average annual number of jobs increasing by 485 over the same period.

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

Darling Downs–Maranoa region, which will impact Greater Brisbane and Toowoomba indirectly.

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

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

TABLE 17.10: SUMMARY OF QLD-WIDE ECONOMIC IMPACTS—SLACK LABOUR MARKETS

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

TABLE 17.11: SUMMARY OF QLD—WIDE ECONOMIC IMPACTS—TIGHT LABOUR MARKETS

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

Table 17.12 provides an outline of the economics assessment adopted capital expenditure figures across each of the QLD Inland Rail Projects. The expenditure profile (rounded to the nearest million) relates to construction phases costs and is generally consistent with the *Inland Rail Programme Business Case* (ARTC, 2015a)

TABLE 17.12: TOTAL CAPEX FOR QLD INLAND RAIL PROJECTS

| | 2015 ^{1,3} (\$Am) | 2019 ^{2,3} (\$Am) |
|--------------------------------------|----------------------------|----------------------------|
| NSW/Qld Border to Gowrie | \$1,042 | \$1,115 |
| Gowrie to Helidon | \$1,016 | \$1,087 |
| Helidon to Calvert | \$528 | \$565 |
| Calvert to Kagaru | \$606 | \$648 |
| Kagaru to Acacia Ridge and Bromelton | \$48 | \$51 |
| TOTAL | \$3,240 | \$3,466 |

Table notes:

Figures rounded to the nearest million

1. The values outlined are incurred over the construction phase which have been derived from the capital cost plan and construction programming. Pre-construction costs are not included because these are incurred outside of the indicative construction period (prior to 2020).
2. 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.
3. Values reflect capital costs and do not include provisions for insurances, ARTC train control system, utilities and property and site remediation.

17.12.2 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. For construction activity occurring within the adjacent region (such as G2H and C2K), most of the workforce are anticipated to be drawn from the local region, within safe driving distance to the Project. It is anticipated that the workforce will return to their place of residence at night, minimising the demand for local infrastructure and services.

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

17.12.3 Cumulative regional labour market impacts

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

The results of the regional economic impact assessment indicate that it is reasonable to assume that the regional labour market will have the capacity to supply a portion of the workforce requirements of the Project, without major disruption. However, these conditions may change in the context of cumulative labour market demand. Prior to the 2020 Quarter 2 market conditions, the major infrastructure projects in the adjacent and surrounding areas, including

those associated with Inland Rail, had the potential to put some pressure on labour markets if inopportune scheduling resulted in cumulative and competing demand for trades and construction labour. However, the overall labour demands of the various infrastructure projects expected to be constructed were modest and that scheduling could be optimised to minimise market impact. The prevailing trends in the Toowoomba and Greater Brisbane labour market, and the ability of workers to mobilise to project locations, suggested that the risks of labour market disruption were limited. In the current environment, this risk has now been further reduced.

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

17.12.4 Cumulative supply chain impacts

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

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.

17.13 Impact management

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

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

There are two sub-plans which are directly relevant to the economic impacts identified and assessed in this EIA—Workforce Management Sub-plan and Local Business and Industry Participation Sub-Plan. A summary of the impacts and benefits identified in this EIA and the relevant recommendations within the SIMP sub-plans is provided in Table 17.13.

Further details of these plans can be found in the Social Impact Assessment (refer Chapter 16: Social).

TABLE 17.13: SOCIAL IMPACT MANAGEMENT SUB-PLANS

| Impact/benefit | Recommendation |
|--|--|
| <p>Workforce management—construction</p> <p>The Project has the potential to provide significant opportunity to support local employment, including Indigenous and youth employment opportunities</p> | <p>Workforce management measures:</p> <ul style="list-style-type: none"> ▶ Require contractors and operators to seek local and regional workers ▶ Ensure people in potentially impacted communities have opportunities to access training related to Project requirements ▶ Identify and communicate to training partners the skills required in construction, operation and maintenance of the Inland Rail Program ▶ Endeavor to ensure that the construction contractor encourages employment, training and skills development opportunities by: <ul style="list-style-type: none"> ▶ Identifying the skills required in the building, construction, equipment and services fabrication and supply, maintenance, operation and support to the Inland Rail Program, for its design, construction, operational and maintenance phases ▶ Arranging timely training and qualification arrangements to meet the needs of skills development to support all phases of Inland Rail ▶ Ensuring that training and qualification systems meet the requirements of the National Standards Framework. ▶ Work closely with local Indigenous communities, the Department of State Development, Infrastructure, Local Government and Planning (former Department of State Development, Tourism and Innovation), Department of Employment, Small Business and Training and Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships (former Department of Aboriginal and Torres Strait Islander Partnerships) to strengthen community members' capacity for employment, support the design and delivery of training and development programs and encourage applications for Project-related jobs from Indigenous people ▶ Provide a clear and efficient process for people to seek information about employment opportunities and register their interest. ▶ Work with key partners to link training and development programs with other projects and local industries to provide the greatest regional benefit ▶ Work with schools and local training providers to provide appropriate training including Science, Technology, Engineering and Mathematics initiatives and scholarships for students from potentially impacted communities ▶ Use of multiple platforms to advertise job opportunities and promote the availability of employment Expression of Interest forms through community forums, newsletters and Inland Rail websites. Work with QLD Government and Australian Government departments to provide long-term outcomes through training, mentoring and other support programs ▶ Provide a workplace that is inclusive and values the contributions of Aboriginal and Torres Strait Islander employees. |

| Impact/benefit | Recommendation |
|--|--|
| <p>Local business and industry participation</p> <p>The Project will have significant construction materials and services requirements, which may provide local businesses with the opportunity to supply the Project</p> | <p>Local business and industry participation measures:</p> <ul style="list-style-type: none"> ▶ Inland Rail's Australian Industry Participation Plan and Sustainable Procurement Policy for the Project ▶ Support Indigenous businesses to ensure they are prepared for and provided with opportunities to participate ▶ Maintain access to services and businesses during construction. Where alternative access arrangements are required, these will be developed in consultation with relevant property owners/occupants <hr/> <ul style="list-style-type: none"> ▶ Indigenous participation and local participation will be included as key elements of construction tender assessments, and ARTC will work closely with contractors to achieve agreed outcomes ▶ Work with key partners to link training and development programs with other projects and local industries to provide the greatest regional benefit ▶ Work with Department of Employment, Small Business and Training and, Department of Infrastructure, Transport, Regional Development, and Communications, Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships (former Department of Aboriginal and Torres Strait Islander Partnerships) and local and Indigenous businesses to: <ul style="list-style-type: none"> ▶ Build businesses' capacity to participate in the Project's supply chain through business development, mentoring and pre-qualification projects ▶ Support Indigenous businesses to ensure they are prepared for and provided with opportunities to participate ▶ Provide a clear and efficient process for businesses to seek information about opportunities and register their interest Work with key partners to link training and development programs with other projects and local industries to provide the greatest regional benefit |

Table note:

Refer Appendix Q: Social Impact Assessment Technical Report for further detail.

There are a number of economic impacts identified within this EIA that are beyond the anticipated requirements of the SIMP. Where these impacts cannot be avoided, a range of measures have been proposed to carefully manage and mitigate these impacts. These measures are summarised in Table 17.14 with further details provided in Chapter 8: Land use and tenure, and Chapter 16: Social.

TABLE 17.14: SUMMARY OF PROPOSED MANAGEMENT AND MITIGATION MEASURES

| Impact | Proposed mitigation/management measures |
|---|--|
| Agriculture | |
| Loss of agricultural land | <p>Where loss of agricultural land is unable to be avoided, the horizontal alignment considered (among other environmental, social, cultural, economic and technical constraints), placement of the rail corridor will be such that it traverses around or as close as possible to property boundaries to reduce potential fragmentation and sterilisation of productive land (where feasible). Intensive livestock operations, including feedlots and poultry farms have also been avoided. Where the disturbance footprint is unable to avoid the severance of agricultural land and enterprises due to the partial acquisition of a property, acquisition will be investigated in consultation with landowners. The consideration of partial or full acquisition of these properties will be determined on a case-by-case basis, with consultation occurring with individual landowners to determine if the agricultural enterprise can remain viable.</p> |
| Land fragmentation and disruption to access and infrastructure | <p>Where land is fragmented or isolated, any impacts on operational farm requirements, such as impacts on access, infrastructure and services, will be managed and reinstated as soon as practicable. Work with individual land owners will continue to develop suitable solutions based on individual farm management practices through the development of individual property management agreements. Solutions may include the provision of crossing points or underpasses for access to fragmented or isolated properties. Where disruption to water supply occurs, crossing points will be provided or the relocation of water supply or irrigation systems will be undertaken in consultation with landowners.</p> <p>The overall disturbance of construction areas has been limited, where possible. Where agricultural land is required to be used temporarily during construction, disturbed areas will be rehabilitated as close as possible to pre-construction conditions in accordance with the Reinstatement and Rehabilitation Plan.</p> |
| Alterations to stock routes | <p>The disturbance footprint does not traverse any known stock routes. Stock movements will be considered during detail design and in consultation with landowners to identify stock routes across grazing properties that may be affected during construction or operation of the Project. If informal or private stock routes are identified through consultation with landowners, appropriate mitigation measures will be agreed on with affected landowners. Mitigations measures may include the provision of alternative access arrangements developed in consultation with affected property owners/occupants.</p> <p>Where stock fencing is required, fencing will be constructed in accordance with the Inland Rail fencing standards. This will occur prior to the removal of existing fencing and prior to any works being carried out on the subject land, unless otherwise agreed with the landowner.</p> |
| Tourism | |
| Disruption to local tourism businesses and industry from changes in amenity and rural character | <p>Where the Project disrupts local tourism businesses, consultation with tourism associations and local governments will be ongoing to ensure that generalised impacts on tourism values are reduced (wherever possible).</p> <p>Work will continue with local governments, Chambers of Commerce, tourism associations and tourism service providers in potentially impacted communities to implement the initiatives identified during detailed design.</p> <p>Work will be undertaken with the Lockyer Valley Tourism Association, and the Ipswich Tourist Association to support their promotional and marketing campaigns to minimise the impact of the Project on the tourism industry.</p> <p>Work will be undertaken with the Lockyer Valley Tourism Association, the Lockyer Valley Chamber of Commerce and interested businesses to develop and fund marketing or business capacity development strategies.</p> |

Table note:

Refer Chapter 8: Land use and tenure and Appendix Q: Social Impact Assessment Technical Report for further detail.

17.14 Conclusions

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

Inland Rail impacts

To meet the requirements of the ToR, this EIA has focused on the specific economic impacts resulting from the construction and operation of the Project. However, the assessment acknowledges the role of the Project, and the remaining project links, in collectively delivering the benefits of Inland Rail. In its entirety, Inland Rail will enhance Australia's existing national rail network and serve the interstate freight market. Based on the *Inland Rail Programme Business Case* (ARTC, 2015a), the anticipated 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 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. Inland Rail is anticipated to deliver a net positive impact of \$16 billion on GDP over its 10-year construction period and 50 years of operation.
- ▶ Nationally, Inland Rail is also expected to deliver an additional 16,000 jobs at the peak of construction, and an average of 700 additional jobs per annum during operations
- ▶ Enhanced competition between rail and road freight, by providing a credible transport alternative, which will drive further innovation and efficiency
- ▶ Potential to promote the expansion and development of freight precincts around Inland Rail terminals as a result of the benefits from co-location and clustering of industries (reduced transport costs to warehousing, economies of scale and knowledge-sharing opportunities).

Local and regional employment, business and industry impacts

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

- ▶ The Project offers opportunities to encourage, develop and grow Indigenous, local, and regional businesses through the supply of resources and materials for the construction and operation of the Project (e.g. materials, fencing, installation and instrumentation, rehabilitation and landscaping, and construction works support services).
- ▶ Opportunities in secondary service and supply industries (such as retail, hospitality and other support services) for businesses in close proximity to the construction footprint. The expansion in construction activity is also likely to support additional flow-on demand and spending by the construction workforce in the local community.
- ▶ The Project is a critical link in Inland Rail. As both a greenfield and brownfield development, the Project comprises new dual-gauge track to create a more direct rail freight corridor for freight operators. As a critical link of Inland Rail, the Project offers opportunities to support the local agricultural industry, by applying downward pressure driving savings in freight costs, improving market access, and reducing the volume of freight vehicles on the region's road network.
- ▶ The Project alignment has been designed to minimise impacts to local business and industry; however, the Project may result in disruption to the agricultural and tourism industries through:
 - ▶ The loss of agricultural land (through disturbance, acquisition, or sterilisation by the permanent disturbance footprint), disruption to farm management, or changes in accessibility or connectivity to market. This may negatively impact on the productive capacity and total economic value add from the local agricultural industry. Based on the proportion of productive agricultural land lost, it is estimated that the Project could result in a loss of \$17,274 (value foregone) in gross agricultural production per year.⁷ Works will continue with individual landowners to develop suitable management solutions based on individual farm management practices to mitigate and manage these impacts.

7. 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.

- ▶ Changes to the amenity of, or connectivity to, local attractions. The Social Impact Assessment (refer Chapter 16: Social) concludes that a significant decrease in visitation as a result of this impact is unlikely. ARTC will work with tourism associations to ensure that generalised impacts on tourism values are reduced wherever possible.

Economic benefits assessment

The economic benefits assessment estimates that the Project is expected to provide a total of \$147.40 million (\$2019) 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 impact assessment

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

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

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

Cumulative impacts

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

The results of the regional economic impact assessment indicate that the regional labour market will have the capacity to supply a portion of the workforce requirements of the Project, without major disruption. However, these conditions may change in the context of cumulative labour market demand. Prior to the change in 2020 Quarter 2 market conditions, the major infrastructure projects in the adjacent and surrounding areas, including those associated with Inland Rail, had the potential to put some pressure on labour markets (if competing demand for trades and construction labour). However, the overall labour demands of infrastructure projects expected to be constructed were modest, and scheduling could be optimised to minimise potential market impacts. 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 will be limited. In the current environment, this risk has now been further reduced.

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

Impact management

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

Economic benefits of the Project will be enhanced, while avoiding, mitigating or managing any potentially adverse economic impacts. The SIMP will be implemented. The SIMP will ensure key objectives, outcomes and performance measures are monitored during each Project phase. The SIMP will assist in managing the social and socio-economic impacts of the Project and enhance Project benefits and opportunities.

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